



Tractor could be converted back to normal use by unbolting it from sprayer frame.

108-FT. BOOM, 1,040-GAL. UNDERSLUNG TANK

Giant Crop Sprayer Built From Deere 4440

By Bill Gergen,
Associate Editor

"It has more capacity than most commercial high clearance sprayers on the market," says Iowa farmer Gene Keller, who built a self-propelled sprayer out of a Deere 4440 diesel tractor.

The one-of-a-kind, 3-wheeled rig is equipped with a 108-ft. wide, 3-pt. mounted boom and 1,040-gal. belly-mounted spray tank. It's elevated 6 ft. off the ground.

Keller, who farms near Williams, uses his "tractor-sprayer" for all his crop spraying, including postemergence herbicides in tall corn.

"It lets me get spraying done fast, giving us time to do other jobs that take longer," says Keller, who along with his father Joe built the tractor-sprayer 12 years ago. They used a brand new 4440. "Traveling at about 14 mph, I can cover 160 acres in an hour or about 1,600 acres on a good day. The spray boom covers 36 rows of corn at a time. We extended the rear axle so the wheels can straddle four rows."

The tractor sprayer's 18.4 by 46 rear wheels are chain-driven by sprockets bolted to the extensions on the tractor's rear axle. A 50-gal. extra fuel tank mounts ahead of the tractor. The single 18.4 by 42 front wheel is mounted on a yoke positioned about 3 ft. ahead of the front of the tractor. The 3-section boom is mounted on parallel linkage and equipped with drop tubes that are 3 ft. apart. Maximum boom height is 8 ft. and minimum height is 2 ft.

"We didn't have to modify the transmission at all because the drive sprockets on the tractor are the same size as the sprockets

mounted on the rear drive wheels.

"One big advantage is that the driver sits about 9 ft. above the ground in a clean environment above most of the spray drift. He also has a great view. We use the tractor for only a few weeks each year so it gets very little wear. The tractor could be converted back to normal use - or to trade in on a new tractor - by unbolting it from the sprayer frame."

Keller used 4 by 6 and 6 by 6-in. steel tubing to build the sprayer's frame. He built his own spindle for the front wheel. A steel guard in front of the tire pushes stalks to the side in tall corn. "The guard really helps when we spray corn for broadleaf weeds late in the season," notes Keller.

The big spray tank was custom-built from 10 gauge steel. A hydraulic spray pump mounted behind the tank pumps liquid to the boom which Keller built from 1 1/2 by 2-in. square tubing. Parallel linkage keeps the boom level as it's raised and lowered. A big lift-assist spring behind the tractor helps raise and lower the boom. Spring-loaded, 4-ft. wings at each end of the boom flex backward if they hit an obstacle. The boom's main sections also have spring-loaded hinge joints. "The outer ends of a boom this wide are moving 30 to 40 mph on turns so breakaway protection is important," notes Keller.

For transport, a pair of hydraulic cylinders are used to fold the boom forward onto brackets welded alongside the tractor.

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Rear wheels are chain-driven by sprockets bolted to extensions on tractor's rear axle.



Tractor Mower Equipped With Hydraulic-Dump "Grass Catcher"

Dean Fechter, Belvue, Kan., built a 5-ft. wide belly mower and hydraulically-operated "grass catcher" dump box for his IH Farnall tractor that lets him mow his 2-acre lawn and collect and dump grass clippings without getting off the tractor.

Fechter built the 5 ft. wide, 4 ft. high dump box from angle iron and salvaged aluminum siding. He built a vacuum blower and mounted it on a steel platform ahead of the grass catcher, then ran a length of 8-in. dia. plastic drain tile from the vacuum to the mower. The vacuum blower is powered by a 12 hp gas engine off an old Allis Chalmers riding mower. The dump box hinges at the top. When it's full it's pushed back and up by a pair of hydraulic cylinders to dump.

"It has more capacity than pull-behind catch trailers for riding lawn mowers and doesn't have to be emptied manually. All I do is back up, dump, and go," says Fechter. "I collect grass clippings only when the grass is tall. Otherwise I disconnect the blower tube and shoot clippings off to the side. The only big problem with the dump box is that it makes it more difficult to turn tight and mow around trees and shrubs."

The rear side of the dump box is covered with screen mesh to allow air from the

blower to escape. The top two thirds of the screen has an aluminum shield over it to direct air and dirt downward.

Fechter lengthened the tractor's hood 1 ft. to make room for a drive pulley for the mower that's mounted on engine's crankshaft. It's engaged by a clutch controlled by a rod that runs up the side of tractor to a lever mounted in front of steering wheel.

The tractor didn't have hydraulics so Fechter fitted it with a hydraulic pump off an old Massey Harris combine. The pump is used to operate the dump box and to raise and lower the mower. He mounted tie rods (off an old truck) on the tractor's rear axle to "push" the mower. A 3-pt. top link, anchored to the operator's platform, attaches to the mower's top bracket. Rollers on the rear edge of the mower deck are used to adjust cutting height. The mower is raised and lowered by steel cables attached to a pair of hydraulic-controlled lift arms positioned directly above the mower.

Fechter used 3/16-in. thick sheet metal to build mower deck and made his own spindles and spindle housing for three 20-in. long blades (originally designed for an IH Cub Cadet riding lawn mower).

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