"Pre-Heater" Makes Waste Oil Burn Better

Whether burning motor oil or vegetable oil, pre-heating makes it burn better, says Craig Kepner, who wanted to heat his house with waste oil but didn't like burners on the market.

"I decided to make a preheater block and heating cartridge for the waste oil and an air atomizing nozzle," says Kepner. "The aluminum preheater block heats the oil and air as they're siphoned to the nozzle. Once the oil reaches the nozzle, it works like a conventional burner."

Kepner experimented with burner nozzles for a number of years. He uses a Bridgeport milling machine for computerized machining. This allows him to make most of his own parts.

He made a digital temperature controller that reads the pre-heater block and displays actual temperature. A digital relay connected to the controller turns the heater block on or off as needed.

To get maximum energy out of the oil, Kepner designed a "retention head" that resembles a turbine. The heated oil/air mixture is sprayed through the retention head before being ignited inside the furnace or boiler by a standard electrode.

Once Kepner had his system in place, and he realized how well it works, he decided to start selling kits.

"I had the parts, so I put some together and sold a few. Then I sold another 20 and then 50, and sales just kept building," he says.

Initially he just sold the preheater block with its cartridge. Today he sells a variety of kits to meet customer's needs. Some customers have dabbled in waste oil and already have some of the components.

"A full kit sells for $600 and comes with a regulator, pressure gauge fittings, controller, thermocouple, preheater, nozzle and retention head," says Kepner. "The heater block and nozzle go for $170. Most go for the in-between kit that is $320 and includes the preheater block, nozzle, thermocouple, digital controller and retention head."

For those who prefer a pressurized system instead of a siphon system, Kepner supplies a pump. "People can get their output to more than 500,000 btu's by adding a pump," he says. "If you want to burn waste oil, there are a lot of options. With a burner system like this, any kind of waste oil, from vegetable to transmission fluid, is fair game."

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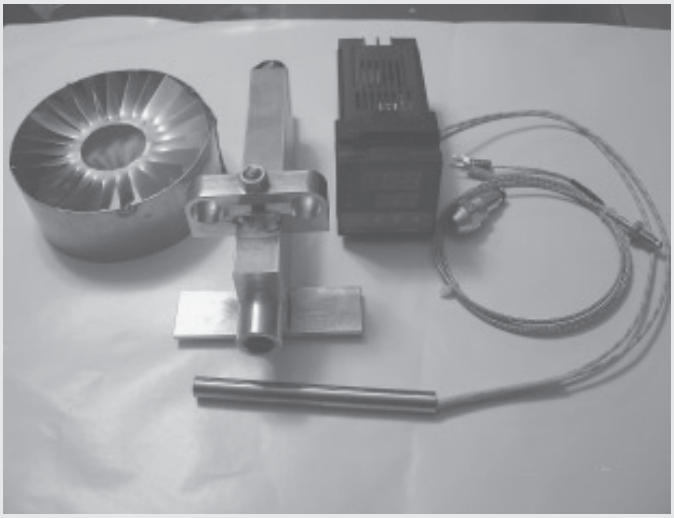
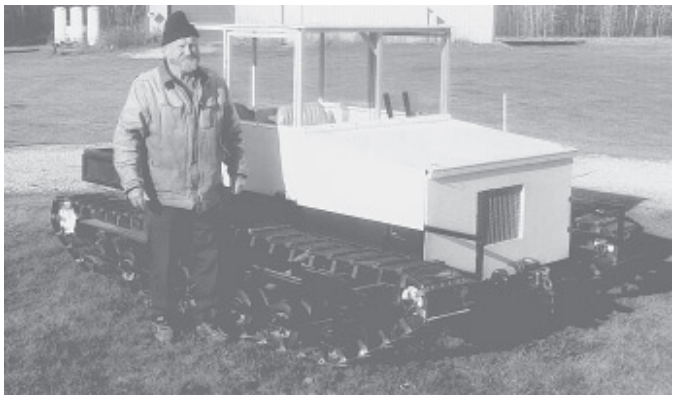


To heat his house with waste oil, Craig Kepner made a preheater block and heating cartridge as well as an air atomizing nozzle.



Joseph Rupinski says his home-built "Snow Cat" is so light it rides on top of deep snow.

Home-Built "Snow Cat"

"Sometimes the snow gets so deep around here that neither my Gator nor my 4-wheeler will go through it. But my home-built 'Snow Cat' rides right on top of the snow, even though it weighs about 1 1/2 tons," says Joseph Rupinski, Twining, Mich.

His Snow Cat measures 12 ft. long and 6 1/2 ft. wide and rides on 12-in. wide rubber tracks. It's built from a 1985 Chevy Chevette 4-cyl. engine and automatic transmission connected to a Chevy S-10 rear end. The body is made from plywood and fiberglass and the frame from 1 1/2 and 1-in. box tubing. The tracks are made from used conveyor belting with channel iron cleats bolted onto it, and ride on 10-in. dual bogie wheels purchased from Harbor Freight. The drive wheels on back were made by welding the wheels off a garden tractor to the S-10's wheels.

The machine has an enclosed cab made from plywood with plexiglass windows. Inside the cab are a pair of folding boat seats. On back is a 4-ft. long metal bed with 8-in. high sides. The hood comes off to provide access to the engine.

"Even though it's a big machine, it's light enough that it rides right on top of the snow," says Rupinski. "I spent less than $500 to build it. I bought the Chevette for $200 and got the conveyor belting from a gravel pit mining company. I didn't use any blueprints at all to build it. I just laid the iron on my shop floor, pulled out my ruler and soapstone to mark the steel, and started cutting."

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Zweifel's T-post driver hangs from the front edge of loader bucket.

Bucket Post Driver Is Speedy, Safe

Mike Zweifel's simple, inexpensive bucket attachment makes driving T-posts faster, easier and, more importantly - safer.

"Bucke-T-Driver is far safer than trying to level your loader bucket out and slamming a T-post into the ground while a worker-helper is holding on to the T-post for dear life," says Zweifel, who invented Bucke-T-Driver at a friend's request a few years ago.

He developed five models - each with 2-in. inner diameter barrel drivers that connect to mounting brackets bolted or welded to the front edge or side of a loader bucket.

The most efficient method is to load T-posts in the bucket - the bucket is completely upright and the extra weight helps drive the posts. A helper on the ground slips the post into the Bucke-T-Driver barrel. Most models use a clamp at the bottom of the driver to hold the T-post long enough to set it in place on the ground. The helper releases the clamp, steps out of the way and the bucket operator pushes the T-post into the ground.

"The barrel hangs straight up and down, so it's self leveling," Zweifel says, though some fencer installers also use a torpedo level to ensure the posts are straight. Two of the Bucke-T-Driver models have 3/4-in. welded hitch knuckles for the head components for faster alignments with a tighter head fit that works well on extremely dry or hard ground. Driver-V is the most advanced unit with a convenient spring latch to hold a T-post, which releases by simply lifting the bucket after the post is driven in place.

Zweifel recommends using better quality, T-posts in hard ground. He tested his driver on a hard-packed driveway with good posts. The front of the tractor rose up, but the posts didn't bend and went into the ground without a problem.

"I loaned it to a doctor who put in 750 posts and only bent six of them and averaged a post every 30 seconds," Zweifel says.

He offers less expensive models for people who only need to put in fence posts occasionally and models for frequent fencers who may also be dealing with hard ground.

Zweifel makes, packs and ships the drivers from his Enid, Okla., shop. Drivers and mounts range from $28.50 to $74.

Contact: FARM SHOW Followup, Bucke-T-Driver, Mike Zweifel, 1618 Indian Drive, Enid, Okla. 73703 (ph 580 747-9288; mrzweifel@yahoo.com; www.bucketdriver.com).

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