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## How To Convert A Lawn Tractor To Electric

You can mow a 2-acre lawn for pennies with an all-electric lawn tractor. Brian Edmond's DIY Electric Tractor Conversion Kit lets you take a lawn tractor headed for the scrap heap and make it mow again.

"I put together a complete kit for converting a 38 to 42-in., gas-powered lawn tractor to 24-volt all electric drive," says Edmond. "You can convert almost any lawn tractor of that size."

Edmond recommends checking with local repair shops for tractors headed for the scrap heap. He advises looking for tractors with 18-in. rims to match the gear ratio of his transaxle. Deck size is also important, as he has sized the electric motors to 19 to 21-in. blades.

Once it has been stripped down and parts resold or discarded, the frame should be power washed. He estimates the repower could take as long as 40 hrs., depending on experience levels. He provides complete plans, including videos and diagrams.

"Standard hand tools and basic electrical skills stripping and wrapping wires are all that are needed, aside from a small amount of welding," says Edmond. "A local welding shop can easily handle that."

With the exception of batteries, the kit contains the most difficult-to-get parts. The transaxle with brake and drive motor come in one unit. The kit also includes individual motors with mounting flanges

for blade drives, electronic motor controller, control relays, digital amp/volt meter, circuit breakers and more.

Edmond selected components for their energy efficiency. "Other conversion kits are out there that will run for 15 to 20 min., but my kit will cut as much as 2 acres of grass on one 50-cent charge," he says. "Another difference is battery placement. Instead of under the hood, I put the batteries under the driver's seat for traction. Without the extra weight over the drive wheels, you can spin out on wet grass."

Safety is a big feature with Edmond's kit. He focused his 41 years of experience with electric motors and instrumentation on making his kit not only efficient, but also safe.

"Take your foot off the accelerator pedal, and the tractor slows in 1/2 a second, stops and applies the parking brake," explains Edmond. "Without a mechanical drive, the cutter blades stop within 2 seconds. You could fall off, and the tractor will come to a standstill and the blades will stop before they could hit you."

Other safety features include the mower deck itself. In order to activate the blades, the deck has to be lowered and the tractor has to be at rest with the operator's foot on the brake pedal.

"You can't activate the blades when the tractor is moving," says Edmond.

Stopping and restarting on a hillside is also

safer than with a mechanical drive. Stop on a slope, and the parking brake engages. Step on the accelerator pedal, and the parking brake disengages. The tractor begins moving within 1/10 of a second.

"With a mechanical drive, release the brake, and the tractor will begin to roll as you let out the clutch," says Edmond. "With my kit, the mower won't roll back more than an inch."

Minimal maintenance is an attractive feature of Edmond's converted tractors. Not only are there no oil or gas levels to check, but there are also no filters, belts or pulleys to replace.

Removing the entire mower deck can be done by pulling 2 pins and a steel bar at the front. Even the blades are easy to maintain. Remove 4 pins to pull the blades for sharpening or replacement. Again, safety is paramount.

"Power to the motors on each blade is delivered via a plug-in cable," explains Edmond.

The kit is available at an introductory 22 percent discount of \$1,247 U.S. or \$1,597 Canadian. It uses standard 6-volt golf cart batteries and can be recharged with a standard battery charger in 4 to 5 hrs.

"You can go on eBay and find a battery charger from an electric wheelchair. They are all smart chargers," suggests Edmond. "They will shut off automatically, extending battery



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life."

Edmond estimates annual operating cost for cutting 2 acres 22 times a year with his repowered mower at about \$11 plus \$57 towards replacing \$400 batteries every 7 years. He compares that with the \$366 estimated cost of operating a gas tractor (fuel and service) the same amount of time.

Contact: FARM SHOW Followup, Edmond Electric Co., Ltd., 90 Harvard Place, Amherstview, Ont. Canada K7N 1J4 (ph 613 900-6355; info@electrictractor.net; www.electrictractor.net).

## Electric-Powered Skid-Steer Loader

After working in the ag electronics business and doing a little farming himself, Kevin Martin was sure there would be lots of times when having an electric-powered skid loader would be useful. So he decided to convert a diesel-driven model to electric.

"I made the conversion on my Case SR 200," says Martin. "The skid loader had burned up in a fire, and only the axles, frame and boom were salvageable. I gutted out everything in the cab except for the hydraulic spool valve that controls the boom."

Martin works as a sales rep installing, programming and servicing electronic equipment, much of it on farms where he installs variable frequency drive (VFD) electric drive systems on everything from vacuum pumps to barn ventilation fans, TMR mixers, and grain dryers. "I thought a VFD drive system would work great on a skid loader," he told FARM SHOW.

He bought a new surplus diesel engine and installed it behind the cab. The engine belt-drives a 50 kilowatt onboard generator, which powers a VFD electric

motor and controller mounted under the cab. The controller is hooked up to a gearbox that drives an electric motor on each wheel.

He mounted electronic sensors on the skid loader's drive levers and uses switches on a homemade electronic control box to control speed and forward and reverse direction.

The electric skid loader has plenty of torque compared to other conventional machines of the same size, says Martin, and the generator has a lot of potential uses. "Power tools can be hooked up to the generator for making repairs in the field. I plan to make a quick-tach bracket that will let me use the skid loader to carry a welder to the field, where I'll be able to plug it into a 240-volt outlet on the generator."

Martin sells VFD drives and welcomes inquiries from readers.

Contact: FARM SHOW Followup, Kevin Martin, KM Electric Co., 1347 Cheyenne Ave., Charles City, Iowa 50616 (ph 641 364-2103; kmevolt@ibyfax.com).

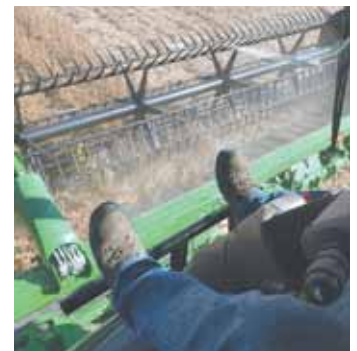


Lankota footrest is designed for Deere 00 to S series combines. It installs using existing bolt holes at base of steering column.

## Kick Up Your Heels On This Combine Footrest

You can put your feet up to rest with this new footrest designed for Deere combines and windrowers.

The Lankota footrest is designed for Deere 00 to S series combines. It helps reduce leg fatigue and cramping due to long hours sitting in the combine. The T-shaped unit installs



using existing bolt holes at the base of the steering column.

Sells for \$85 plus S&H. Contact: FARM SHOW Followup, Lankota, Inc., 270 West Park Ave., Huron, S. Dak. 57350 (ph 866 526-5682; www.lankota.com).