Remote-Controlled Electric Skid Steer Now On The Market

The Elise 900 from Kovaco is the first battery-powered skid steer on the market. With the aid of a mobile app, it can be operated remotely, using a mobile phone for display and control.

"We have several running in the U.S. now," says Adam Zajac, Kovaco Electric. "Without a diesel engine, the advantages include virtually no maintenance, no exhaust or emissions, and low noise levels. It can be operated indoors because there are no exhaust emissions."

Prior to introducing the Elise 900, the Czech Republic company had not made motorized equipment of any kind. Thus, they had no preferences or prejudices to overcome. Known for equipment attachments and welding positioners, the European company made their move swiftly.

"We started work on the concept in 2014 and introduced it to the European market in 2019," says Zajac. "Everything from design to manufacturing and assembly was done in-house, which helps. Our owner is very passionate about the Elise 900 and very responsive to customer needs."

Zajac says the company recognizes that skid steer users often can't afford to wait for parts or customer response. "One of our first customers had purchased a new conventional skid steer, and it immediately broke down," relates Zajac. "He had to wait 2 weeks for parts. He sold it and bought an Elise 900."

Service is easy, as the entire cab can be tipped forward with the help of gas struts.

However, the lead acid battery-powered Elise 900 has little service needed and very few parts to break down. Most electric and hydraulic components are readily available.

The battery pack supplies power to 3 electric motors, 2 for motive power and a third for the hydraulic pump. Each of the 3 motors is rated at from 13 1/2 hp. to a maximum of 36 hp.

"Each wheel has a planetary gearbox to reduce the high motor speed to the desired travel speed," says Zajac. "Belts rated for high torque run from front to rear. Travel speed ranges from less than 1 mph to a maximum of 8 mph."

Depending on work being done, the batteries can last from 2 to 8 hrs. They recharge to 80 percent in 3 hrs. and 100 percent in less than 5 1/2 hrs. Battery packs can be quickly replaced via a pallet mover.

"We went with lead acid batteries because they are well-proven, perform well in extreme heat and extreme cold, and are lower cost than lithium ion batteries," says Zajac. "At some point in the future we will offer an equivalent lithium ion battery pack."

The electric motor on the hydraulic pump puts out more than 17 gpm at 2,600 psi, from a 10 1/2-gal. reservoir. The Elise 900 has a load height of nearly 12 ft. and a load capacity of 1,984 lbs. It offers a tipping load of 3,968 lbs.

The Elise 900 is well-equipped with options. More than 40 different attachments are available, ranging from brush cutters to bale handlers, multiple buckets, grapples and blades. They also include snowblowers, spreaders, sweepers, tree cutters and wood splitters.

More than 40 different attachments are available for the Elise 900 electric skid loader. It can be operated remotely using a mobile phone for display and control.

"You can put any of our attachments on it, as well as other universal quick attach attachments made for skid steers," says Zajac. "We have the standard hydraulic connections, as well as an auxiliary for attachments that need it."

Currently Zajac is one of two sales contacts for the company in North America. "We are in the process of establishing dealerships," he says. "Our largest dealer currently is in Wakarusa, Indiana with another one in Houston, Texas. We are establishing one in Hastings, Minn. and another on the East Coast."

The price for the Elise 900 with a standard battery pack is $54,999. It is also available with the extended battery pack for $58,081. Shipping and taxes are extra.

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He Builds Custom Lawn Mowers

"A few years ago I got tired of mowing my lawn out in the sun so I decided to make a remote-controlled mower. I used an RC controller, a motor driver, batteries, a receiver and it worked great," says inventor Jesse Smith. "Variations on that idea just kept popping into my head and I kept building them."

Smith uses a Sabertooth 2x32 regenerative motor driver for each of his mowers. It supplies 32 amps of power to the motors, with peak currents up to 64 amps per motor. Smith says the Sabertooth is popular for other applications including robots, electric vehicles, ride-on toys and scooters.

"I operated the second mower with a 12-ft. cord and a control panel with two switches, but that didn't have a lot of power and it was a pain to follow around," Smith says, "so I rebuilt it into a 24-volt system. That version has larger wheels and a stronger axle, so I can operate it remotely or actually sit on it."

Although Smith didn't try to sell any of the mowers, he says "random people stopped by or heard about what I was doing, so I've built and sold three of them for about $900 each. It's just me in my garage with the parts."

Smith's remote controlled mowers have unusual capabilities. "One of them towed my 4-wheeler up the driveway with me sitting on it, and I've also pushed old refrigerators with it at the dump just by pressing against them from the back and pushing forward. They have a lot of power."

A roofer by trade with an affinity for fixing things, Smith says he began repairing old weed trimmers, mowers, washers, dryers and pressure washers that people threw away. "I'd fix them up and give them away to people who couldn't afford to buy new equipment," Smith says. "That grew into building mowers, which I really enjoy."

One of Smith's first remote control mowers (top) had a tether cord attached to a dual switch control board made of plywood. "I had to follow it around the yard, and people thought I was crazy," he says. A newer version has larger tires, cordless control, and more power.

He uses a Sabertooth 2 by 32 regenerative motor driver on all of his mowers.

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Goat robotic 22T solar lawn mower is designed to mow under solar panel arrays. It's just 18 1/2 in. tall and comes with 2 trimmer arm attachments.

Robotic Mower Led To Other High-Tech Products

In 2004 (Vol. 28, No. 4) FARM SHOW wrote about a small autonomous lawn mower invented by Luis Medina, a Florida electrical engineer with a passion for new ideas. Today he's selling an updated version of the mower along with about 20 other products.

Medina is CEO of Evatech, a design and development company that has numerous high-tech patents for products made at two factories by 14 employees and sold in North and South America, Europe, Japan and China. He began marketing his mowers using YouTube videos.

Evatech is widely known for its low-profile, bright orange wheel or track-driven GOAT series. The GOAT 22 is a residential unit used for smaller sloped areas and flat properties. The GOAT 22T is a tracked unit for larger residential properties, steeper slopes and commercial businesses like golf courses, small parks, cemeteries and small farms. The GOAT 22T solar is designed to mow under solar panel arrays and has two trimmer arm attachments. It's 18 1/2 in. tall, has a retractable deck elevation handle and two powerful 3-phase 48V brushless DC motor trimmer arms. The GOAT's aggressive tracks make the machines ideal for all types of terrain, including slopes on ditches, water reservoirs and dams. The GOAT product line also includes a hybrid robot that can handle a front deck along with a commercial grade remote controlled mower.

"We design and build innovative products that people want for specific needs rather than for a mass market," Medina says. A good example is the company's SUMO ROBOT, which can be immersed under a foot of water and carry a 300-lb. payload. It was originally designed for the mining industry and has since been adapted for other uses.

The MAGA units are highly advanced robots that can mow grass, plow snow, sweep, pull wagons and other equipment. The TREX (terrestrial robotic explorer) is a patented clean propulsion 44-in. mower that Medina says is the most eco-friendly slope mower on the market.

Medina says his company has worked hard to be an innovative leader, building products that help customers solve problems, often with custom units. "We offer lifetime tech support to our customers."

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