Petersen mounted a Predator V-Twin 22-hp. engine on the wheeled loader with a 13-gpm hydraulic pump and a 5-gal. hydraulic tank.

Petersen purchased a hydraulic steering mechanism designed for a Massey Ferguson tractor to control the rams on the articulation.

They Built Two Hydraulic-Driven Tractors

Reynold Petersen motorized a 3-pt. backhoe kit and also built an articulated loader tractor with the help of his son, Nick. Both tractors rely heavily on hydraulics, including hydraulic motors for drive wheels.

"We farmed, but I really didn't understand hydraulics until I built these," says Petersen. "Nick was an engineering manager with a large equipment firm and asked the hydraulics specialist when we had questions. He also got me books on hydraulics and the parts I needed."

Petersen had purchased a 3-pt. backhoe kit in 2002 for use on his IH 856. Tired of putting it on and taking it off, he decided to turn it into a wheeled backhoe with its own power unit.

"My neighbor had given me several 1978 IH Scout trucks, and I have a lot of salvaged parts cut up and set aside," says Petersen. "I shortened a Scout frame and used its transfer case as well as the axles and mounted a hydraulic motor on the transfer case for 4-wheel drive."

Petersen mounted a Predator V-Twin 22-hp. engine on the wheeled loader with a 13-gpm hydraulic pump and a 5-gal. hydraulic tank. He used hydraulics from the backhoe kit with an added valve for the hydraulic motor on the transfer case. He also powers a hydraulic valve on the rear of the wheeled backhoe for use with a wood splitter.

"I used to use tractor hydraulics on the splitter, but the relief valve isn't high enough on it," says Petersen. "I busted a wood splitter when trying to split knurled pieces. This is a smaller pump, but I can get lots of pressure and set it where I want."

Petersen follows a well-worn mantra of build it and if it doesn't work, burn it off and try again. He admits to doing a lot of it on the wheeled backhoe as he experimented with the design.

"Mounting the backhoe on the frame took some thought," says Petersen. "I wanted to make a 360-degree table, but the mechanism was too expensive. I retained the swing mechanism that was on it. As it is, it works great. I use it at home digging rocks out, and the neighbors call me to dig up water lines and other things."

With the wheeled backhoe under his belt, Petersen tackled another project. A YouTube video of a home-built loader tractor inspired him to build one, but he decided to make it articulated.

"I always wanted to make an articulated tractor," he says. "I used to drive around and take pictures of large articulated equipment."

Again, he leaned on his son Nick to help. They sized the unit for a Woods loader. Previously employed by the company, Nick had purchased a returned loader for only $100. It sat in the company yard so long the hoses had rotted and had to be replaced.

"We used the axle units from one of the old Scouts, and I built the front frame out of 4 by 4-in. steel tubing salvaged from an old forage harvester," says Petersen. "Nick gave me scrapped, dropped steel from his shop for similar rear frames. The front and rear frame are slightly off square, so they don't bind when turning."

One problem with the Scout he salvaged was a shortage of wheels. "Nick made patterns to match the Scout axles," says Petersen. "He cut the centers out of a set of 16-in. truck tires from an old 4-WD Chevy and welded in the patterns."

The biggest challenge the two faced was the articulation joint. Here again, Petersen got inspiration from YouTube videos before making his own pattern.

He used an axle hub and a shaft stub from a 20-ton wagon for the joint to flex over rough ground. His son cut the parts out of 1-in. steel, and Petersen welded a hinge for left/right movement. The hub is bolted to the hinge plate for the rear frame, and the shaft is bolted to the rear frame where it would normally be bolted to a wagon frame.

He used the same 22-hp. Predator V-Twin engine, hydraulic pump and tank as he put on the wheeled loader. He mounted high-torque, low-speed, hydraulic motors on the differentials of the two axles. The freewheeling motors equalize speeds between the axles. A two-way foot pedal controls forward/reverse and speed.

Petersen purchased a hydraulic steering mechanism designed for a Massey Ferguson tractor to control the rams on the articulation. He modified it to use a steering wheel from an old riding mower He also added a counterweight basket to the rear to hold several concrete silo staves.

"It's a lot of fun to buzz around with," says Petersen. "The direct drive works well. It can't dig like a big loader, but it's great for moving snow. I can plow the driveway in half the time it would take with my big tractor."

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Articulation joint on Petersen's tractor.

Detachable Tines Fitted To Tractor Bucket

Cleaning out packed manure is much easier for Duane Miller since he built a set of detachable tines for his tractor's loader bucket.

He started with heavy angle iron with one side slipped over the bucket's edge. On the side that hangs down, he cut out seven notches to slip in 1-in. solid square steel about 20 in. long. About a foot of it's under the bucket and the rest is out front cut on a taper.

"It works very well to get a bite with the bucket into manure that's packed with straw," Miller says. He also uses it to clean plant debris in the garden and for lifting pipes and 2 by 4s.

Tines are secured and welded to bottom of loader bucket.

"To support it, I added two steel tabs on the sides to match the bucket holes and put a bolt on both ends," Miller says. He also welded a 3/4-in. solid round piece of steel to the tines under the bucket.

"It works very well to get a bite with the bucket into manure that's packed with straw," he says. He also uses it to clean plant debris in the garden and for lifting pipes and 2 by 4s.

The tine unit goes on and off easily with two bolts when he needs to use his 770 John Deere for something else.

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Reinker stores fertilizer in two 2,500 gal. tanks.

He Saved Money Buying Bulk Fertilizer Early

Matt Reinker, Horton, Mich.: "Liquid fertilizer tanks and a transfer pump were a good deal this past winter. With fertilizer prices going crazy, I decided to buy tanks to store 28 percent. I bought two tanks that stored 2,500 gals. each (5,000 gals. equals 26.5 tons). I was going to get smaller tanks because I don't use that much each year, but there was a discount if I bought a semi-load.

"I had to call multiple dealers to get the fertilizer, finally having it delivered in February. I paid $575 per ton. By spring, it was $200 per ton higher.

"I wanted a Banjo pump with a Honda engine but could only get a Pacer with a Honda. I bought it through Fertilizer Dealer Supply.

"I found that the pump and motor sitting on the ground would get unstable when the fluid is running through. So, I mounted both to a piece of plywood and bolted it to the top of a walk-behind mower deck. The mower keeps everything stable and makes it easy to move the pump and motor around as needed.

Pacer pump and Honda engine mounted to a mower deck

"I have about $6,000 wrapped up in the tanks and the transfer pump, but I saved nearly that just this year. Going forward, I can buy my fertilizer in the summer like my neighbor does, when the price is even lower."