



To save money, custom silage cutters Ray and Larry Froese built their own self-propelled choppers. "They're sort of a hybrid between a Claas and a Deere," says Larry.



They use 8-row Austrian-built Kemper headers on the choppers. Power is supplied by new 600 hp 3456 Caterpillar diesel engines.

By Mick Lane, Contributing Editor

## Home-Built Choppers Cost Less Than Factory Built

When custom silage cutters Ray and Larry Froese, Inman, Kan., balked at the \$200,000-plus price tag on new self-propelled choppers, they built their own. FARM SHOW reported on that machine four years ago (Vol. 21, No. 4).

Since that time, the men have built several more self-propelled rigs including two new, bigger choppers that were added to their fleet last summer.

"We've now built five machines," Larry says. "We sold the first one, but we still use the other four." He says they average between 500 and 600 hours per machine per year.

The choppers were all built from the ground up, using their own design that incorporates a number of readily available components. Some of the components, like engines, they buy new. Others, they locate in salvage yards. The shop-built rigs still aren't cheap, at about \$130,000. But because they select components carefully, operating and repair expenses are lower than with factory-built machines they've used in the past.

Larry describes the choppers as sort of a hybrid between a Claas and a Deere. "Ours has a drum cutter, similar to Deere, but the engine is transverse mounted, like in a Claas," he explains.

They start with a 4 by 10-in. steel tube frame of their own making and add the drive axles and transmissions from Gleaner N7

combines. The rear axles came off International 1680 rotary combines.

"We picked these axles because we could find them in salvage yards. We've had no trouble with them, and evidently other people don't either, since salvage yards tell us they don't sell many of them," he says.

While the cutter drums may be similar to Deere's, they're about 2 in. bigger in diameter and 7 in. wider, with 12 more knives on it than the Deere drum.

To power their two latest choppers, the Froese brothers bought new 600 hp 3456 Caterpillar diesels with the clutch as part of the package.

The Froese chopper design puts the engine behind the cab, mounted transversely. That way, they don't need a gearbox to change the direction of the power drive. "This is one of the things that makes our chopper simpler. Not only is it less expensive to build this way, it's also less costly to maintain," Froese says.

To keep the engine cool, they add an oversized radiator that uses engine coolant and air-to-air cooling, assembled for them by a local radiator shop. The 50 gal. capacity radiators are mounted on the rear of the choppers, to blow hot air and noise away from the machine. The radiator fan is hydraulically powered.

They used cabs from Deere 9600 combines on their two latest choppers. In the past, they'd used Gleaner L combine cabs, but they

were able to find the Deere cabs for the right price.

For electrical controls, they used circuit boards from Deere 9600 combines, too. "They're integrated into the cab as part of the arm rest," Froese tells. "Not everything in the board worked like we wanted it to, though, so we cut some of the circuits and resoldered them to make them do what we wanted."

They use 8-row Austrian-built Kemper headers on their new choppers. Their first choppers had 6 row headers.

A 20-gpm hydraulic pump powers the header. Froese says they opted for hydraulic drive because it allows them to power up the headers without having to reduce engine speed.

The new choppers are also equipped with kernel processing rolls, which they purchased from Automatic. The kernel processors can be removed or installed in only about 20 minutes.

On the front axle, they mounted 650 metric tires, even though they had to hunt for the right wheels to fit them. "These tires are narrow enough to fit between 30-in. rows, so we don't have stalk damage to the tires, but they're flat across the surface rather than rounded, so they give you as big a footprint as a 30.5 by 32 tire. In addition, then can run with 5 to 10 lbs. lower air pressure and still support the same amount of weight," he explains.

On the rear they used 18.4 by 26 lugged tractor-type tires.

The choppers need about 28 gal. of fuel per hour when working at peak capacity, which, Froese says, means they'd need a 400-gal. fuel tank to run all day. "These machines are already quite heavy and adding 400 gal. of fuel would put more stress on them. We went with 160-gal. tanks, which means we need to refuel once or twice a day, but it also means less stress on the machine and less power needed to move it," he says.

"We made these especially to cut silage for dairy farmers in western Kansas," Froese notes. "We can cut and blow 200 lbs. of silage per second into trucks. In terms of capacity, these machines are comparable to some of the biggest machines on the market. We're spending only around \$5,000 per machine per year on maintenance, while we hear other custom cutters who are talking about spending three or four times that much."

With the lower initial and lower maintenance costs of their home-built choppers, Froese says they don't have to work nearly as many hours to start making a profit.

For more information, contact: FARM SHOW Followup, Froese Brothers, Box 139, Inman, Kansas 67546 (ph 316 585-6478 or 2590; E-mail: lbfroese@hotmail.com).

## Bumper-Mounted "Blockhead" Eliminates Dangling Cords

Inventor Len Ranch of Brooks, Alberta, knew there had to be a simple way to do away with dangling block heater cords on front of vehicles in cold weather country.

He was tired of seeing block heater plugs dangling from the end of split cords, and he had also had chipped paint on the front of one of his vehicles from the cord flapping around while on the road.

"Block heater cords can make an irritating banging noise when you're driving down the highway, and then there's always the problem of having the plug's prongs coated with ice and dirt when you go to use it," Ranch says. "I knew I could develop a device that would solve all of those problems."

Ranch designed a unit he calls "The Blockhead". The block heater plug simply plugs into it. The durable plastic device attaches to the front of a vehicle's bumper with an adhesive backing, so no tools are

necessary. The Blockhead can be removed during summer. The black, 1-in. square "outlet" has plug-in access on five sides and prong slots can be seen at night since they are made with luminous yellow plastic.

After two years of engineering, making a prototype and re-designing, Ranch patented the device and finally found a manufacturer in China. Molds and samples were followed by promotion, setting up distribution and production.

It retails for \$7.99 (Canada) plus shipping, handling and 7% G.S.T. The Blockhead is available at some hardware stores or can be ordered direct by mail or phone from Ranch's marketing representative, Prairie Mountain Trading in Edmonton, Alberta.

Wholesale and distributor inquiries are welcome.

Contact FARM SHOW Followup, Prairie Mountain Trading, 11420 - 142 St.,



Plastic device attaches to vehicle's front bumper and has plug-in access on five sides.

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