

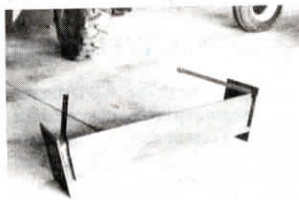
## Combine Attachment Windrows Straw

Galen Miller, Arcanum, Ohio, built his own combine windrow attachment that mounts on the combine's tailboard to block straw coming out of the chopper fins, forcing it to drop onto the ground.

The attachment consists of three pieces of 3/4-in. plywood and two pieces of 1/4 by 1-in. angle iron.

"We used the attachment on our Deere 6620 combine last year and it worked really well," says Miller. "Chopped straw hits the attachment and falls straight down, forming a windrow of chopped straw. We could get the same results by removing the combine chopper, but this attachment is easier to get on and off and the chopped straw makes nicer livestock bedding than non-chopped straw."

The plywood consists of two end pieces about 12 in. wide and 16 in. long. The middle piece is 12 in. wide and 4 in.



longer than the width of the tailboard. The ends of the middle piece are cut on a 10° angle. The two angle iron straps are about 32 in. long. They're bolted to the two outside corners of the box and to the top of the tailboard so that the attachment is perpendicular to the ground.

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## One-Pass "Till-Drill" Rig

"I think many FARM SHOW readers will be interested in my economical till-drill rig which we used to plant wheat and oats on our farm," says Larry Anderson, Ward, S. Dak.

"We only plant 12 acres of wheat and 38 acres of oats but using this system it took only about 1 1/2 days to put it in and the cost for fuel was just 93 cents per acre. Making just one pass helped save ground moisture and reduced compaction.

"This wasn't a totally new idea but the price tag was very reasonable for the entire rig and our crop looks excellent so far. Here's a rundown of the system components:

"A 1967 IH 706 diesel tractor with cab - \$2,625; "jawed" rock box - \$120; rear tractor tire digger to dig up tire tracks - \$5.00; 14-ft. tandem disk - \$200; Deere 14-ft. single disk drill - \$140; drag evener - \$5.00; three Noble drag sections - \$15; two hydraulic cylinders - \$60; 20 ft. of hydraulic hose and couplers - \$30; 6 gal. of machinery paint to make the tractor, disk and drill look like new - \$90; miscellaneous parts - \$110. The total cost of the rig was just \$3,400."

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## Door Latch Seat Belts

"I have an old barn with big double doors that are each 14 ft. high and 8 ft. wide. A long pole fits into brackets on either side of the doors inside the barn, running across the center of both doors. For years I've just tied wires from the doors to the pole to hold the doors shut. The problem is that wire doesn't last long before it breaks. To solve the problem I started using old

seatbelts," says Ronald Lenske, Egadine, Mich.

"I simply attached old lap seatbelts to the inside of the door using ten penny nails with a small washer on each. They work great because they're easy to tighten when closing the doors, their easy to unhook, and they're so tough they'll last practically forever."

## Deere 4020 Gas Engine Replaced With A 98-Hp Combine Diesel

"We feel like we have a new tractor since we replaced the 80 hp gas engine in our 1960s Deere 4020 with a 98 hp diesel engine from a 1972 Deere 6600 combine," says Dale Heitritter, Sanborn, Iowa.

Heitritter bought the engine from Wall Lake Used Parts, Wall Lake, Iowa, and installed it himself using the company's adaptor kit.

"The 6-cylinder, 404 cu. in. diesel engine is more powerful, less noisy and uses less fuel than the tractor's original gas engine," says Heitritter, who made the conversion one year ago. "The tractor itself was in excellent shape but the engine's rocker arms and guides were bad and the head had to be rebuilt. Overhauling the engine would have cost \$1,500 to \$2,000. This conversion cost about the same at \$2,050. However, our combine diesel engine, which Deere eventually installed in later-model 4020s, offers several benefits. This engine had only 2,500 hours on it whereas a tractor engine of the same age probably would have had at least 8,000 hours. It has more power so implements we used to pull in seventh gear we can now pull in eighth gear. The 4020 used to be cold blooded. When we'd lug it, it would sputter and die whereas once we get our diesel going, it never stops. And it uses less than half as much fuel. We get 5 gal. per hour now com-

pared to two gal. per hour before. It's also a much quieter engine than the first diesels installed in the 4020s."

During installation, the only change Heitritter made to the engine was to replace its two-pulley water pump with a one-pulley model and to install new injectors. "The company supplied a diesel fuel tank but we didn't want to take a chance on dirt so we kept our old fuel tank."

The Wall Lake kit includes a heavy-duty starter, flywheel, intake manifold, battery, wiring, throttle linkage, fuel tank, air cleaner, and muffler.

"It lets you convert your tractor to diesel for about the same cost as overhauling a gas engine and it improves tractor resale," says company representative Dave Biret. "Most of the combine diesel engines we sell are removed from Deere 7700s but we also sell diesel engines from other combine makes and models to fit other tractor brands. The cost depends on the value of the trade-in. It typically costs \$2,000 to \$2,500 to replace the gas engine in a Deere 4020 with a diesel engine from a Deere 7700 combine."

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## He Repaired His Outboard Motor With A Briggs & Stratton Engine

When the 7 1/2-hp Evinrude outboard motor failed on Donald Bray's 12-ft. aluminum boat, he replaced it with a new 5 hp air-cooled Briggs & Stratton motor for about one fifth the cost of a new outboard motor.

"A new 8-hp outboard motor would've cost about \$1,100 whereas the Briggs & Stratton motor cost only \$200," says Bray, of Litchfield, Ill. "I used it all last summer and it worked fine. It uses less fuel and oil than the Evinrude and goes almost as fast. I would have preferred to use an 8 hp motor, but the motor's extra weight might have made the boat a little awkward to handle because I don't have a boat trailer. This air-cooled engine is lightweight and has no exhaust or water intake so I can set the propeller nearly 7 in. higher than normal which allows me to run the boat in

shallow streams."

Bray removed the original motor, keeping the propeller, gearbox and transmission. He extended the propeller drive-shaft upward, installed a new bearing on the driveshaft, and attached a pulley to the upper end of the shaft. He also mounted a pulley on the Briggs & Stratton output shaft. "It runs at a slower rpm than the original engine, so I used a larger pulley on the engine than on the drive shaft. The transmission allows me to go forward and reverse just like before, at almost the same speed. I tighten the belts by turning a crank, and I can install and remove the motor using only a wrench," notes Bray.

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