

## "Level Fold" Max Emerge Planter

Seven years ago Jerald Ryerson bought a Deere 7000 8-row planter. After transporting it on an implement trailer for one season, he decided to find a better way to get it from field to field.

"I looked at some of the fold kits on the market but I wasn't satisfied. I came up with my own flange-style hinge that allows the planter wings to fold in a level plane so there's no sagging and less stress on the toolbar," says Ryerson.

Key to his fold kit is the 3-pt. hitch adapter mounted on the tractor that lifts the tongue to provide enough ground clearance for the planter units and lift wheels to swing around. Another key to the system is that it's built with enough clearance between the folded bars so there's plenty of room for most no-till attachments.

Ryerson has sold about 40 of the hinge kits in his local area, mostly through Deere dealers



who've heard about his idea. He hasn't offered the fold system in kit form because he feels proper installation is the key to success of the unit and he's made all installations himself. He says it takes about three days to do the

installation properly, in part because he removes all the planter units from the toolbar before installing the hinge and then "preloads" it before final welding.

"This kit is unique in that

once installed, the folded-up wing wheel rides on the ground, supporting the folded up units so the hinge doesn't have to support all that weight. We've never had one break in the field and, once installed, it swings so easily it'll fold up if you lean against it," says Ryerson.

To lock the planter into field position, you simply slip a bolt through the flanges on the hinge and put a cotter key into the two ends of the planter drive shaft. Ryerson says that, since the hinge only takes up about 1 1/2 in. space in the bar, there isn't a lot of refitting needed for toolbar accessories.

The kit sells for around \$2,000 and can be used on any planter toolbar. Ryerson also folds cultivators, hoes, and other field equipment in his on-farm custom shop.

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## Home-Built Furnace Stores Heat In Rocks

Ronald Behne, Nora Springs, Iowa, has a home-heating system that's most unusual. It consists of a home-built, wood-burning furnace made from a 500-gal. anhydrous tank completely surrounded by rocks.

The 3 1/2 ft. dia., 8-ft. long tank — installed when the house was built — is located in an 8 by 9 by 10-ft. sealed room made of concrete blocks. Behne installed the tank in the room, and completely surrounded it with fist-sized rocks.

"The system saves me more than \$500 a year in heating costs each year," says Behne. He uses an LP furnace as a back-up for when he's gone for more than a few days, or when it's extra cold. His gas costs now run from \$200 to \$300 a year to heat his two-story, 2,700 sq. ft. home.

The unique set-up allows him to fire his home-built furnace with wood for 4 to 5 hours at night and store enough heat in the rocks to last for two days when outside temperature is 20°. When it's 0° (and depending on wind chill) Behne notes that he needs to fire the wood furnace once a day to keep the LP furnace from kicking in.

"I got the idea for my system from heating systems that use water to store heat," Behne explains. "I just decided to use rocks instead."

After placing the tank in the basement room, building the chimney, and filling the room with the limestone rocks, he

poured a 4-in. thick concrete roof over the room to both seal the room and serve as fire protection. The side walls are made of 8-in. concrete blocks.

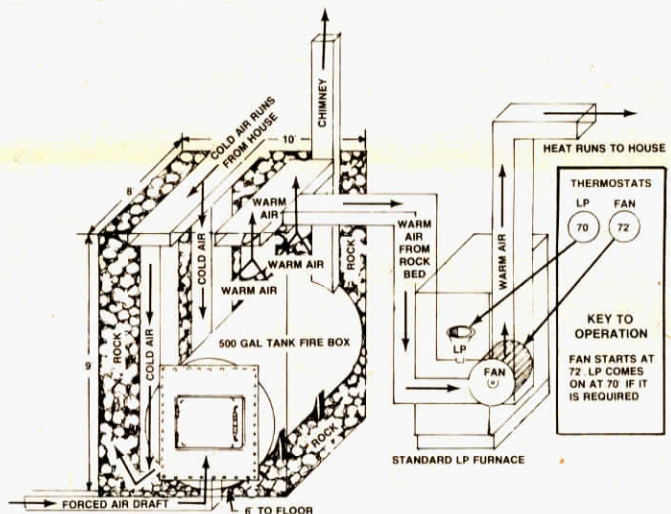
The anhydrous tank has a 20-in. square door for filling with firewood. Heat from the burning wood heats the 3/16-in. thick steel walls of the tank and warms the surrounding rocks in the room. A forced air draft controls how hot the fire burns.

The only opening into the sealed room is the door into the "anhydrous tank" furnace. Keeping the room sealed lets Behne store heat more efficiently.

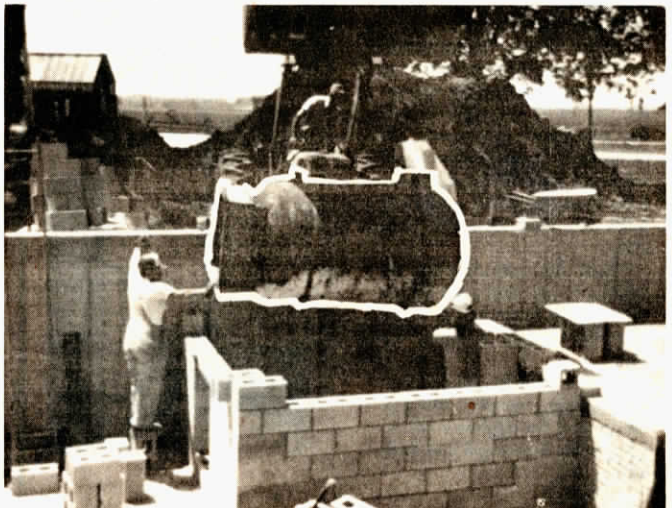
He burns wood in the furnace but did try burning crop residue. He notes that he only needs to clean out the ashes once a winter.

The air circulation system consists of cold air entering the bottom of the room through two 16-in. dia. tubes. A fan draws warmed air out through a duct on the opposite side of the room and circulates air through the house's duct system. Behne's LP furnace has separate fan and furnace controls. The fan operates at one temperature, pulling warm air out of the sealed room. The furnace is set so it doesn't kick in unless outflowing air isn't warm enough.

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Drawing above illustrates how furnace functions. Below, Behne lowers the 500 gal. tank into the 8 by 9 by 10-ft. room during construction. He filled the rest of the room with rocks and sealed it.



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