



The Amazing \$500 Wood-burning Stove ... That You Can Build for \$35 (or Less!):

Build this stove from a used hot-water tank to heat your house.

There's no shortage of old electric water heaters in most of this country's landfills and dumps. MOTHER staffer Clarence Goosen contemplates all the groovy wood burners he'll be able to make from one morning's haul of junked water heater tanks. The sparks fly as Robert Smyers converts an old water heater into a stove. Drawing shows general details of ""water heater tank to wood-burning stove"" conversion.

(Note: Since this article was published in 1978, building codes and homeowners insurance rules have changed, and federal rules governing wood stoves have been adopted. This stove design may not comply with various federal and local regulations. Readers are advised to check with appropriate officials before installing this stove in their homes. —Mother)

There must be a better way to go about assembling a homemade wood-burning stove. And there is' As MOTHER was recently shown by Wilton, Iowa's Robert Wars (who, incidentally, just happens to be the brother of MOTHER researcher Emerson Smyers).

"What you want to build your stove out of is a discarded electric water heater tank ... for at least four good reasons:

"In the first place, the walls of such a tank are a minimum of three to four times as thick as the metal in a 55-gallon barrel ... which means that a water heater drum will make a much tougher stove that will last a lot longer.

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"Second, when you build a firebox from a junked water heater tank, it's very easy to make the stove as airtight and efficient as any \$500 wood burner on the market.

"Third, if you construct your heater the way I tell you to, it'll be easy to load, it will have excellent fire and temperature control, and it'll look classy enough to put on display right in the living room.

"And fourth, you can build one of my 'water heater' stoves for even less than most barrel wood-burner. As a matter of fact, I scrounged up everything that went into mine. Which means that the stove cost me only the labor; one good long day that I used building it."

Well, now. Those were pretty big claims. Especially since we were listening to them while looking at some photographs of a flat-out good -looking stove. So, in our best and most devious "backwoods of North Carolina" fashion, we challenged ole Bob to prove everything he'd just told us.

And then just to put him at as large a cost disadvantage as we could we spit a couple of times, looked at Smyers out of the corner of our eye, and innocently said, "Of course you know, Bob, that a lot of our readers have trouble scavenging up project materials the way you do. So, other than letting you recycle an old water heater tank, we'll just have to make you buy and pay new prices for everything else that goes into any stove you build for us."

"Oh, of course!" Bob answered. And it wasn't so much what he said as the way he said it which told us right then and there that we were the ones who'd been had. Shucks. This Iowa slicker knew from the beginning that he could build a \$500 stove and never use more'n \$35 worth of materials doing it.

The Secret of the Smyers Stove's Low Cost:

As Bob Smyers drafted his brother, Emerson, and set about the construction of one of his now-famous stoves, it was easy to see that the recycled-into-a-firebox electric water heater tank was the real secret of his wood-burner's low cost. Also its ease of assembly. Heck. Once you've found your "junked but still in good condition" water heater tank, you've already got about three-quarters of your stove "custom made" just the way you want it.

And it really isn't difficult to find one of these tanks, either. Most of the landfills scattered around the country, in fact, are so filled with the containers that we've- developed a sneaking suspicion the old water heaters breed out there. Maybe not ... but there sure are a lot of 'em "out there" for the taking.

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Any discarded electric (forget the gas ones for this project) water heater from 30- to 50-gallon capacity will convert nicely into a stove. We've come to think, however, that one of the 30-gallon tanks (with a diameter of 20 inches and a length of 32 inches) makes the best-looking wood-burner of all.

Pick and choose a little from your friendly local landfills, dumps, or the alleyways behind appliance stores until you find just the tank or tanks you want. Then (if you're doing your "shopping" in a landfill or dump) strip off the lightweight sheet metal "wrapper" and insulation right in the field and make sure that the main tank inside isn't rusted out or filled with corrosion. Or, if circumstances dictate, you can do this stripping back home in your shop and then haul the castoff sheet metal and insulation back to the dump when you're ready to discard them.

The Rest is Easy:

Anyone with a cutting torch and welder will find the rest easy. And if you don't own or operate such equipment, scout around until you find a competent welding shop that'll convert your tank at a reasonable price.

Lay the container on its side and add legs and the "loading hopper box with hinged lid" as illustrated in the accompanying drawing. Then weld in the "exhaust stack" or "smoke boot" as shown. Make sure that all seams are airtight and that the hopper box lid fits snugly (airtight) too. he draft control is, perhaps, the most critical part of all. If it's well made and doesn't leak, you'll have good and positive control of your finished stove's blaze and temperature at all times. Conversely, if it isn't well made and it does leak, you won't. Work carefully and do the job right.

Once the stove is completely assembled, paint all its outside surfaces with Rustoleum Bar-B-Q black paint or "high temperature engine paint". You've just built yourself one mighty fine wood-burner! And even if you bought everything (approximately 65 pounds of steel) except the recycled water heater tank, you shouldn't have spent more than \$35 on the project. (Bob and Emerson built MOTHER's demonstration model in one short day six hours for a total cost of \$31.54.)

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It Works!

MOTHER researcher Dennis Burk-holder has been using our original "water heater wood stove" to warm his entire 1,100square-foot house since last fall and he's constantly amazed at the large amount of heat and small amount of ashes the unit produces. He's also been pleasantly surprised by the way the heater holds a fire overnight. "All I do in the morning," says Dennis, "is jar the stove a couple of times, open the draft a bit ... and the ole log-burner snaps right to life."

Homemade Wood Stoves:

How to Put Together Homemade Wood Stoves

Let's face it - heating costs are going up and they're not coming back down any time soon. The use of natural gas, oil, and expensive electric services is a great way to spend thousands of dollars a year heating your home.

However, if you are a little thrifty, can find a used hot water heater and want to try and replace the pricey piped in energy you use for heating, home made wood stoves are a great option.

What You'll Need To Make Your Own Wood Stoves:

Old Water Heater Once upon a time, homemade wood stoves were made with old 55 gallon drums. Today, they are more often put together with garbage hot water tanks because they are easier to find and actually work a little better. They are thicker than the barrels so they will last longer and they can be made more airtight than a drum ever could be. Many people are now even using these homemade wood stoves in their homes instead of just in a garage or shop where no one cares how ugly they can be.

Building Home Made Wood Stoves:

After finding your 30-50 gallon electric water heater, make sure the inside of it is fit for conversion. It should not have any rust or corrosion inside. Make sure you remove the steel wrap layer around the heater to get to the inside and check - this part is very important.

Now, turn the hot water heater on its side and weld on small metal pegs for legs - the size and style is up to you - they just need to be able to hold the heater up. Now, cut off part of the top of the heater and turn it upside down and weld it back in place.

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Weld vertical sides and a flat section of the steel to the top of the upside down section of the water heater you cut out to create an air channel for inside the stove. Place a hole in the back of that upside down piece to funnel air into the channel. You will ensure the gas in the stove goes forward toward the room and not up and away from the room when heating.

Now, drill a hole in the back of the stove top and make a cover that you can attach to a steel rod for easy opening and closing of the air vent. This is to make lighting your stove easier. Now, create a hole near the bottom of the stove that you can pipe outdoors where the stove can draw air from. You don't want to draw the air from inside the house. It wastes heat and can be dangerous. Attach a lever here to control the intake as well.

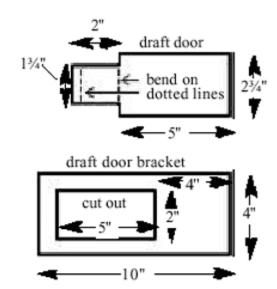
If your home does not already have a chimney pipe, install one in the roof that you can then attach to the vents on the back of your new wood stove.

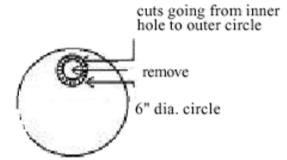
Finally, if you so choose, you can paint your new homemade wood stove whatever color you like. It will make it fit into your home more effectively and preserve the metal. It might seem like a lot of work, but it can save you a tremendous amount of money over a needlessly pricey wood stove from the department store and it can be a fun and rewarding project for you and your family.



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