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“Solar Powered” Shop

Steven Ratliff, Spring Grove, Penn., used old sliding glass doors to build solar collector panels that he uses to heat his shop.

“It’s maintenance-free and keeps our farm shop comfortably warm at virtually no cost, even on the coldest winter days,” says Ratliff.

The solar collector panels cover almost the entire south wall of his 30 by 60-ft. machine shop. They consist of a series of sliding glass doors on the outside, with a thin black plastic curtain to absorb heat behind them that hangs from a length of rebar. The 6-ft. sq. glass doors and the curtain mount inside a 2 by 10 wooden frame that bolts onto the side of the shop.

There’s 12 in. of space between the window and the plastic, with cold air entering through a vent at each end of the 25-ft. long collector. The heated air is drawn in by a 2-ft. dia. louvered fan that sets inside a 1-ft. wide gap

at the center of the plastic. The fan is hooked up to a thermostat and turns on whenever the temperature in the panel reaches 90 degrees.

“Even if the outside temperature is only 10 degrees, as long as the sun is shining the temperature in the shop will rise by at least 50 degrees during the day. In fact, when the sun is shining the furnace doesn’t even come on,” says Ratliff.

“I bought the sliding glass doors on Craigslist for \$35 apiece. I open the windows to let the welding fumes out or whenever it gets too hot. In the summer I just slide the doors open all the way.”

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Home-Built Hydraulic Press

When Don Ramberg needed a way to straighten snowmobile crankshafts, he built a 12-ton press. More than 30 years later, it can still handle any job he throws at it.

“It’s nothing fancy,” he says. “I used 6-in. C-channel for the sides and top and steel plate for the press table and jack platform.”

Ramberg’s press stands about 6 1/2 ft. tall at its top. The side legs stand about 5 ft. tall. Holes drilled in the sides of the channel allow Ramberg to raise and lower the work table as needed. The work table consists of two pieces of channel iron with gussets welded in the middle and a steel plate laid on top of it. Simple pins hold the table in place until it needs to be moved.

Two more lengths of C-channel are welded across the top of the legs leaving a gap between them for the press post. Centered on these cross beams are two more C-channels about 18 in. in length with a third C-channel topping them off. The hydraulic jack that provides the pressure is housed inside this upside down U.

“The jack rides on a steel plate that fits inside the C-channel sides,” explains Ramberg. “The steel plate is suspended on either side from the top of the compartment by two, 1-in. coiled springs that ride against the inside of the side C-channels.”

The press ram is, in turn, suspended from the bottom of the jack table. When hydraulic pressure is applied, the jack table and the ram are forced down. When pressure is released, the springs pull them and the jack upwards.

“I made the ram from a piece of tractor axle, boring out a 1-in. hole to hold different types of punches,” says Ramberg. “A hole drilled in the side of the ram holds a spring and a ball bearing. The hole on the inside



Don Ramberg built this 6½-ft. tall, 12-ton press more than 30 years ago and says it can still handle any job he throws at it.

of the bore isn’t quite large enough for the ball bearing to come through, so it catches and holds punches when they are inserted. Punches are made out of 1-in. stock as needed.”

Ramberg welded a half moon of 5/8-in. steel over the top of the jack compartment to reinforce the top beam that takes half the pressure exerted by the jack. Two pieces of triangular shaped, 1/2-in. flat iron with 18-in. sides are welded to the bottom outsides of the two press legs. These “feet” stabilize the press.

“It’s pretty heavy,” says Ramberg. “I’ve only moved it twice since it was built. It has worked well, and with the adjustable work table, I can handle large pieces. I do a lot of work on shafts for area farmers.”

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Wheeled garden tractor “rotisserie” keeps tractor about 30 in. off the ground.

Lawn Tractor “Rotisserie”

Gary Hast built a garden tractor “rotisserie” using a small photo from an old parts manual as his only guide.

Hast built it for a Deere 110 tractor he picked up cheap that needed lots of work. He wanted to have a way to move it around easily to store out of the way between the times he had to work on it.

“Plus, doing the engine work was a pleasure - no backaches,” Hast says, because the tractor was off the ground about 30-in.

He started with two inexpensive 750-lb. engine stands, and a worm gear and bull gear from a 1-ton winch.

“Bore out the bull gear to slip over the engine stand shaft and weld it,” Hast says. He welded it “sloppy” so it turns freely. “Mount the gear drive below the bull gear.”

He welded two nuts inside the arms of the engine stand and bolted it to the tractor’s front draft plate.

For the back of the tractor, Hast welded short pieces of 1 1/2-in square tubing to the stand arms and bolted them to the tractor’s transmission. Hast notes he would make the tubing a couple of inches longer for more

stability if he were to build it again.

A piece of 1 1/2-in. square tubing connects the two stands. To create the right width for his 110 Deere, Hast cut an 18-in. piece and put 2 in. of both ends in the stands and bolted them. The length will vary according to the model tractor the rotisserie is designed for.

Hast uses a hoist to lift the tractor to attach it to the engine mounts. He cranks the gear drive to turn the tractor in any position he wants. It holds without any extra locking system.

While it worked out, Hast would make changes if he built it again. He’d buy better quality stands - ones with bearings would be the best. Hast spent about \$200 to purchase the engine stands, winch and castors.

He offers one last suggestion: Grease up the rotating parts of the engine stands so the plates spin easily - before you mount the tractor.

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“Larry Lugs” Revive Worn Rubber Tracks

The rubber track on a CAT/ASV skid steer may look like it’s in good shape on the outside, but if too many inner lugs break off, the track becomes useless. Bair Products Inc., in Louisburg, Kan., offers bolt-on replacement lugs that solve the problem.

“It can cost \$1,400 to \$2,300 for new tracks,” says Tonya Bair, co-owner of the company that specializes in after market parts for CAT/ASV and MTL skid loaders. Her father, Larry, invented “Larry Lugs” which are made out of a tough composite material.

The individual lugs can be installed with the track on or off. You grind off the remainder of the broken lug. Center the template that comes with the lugs over the area and use a 1/2-in. drill bit to drill holes at a 90-degree angle. Place the lug’s washers on the outside of the track and alternately torque the bolts until the bolt heads are 3/16 to 1/4-in. embedded in the tracks.

“Each only takes about 10 minutes to install,” Bair says. Once installed the durable lugs extend the life of the track. And they outlast it.

“The great thing about Larry Lugs is that when the track becomes unusable, you can remove the lugs and reuse them on another track,” Bair says.

Larry Lugs sell for \$20 each, with volume discounts. They are available at CAT/ASV dealerships and at Bair Products, Inc.



Bolt-on replacement lugs can be installed with the track on or off.



When track becomes unusable, you can remove the lugs and use them on another track.

Contact: FARM SHOW Followup, Bair Products Inc., 2785 West 247th St., Louisburg, Kan. 66053 (ph 913 947-3934; www.bairproducts.com).