Power Drill Opens Heavy Shop Door

Instead of spending $1,000 to install a door opener for his old shop door, Fred Davison bought a $50 reversible drill and rigged up a pulley system. He simply uses the drill to open and close the 16 by 12-ft. wooden door.

The Highwood, Montana, semi-retired rancher welded a 2-in. pulley on a steel shaft that fits into the drill. The drill turns a belt on the pulley, which is connected to an 11-in. pulley with a 2-in. sprocket on the end. That sprocket connects No. 40 chain to 2-in. sprockets at the bottom and top of the door. Small bolts connect the chain to an iron strap bolted on the bottom of the door to move it up or down when the drill is turned on.

The drill and pulleys are secured and aligned to the shop wall with scrap iron brackets. A rod is also attached to the drill and held in place to maintain the right belt tension.

"You have to make everything in line," Davison notes, adding he wasn't sure if pulling the heavy door up on the side would work. But it has worked well for three years.

"It's just fun to operate. My wife, Kathleen likes it too," Davison says. Before his drill door opener, the couple pulled the door up by hand with a rope.

With materials and labor costs to install it, Davison estimates the opener cost about $250. He can make plans or kit assemblies available for sale to anyone interested.

Reversible drill works with pulley system to open and close Fred Davison's 16 by 12-ft. wooden door.

Contact: FARM SHOW Followup, Fred Davison, Many Hills Ranch, 1979 Upper Highwood Creek Road, Highwood, Montana 59450 (ph 406 733-5031; davisonfred@yahoo.com).

Revolutionary Carbon Foam Batteries

Have you heard about these new 12-volt lead acid batteries that recharge faster, run longer, produce more power, weigh less and are completely recyclable? The "carbon foam" lead acid batteries are so efficient they match the performance of lithium and NiMH batteries without their high cost and also without their safety issues.

The new batteries are being produced by Firefly Energy, a spin-off from Caterpillar. They use Cat's patented Microcell foam grid technology that replaces up to 70 percent of the lead in a traditional lead acid battery. Positive and negative plates consist of lead oxide slurry impregnated, carbon-graphite foam. The result is up to 50 percent lighter weight than traditional lead acid batteries. The electrodes don't corrode, operate cooler and resist sulfation.

The carbon foam provides more surface area, which increases power output and enhances recharge speeds. It also improves cold weather performance. Best of all, the foam core improves power availability three to four times when compared to a conventional lead acid battery.

Extended cycle life is also expected for the new batteries. They are projected to last three to five times longer than conventional deep discharge lead acid batteries. The batteries can also be left in storage at low charges for extended periods without damage.

Initial development has been for use in U.S. military vehicles and for over-the-road trucks.

New batteries use Caterpillar's Microcell foam grid technology that replaces up to 70 percent of the lead in a traditional lead acid battery.

The new Oasis Group 31 batteries developed for deep discharge use, such as truck starting and cab support, are expected to be available this summer.

Other projected markets include hybrid and electric vehicles and specialty equipment such as electric lawn care equipment, electric carts, forklifts, and wheelchairs - any product currently using storage batteries.

The new batteries will not initially be available directly to the general public. Firefly intends to market the technology through existing companies such as Husqvarna, an investor in Firefly.

The first batteries from Firefly were shipped to Husqvarna in November 2007.

Contact: FARM SHOW Followup, Firefly Energy, Inc., 5407 N. University St., Arbor Hall 2nd Floor, Peoria, Ill. 61614 (ph 309 690-7500; www.fireflyenergy.com).

Water Shut-Off Tool

This water shut-off tool fits into tight spots, making it easy to shut off stuck valves.

"It lets you safely turn valves that would otherwise be difficult to turn by hand," says inventor Bob Gordon.

Made from ABS plastic, the Gordon Wrench measures a little less than 5 in. long by 3 in. wide. The tool has an oval, recessed slot in it that exactly fits over the valve.

"It works great on valves under sinks or toilets that are corroded and almost impossible to turn by hand," says Gordon. "After a few years, a shut-off valve can corrode and become nearly impossible to shut off in an emergency or in order to make repairs. If you use a wrench or pliers you'll often break the valve. The Gordon Wrench grabs the valve's entire oval handle so there's no unusual amount of pressure on any point on the valve. And it's small enough to fit into hard-to-reach areas.

"The wrench also has a second oval slot with a pair of small holes in it. The second oval slot comes in handy wherever there isn't enough room to turn the wrench 360 degrees with the first oval slot. The holes are for use on valves found on automatic lawn sprinkler systems that are used mainly in California," says Gordon.

"It lets you safely turn valves that would otherwise be difficult to turn by hand," says Gordon about his water shut-off tool.

Sells for $9.75 including S&H.

Contact: FARM SHOW Followup, Gordon Tool Co., 77500 South 6th St., F-1, Cottage Grove, Oregon 97424 (ph 541 942-9342; contact@gordonwrench.com; www.gordonwrench.com).

"Wheel-Driven" Generator

"It lets me operate my generator on diesel, which is much more fuel efficient than gas," says John Heide, Deerbrook, Wis., about the low cost 7,000-watt generator he powers with a pto and a spare tire.

The generator bolts to the top of a scrap iron frame equipped with 3-pt. mounting brackets. The 15-in. spare tire bolts onto the front part of the frame. Heide uses his Case 530 diesel tractor to pto-drive the tire, which in turn belt-drives the generator.

"The tire serves as a big pulley. It works much on the same principle as Bill Reeks's wheel-driven bandsaw-type sawmill, on which a 1 1/4-in. wide bandsaw blade is stretched around a pair of 14-in. car tires. Instead of the bandsaw blade I'm running a pair of 1/2-in. wide belts around the tire," says Heide.

Heide bought the generator at Harbor Freight for $240 and mounted a double groove 4-in. pulley on it. He welded the pto drive system from an Owatonna hay conditioner to the tire's rim, and also welded a 1/2-in. thick steel plate to the back side of the rim. The plate was drilled and tapped, allowing Heide to slide it up and down on a pair of angle iron supports to adjust belt tension.

He used 3/8-in. thick angle iron and 2-in. sq. tubing to build the frame.

"It runs smooth and quiet. It's surprising how true the double V-belts run on the tire," says Heide. "I could've used a pulley instead of the tire, but a pulley big enough to do the job would have cost $240. I can also adjust tension on the belt by varying tire pressure.

John Heide uses a diesel tractor to pto-drive a spare tire, which in turn belt-drives his generator.

"By using a diesel tractor to operate the generator instead of gas, I'm saving about 50 percent on fuel costs," says Heide. "I had been using a gas engine-powered welder to power another generator, but it used too much fuel. One time the power went out on our farm for three days and it seemed like I was filling up the gas engine every four hours. Now I can fill the tractor up with diesel in the morning and it'll run all day without a refill."

Contact: FARM SHOW Followup, John Heide, W8605 Kramer Road, Deerbrook, Wis. 54424 (ph 715 623-6447).

Bus Front End Revives Old Grader

Instead of spending $2,000 to repair the diesel engine on his 1950's Austin Weston grader, Tom Miller attached the front end of an old International bus.

"I cut the frame of the bus off right behind the transmission to use the radiator, motor and transmission as a unit," the Trinidad, Colo., rancher explains. "The grader's frame on the rear end slopes down, so I just set this bus unit on the old frame."

He used his 4-WD Michigan loader to remove the grader's diesel engine and radiator and replace it with the bus front. He modified the drive shaft and changed U-joints to make it fit and welded plenty of braces from the grader frame to the bus frame. He removed the bus's air compressor for air brakes and replaced it with the hydraulic pump to operate the grader's hydraulics.

"The biggest challenge was to connect the linkage from the clutch on the bus to the grader. I also had to work on the throttle linkage," Miller adds. He notes that between the grader and bus gears - eight altogether - he can drive in super slow speed if needed.

Tom Miller attached the front end of an old International bus to his 1950's Austin Weston grader.

The bus's V-8 392 cu. in. gas engine has worked well to run the grader. Miller credits the bus's large radiator for preventing overheating.

Miller uses the grader to remove snow in the winter and to level the ground along his irrigation ditches and roads throughout his ranch. He purchased the old Army grader many years ago and also picked up the used bus because he wanted its tires for a ranch truck. He transformed the bus body into a woodshop.

"Nothing goes to waste. The old bus put new life into an old grader that wouldn't have been good for anything," Miller says.

Contact: FARM SHOW Followup, Tom Miller, 20981 Hwy. 350, Trinidad, Colorado 81082 (ph 719 846-3027).