

# These Farmers Built Their Own Tractors



Photo by Claudia Johnson.

It took 20 gal. of paint to cover Floyd and Kevin Knewton's home-built 525-hp. tractor.

## 'Unitized' 525 Hp Tractor

By Claudia Johnson

Hours and hours of labor and 10 years of planning and saving materials have produced a "unitized" 525 hp tractor for Floyd Knewton and his son, Kevin, of Madelia, Minn.

"Building this tractor was much harder work than farming for us," says Floyd. "In the winter of 1982-83 we worked on it steady for six months starting early in the morning and working as many hours as we could take, usually quitting shortly before midnight." Previously the father-son combination had worked on the project for two months each during the winters of 1980 and 1981. Last fall the tractor was used to plow the fields and also for working the ground for planting this spring. "We still have the power take-off to complete and the paint job isn't finished," notes Floyd. Eighteen gallons of paint have already been applied with an additional two gallons expected to be needed!

The Knewtons are extremely pleased with the tractor's easy handling. With the plow attached, the two pieces of equipment measure 60 feet in length. "It is unbelievable how well the tractor maneuvers, so the extra length didn't hinder us a bit," Floyd points out. "Another nice thing is that the back wheels follow the front wheels and don't fall in when turning a corner so, if the front wheels will fit through a space, there isn't a problem in getting hung up."

The "unitized" tractor consists of 10 units. Each unit was built on the floor of a shed and then bolted into place after it was finished.

The 10 units of the tractor are the cab, cab floor, two fenders, engine, cooling system, transmission (two units), three-point hitch and draw bar and the frame. One big advantage of a unitized tractor is obvious when it comes to doing repair work, says Floyd.

"Instead of tearing the tractor down to get at something, you just lift the whole unit out and the repair time is down to one-fourth of what it takes on other tractors."

The control panel, which is situated directly in front of the seat in the cab, has been scaled down in size, enabling the operator to have both front tractor wheels in sight at all times. This enables the operator to see the furrow tire and the land tire at the same time from the tractor seat, a rather unique feature.

"Most tractors struggle with loads. To offset this, we doubled the horse power per pound of weight so with the power take-off at full power and the wheels carrying a full load it still doesn't exceed 80% of the horsepower," explains Floyd. "We also wanted to stay in the range which is economical for us. When plowing, the tractor burns 12 gal. of fuel an hour."

The tractor has a full-time coordinated steering and full hydrostat steering. Fifty gallons of hydraulic fluid are circulated every 30 seconds for the hydrostat steering.

Weight of the tractor frame is 5,000 lbs. In the spring, when dual wheels are in place, total weight is right at 18 tons.

There are three fuel tanks (one under each fender and one located on the tractor's side) which together hold one ton of fuel. The tractor has six radiators and uses 27 gals. of coolant.

About the amount of money it took to build this four-wheel drive machine, Floyd compares it "to about the same amount that the interest would be for one year if you financed a tractor that size."

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## 4-WD Loader Tractor

Paul Bradford, Neosho, Mo., needed a tractor to skid and load logs but couldn't justify the cost of two tractors. So, he designed and built a 4-WD tractor — equipped with a front-end loader and a 20-ton Braden winch on back — that'll do both jobs.

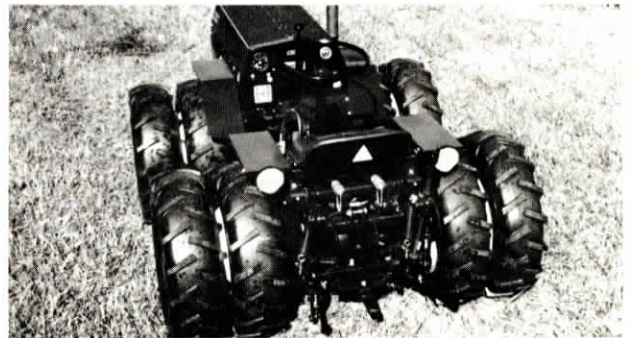
"The tractor frame was built from box channel iron and the axles from a heavy-duty 2-ton GMC truck. It has power steering and a road speed of up to 40 mph. A Ford 250 cu. in. engine with a 3-speed automatic transmission provides the power. I used the automatic transmission to obtain faster shifting. Behind the 3-speed is a Dodge transfer case with a pto that's used to power the winch. The power drops down through the transfer case and goes forward into a 4-speed Dodge truck transmission. It is then transmitted to a heavy Dodge truck transfer case and onto the axles. The automatic transmission transmits power to the winch through the first transfer case, using the pto to give three forward speeds and one reverse on the winch. The tractor itself has 48 forward gears and 18 reverse.

"The front-end loader has four double-action cylinders off a junked International loader.



It'll handle approximately 4,500 lbs. The tractor, equipped with 24-in. combine wheels, has been used about 1,500 hrs. in the past 8 months. Besides skidding and loading logs, I also use it to load creek gravel and to load several hundreds tons of lime and fertilizer. It cost just \$2,250 to build.

"I have had a few problems. The spider gears in the rear axle broke and, because I couldn't find the right part, I welded them together to make the rear axle positive track. I also twisted the front axle in half and have had to replace several U-joints. Overall, though, the tractor has worked well."



## 4-WD Garden Tractor With Duals

"Most people think it's a baby Versatile when they first see it," says Lyle McHenry, Beloit, Kan., who built a 4-WD garden tractor, together with Richard Worick, an engineer with Sunflower Mfg. Co.

The heavy-duty rig is probably unique among garden tractors in that it's fitted with clamp-on duals on all four wheels. "We started it as a spare time winter project but it took two winters to complete," says McHenry. "We finished it in 1980 and it's been used since for heavy work in large gardens and for some custom work in the

area."

The tractor is about 8 ft. long and 5 ft. wide. Total weight is 1,600 lbs. Steering is done by a mechanical gear box acting on the articulated frame. It has a 15-hp. engine and 4 speeds ranging from about 2 mph to 6 mph in both forward and reverse. The tractor's equipped with disc brakes. The hydraulic system operates a Cat. "0" 3-pt. hitch and is fitted with remote outlets. Tire size is 7.00 by 15 and most of the drive train was built with recycled automotive parts.