



Breneman added front wheel assist to his Farmall F-20. There's a chain-driven gearbox between the clutch and tractor transmission with driveshaft leading to front axle.



Front drive axle and traction grip tread tires are off an International Loadstar truck.

Farmer's 4-WD F-20 Is A Dream Come True

By Jim Ruen

Elmer Breneman always figured that if he could add front wheel assist to his Farmall F-20, he'd have a dream chore tractor.

It took him more than 20 years to do it, but the Manheim, Pennsylvania farmer finally did it and he reports that the modified F-20 works great whether hauling manure in the winter or working with the farm's vegetable crops the rest of the year. But, it was a conversion he doesn't plan to repeat on other tractors.

"Adding front wheel assist wouldn't be nearly so easy on any other kind of tractor," explains Breneman.

He points out that the F-20 has an input shaft that goes from the differential to the transmission and then out the front end of the transmission case. Originally, the design allowed a fifth gear to be added. Breneman simply mounted a 5-in. sprocket on the end of the shaft. To make room for the sprocket and chain drive, he remounted the differential upside down.

The front drive axle was pulled from a 1971 International Loadstar truck that Breneman bought for \$700. The axle was cut down 7 in. to match the back wheel width on the tractor. He attached a 16-in. sprocket

to the axle's driveshaft and then enclosed both sprockets and drive chains in a sealed oil bath.

"The sprocket-to-sprocket ratio turns the front wheels five percent faster than the rear wheels to accommodate turns," says Breneman. "Some front drive tractors turn their front wheels ten percent faster, but I feel that's too fast."

The Loadstar axle came with traction grip tread tires mounted on it. Breneman expects they'll last him 20 years. He did have to mount larger tires on the rear, moving from 10 by 36's to 13.6 by 38's, raising the over-

all height of the rear end to match the height of the front end with its larger tires.

Altogether Breneman estimates that he spent between \$1,200 and \$1,500 to add front wheel drive to his F-20. "That's more than double the \$600 my dad paid for the tractor in 1950," says Breneman. "Everything works well so far. The hardest part was finding the time to do it."

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Old "Doorless" Car Replaces Farm's 4-Wheeler

"This car is so much fun to use we stopped using our \$4,000 4-wheeler," says Roger Kuntz, Grainfield, Kan.

"When we bought the old car, it would run but wasn't road worthy. We decided to use it around the farm. A bit of unplanned engineering happened when my son backed it out of a shed with the driver's door open and broke it off. We left it off and found it much easier to use for chores such as fencing where you get in and out often.

"The door idea worked out so well we took off the trunk and torched off metal to make a mini pickup bed. We can haul a couple of

bales in there or carry our tools.

"The car is more fun to drive than our 4-wheeler, goes faster, rides smoother, and we can pull a small trailer. It also makes it easy to bring along our St. Bernard. In addition, both my sons have learned to drive better before getting their licenses.

"We could not have found a cheaper or more entertaining way to go. I doubt I'll be buying another 4-wheeler."

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Without a driver's door the car is much easier to use for chores such as fencing where you get in and out often, says Kuntz. Open trunk is used as a mini pickup bed.

"Why Doesn't Every Farmer Build One?"

"It works so well I don't know why every farmer doesn't build one of these," says Eugene Weimerskirch of Coulee City, Wash., who turned an old Deere 95 combine into a 52-ft. wide self-propelled sprayer that offers great visibility and covers acres fast.

He stripped away everything but the engine, front axle, and cab, removing the threshing mechanisms but leaving the outer housing intact. He mounted a 500-gal. tank behind the cab and a 300-gal. tank inside the thresher housing. A commercial 3-section boom mounts on front. He replaced the original rear axle with a 120-in. wide axle off a Deere Hillside combine for extra stability. He also replaced the original rear wheels with large 18.00 by 16 flotation tires. The front tires are original.

"I used it to spray 500 acres on my farm last year. I go about 6 mph in the field. Visibility from the cab is excellent," says Weimerskirch. "Because the sprayer has the combine's pulley-actuated transmission, I can operate at variable speeds for different



There's a 500-gal. tank mounted behind the cab and a 300-gal. tank mounted inside the thresher housing.

rates of application. The boom can be raised hydraulically from ground level up to 4 ft. so I can clear tall obstacles.

"I already had the combine and had built my own cab for it. I kept the cab when I converted the combine to a sprayer. The boom sections are independently controlled from the cab by solenoid valves. The original header lift cylinders are used to raise and



Combine's original header lift cylinders are used to raise and lower a commercial 3-section boom that mounts on front.

lower the entire boom, and another pair of cylinders is used to raise the wings for use on hillsides and for transport. In transport the wings fold back beside the combine for a total

road width of 12 ft."

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