

BLOWER'S DRIVE SYSTEM OPERATES PAIR OF DISC MOWERS – ONE PULLED, ONE PUSHED

SP Chopper Converted To 28-Ft. Mower-Conditioner

Last summer Ked Miller of Bad Axe, Mich., gave his old 1978 Deere 5460 self-propelled chopper a new occupation – he converted it into a mower-conditioner that cuts a 28 1/2-ft. swath.

He removed the chopper head and mounted a 13 1/2-ft. Deere 945 MoCo disc mower – with the tongue removed – in its place. He pulls a 15-ft. Deere 955 swing-tongue MoCo disc mower behind. The chopper's blower drive mechanism is used to power both mowers.

Miller made the conversion last winter and used the machine to cut about 4,100 acres of hay last summer. "It lets me cut twice as much hay in the same amount of time, and eliminates the need for another tractor and mower. I can mow up to 17 1/2 acres per hour," says Miller, who farms with his brother Eric.

The chopper unit was worn out but the rest of the rig was in fairly good condition. He already had the Deere 945 mower, which was two years old. He bought the 955 new last spring for about \$25,000.

After removing the chopper head and blower, he used sq. tubing to widen the front axle by 19 in. on each side so he had enough room to mount the front mower close to the machine. He also replaced the original 23.1 by 26 front tires with smaller 14.9 by 28's.

Where the blower was originally located, he made an adapter for a 6-groove V-belt pulley. The pulley is driven by a pto shaft that he made by cutting a tractor pto shaft in half. A set of bearings are fitted to each end. Three of the belts drive the rear mower and the other three drive the front mower. Three of the belts are hooked to a pto shaft that operates the back mower. The other three belts drive a right angle gearbox taken from a Deere 3800 pull-type chopper. The gearbox

drives a pto shaft that operates the front mower.

To modify the front mower, he removed the tongue and the wheel framing and made new wheel framing and lift arms which he bolted onto the mower. The mower is connected to the chopper frame by a pair of bolted-on steel arms equipped with lift cylinders.

"It took about 300 hours of time to put this all together, but I'm happy with it. My brother-in-law Brent Wessels helped me build it," says Miller. "During the summer I had a lot of people watching me from the road. I call it my 'Chomoco' because it's part chopper and part MoCo mower. I got the idea for it last year when I was using just the one 13 1/2-ft. mower. I was cutting every day from 6 in the morning until 9 at night but I still couldn't keep ahead of the chopper. I figured there had to be a way to cut hay twice as fast without having to rent or buy another tractor and find someone to operate it.

"We sell feed to two area dairy farmers. Those farmers keep getting bigger so we have to keep up with their needs.

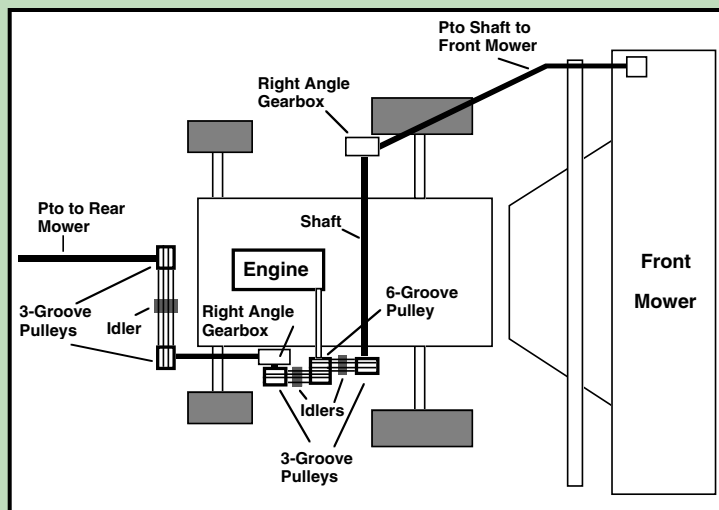
"I think there's a problem with the way hay machinery is made today. Choppers keep getting bigger but the mower sizes haven't kept up. My total cost, not counting the new mower, was about \$10,000."

According to Miller, the most difficult part of the job was beefing up the back part of the chopper in order to make it strong enough to handle the rear mower. "The rear mower has about 1,500 lbs. of drawbar weight which the chopper wasn't designed to handle. I used lengths of steel to double the drawbar size and welded a couple of 1-in. dia. steel rods, with flat iron welded to them, between the chopper frame and the drawbar."

The chopper's hydraulic pump is used to



Miller converted his Deere 5460 SP chopper into a mower-conditioner by reworking the drive system to power a front mount mower and a mower that trails behind.



Drawing shows details of how Miller gets power to both mowers.

raise, lower, and swing the rear mower and to raise and lower the front mower. Hydraulic hoses extend forward and backward from the chopper to the mowers. Miller uses push button electronic-hydraulic controls on the chopper's original joystick to operate both mowers. Both mowers start up at the same time using the same clutch lever that starts the chopper up.

"When I modified the front mower I made

sure that if anything ever happened to the chopper's engine I could unhook the mower, re-install the tongue, and pull it behind a tractor as it was originally designed," notes Miller.

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He Built His Own Rotary Combine

Loyal John Deere owners waited a long time for the company to come out with a rotary combine. When they finally did – about a year and a half ago – it was too late for at least one farmer who had already gone ahead and built his own Deere rotary.

It happened seven years ago but we only recently heard about the home-built Deere rotary put together by Nebraska farmer Alec Yeager. He took a conventional Deere 6600 and converted it to rotary by removing the straw walkers and installing his own home-built, hydraulically-powered rotary separator.

The rotor was designed to slide in or out of the back side of the combine. As the crop comes out of the cylinder, a metal shield diverts it to the rotor. Yeager made the rotor out of a 16-in. dia., 8-ft. length of oil field pipe, which he capped off at both ends. He made the cage around it out of a piece of 24-in. dia. high tensile gas line pipe. He installed auger flighting along the length of the rotor and welded beater bars on between the auger flighting. The beater bars throw crop material to the outside of the cage as the auger moves material to the back of the combine, where it drops onto the combine's original straw spreader.

Both the cage and rotor mount inside a steel frame made from 2 by 4 rectangular tubing. The cage bolts in place inside the combine. The shaft that originally drove the straw chopper is used to belt-drive a double hydraulic pump mounted at the back of the combine. One pump operates at 70 gpm and is used to power the rotor, while the other one runs at 20 gpm and rotates the cage. A flow control valve inside the cab allows Yeager to control speed and direction.

"I built the rotary separator in five months and used it to harvest about 2,000 acres of mostly wheat, with some milo, sunflowers, and corn," says Yeager, who has a custom combining business. "I built the rotor as a slide-in unit because I wasn't sure it would work, and I wanted to be able to put the straw walkers back in if necessary.

"My original reason for building it was because I was tired of watching Gleaner rotary combines outperform my 6600. If the straw was very dry and brittle, my machine's straw walkers couldn't separate the grain fast enough so I had to slow way down.

"I used the home-built machine for two years. It had so much capacity I didn't even have to rotate the cage – just the rotor. It



Yeager converted a conventional Deere 6600 combine to rotary by removing the straw walkers and installing his own home-built, hydraulically-powered rotary separator.

processed the crop much faster and cleaner than a conventional model. The big problem was that the hydraulics needed to operate the rotary separator used up about one third of the combine's horsepower. As a result I was able to go only 3 to 4 mph, which wasn't any faster than I had been going before the conversion. I'm sure that if I would have belt-driven the separator I could have greatly increased my ground speed.

"After a couple years I bought a Gleaner N7 rotary model. If the Gleaner rotary hadn't been available, I would've bought a Deere 8820 and put my home-built rotor into it. A belt-driven rotor inside an 8820 would've made a heck of a combine."

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