

## He Melts Aluminum With Wood-Fired Furnace

Think you can't melt metal with wood? Think again. Robert Ferreira uses all kinds of scrap wood to melt aluminum for his casting hobby.

"I read that you can't use wood, but I just cube whatever wood I find, and it works great," says Ferreira, who also built his own melting furnace and tools. "I can get a melt going in about 20 min. with wood."

The furnace is an old water tank lined with firebrick. Ferreira cut a door in the tank.

He drilled bolt holes in the door, the tank above the door and the bricks and then countersunk the holes on the inside surface of the bricks for nuts. After mounting the bricks, he filled the holes around the nuts with a mix of fireclay, sand and water.

The access plate at the bottom of the tank serves as air inlet. A hole cut in the top serves as chimney and a damper to control the draft in the furnace.

"I can move the fire up and down the furnace by opening and closing the door on top to control the draft," explains Ferreira. "All I need is 1,200 to 1,300 degrees to melt the aluminum."

Ferreira uses his furnace to melt down cast aluminum lawn mower motors, broken propellers, and any kind of cast aluminum. He has found aluminum cans and extruded aluminum to be too pure for his uses.

"I make molds of whale flukes and manatees as well as casting aluminum repair parts that are hard to find," explains Ferreira. "For example, I made a leg for a guy's stove."

He picks up cast iron Dutch ovens and pots at flea markets and garage sales to use as crucibles for holding the aluminum as it melts down. The crucible hangs from a bolt inserted through the top of the furnace. Ferreira handles the crucible with a pair of hooks he made.

"I just put the pieces to be melted in the pot, put the cover on it and let them melt down," he says. "As they melt, any oil or other residue burns off or floats to the top."

To clear the dross or impurities out of the melted aluminum, Ferreira uses old steel serving spoons. When he has excess melted aluminum, Ferreira pours it into steel cupcake tins to make ingots that can be melted down again.

"People throw away lawn mower engines, yet cast aluminum is worth about 60¢/lb.,"



**Furnace is made out of an old water tank lined with firebrick. Ferreira uses furnace to melt down cast aluminum lawn mower motors and other cast parts.**



**"I make molds of whale flukes and manatees, an also cast aluminum repair parts that are hard to find," says Ferreira.**

he points out.

Ferreira uses sand, fireclay and water to cast pieces. Here too he uses homemade tools and casting boxes. If he wants a hole or hollow center in the casting, he uses a mixture of mineral oil and silica sand to make a core material that pours out of the mold when finished.

Ferreira taught himself how to melt aluminum, make casts and pour molds with the help of books not found in most bookstores. "If people are interested in molding their own aluminum pieces, I would be glad to suggest some books they could read or answer any questions I can," says Ferreira. "Just send me a paper with a stamped, self-addressed envelope, and I will send a reply."

Contact: FARM SHOW Followup, Robert Ferreira, 9775 W. Sunny Day Ct., Crystal River, Fla. 34428 (ph 352 795-0049).

## Simple Shop Ideas Save Space, Time

Mike Miller, Athens, Ill., jumped at the chance to pick up a section of four old school lockers for use in his farm shop.

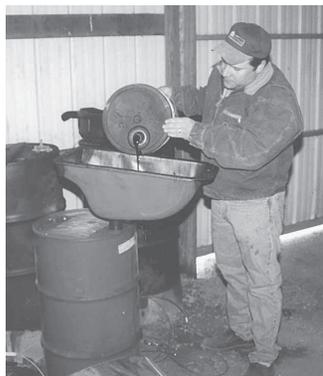
The lockers hold a variety of items. One holds towels, another electrical tapes and miscellaneous supplies. The nice thing about the lockers is that they do all of this in a very compact place, and they keep items absolutely clean.

Miller also came up with another useful idea for his shop. He connected an old tractor oil pan to a barrel to make it easy to dump used oil. The pipe nipple on the pan fit the bung hole on the barrel.

In the bottom of the pan, he placed a screen to catch debris. He has a friend who burns oil in a furnace.

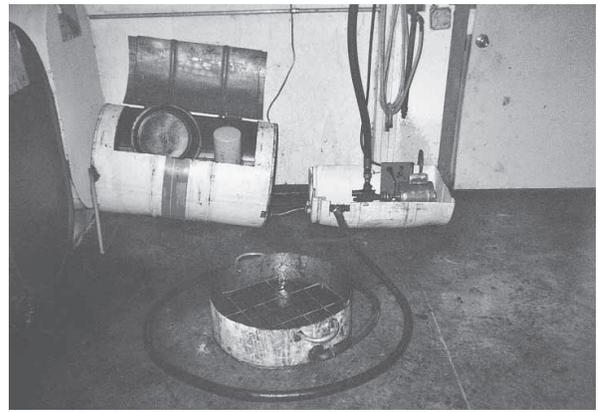
A big advantage of using the large tractor oil pan is that Miller can pour a 5-gal. can of oil into it without having to wait for it to drain down.

Contact: FARM SHOW Followup, Mike



**Connecting an old tractor oil pan to a barrel makes it easy to dump used oil, says Mike Miller.**

Miller, 900 W. State Rt. 124, Athens, Ill. 62613 (ph 217 971-0769).



**An electric-powered gear pump sucks oil from a portable oil pan into a 55-gal. storage drum.**

## Used Oil Pumping System

Some rear ends and differentials in tractors carry up to 50 gal. of oil, so you can get a lot of backache carrying oil pans back and forth.

Gary Elston, Mulvane, Kansas, used salvage materials to come up with an automatic oil pumping system in his shop. It uses an electric motor and a gear pump pump to automatically deliver used oil from his tractors to an indoor container and then to a pair of 300-gal. storage tanks outside the shop.

"We burn the oil in a furnace to heat our shop," says Elston.

Used oil is sucked from a portable oil pan through a 15-ft. long hose to a "T" line inside a small plastic barrel cut lengthwise in half. The "T" line is hooked up to a gear pump that's driven by a small electric motor. The oil is delivered into a nearby 55-gal. barrel with a lid cut into its top. A section of perforated bin flooring, mounted 6 in. above the bottom of the barrel, serves as a screen when draining used oil out of filters and small oil pans.

Whenever the 55-gal. barrel gets full, Elston opens an in-line valve to suck oil from the barrel through a hose that leads outside to the two storage tanks.

"It lets us pump used oil straight from the oil pan into storage tanks instead of having to carry it in buckets," says Elston. "A switch



**When the storage drum inside is full, oil is pumped to a pair of 300-gal. storage tanks outside the shop.**

that mounts on a control panel inside the half barrel is used to turn the electric motor on or off. To make the portable oil pan we cut the bottom six inches off a 55-gal. metal barrel, then cut a hole in one side and attached a 1-in. dia. hose to it."

Contact: FARM SHOW Followup, Gary Elston, 427 Franklin Ave., Mulvane, Kansas 67110 (ph 316 777-1234).

## Big Toolbox Features Rotating Trays

Wanted: A few good tool users to test and report back on a new power toolbox.

The Tool Turn toolbox is a new product not yet in production. Inventor Jim Young and business partner Pauline Allen are building 20 units and looking for a cross section of people to try them out.

"Ideally, we would like to see a couple of farmers, carpenters, electricians, plumbers, heavy construction workers, utility, government or municipality workers try out prototypes," says Allen. "We want them to evaluate it and provide suggestions for improvement before we go into full scale production."

Young has already crash-tested his prototype. He flipped his truck, totaled it out and ended up in the hospital with a broken arm. The toolbox, which had been in the back (with no restraint), survived without a problem. In fact, it is pictured with this story, but in a new truck.

The 24-in. wide, 64-in. long and 23-in. high toolbox is designed to sit in a full size pickup box. It is available in diamond tread pattern aluminum or powder-coated black.

Each tray is 4 by 12 by 21 in. A switch on the left side turns the device on, while a toggle switch on the right rotates the trays. Suggested retail price is expected to be around



**Tool Turn toolbox is fitted with 4 by 12 by 21-in. trays. A toggle switch is used to rotate the trays.**

\$2,495. Allen and Young plan to offer a significant discount to testers and a money back guarantee.

"Once they have reported back on features they like or dislike, they can get their money back," says Allen. "If they like the concept, but dislike the prototype, they can give it back and apply the money against the improved production model, or they can keep their prototype."

Contact: FARM SHOW Followup, Pauline Allen, Tool Turn, 12985 Tom Smith Rd., Henderson, Ky. 42420 (ph 270 860-6633; pauline@toolturn.net).