



Glen Schewpe uses a single garage door opener to open a set of double doors on his home-built garage.

## Garage Door Opener Powers Shed's Double Doors

"As I get older, I find it's a lot easier to push a button to open doors than it is to manually open them," jokes Glen Schewpe, Syracuse, Neb., who recently sent FARM SHOW photos of a 10 by 12-ft. metal utility shed he recently built. A garage door opener is used to automatically swing open a set of double doors.

Key to success of the idea is a metal bracket that's attached to the opener's chain and rides back and forth along the rail. A pair of arms made from 1-in. tubing bolt to the bracket and to the doors, in place of the single rod that would normally be used. The chain runs backward to push the doors open, and forward to close them.

"It works pretty much like a regular garage door opener, except it runs backward and is attached to two arms instead of one," says Schewpe. "It doesn't take much pressure to



Door opener chain runs backward to push doors open and forward to close them.

push the doors so the opener has no trouble handling two doors. I adjust how far the bracket travels just like I would if I was using the opener conventionally."

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Metal bracket is attached to opener's chain and rides back and forth along the rail.

## Home-Built Radiant Heat System

"My wife and I have lived totally off-grid for 10 years, using wood as our only source of home heat. We wanted a more efficient wood burning system so I decided to build my own," says William Schuller of Cusick, Wash.

He started with a junked-out, 50-gal. water heater tank. He cut it down to a length of 43 in., removed the concave bottom end, and turned it around and welded it back on.

"We wanted radiant floor heating so I added a 13-gal. heating tank on back of it. The heated anti-freeze mixture is pumped through 500 ft. of plastic tubing that goes through our house's floors.

"The top of the stove is even equipped with a 10 by 20-in. flat cooking surface. No clearance is needed between the hot water tank and the cedar wall because the tank never gets hotter than the circulating water."

A thermostat turns the pump on when water is at 125 degrees and off at 60 degrees. The water first circulates to a small automotive radiator with a 12-volt fan in the crawl space under the house to keep the well pipe from freezing. From there the water goes out to a large 24-volt battery room which also

has an automotive radiator. Then the fluid is pumped back into the house and through the plastic tubing, which heats the floors. The cooled water then returns to the heating tank.

"The total fluid capacity of the system is about 20 gallons," says Schuller.

"With a stack temperature of 400 degrees, the crawl space and battery room remain at about 40 degrees while the rest of the house stays at a constant 72 degrees, even with outdoor temperatures around zero. We load the stove up at night and it holds a fire for 10 hours.

"I purchased three components: a low volume (3.3-gal./min.) 24-volt hot water circulating pump, an adjustable snap-disc thermostat, and 500 ft. of Pex 5/8-in. dia. plastic tubing. Total cost of these materials was \$460, with the pump making up two thirds of the cost. This pump is bronze, stainless steel and Teflon. It has a 24-volt DC magnetic drive and is completely silent.

"I purchased the hot water pump from Northern Arizona Wind & Sun (ph 800 383-0195 or 928 526-8017; www.windsun.com). The thermostat came from Grainger (ph 800 323-0620; www.grainger.com). I bought the



Digger consists of a cultivator shank and sweep attached to front-end loader.

## Scrap Iron Potato Digger

Getting potatoes out of the ground doesn't have to be slow, back-breaking work, nor does it require a large investment in equipment. The Hal Martfeld family of Unity, Sask., made a home-built digger attachment for their tractor.

"Although we don't grow potatoes commercially, we do grow enough for family and friends, and that makes digging them by hand a real chore," Hal explains. "The tool we made fastens to our front-end loader and makes the job go much easier."

The device consists of two heavy, 6-ft. long steel bars bolted together. A cultivator shank attaches to one end. An ordinary cultivator sweep is bolted to the shank, but the wings of the standard 14-in. shovel have been twisted to give them a more aggressive angle. Martfeld also welded flat steel plates to the sweep, widening it a little on each side.

He bolts the attachment to digger teeth on his loader bucket.

"The digger's working depth and angle are adjustable from the tractor seat, using the front-end loader controls," he explains. "It must stick out from the loader far enough to give the operator a good view, and to prevent potatoes from rolling under the tires as you drive down the row."

Martfeld says it's quite important that the potatoes be well-hilled for the tool to work properly. It's not necessary to pull the plants before going down the row, he says.

"We work toward the center of the patch by going down one side and up the other, then picking the potatoes before repeating the procedure," Martfeld says.

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Sweep's wings have been twisted to give them a more aggressive angle. Martfeld also welded flat steel plates to sweep, widening it by an inch or two on each side.



Wood burning system makes use of a 50-gal. water heater tank, with a 13-gal. heating tank added on back of it.

Pex plastic tubing at a home heating and air conditioning store in Sandpoint, Idaho. All the rest of the plumbing is standard black pipe or brass."

The round wood burning tank with convex ends radiates heat out better than flat sides, says Schuller. "The door on the tank is big enough for an 18-in. long, 10-in. dia. piece of wood to fit through. The tank is fitted with two adjustable draft vents - one at one end of the tank and the other just below the door. The two draft vents result in a better burn than one," he notes.

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A heated anti-freeze mixture is pumped through 500 ft. of plastic tubing in the floors.

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