

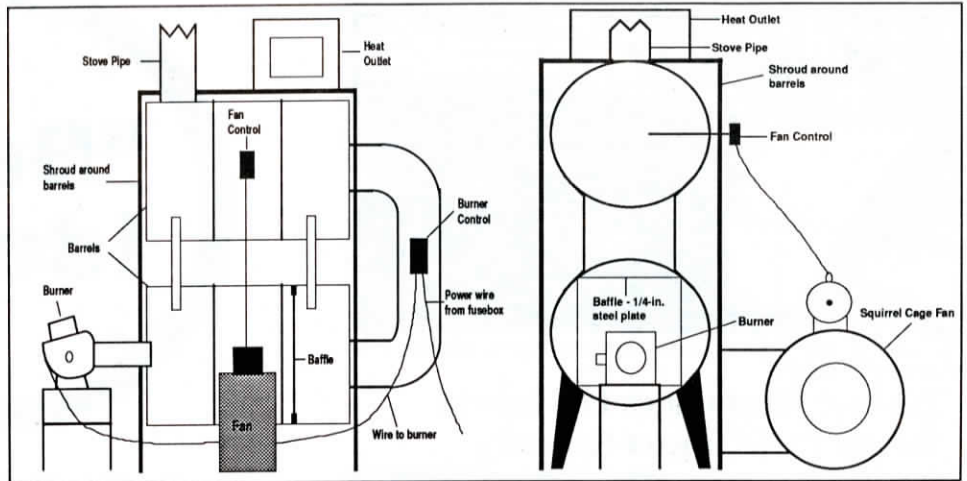
Shop Furnace Built With 45-Gal. Barrels

When Robert Kerr decided to heat his 30 by 32-ft. farm shop, he knew he couldn't justify spending a lot of money but he also knew he'd need a good-size stove or furnace to do the job. In addition, he wanted a stove that would run automatically without much tending on his part.

He decided the only solution was to build something himself. "I spent just \$125 to build this 115,000 btu oil furnace. It puts out a tremendous amount of heat yet burns just 2 1/2 to 3 gal. of fuel in a 12-hour period. Operation is totally automatic with thermostatic control," says Kerr, noting that he's had almost no problems with the furnace in 5 years of use.

It consists of two 45-gal. barrels mounted one on top of the other. The barrels are surrounded by a sheet metal housing that captures heat thrown off by the barrels. A squirrel cage fan, off an old furnace, blows air into the housing around the barrels. Hot air comes out an outlet at the top of the housing and blows into the room.

A 1-gal. per hour oil burner mounts on a small stand outside the end of the bottom barrel. It points into the end of



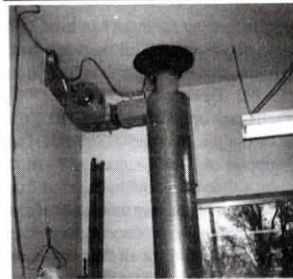
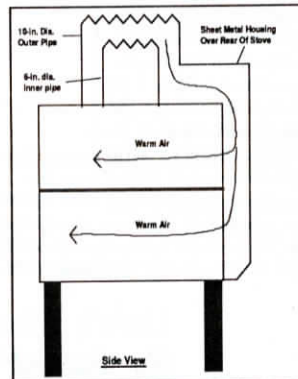
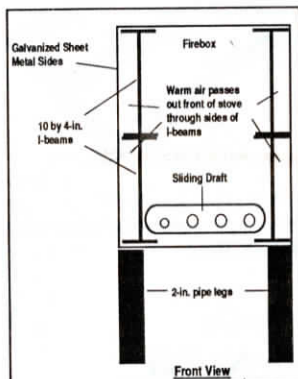
the barrel, shooting directly against a 1/4-in. thick steel baffle plate mounted about 2/3 of the way down the length of the barrel. Heat passes around the top, sides, and bottom of the baffle plate and up through a section of stove pipe that runs from the end of the bottom barrel up to the end of the top barrel. A stove pipe exits out the top of the top barrel.

Kerr says the top barrel acts like a heat exchanger that keeps excess heat from

exiting up the chimney. Air blown in and around the barrels by the squirrel cage fan draws off heat from the barrels. A fan control sensor mounts in the top barrel, turning the squirrel cage fan on or off as needed depending on the level of heat in the barrels. An "old-style" burner control unit mounts in the pipe between the two barrels, turning the burner on or off as temperature in pipe rises or falls. "The amount of heat you can get out of

the stove depends on the size of the burner nozzle you use. I'm using a 115,000 btu nozzle. One improvement I plan to make is to run ductwork from the fan up to the ceiling area so it will draw warm air down from the ceiling which should help circulate air even better than it does now," says Kerr.

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Innovative "I-Beam" Shop Stove

"I've never seen a stove as good as this one on the market," says Curtis Fowler, Yreka, Calif., who built his own wood-burning "I-beam" shop stove with the help of his friend Mardell Day.

The home-built stove has two unique features: the sides are made out of heavy-duty I-beams and it has a fan-driven air exchange system that sucks hot air down from the ceiling, blows it down the outside of the flue, and through the stove before it's blown out into the shop.

Each side of the stove is made out of two 26-in. long pieces of 10 by 4-in. I-beam stacked on top of each other. The top, bottom, and back of the stove are covered with 3/8-in. thick steel plate.

There's a 12 by 13-in. door on front with a sliding draft opening built in below it. Legs are made from 2-in. dia. pipe. The main flue pipe is 6-in. dia. It's covered by a 10-in. dia. flue pipe that runs up to within a foot or so of the ceiling.

A Dayton 2-speed squirrel cage fan mounts at the top of the outer flue pipe and blows warm air from near the ceiling down through the outer pipe to a housing made out of galvanized sheet metal at the back of the stove. From there, the warm air is pushed through either side of the stove, along the outside of the I-beams, which are also covered with sheet metal. As air passes down through the flue and through the stove, it picks up heat so it's

hot when it comes out the front of the stove. The 2-speed fan is wired into two thermostats that mount on the inner flue pipe. The fan's low speed is activated when flue temperature reaches 120° F and shuts down when temperature drops to 110° F. The fan's high speed kicks in when flue temp reaches 160° F and shuts down when it drops to 140° F. "It's so efficient I don't have to build much of a fire to heat my shop. I seldom

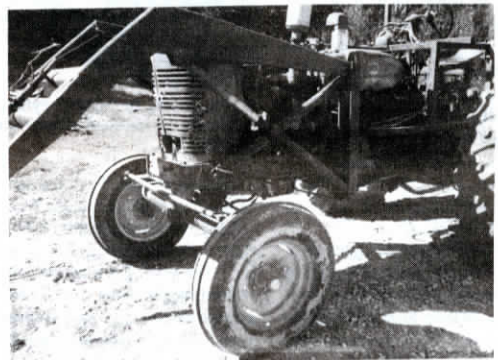
After years of getting stuck when doing loader work with his IH Super M-TA with a narrow front end, Gerald Fedler, Ft. Madison, Iowa, found a way to solve the problem by mounting the steering axle from an Oliver 535 combine on the tractor. "I made the change about a year and a half ago. Factory-made wide front ends are hard to find and expensive. This modification worked much better than I expected and now I can go places I never would have tried before," says Fedler. He mounted the entire axle assembly from the combine on the Super M-TA, including the power steering cylinders. He had to build a large mounting bracket

to fit under the front end to hold the axle. It has a pivot built into it, allowing the axle to oscillate back and forth from side to side. He mounted the combine steering wheel and steering motor in place of the tractor's original steering column. The tractor had power steering on it originally so he just used the tractor pump to power the combine steering components.

"It was really quite an easy conversion to do. Anyone with a little hydraulic knowledge and a welder and cutting torch could do it," says Fedler. Contact: FARM SHOW Followup, Gerald T. Fedler, 1819 Otte Road, Ft. Madison, Iowa 52627 (ph 319 837-6352).

to build a big enough fire to kick in the high-speed thermostat since that puts out so much heat I have to open the door. The only parts I bought new were the fan and thermostats, which cost about \$60 when I built the stove 10 years ago. Everything else was left over from other projects."

Contact: FARM SHOW Followup, Curtis Fowler, 403 Walters Lane, Yreka, Calif. 96097.



Wide Front Axle For IH Tractor

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