

Ferguson TO-20 Tractor Converted To Hydrostatic Drive

Bryan Albrecht, Goliad, Texas, needed an efficient way to get rid of invasive brush on his pasture and hay land.

He already had an old Ferguson TO-20 tractor with a worn out engine so he replaced the engine, converted the transmission to hydrostatic drive, and added a 50-gal. tank on back between the fenders. A belt-driven sprayer pump, mounted under the tractor, supplies herbicide to a pair of fender-mounted spray wands, one on each side of the driver, and to a boomless nozzle located behind the tank. The tractor's speed and direction is controlled with a single foot pedal.

He replaced the tractor's original 20 hp. engine with a 22 hp. V-twin engine that he bought at Harbor Freight. He also re-routed the tractor's muffler down low to direct exhaust away from the driver.

Albrecht's wife, Cyndy, named the tractor the Huisache Predator.

"She came up with the name because we have a real problem with an invasive species of thorny brush called Huisache, and this tractor is designed to go after it," says Albrecht. "Cyndy does most of the spraying. I figured that if she doesn't mind doing the work, the least I can do is build a spray rig for her that makes the job as pleasant as possible.

"We use the spray wands mostly during the fall to control brush, and the boomless nozzle in the spring to control weeds that grow around farm equipment in our barn yard.

"I like to weld and do various projects, but this was my first hydrostatic build. I was excited to see it come together."

He says the single foot pedal provides infinite forward and reverse control and is easy to use. "Cyndy can put the transmission in any of the tractor's four forward gears and rock the pedal forward for infinite control, from zero to a wide open speed. If she misses a bush and needs to back up, she can push down with her heel and go backward at the same speed without having to change gears."

He cut the tractor in front of the transmission case where the engine's clutch was coupled to the transmission, keeping the original transmission with its 4 forward gears, and mounted a hydraulic motor on the input shaft.

"The four gears are still there, but with the add-on foot pedal the operator has infinite speed control for each gear," says Albrecht. "The control lever for the hydraulic pump is located on the left side of the tractor and connected by a chain and sprocket assembly to the foot pedal, which is located on the right side. The operator uses the lever to control the flow and direction of oil to the hydraulic motor, which causes the tractor to speed up, slow down, or go forward or backward."

He mounted a 6-roller sprayer pump under the tractor that's belt-driven off the engine. "This tractor now has a live pto, so the sprayer pump keeps going even when the driver changes gears or stops and backs up. A magnetic clutch is used to control the spray pump and is activated by flipping a switch on the dash," says Albrecht.

He bought a pair of replacement spray wands at Tractor Supply Company and connected a Harbor Freight self-coiling, retractable air hose to each one. The hoses are attached to a pipe that runs from the pump



Bryan Albrecht converted the transmission on an old Ferguson TO-20 tractor to hydrostatic drive. A single foot pedal provides infinite forward and reverse control and is easy to use (above). He replaced the tractor's worn-out engine with a 22 hp. V-twin from Harbor Freight, and mounted a hydraulic motor on the transmission input shaft.

back to the tank. The boomless nozzle screws onto an outlet at the back of the pipe and is controlled by turning a valve.

Albrecht bought the engine at Harbor Freight and the hydraulic pump and motor, and other miscellaneous parts needed to make the hydrostatic conversion, from Surplus Center.

"I didn't keep any receipts on purpose,

because I didn't want to know what my total cost would be for this project. I paid \$700 for the engine and am sure I spent a total of about \$2,000," says Albrecht.

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Jason Timm built log "clams" out of parts from an old 7-bottom White plow. The sides of the clam are 18 in. apart so wood can be sawed in firewood lengths while in the clam, and the remaining piece in the clam is also firewood length.

He Turns Plow Parts Into Log "Clams"

As a kid, Jason Timm didn't mind cutting firewood, but he disliked the job of balancing logs on the tines of a tractor as the wood was moved. It's a job he'll never have to do again since he built log "clams" out of parts from an old 7-bottom White plow and scrap iron lying around his father's Michigan farm.

Timm started with four plow tines and added steel pieces to make the clams about 4 ft. long. The top and bottom sections are each welded together with 3-in. round steel pipe between.

"It took some figuring to get the right closure angles," Timm says.

He built the clam for his brother's 100 hp. tractor and later built a second clam for his fiancée's father. Timm used the holes that were already in the plow tines to attach the

clam to quick-attach brackets.

The driver operates the clam with one hydraulic cylinder. The clam weighs about 400 lbs. and opens up to 30 in. wide. The sides of the clam are about 18 in. apart so the wood can be sawed in firewood lengths while in the clam and the remaining piece in the clam is also firewood length.

The final touch was orange paint, which shows up nicely with his brother's blue New Holland tractor.

"My dad thinks it's pretty nice. It's one handy outfit to have and it saves on the back," Timm says. "I picked up a 3,500-lb. log and nothing broke."

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Home-Built Forklift Makes Vineyard Work Easier

Gary Gradek of Ukiah, Calif., does a lot of cane cutting in his small family vineyard, which means he has always had to spend a lot of time putting the machine on and off the front of his tractor. He decided to convert an old forklift to fit his New Holland 4430 4-WD tractor.

"It works great. Besides cutting canes we use it to haul pallets and to do many other jobs. It can lift loads 10 ft. high. We can't imagine how we would get along without it," says Gradek.

The forklift came with a 10-ft. high lift carriage but no forks or mast, so Gradek borrowed a big mast off an old piece of equipment equipped with a lifting attachment. He removed the tractor's front weights and bolted hinged steel mounting plates in their place. Big 6-in. dia. pivot bearings are welded onto both sides of the mast, allowing the forklift to tilt forward or backward.

He also built a mechanism that supports a pair of 48-in. steel forks. Two hydraulic cylinders are used to raise and lower the forks, and two more to tilt it. The tilt cylinders attach to brackets that bolt onto the tractor.

The cane cutter came equipped with a pair of 5-ft. long sicklebar heads and was designed to bolt onto the tractor. Gradek converted it into a freestanding unit with forklift tubes at the bottom. He kept the machine's original sicklebars, hydraulic motors and hoses. Homemade mounting brackets connect the machine to the forklift.

"It normally takes about 4 hrs. to take a commercial front-mounted cane cutter on and off, but with our forklift it takes only a few minutes. We just unhook the hydraulic hoses and go," says Gradek. "We can still attach a



Gradek converted an old forklift to fit his New Holland tractor, and also converted his cane cutter into a freestanding unit with forklift tubes at the bottom.

mower on back of the tractor, if we want to mow and cane cut at the same time."

Gradek says he spent less than \$1,000 to build the forklift and to modify the cane cutter, with most of that going for hydraulic hoses and steel.

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