

Mini Backhoe Controlled By “Made It Myself” Hydraulics

“I built it as a challenge and couldn’t be happier with how it turned out,” says Andrew Vincek, Saratoga Springs, N.Y., about the home-built, self-propelled mini backhoe he made out of an old Murray lawn tractor. He made the rig’s eight hydraulic cylinders out of shock absorbers.

The one-of-a-kind machine is equipped with a 9-in. wide bucket that can dig up to 5 ft. deep and has a 4 1/2-ft. dumping height and a 7-ft. reach. The bucket hydraulically swings 120 degrees from side to side.

Vincek reversed the seat, steering wheel, and controls so the operator faces the tractor’s rear wheels. The mower’s control levers are used for going forward and back.

He stripped the tractor down to the frame, wheels and axles and used 2-in. channel iron to make a new frame which he bolted on top of the original frame. The backhoe’s frame bolts on top of the add-on frame, allowing it to be easily disconnected. He removed the original engine and replaced it with a new vertical 6 hp Tecumseh engine that drives a low pressure, 3.2 gpm hydraulic pump

equipped with a flexible coupling. A pulley above the flexible coupling on the crankshaft output drives the transaxle.

The shift lever to the tractor’s foot clutch brake pedal was converted to hand operation. He cut off the foot pedal and welded a shift lever to the foot clutch. The seat rests on a homemade hydraulic reservoir. A heavy duty rear bumper grill was made out of thick steel, channel iron and sq. tubing.

“Even though the engine has only 6 hp it has plenty of power to operate the hydraulics. It has enough power that if the bucket encounters something hard it’ll slide the tractor off to one side or the other.”

Vincek made the machine’s hydraulic cylinders by reworking shocks off old 3/4-ton Dodge pickups. All cylinders have a 5/8-in. dia. piston rod, 1 3/8-in. bore and a 10-in. stroke, with 1,400 lbs. of push and 1,100 lbs. of pull. “Cylinders that have low line pressure and high pressure could be dangerous,” he notes. An adjustable relief valve is used to keep the pressure from getting too high and bursting the cylinders.



Vincek made the tractor’s hydraulic cylinders out of shock absorbers.

“I made the cylinders because I couldn’t find the size I needed and because I wanted to save money. My homemade cylinders weigh only 7 lbs. apiece compared to commercial cylinders that weigh about 20 lbs.

apiece.”
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Self-Feeding Corral Panels With Moveable Headgate

Robert Friesen, Crooked Creek, Alberta, came up with a way to self-feed round bales between two rows of free-standing, 30-ft. long steel panels spaced 20 ft. apart.

The panels are built out of 2 3/8-in. dia. oilfield tubing and are held upright by a series of 3/4-in. dia. steel stakes, which are driven into the ground to keep cattle from pushing the panels around. Between the two rows of panels is a 20-ft. wide moveable headgate. A length of chain at each end of the headgate allows cattle to push the gate into the bales.

The main body of the headgate consists of

a series of slanted metal bars. The top part of the headgate consists of a length of 2 by 4 sq. tubing with a vertical steel pin at each end to keep the gate from moving sideways. The bottom part has a moveable apron made from a pair of 2 by 6’s. The apron is U-bolted onto the headgate, allowing it to be adjusted up or down in order to reduce waste.

“It’s an easy way to feed a few cattle without having to start up my tractor every day,” says Friesen.

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Each end of feed headgate rests on parallel sections of 30-ft. long corral panels.



Trailer is narrow enough to wind through the woods with a load of up to 600 lbs.

Firewood Trailer For ATV’s

Dan Jacobson hauls a lot of firewood out of the woods near his Pequot Lakes, Minn., home. To make the job easier, he built an ATV-pulled trailer that’s designed to haul logs over rough terrain.

Built from tubular steel, the trailer rides on a pair of 16-in. puncture-proof pneumatic wheels. It has a log rack that measures 6 ft. long by 16 in. wide, with 2-ft. high metal “stop brackets” on front and back. There’s a small boat winch on front. After the trailer is loaded with logs, a poly rope from the winch is hooked up to a length of chain that’s permanently fastened to the stop bracket on back of the trailer. The cable is then tightened down over the logs, and they’re ready for transport.

“It can carry 500 to 600 lbs. of logs. The trailer measures only 3 ft. wide from wheel to wheel so it’s narrow enough that I can pull it through the woods without running into trees,” says Jacobson. “The winch has a 600-lb. pressure rating so I can put a lot of pres-

sure on the logs and keep them from falling off. Any more weight and I might lose control of the ATV going downhill or in slippery conditions.

“The trailer isn’t designed to be pulled down the road at high speeds - the wheels are equipped with slow speed bearings that would heat up, causing the wheels to come off.”

Jacobson says he built two earlier models before this one. “I built the first one out of wood, using 2 by 4’s. Unfortunately the weight of the logs pulled the lag bolts out of the wood. It was a 75 percent failure, but I learned enough that I was able to build one that works.”

He estimates his total cost to build the trailer was about \$365.

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Crane boom is made from I-beams powered by combine hydraulics.

Combine Converted Into Crane

Aron Wiebe of Niverville, Manitoba turned an old combine into a handy and economical crane.

The 72-year-old bought the 503 International combine for \$600. He then removed the header and mounted a crane on front of the machine by hinging it to the same points where the header had been mounted.

“The frame of the crane is made from two TD6 crawler track frames welded end to end,” he explains. “The hydraulic cylinder is from a D4 Cat loader lift cylinder. The end

piece is an 8-ft. long section of 8-in. I-beam, and is adjustable so as to keep it level at any given height.”

Wiebe mounted a trolley on the I-beam and then attached a chain hoist to the trolley. He uses the existing combine hydraulics to operate it.

“At present, I am using it to handle logs at my one-man saw mill,” he says.

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