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Tractor Fulfills Lifelong Dream

"I've wanted to build a tractor for most of my life but I never had the need until after my wife and I retired and sold all our farm equipment. When the young couple who bought our small farm decided to leave, I was back in farming but with no equipment to do the work. I decided the time had finally come to build a tractor," says John Grabber, Umbarger, Texas.

In addition to farming, Grabber used to own an IH combine salvage yard so he was most familiar with salvage IH parts. With the exception of some structural steel and sheet metal parts, all components on his home-built tractor are standard IH parts.

The front axle, rear axle, final drives, wheels, and transmission come from an 815 combine, along with about 5 ft. of the frame. The engine, radiator, and hydraulic pump come off a 403 combine. The power steering pump, valves for 3-pt. hitch, the remote valves, the valves for the front-end loader, and the lift cylinders used on the 3-pt., come from a 503 combine.

The hydrostatic speed control has a safety starting arrangement so the tractor cannot be



Valves for the 3-pt. hitch, as well as the 3-pt. lift cylinders, come from an IH 503 combine.

started in gear. The steering wheel is adjustable up, down, forward, and backward. A 20-gal. air tank serves as a fuel tank.

"I'm building a front-end loader to use with the tractor. I've also used it to pull a 14-ft. tandem disk as well as a 3-pt. mounted chisel plow. The tractor has the same basic engine as a gas-powered 706 Farmall, with 50 to 60 hp."

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"Built From Scratch" Articulated Utility Tractor

For about \$1,400, Canadian farmer Marshall Pfannmuller put together an articulated 4-WD utility tractor that he uses for all kinds of chores around the farm.

"I built it entirely from the ground up. It's only 32 in. wide and 69 in. long but it's big enough to do all kinds of jobs. It is steered by the articulation joint at the center and also oscillates back and forth at the articulation joint to keep all four wheels in contact with the ground at all times.

"The tractor is primarily driven by the front wheels and has 4-WD "on demand". Setting it up this way avoids the "scuffing" of the lawn that can occur with other 4-WD vehicles. Yet you can kick in to 4-WD when needed to move snow or dirt.

"The tractor spins around in its tracks. It has a hydrostatic transmission controlled by a single pedal foot control for speed and direction. It's much more maneuverable than conventional lawn tractors and ATVs.

"The sub-frames are made of 1 1/4-in. sq. tubing. I was given two small 4:1 differ-



Pfannmuller's 4-WD utility tractor is only 32 in. wide and 69 in. long, but it's big enough to do all kinds of jobs.

entials from GM cars made in Britain. I narrowed them up and modified them to accept standard Spicer universal joints.

"The engine is a 16 hp. Tecumseh. It drives a Model 11 Eaton hydrostatic transmission which I purchased at a receivership sale. The transmission's charge pump provides the hydraulic pressure via a Gresen control valve



Linstad's 4-WD tractor is equipped with the rear ends off two junked WD Allis Chalmers tractors. It's powered by a Chevy 283 V-8 engine over the front axle. The bucket seat is from an old Chrysler car.

4-WD Chore Tractor Cost Less Than \$2,500 To Build

People often stop, look, and stare when George Linstad, Peshtigo, Wisconsin rolls out his 4-WD tractor.

He admits that the machine he and his brother David built from salvaged parts may not look as good as other tractors, but it definitely works.

"I use it mostly for chores — cleaning up around barns, landscaping, dirt moving. It can handle just about anything a factory-built tractor does, except for pto work," says Linstad. "We wanted it mostly for loader, blade and bucket work, so we didn't need a PTO. Linstad found two junked WD Allis Chalmers tractors at a salvage yard with the rear ends still intact. He used these for the drive wheels, turning the front one around and hinging them together. He coupled the drive shafts with a U-joint, so the tractor articulates in the middle.

He built a frame in two sections, front and back, made of 6-in. channel iron. Then he mounted a Chevrolet 283 V-8 engine over the front axle. "I made my own motor mounts and welded them to the frame," he says. "I could have used any engine on it, but this is what I had available at the time. It certainly has plenty of power for just about anything you'd want to do."

Then he found a 4-speed transmission from a 1960's vintage Chevy pickup. He coupled this to the engine and then coupled it to a transfer case using a short drive shaft his father took off an old Payloader. The transfer case drives the axles.

to a small double acting ram mounted in the steering column housing, which in turn operates the lift arm for attachments.

"The telescoping steering wheel drives a small drum wound with 1/4-in. aircraft style cable which controls the articulating steering via nylon pulleys. The steering ratio is 4:1 lock-to-lock and provides light control with the 13-in. wheel.

"Instead of direct coupling the engine to the transmission, I chose a belt drive arrangement via a jackshaft. The jackshaft is extended via another dual U-joint assembly to the front to provide an 800 rpm pto for a front-mounted snowblower, mower, leaf blower, and rotary broom. The engine runs at a constant 3,000 rpm's when working regardless of traveling speed.

"Attachments slide into a lift arm which I fabricated from the same size square tubing as a receiver hitch on a standard pickup

Two hydraulic cylinders - one on either side - bend the frame at the articulation joint to steer it.

He found a front-end loader with a detachable bucket in a salvage yard and rebuilt it to fit. He says it took some major re-engineering, but it works great.

He also adapted a 3-point hitch mounted boom to fit up front where the bucket mounts on the loader. "The boom is about 6 ft. long. With the end loader arms, it can reach up quite a ways. I use the cylinder that dumps the bucket to move the boom separately from the end loader. It's great for setting rafters," he says.

He mounted two hydraulic pumps on the engine — one for the steering cylinders and the other to handle the cylinders on the front-end loader.

For hydraulic reservoirs, he used a couple of 3-ft. long sections of 6-in. square tubing that he welded shut at both ends. He installed one on either side of the radiator and tapped and plumbed them into their respective pumps. Each reservoir holds about 4 gal. of fluid.

Rather than a steering wheel, he uses a lever mounted on the hydraulic control valve to control the steering cylinders.

Finally, he completed the tractor with an operators' station — a red bucket seat from the driver's side of an old Chrysler K car.

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truck. A single pin holds each attachment in place.

"Tires mount on 12-in. rims which came off the same British car as the differentials.

"The tractor works great. The only problem I have is a slight rattle from the U-joint on sharp turns. I might replace it with a constant-velocity joint.

"Top speed is about 12 mph. It has four speed ranges.

"Most of my out-of-pocket cost was for the hydrostatic transmission, hoses, fittings and a control valve. I don't know how many hours I spent building it but I do know that about 60 percent of that time was spent in deep thought."

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