

Self-Propelled Concrete Mixer

By Mick Lane, Contributing Editor

When you need concrete 50 miles from the nearest ready-mix plant, it's pretty much a given that you're going to mix it yourself, says Kent Durfee, Almo, Idaho.

Durfee says most do-it-yourself mixers are small and require a lot of labor, so pouring concrete was always a real hassle for him. Until he ran across an old trailer-mounted mixer.

"It was called a Roto-Mix, I think," he says. "It was designed as a rental unit for do-it-yourselfers. You'd fill it up at a retail store, start the tank turning, and then tow it to the work site."

He says the mixer was all hydraulic-powered, with the pump being driven by a small gas engine. A hydraulic motor turned the mixing tank, and hydraulic cylinders raised it to dump. It was in reasonable shape, but the idea of having it on a trailer didn't appeal to him.

Luckily, he had an old diesel-powered Massey Ferguson 410 combine that wasn't being used and decided to put the combine and mixer together to make a self-propelled concrete mixer.

He built a new frame for the machine from 6 by 2 by 1/4-in. steel tubing. On this frame, he mounted the front and rear axles, engine, radiator, hydraulic pump, fuel tank and the operators station from the 410. He set the axles so it has a wheelbase of 8 ft. The axles are configured as they were on the combine, with the drive axle to the front and the steering axle at the rear.

The 410 had a belt-driven variable speed drive. "We removed the old flat belt drive from the engine and replaced it with a hub machined to fit the shaft. The two halves of the cylinder drive pulley were bolted to the hub. The cylinder drive belt is used to drive the transmission. This works well since we didn't need the variable speed feature," he says.

The operators station is located on the right

over the steering axle, with the engine directly in front of it, setting sideways. He found two electric radiator fans salvaged from old Volkswagen Rabbits and mounted them so they blow air through the radiator.

The original combine fuel tank sits beside the operators station over the steering axle.

Durfee added a lift to his frame, sized to fit the mounts that held the mixing tank on the trailer. "In the original design, a cylinder raised the back of the tank to dump it. I wanted to be able to place the concrete higher, to pour walls, or just so we wouldn't have to move it in wheelbarrows," he says. "With the tank mounted on the lift, we can raise it to 9 1/2 ft. high and then tip it up to dump."

He fitted the lift with a couple of heavy-duty loader cylinders. "They're 4 ft. long when closed, with 4 in. outside diameter and 1 1/2-in. shafts. They extend to 7 ft.," he says.

He designed the lift so the weight of the mixing tank remains centered over the drive wheels. The same cylinder and dumping lift still dumps the tank.

For hydraulics, he used the pump from the combine with the reservoir that came on the old mixer. "It raises the lift rather slowly, but when you're lifting that much weight, you don't want it to go up too fast," he says.

Finally, Durfee added a chute to the front of the rig, so he could direct the flow of the concrete as it dumps. A dairy farmer, Durfee had some old stainless steel grain feeders he'd salvaged from some milk barn stalls. The rounded feeders are 14 in. across and 40 in. long, so one was just right to make the chute.

He says the self-propelled mixer is quite maneuverable, with its short wheelbase. "Driving it does take some getting used to, though, since you're sitting right over the steering axle," he says.

He says the old mixer was not a small investment. "It was the least expensive mixer I could find, but it still cost \$4,200," he says. He put about \$5,500 into his self-propelled



"With tank mounted on lift, we can raise it up to 9 1/2 ft. high to dump," says Kent Durfee.



Weight of mixing tank is centered over drive wheels, which aids in steering and also makes rig more stable.

mixer, including the steel, machine work, and sprockets.

"Getting ready mix delivered out here costs about \$100 a yard," he says. "I figure we can mix it ourselves for about half that." To help recoup some of the cost of building it, he plans to rent the machine to others. He says

he's already had several requests from nearby farmers to use it.

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Round Bale Feeder Loads Itself

You don't need a tractor to load big bales into the new Freedom Feeder manufactured by Kinsella Plastics.

The self-loading feeder can be pulled behind a truck at speeds up to 45 mph, thanks to the two regular sized tires at the rear. To load a bale, one side of the feeder folds down to form a ramp. Pins are inserted into either end of the bale and a scissors unit attaches to the pins and to a winch on the feeder, which then pulls the bale into the feeder. It rolls right up the ramp.

The feeder was invented by Donny Lane of Fort St. John, B.C. and is patented in both Canada and the U.S.

"It will pay for itself after eight to 10 round bales, says Neil Gillard, owner of Kinsella Plastics.

"It allows smaller farmers to enjoy the convenience of using round bales, since the feeder will load, transport and feed one round bale at a time," Gillard says.

"Since it's classed as a farm implement, there's no need for trailer wiring if you use the slow moving vehicle sign which comes with it. You don't need to bother your hay supplier to start up his tractor when you come for a bale, and once the feeder is parked at home in your corral or pasture,

there's no more work involved for days or weeks at a time, depending on how many head you are feeding. For example, you can go away for the weekend without having to rely on anyone to do your feeding like you'd have to with square bales," he says.

Once the side panel/ramp is closed and secured, the operator can pull the feeder to his or her corral or pasture. It can then be unhooked and stabilized with the unit's jack and stabilizer legs.

Animals access the feed from either side, with those panels positioned at an angle (further out at the top) in order to minimize feed waste. The unit accommodates the larger 6-ft. bales.

A 2 by 6-ft. mineral tray is located between the back wheels for feeding minerals or salt blocks.

The Freedom Feeder costs \$2,500 (Can.) plus freight.

Custom orders for two-bale versions of the Freedom Feeder are also accepted, according to Gillard.

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Pins are inserted into either end of bale, then winch is used to pull bale into the feeder.



Once side panel/ramp is closed, feeder can be towed to corral or pasture. When ramp is unhooked, legs and jack are used to stabilize it.