



Sickle Mower Converted To Front Mount

"It lets me see exactly where I'm mowing without having to look back all the time," says Charles Johnson, Bridgeport, W. Va., about the 6-ft. long, hydraulically-operated mower he mounted on front of his 1980 Massey Ferguson 4-WD tractor.

Johnson used the cutterbar and drive mechanism off an old Massey Ferguson 72 side-mounted mower that he bought from a neighbor for \$200. He used angle iron to build a steel frame and mounted the cutterbar on it. The mower was equipped with a pitman-type drive system that was pto-operated. Johnson replaced the pto and driveshaft with a hydraulic motor. The hydraulic motor worked too slow so Johnson used a pair of sprockets and a chain to speed it up. He mounted a large drive sprocket on the motor and welded a smaller sprocket to

the mower's driveshaft.

"It makes it easier to mow along fencelines because now when I turn the tractor one way, the cutterbar goes in the same direction," says Johnson. "The weight of the mower also keeps the tractor's front end from coming off the ground when mowing up hill. Another advantage is that in the mowing position it's narrow enough to fit through a 10-ft. wide gate."

A one-way hydraulic cylinder is used to raise and lower the mower. A 2-way control valve on the operator platform is used to start and stop the hydraulic motor and to reverse its direction.

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Power Assist For Pull-Type Equipment

Ontario grape farmer Creston Ferrier says he and his sons came up with a way to add power to wheels on their pull-type grape harvester that may be of interest to any farmer with pull-type equipment that needs a power boost.

"We used to get butterflies in our stomachs whenever it started to rain during harvest. We knew that our 5-ton pull-type harvester would create havoc with posts in the trellis if it slipped sideways. Often the wheels would just dig in and get buried. Even large 4-WD tractors could not handle the harvester under wet conditions," says Ferrier.

"We decided to solve the problem by adding power to the harvester's wheels. The problem was that, unlike a pull-type combine or corn picker, grape harvesters don't have straight-through axles since they straddle the row and have independent suspension on each side. We decided to go with independent hydraulic motors on each side.

"Bull gears were salvaged from an old Deere self-propelled combine. Most combine bull gears have short stub axles with couplings close to the housing, so they're ideal for this type of application. We salvaged the gear, couplings, and a piece of the box frame axle from each side, including the flange to which the bull gears are bolted. We were able to buy all these parts, which became our main drive components, for \$150 and picked up an extra set for spares.

"We cut off the end of the old axles on the grape harvester, replacing the ends with the box axles from the Deere combine. Then we made a bracket for each drive motor to allow them to be easily



disconnected for road travel. A local machine shop used the old Deere couplings to make a solid coupling to connect the stub axle to the drive motor.

"A fairly high volume gear pump, reservoir and a lot of hydraulic fittings were salvaged from an old concrete boom truck. The rest of the system consisted of hose, valving and filters. Off-the-shelf, simple valves were used for variable speed and directional control. A simple ball valve was added to allow full flow bypass for free wheeling when needed. Flow dividers were not used since they would prevent easy turning. The way it's set up, the extra flow automatically goes to the outside wheel when the tractor starts spinning which tends to keep the harvester straight on the row.

"Speed is synchronized by controlling flow until pressure starts to show on the gauge on the tractor. When the tractor starts to spin, this pressure comes up and the harvester drive wheels take over."

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500-Bu. Auger Bottom Grain Trailer

Robert Weer and his brother Bill turned an old auger bottom limestone transport trailer into a low-cost, 500-bu. grain wagon.

Weer, of Goldsboro, Md., bought the 16-ft. long 4-wheel trailer from a local fertilizer dealer for \$200. The trailer had been used to haul lime from quarries and auger it into fertilizer spreader trucks. It was pulled behind a limestone spreader truck as a nurse rig for the truck. The auger was driven by a gas engine that was missing. Weer removed the rusted-out unload auger and replaced it with a new 10-in. dia. sq. pitch auger that extends 2 1/2 ft. out the back of the trailer. He mounted an 8-ft. long pto shaft on the front end of the auger. He also widened the trailer's sides and added sideboards that increase capacity by 125 bu.

"We use it to haul grain from the field and unload it into a portable auger that fills our bins," says Weer. "We built it for \$700. A new comparable size grain wagon would have cost \$10,000 to \$15,000. It can unload 520 bu. of corn at the elevator in 5 min. The fifth wheel hitch is still in place on the front axle and responds faster than tie rods on a conventional grain wagon. Backing up takes a little getting used to. The 10.00 by 20 dual tires help



stabilize the wagon."

The bottom of the trailer was tapered and the top had straight sides. Weer split the top of each corner and welded in pie-shaped wedges of steel plate, increasing trailer width by 2 ft. He also added a pair of 2 by 10 boards on top of each side and reinforced them with bolted-on steel plates at each corner. Steel truss rods support the sides of the trailer. He bent two 8-ft. long sections of 1/8-in. steel plate at a 90 degree angle and mounted them over the top of the bottom auger to protect it from the weight of the grain, leaving 2 in. of clearance on each side at the bottom for grain to flow into the auger. He salvaged the pto shaft from an old silage chopper.

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