

Gearbox Replaces Combine Drive Belt

John Curtis says his company's new ratio gearbox can replace belts on high use equipment such as combines and forage harvesters. Curtis Machine designed the custom gearbox in 4 months and machined the first prototype housing from a solid block of aluminum using computer automated machining. Curtis says that with different shaft configurations, the reducer bolts to either side of a combine header auger and replaces the belt drive. "The reducer is designed to provide greater longevity than a belt drive and reduce downtime for a harvester operator," Curtis says.

The unique design won a new product award from the Western Kansas Manufacturers Association at the 2015 3I Show in Dodge City, Kan.

Curtis says the reducer was initially built

for a 160 hp machine, but can be scaled up to larger horsepower combines. The company designs and builds a variety of specialty, custom and standard gearcases for combines and other ag equipment. Prices vary depending on the design, size and complexity of the gearbox or reducer.

Curtis has a nearly 70-year history of producing high quality machined parts, gearboxes, and gearing for hundreds of commercial and industrial applications. The company makes right angle, off angle, and parallel shift gearboxes for any angle from 0 to 360 degrees. Customers who need an offset 1:1 ratio, a 40:1 reduction, or a 1:40 speed up gearbox, or anything in between, can rely on Curtis to supply what they need. NEMA, SAE and custom flanges can be designed into the housing. Splined, keyed



Custom gearbox can be bolted to either side of a combine header auger to replace the belt drive.

or hollow bore shafts are available.

The company has a nearly 70,000 sq. ft. facility dedicated to machined part production.

Contact: FARM SHOW Followup, Curtis Machine Company, P.O. Box 700, 4209 Jayhawk Drive, Dodge City, Kan. 67801 (ph 620 227-7164; www.curtismachine.com).

Remodeled barn is fitted with an 18-ft. wide folding door that's 14 ft. high. Door is built in 4 1/2-ft. wide sections that manually fold sideways like closet doors.



"Because of the design, we didn't have to hang anything on the front end of the barn and put stress on the trusses," says Verne Schlueter. "The door is big enough for our combine with 6-row corn head."

Folding Door Fitted To Remodeled Dairy Barn

"We no longer had a use for our old 30 by 50-ft. dairy barn. It needed to be rebuilt but we wanted to keep the barn's original look. As part of the remodel we fitted it with an 18-ft. wide accordion-style folding door that's 14 ft. high. That's big enough for our combine equipped with a 6-row corn head," says Verne Schlueter, Arlington, Minn.

"We had to add heavy duty trusses so we could raise the hay mow to 14 ft., high enough for big equipment. We also re-sided the barn and installed a metal roof," says Schlueter.

"The barn was built for dairy cows in 1912. In the 1970's we converted it into a farrowing barn and added an 18 by 50-ft. lean-to hog nursery on the west side. By 2000, the barn was no longer used and provided very little storage space.

"We thought about tearing it down and building a big shop, but then got quotes from contractors and found that installing a new

roof would cost much less than tearing the barn down.

"The posts on the east side of the barn were retained, along with the hay mow floor. This 6 by 50-ft. area has an 8-ft. high ceiling and gives us room for work benches and all our other shop tools including a drill press and welder. We removed the posts in the rest of the barn. It now has a 14-ft. ceiling after we added the heavy duty trusses.

"The 18-ft. wide bifold door is built in 4 1/2-ft. wide sections. It consists of 2 bifold doors that manually fold sideways like closet doors. Because of this design we didn't have to hang anything on the front end of the barn and put stress on the trusses. If we would have used a conventional hydraulic-operated bifold door we'd have lost a foot of head space. Our Case IH 5140 combine's 6-row corn head just fits through the door. We had Crown Door in Plato, Minn., custom build the bifold doors for us (ph 320 238-2616;

www.crowndoors.com).

"We installed a new concrete floor that slopes toward the center and installed a drain and holding tank for the water so we can wash equipment inside the building. We re-wired the barn and installed 2 banks of lights on the 14-ft. ceiling. We also added a bathroom in the nursery lean-to that makes use of the hog nursery's original manure holding tank.

"We hired contractors to install the new trusses and roofing but did the rest of the work ourselves. Our total cost to remodel the barn was more than \$20,000, but a new shop of comparable size would've cost \$60,000 to \$70,000 or more."

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