

Auto Hitch Connects Pto, Hydraulics

By Lorn Manthey, Contributing Editor

Rasmus Helms grew up on one of Denmark's largest organic dairy farms, spending thousands of hours getting on and off tractors while using a variety of implements to clean yards, load wagons, and feed animals. During those years an idea gelled in his mind about hooking and unhooking implements without leaving the tractor seat.

First educated as a mechanic and later as an engineer, Helms started his own company to build and market the Combi Hitch system in 2012. Helms says his invention lets a tractor operator hook and unhook implements, including pto, hydraulics, and all electrical connections, without leaving the tractor seat. His first-generation product was used primarily for pulling trailers behind a forage harvester or tractor. The system gained popularity and customers began asking for a version that could also connect a pto shaft, which Helms introduced in 2016.

Steen N. Jensen, sales and marketing director for SIWI Maskiner, the manufacturing company, says the Combi Hitch now on the market can be used on different trailers, spreaders, feed mixing wagons, seed drills, and tillage implements. "Our typical customers are large farms and contractors, where they want to be more effective and save money while being able to do a lot of jobs with one tractor and one operator."

Jensen says an operator using the Combi

Hitch system can unhook a feed wagon or a manure spreader within seconds, use his front loader to fill that implement, then hitch on again without leaving the tractor cab. The system hooks and unhooks the same way every time, allowing even operators who have problems climbing into and out of a tractor to work safely and productively.

"We have customers with disabilities who want to return to their jobs despite missing legs or paralysis," Jensen says. "These operators are very grateful that a product like ours can help them continue farming even after serious injuries."

The Combi Hitch, which works on tractors from 130 to 450 hp., easily connects hydraulic, pneumatic, ISOBUS, CANBUS, standard trailer light, and all kinds of control boxes. The company's first system in North America was sold to an Alberta cattle farmer in January 2019, where Jensen says the temperature was 31 degrees below zero, a harsh environment where the hitch worked without any problems.

"The rancher bought the system because of its safety and effectiveness," Jensen says. "He has two cattle farms and his son is working alone on one farm during winter to feed 800 cows. Staying inside the tractor during all operations was the ultimate security for the father, and at the same time he saved money by not needing an extra loader running all the



Combi Hitch comes in 2 parts that attach to implement and tractor. Electrical and hydraulic connections, along with the pto shaft, connect as tractor backs up.

time to keep hydraulics warm. Later in 2019, the rancher invested in extra trailer modules, so when feeding was done, he could unhitch the feeding mixer and hitch a bale processor for further operations. This is a scenario we see more and more in Europe, where large contractors only want to use one very good tractor with a front loader, and then use our system for easy changes between different implements and trailers."

A Combi Hitch system includes the carrying module that mounts on the tractor and attachment modules that mount on implements or trailers. The tractor module fits

on a standard 3-pt. hitch and accommodates up to 8 hydraulic couplers and two 7-pin power plugs. The Canadian distributor is Future Ag (www.futureag.ca; ph 403 343-6101). Jensen says the company is still looking for a U.S. distributor to handle the product, which sells for \$19,997.

Check out the video of the system in action at www.farmshow.com.

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Industrial forklift mast attaches to skid loader arms and can be fitted with a 12-ft. long metal basket that slides onto the forks.

Skid Loader Forklift Loads 21 Ft.

An industrial forklift mast mounted on a Deere 325 skid loader allows Alan Lewis of Statesville, N.C., to raise loads up to 21 ft. high.

Lewis, a residential home builder, removed the skid loader's bucket and forks and replaced them with an Allis Chalmers forklift mast, which he bought from a local masonry contractor. He also had a local welding shop build a 12-ft. long, 52-in. wide, and 42-in. high metal basket that slides onto the forks.

The add-on mast uses the skid loader's existing hydraulic system to lift loads on a pair of 4-ft. forks. Lewis welded a universal adapter plate on back of the mast that attaches to the skid loader arms.

"I use the forklift and basket to lift pallets loaded with plywood and other materials to the upper floors of new homes. It greatly reduces the labor involved in hauling

materials," says Lewis. "The forklift can reach up under building rafters like a telehandler, but is much more maneuverable and fits into tight spots better."

"Even with the basket loaded and the mast fully extended, the skid loader remains surprisingly stable. However, I do plan to add weights on back of the skid loader as a counterbalance."

He paid \$800 for the forklift mast and tires. "I've made 3 other skid loader forklift masts that raise up to 16 ft. high and sold one of them. I've also built other baskets, including a 4-ft. square one that I use to trim tree limbs."

Lewis says he's willing to build forklift masts for others if there's enough interest.

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Cart's front and rear axles pivot independently from side to side, thanks to Kuenzi's home-built suspension system.

"Always Stable" Garden Cart

Jerome Kuenzi can pull his home-built garden cart anywhere without worrying that it will tip over on rough ground. A home-built suspension system allows the cart's front and rear axles to pivot independently from side to side, keeping the cart stable.

The cart measures 4 ft. long by 2 ft. wide and rides on 10-in. wheelbarrow tires. It has removable 1-ft. tall, expanded metal sides and an expanded metal floor. It can be pulled either by hand or behind a small tractor.

"I designed and built the cart myself in our shop," says the 17-year-old Kuenzi. "I came up with the idea because I want to be a mechanical engineer someday, and this was a way to challenge myself. Our old garden cart was built flimsy and broke while going over a steep drop-off that leads to our big garden. My cart is much more sturdy, and even with a heavy load it won't tip over."

The cart mounts on a pair of V-shaped steel frames that allow both axles - made from 1 by 2-in. tubing - to pivot. Heavy-duty bolts attached to steel brackets connect the axles to the wheels. A pair of metal hinges on each steering link allow the cart to tilt back and forth according to the terrain, without bending the steering linkage.

A pair of cables, one on each side of the cart, connect both axles together so that only one axle can tilt at a time. "The cables are connected to long vertical bolts that run through both axles," says Kuenzi. "Each



A pair of V-shaped steel frames hold wagon level as axles pivot.

cable runs up and over a pair of pulleys, one at the front of the wagon and one at the back.

"Both axles are free to pivot from side to side, but because of the cables only one axle at a time can tilt up or down," says Kuenzi. "When one axle tilts one way, the other axle tilts the other way."

A vertical bolt through the front axle allows the hitch to pivot from side to side, and a horizontal bolt allows the hitch to pivot up or down.

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