Extendable Bucket For Front-End Loaders

Larry Williams says that although his patented ExtendaLoader for front-end loaders is not yet in production, he thinks it could revolutionize loader tractor design.

"When it's retracted, my loader will look like any other tractor loader. But once it's extended, it will reach out an extra 2 to 4 ft., thanks to a telescoping boom that's not available on conventional tractor loaders," says Williams, of Beckville, Texas. "The design does not compromise the loader's structural stability or lifting capacity.

"When retracted, the loader bucket is the same distance from the front of the tractor as a conventional loader. But when you need to reach higher or farther, you just extend the loader hydraulically. The loader can be used in either a retracted or extended position, or anywhere in between," he told FARM SHOW.

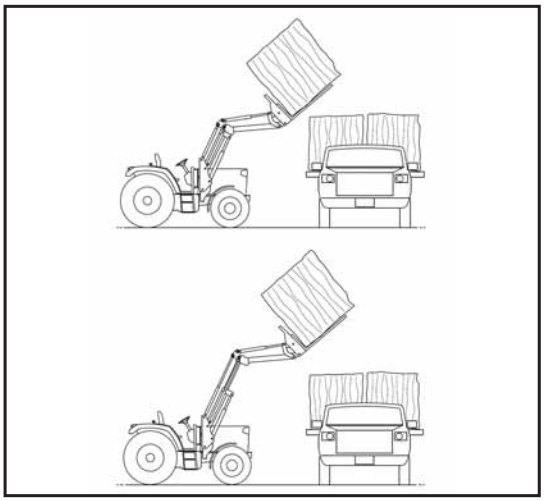
Williams says he got the idea from when he used to work with hydraulic cranes and Manlifts equipped with extendable booms.

"With the loader's extra reach, the operator can reach higher and farther, which will come in handy when loading bales or loading or unloading a truck or stacking small square bales inside a shed."

The idea is to cut the loader arms in half at the "knee" and insert a long rectangular steel box in each rear section of both loader arms. "The arms are hollow, and need to be taller and wider to accept the inner front section that extends forward. The entire length of the box is lined with friction-reducing wear pads," says Williams. "Hydraulic cylinders slide the front section out and pull it back. The design also will be integrated into the self-leveling feature on some loaders to maintain the integrity of that function."

He says the ExtendaLoader could be used on loaders with or without self-leveling buckets, and will maintain the modern styling of today's new loaders. "It's designed to solve a problem with all loaders that are just a few inches short of delivering the load or being able to reach the load."

Williams has built a prototype and is in contact with several manufacturers. He hopes to license the ExtendaLoader.



Extended loader reaches out an extra 2 to 4 ft., thanks to a telescoping boom. The extra reach comes in handy when loading bales.

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"Sphere" Adds Value To Dairy Waste

The Lely Sphere boosts the fertilizer value of dairy waste and captures 70 percent of normal ammonia emissions. It separates dairy waste into ammonia gases, solids and urine at the source. This allows them to be more precisely applied for better crop utilization, with fewer emissions than with slurry.

"Lely Sphere is designed to help dairy farmers exploit the valuable nutrients in manure to the maximum and thus promote crop growth," says Korstiaan Blokland, head of innovations, Lely. "This practical solution is easy to deploy and part of the transition to more sustainable and even more circular dairy farming."

Liquids pass through perforated floor while solids remain on the surface, to be picked up by Lely robot and siphoned into a separate pit.

The sphere consists of multiple components. A near solid floor with separator strips of small holes allows liquids and air to pass through. Solids remain on the surface to be picked up by the Discovery Collector robot. It constantly cleans the surface of the floor, scraping solids into a siphon that moves them into a separate pit. Separating the liquids from the solids (largely organic nitrogen and phosphates) reduces ammonia production. Enzymes in the solids would otherwise convert more of the urine into ammonia.

An N-Capture ventilator creates a negative pressure in the urine pit. This pulls manure gases formed in the pit and at the floor surface through a filter of water acidified with either sulfuric or nitric acid in the N-Capture. The acid is stored in nearby double-walled Variboxes. Once the acidified water has been saturated by ammonia in the manure gas, the resulting ammonium nitrate and/or sulfur nitrate is pumped to a nearby fertilizer silo.

Photo shows N-Capture ventilators (far left and right), acid storage (small unit), and fertilizer silo for storing ammonium nitrate or sulfur nitrate.

Urine remaining in the pit is largely a potassium mineral source.

The Lely Sphere nutrient separation, collection and storage system has been operational since 2017 and is being run on 4 test farms. Niels Borneman, Lely, estimates it's 60 percent of the way through evaluations required under Dutch regulations. He expects approval in mid to late 2021 with commercial availability to follow.

"The system has international potential, but initially Lely will focus on the Dutch market," says Borneman.

Pricing of the modular Sphere system will depend on the size of the dairy farm, with larger farms requiring multiple N-Captures. A Lely source estimates the investment for a 120-cow dairy at between $180,000 and $200,000. This would include 2 N-Captures, one (robotic) Discovery Collector, one silo, adjustments to a slatted floor, and installation.

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Small Tractor Chisel Digs Deep

You don't need a big tractor to deal with soil compaction issues with the Chisel CR, a deep tillage tool designed for small-acreage and hobby farmers.

Two rear shanks, 36 in. apart, dig up to 14 in. deep, using forward motion to shatter the soil, says Jeff Sberna, who came up with the design in 2005 to deal with compaction on his Bellevue, Ohio farm. That takes less power (40 to 105 hp.) than other compaction tools such as disc rippers and chisel plows that roll the earth over.

S-tines in the middle dig in about 4 in. to work up the soil for weed control, but still leave firm ground between. That prevents the soil from recompacting, as it does with other tools that work up all the soil.

"I've gone back a couple years later with a compaction probe and there's still less compaction (where the shanks dug in)," Sberna says. It also does a good job of aerating the soil, which helps speed up residue decomposition.

"As a farmer, when it came to the final design of the machine I wanted a quality tool that was as user-friendly as possible," Sberna says. "You will find it pulls more smoothly than the others. It's the most enjoyable primary tillage tool you will ever use. Especially as you get older and look for a less stressful day without the bounce and jerking that some tools give."

Fabricated for Sberna's business, J&D FarmBuilt, the spring chisel assemblies, rear shanks, and Danish tines have a lifetime guarantee from Bellota Agrisolutions. While designed for smaller horsepower tractors, the rear shanks and chisel assembly withstand the horsepower of larger tractors. The frame is built of 1/4-in. box tube and has a 4 by 4 by 1/4-in. rear beam.

Sberna initially built a larger model for his farm, then introduced the smaller Chisel CR 5.0 in 2018. Its compact 6-ft. wide design is perfect for people with wildlife plots, organic operations or small acreages. It's priced at $3,000 if you mention FARM SHOW.

Contact: FARM SHOW Followup, FarmBuilt LLC, 6991 Co. Rd. 219, Bellevue, Ohio 44811 (ph 419 271-4176; www.farmbuilt.net; farmbuilt@hotmail.com).

Chisel CR deep tillage tool has 2 rear shanks spaced 3 ft. apart, which dig the soil up to 14 in. deep.