

## 4-WD Articulated Garden Tractor

"There's no tractor like it on the market," says Maurice True, New Castle, Ind., who put together a 4-WD articulated garden tractor from scrap parts around his New Castle, Ind., tractor repair shop.

The tractor consists of two joined-up IH Cub Cadet garden tractor rear ends (He had to reverse the ring and pinion gear on one so they'd run the same direction). True installed a drive shaft between the two rear ends with a universal joint at the center to allow for back-and-forth articulation and up-and-down oscillation. Above the driveshaft, at the front of the tractor, he mounted a small transmission from an old Crosley auto and the tractor's 12-hp Kohler engine. The transmission has three speeds forward and reverse. A roller chain runs from the transmission to a sprocket on the transmission shaft. For steering, he cut down an old Allis Chalmers "B" steer-

ing box and ran a tie rod along the left side of the chassis from the front to the rear end. The tie rod steers the tractor by pulling the two halves of the tractor together or pulling them apart. He can take the rear end out of gear, shifting from 2-wheel drive to 4-wheel drive.

"It's like operating a large IH 4-WD tractor. I use it to haul wood or push snow with a front-mounted blade," says True, noting that a key to the design is the use of the old Crosley transmission. "It's only about 12 in. long so it fits right up under the steering wheel."

He spent only about \$300 on parts to build the tractor. "I've got more into tires than anything else," says True, noting that it's fitted with 10.50 by 12-in. garden tractor tires.

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## Hydraulic Power Steering

If your tractor doesn't have enough power in its power steering pump, or if the belt squeals all the time, you'll be interested in an idea Torrey Fiorini, Turlock, Calif., came up with on his 1979 Massey Ferguson 275 tractor.

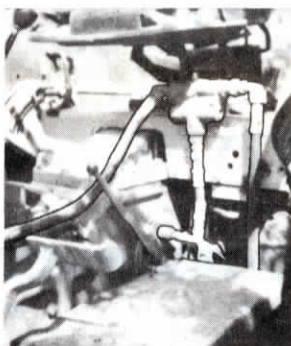
Fiorini says the tractor's power steering pump never did have enough power and he had already replaced a couple pumps before he realized that he had a more serious problem. Then he came up with the idea of obtaining the pressure he needed to drive the power steering pump from the auxiliary hydraulic system.

"Many tractors, including most of Deere's, are factory-built that way but Massey uses separate pumps to drive each hydraulic system," Fiorini explains.

The first step in the conversion was to take the power steering pump off and throw it away. He then bought a 1-gal. hydraulic flow diverter valve which "splits" 1 gal. per minute off the 24-gal. per minute auxiliary hydraulic line. He mounted the valve on a metal plate under the tractor seat.

"You have to use the splitter valve. If you just put in a T-valve, the fluid will take the easiest route through the system and might possibly damage your hydraulics. This way you can still use your hydraulics and notice virtually no affect," says Fiorini.

A hydraulic line runs from the splitter valve to the input

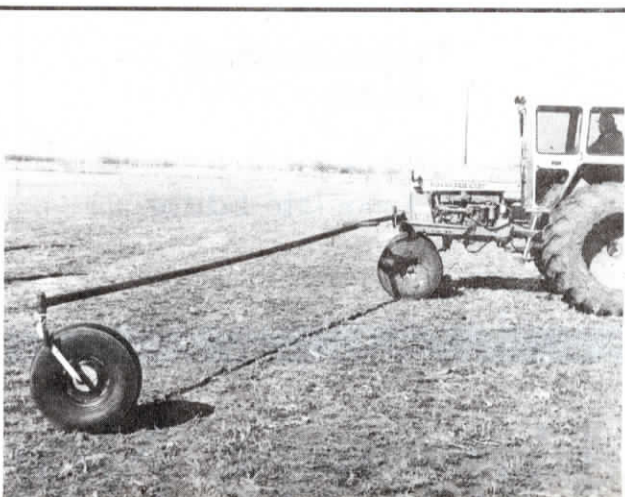


side of the power steering drive and a line comes back out the other side to the auxiliary lines. Fiorini says the steering drive unit is so small, 1 gal. a minute flow is more than enough to drive it, although on a larger tractor you may need as much as a 2-gal. per minute diverter valve.

Parts for the steering conversion cost about \$120 for the diverter valve, bushings to connect to the steering drive, hydraulic lines and other miscellaneous parts. "A new pump would have cost about \$400 and that wouldn't have solved the problem," Fiorini notes.

Besides the Massey tractor, Fiorini has also performed the hydraulic "surgery" on a skid steer loader. "It'll work on any power steering or other hydraulic system that's underpowered," he notes.

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## Up-Front Spray Marker

Nebraska farmer Tom Brown and son John, of Hershey, built an up-front spray marker that pivots off the front of their tractor.

They find the marker ideal when spraying eco-fallow ground and early-emergence wheat. The 32-ft. long marker is the same width as their pull-behind sprayer so it leaves the mark right where the tractor should be centered on the next pass.

The Browns note that this simple marker is cheaper than a foam system, plus it eliminates the guesswork of lining up the end of the boom with the foam marks.

The marker's main pipe frame has a smaller pipe inside that slides in and out for adjusting marker length. One end of the marker pivots off a 1½-in. shaft on the front of the tractor while the other end has a 14-in. crazy wheel attached. When the tractor turns to make the return pass, the marker pivots and moves automatically to the opposite side.

The Browns say the wheel itself leaves an easy-to-follow mark in a growing crop. In eco-fallow ground, they attach an old wheel rim or rotary hoe wheel for extra weight and a better mark.

An 8-ft. long section of chan-



nel iron attaches to the front of the tractor and acts as a stop to keep the marker arm perpendicular to the tractor while spraying. A dog-leg piece of iron welded to the channel iron acts as a stop for the marker arm to ride on to take weight off the marker while spraying.

For transport, the marker separates into sections.

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