New Holland Straddle Tractor concept.

Straddle Tractor Concept Can Change Row Spacing

New Holland recently unveiled a concept tractor for specialty crops that's designed to adapt to various row spacing. It's built low for vineyard work so the height is under 5 ft.

"A prototype has not been produced, but the design will be used to inspire a future production straddle tractor," says Thierry Le Briquer, grape, olive, and coffee global product and platform manager, New Holland. "The concept was developed to be versatile and manage several implements at the same time. For this, we developed a specific intelligent hydraulic system that can adapt flow and pressure, depending on the need of the attached implements. This solution could also be applied to other tractors."

Thierry compares the tractor design to a Swiss knife that can be equipped with all the implements currently dedicated to viticulture. At the same time, the company is working with partners to develop implements exclusively designed to make use of the tractor's unique features.

The concept's key feature is the ability of the axles to expand their width at the push of a button. New Holland currently offers the TD Straddle Tractor with the ability to expand from about 4 1/2 to 6 ft. in a standard row-crop style. However, all it shares with the new design is the name.

The experimental design envisions a center pod for the cab, engine, and drive systems with side pods for wheel units. The pods are connected only by axles positioned above standard grapevine row (and support post) height.

As the axles extend, the side pods move away from the center pod with each pod riding between rows. This would allow the tractor to straddle one or several rows of grapevines with row spacings as small as 5 ft.

Some features are like the tractor, only in the concept phase. They include a hybrid electrical transmission and hybrid engine with electric motors. This could possibly include the 6 cyl., 145-hp. rated/175-hp. Boosted Natural Gas engine. It powers the T6 Methane Power tractor introduced in 2021.

Another feature planned for the new design is autonomous functioning. Such features already exist on current New Holland brand equipment.

Contact: FARM SHOW Followup (www.agriculture.newholland.com/eu/en-uk/about-us/whats-on/news-events/2022/new-holland-straddle-tractor-concept-wins-german-design-awards-2023).

Photo Courtesy of Northeastern Nevada Museum

Wooden hoof shoes that make footprints look like cows.

These Boots Were Made For Stealing

FARM SHOW readers of a certain age may recall The Andy Griffith Show episode when a cattle thief put shoes on a cow. While it appeared that there were three thieves, wise Sheriff Taylor cracked the case noting that there were no cow tracks.

The show may have been a humorous twist on real-life cow thief Crazy Tex Hazelwood during the 1920's. He was a little smarter and rigged his boots with boards and two hoofs to lead cattle away from Utah Construction Company Ranches in northeast Elko County, Nev. Ranch hands realized that the herd was thinning, two at a time according to the tracks. But they were confused because there were never any human tracks left by a rustler.

Eventually, a couple of hands followed a pair of fresh "cow" tracks and discovered Hazelwood, wearing his hoof boots and leading a cow. According to an article by Howard Hickson for Nevada Magazine, the beef thief bragged that he had practiced taking long strides with the foot-long, 6-in. tall shoes and had been stealing cattle for 6 mos.

After spending a couple of years in prison, Hazelwood moved back to northeast Nevada and "remained a nuisance for several more years." In 1953, a feuding neighbor shot Hazelwood, 72, who was sitting in his pickup.

The cow rustling boots can be seen at the Northeastern Nevada Museum in Elko, Nev.

Contact: FARM SHOW Followup, (www.museumelko.org).

"The LCR is like a smartphone with different options," says Dan Abramson, co-founder, Directed Machines. "You can mow, tow, blade snow or dirt, almost anything you could do with a small tractor."

Solar Robot Designed For Landscape Work

The all-electric Land Care Robot (LCR) from Directed Machines is an all-purpose, mechanized helper for small acreages, fruit growers, nurseries and more. The 50 by 80-in. LCR can be controlled from a smartphone to operate autonomously or in "follow-me" mode. With its Cat I 3-pt. hitch, 2-in. receiver hitch, and electric pto, it can handle a wide variety of implements and tasks. Equipped with ATV-style tracks, it can handle slopes of up to 45 degrees.

"The LCR is like a smartphone with different options," says Dan Abramson, co-founder, Directed Machines. "You can mow, tow, blade snow or dirt, almost anything you could do with a small tractor. It can even be used for security patrols or scaring away predators. All of which can be done autonomously."

The LCR is a relatively simple machine designed for DIY maintenance with many off-the-shelf components. The company is dedicated to customer right-to-repair. Other components are built by the company to hold down costs.

The first LCR was built by retired Microsoft software engineer George Chrysanthakopoulos. His goal was a solar-powered robot for snow removal. Discussions with neighboring small-scale farmers lead him to design and program the LCR.

"I was the fourth buyer of an LCR," explains Abramson.

Customers are golf courses, solar farms, rural properties, high-volume garden nurseries, farms, and more which has allowed the company to do extensive research on how the platform fits diverse needs.

"The two most popular uses so far have been mow and tow," says Abramson. "As a result, we have made a lot of changes and improvements to our mowing capability."

When first introduced in 2020, the LCR was equipped with a 48-in. stainless steel mower deck which, like the 3-pt. hitch, is manufactured in-house. Directed Machine mower decks can now be customized in size from 48 to 144 in. and equipped with either blades or string trimmers. Blades and string trimmers can be readily switched out.

"We use all stainless steel instead of mild steel for the frame and many components," says Abramson. "It's highly resistant to corrosion and avoids the need for costly painting systems. The single bent steel plate chassis and frame will look as good 100 years from now as the day it was delivered."

The zero-turn 1,400-lb. LCR is equipped with up to 30 kWh of energy storage and a 400W bi-facial solar panel. It's powered by a 45 kW, 60-hp. electric drive with 1,400-ft. lbs. torque and more than 6,000 lbs. towing capacity. The 3-pt. hitch has a 2,000-lb. lift capacity.

Electric drive with chain drive that can be field replaced can tow over 6,000 lbs.

The low-cost chain drive can be field replaced or repaired with easy-to-source parts. They and the mower deck are controlled by a 300A at 48V board custom designed and produced by Directed Machine.

The operating system is designed around a Raspberry Pi 4. The credit card-sized single-board computer has been proven in countless applications since its 2012 introduction.

"We do with a $35 computer what Tesla and others have accomplished with billions of dollars in investments and expensive hardware," says Abramson.

"Machine vision allows us to work in areas where GPS is occluded, such as under heavy foliage or solar panels," says Abramson. "Higher energy applications will have to rely on the battery pack; however, the solar panels are usually sufficient to power the LCR indefinitely for applications like towing."

Base price on the LCR is $14,999 without batteries. The 10 kW sealed acid batteries add around $2,000 to the cost versus $6,000 for 10 kW lithium ferrous phosphate batteries. Mower deck, tire type (skid steer/turf/mud/ATV tracks), 3-pt. hitch and other options all impact the final price.

"A typical LCR delivered runs between $25,000 and $35,000, depending on applications," says Abrahamson."

Abrahamson notes that the company website is currently under redesign and update. The new site, when completed, will have current features and specifications.

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