

Lloyd used a 1950's Chevy transmission and a Studebaker rear end to create his tractor.



Piecemeal "Tractor" Brought Back To Life

When Bill Lloyd's grandfather, affectionately known as "Pop," received a 10-hp. Kohler engine for Christmas in 1964, he decided to use it as the base for a made-from-scratch yard and garden tractor.

"Pop was a self-taught mechanic who understood equipment," says Lloyd. "So, he picked up a 1950's Chevy transmission and a Studebaker rear end from a wrecking yard and set about putting his 'tractor' together."

The engine was manual start with a pulley and rope. To drive, Pop ran a belt from it to a small jackshaft and a reduction gear that went into the transmission.

One shift lever was for 2nd and 3rd gears with the other for 1st and reverse.

"When you pushed the clutch in it engaged an idler pulley that released the belt to allow a change in gears. You had to be gentle as you could feel the gears rolling by in your hand before it dropped into the right spot."

Pop built the tractor to have no hidden bolts. Everything was easily accessible for maintenance or repair.

When Lloyd and his cousins dug it out of

a farm building in the 90's they attempted to get it running but found it had an engine coil issue. Kohler tech support didn't even list the specific manual start engine or stock a usable part so Bill's brother Tim, a small engine mechanic, found a Kohler conversion kit and adapted the system to a conventional coil and 12-volt battery.

Lloyd found a set of Packard wheels at a local swap meet and some used trailer tires to replace the existing wheels and rubber.

"It runs good," he says. "It's tough to steer with the manual steering and the engine is perched up high so you have to be careful it doesn't flip over going around a corner too fast, but it can plow a garden, pull a cart or push snow."

Lloyd is hoping to enter the unique tractor in the Somerset Pasture Party, a small tractor show near Charlottesville, Virginia.

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How To Install Fence Posts On Rocks

With chain, concrete wedge anchors, and a little welding, Tim and Renée Grace figured out a way to make a boulder work for them instead of getting in their way when they installed a fence.

The big rock in a steep area on their Tennessee property was right where a T-post should go. Tim started with a steel plate, then arc welded a corner section of steel to support the post and welded a chain link to it. He wrapped the other end of the chain around the post and welded it in place.

Using a cordless 20-volt DeWalt hammer drill, he drilled two holes through the plate into the rock for two concrete wedge anchors to bolt to.

"The post flexes, but holds tight," Renée says, noting the post would be at an angle if it was bolted directly onto the plate.

After five years, it's still in place and the Graces have installed a few more posts the same way.

"We installed them in a downhill location crossing a drainage creek fed by a wet weather spring - nothing but rock," Tim says. "The T-post lays on the ground until we pull wire and start tying it off."

"It's a really good solution for tricky, rocky locations," Renée says.

In areas where there are lots of trees, they run high tensile wire on top to catch falling



Using a cordless 20-volt DeWalt hammer drill, he drilled two holes through the plate into the rock for two concrete wedge anchors to bolt to.

limbs. The top strand might break, but the fence stays in place.

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Kramer fitted a boiler with a chopper and feeder system to use loose hay.

Boiler Uses Hay To Heat Farmhouse

During the financial crisis of 2008, Michael Kramer began looking for a way to use resources on his Pennsylvanian farm to reduce energy costs and become more self-sufficient.

Since he had lots of hay, he started looking at ways to use it to heat his older farmhouse.

In 2014, he took the first step by purchasing a Denmark-based company's biomass boiler that Cornell University was selling (www.reka.com/en/).

"I wanted something automated, and I thought the Danish REKA boiler had excellent possibilities," says Kramer. "The programming is configurable, so I figured it would work with burning my grass and hay to provide heat for my house."

He set the boiler in a small building about 60 ft. away and buried an insulated pipe to carry the heated water to his home.

To feed the boiler, he pieced together an assembly line of equipment beginning with a chopper that shreds large square bales into approximately 1/2 in. pieces. Kramer accomplishes this portion of the process manually by forking hay into the chopper about once a month.

The chopper blows the loose hay onto a moving floor which feeds a bin that holds up to four bales worth of hay.

"One large square bale lasts about a week in the coldest seasons," Kramer says. "This would vary with the temperature and house size but that's about average for us."

The hay then moves from the bin floor into a set of silage wagon beaters that direct it into a 10-in. open topped auger which delivers it

into the boiler.

The boiler is fitted with electronic controls varying the air and fuel supply to control the amount of required fuel. An oxygen sensor in the exhaust stack optimizes combustion and a probe in the water jacket monitors temperature.

Kramer uses a programmable controller to run an electric motor that operates the beater and auger assemblies.

"The biggest challenge was matching everything I designed to what the boiler wanted. It assumes it has an unlimited supply of fuel that's always available and it was up to me to ensure it got it. That's where the controller comes in. The moving floor, feeder bars, beaters and auger needed to work together properly."

Kramer says the boiler heats the water to about 180 F and circulates it through his home's radiator system, maintaining a comfortable and consistent temperature.

He's working on an automated and safe way to eliminate the manual feeding of the chopper to make it more user-friendly.

"It works great but it's probably not for everyone," he says. "It has some good possibilities for farms or greenhouses with a supply of by-products such as rice hulls, cherry pits or peanut hulls. The boiler is made to burn almost anything."

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Pressed and dried fire log cakes can be sliced, crumbled, or burned whole.



Turning Wastepaper Into Fire Logs

A recent email from a book publisher described a method of turning wastepaper into fire logs. A quick review of available YouTube videos, websites, and products suggests there are many ideas out there on the subject.

One of the better videos was found on the Tiny House Listing channel. It has had more than 9.8 million views.

FARM SHOW readers can easily do it too.

Start with junk mail, newspapers, and magazines (anything but FARM SHOW!). You can even add leaves and other dry biomass.

Place in a container with lots of holes drilled through the walls. A 5-gal. plastic bucket is a common suggestion. Slip the bucket into a second container and fill both with water. Let the material soak overnight or longer.

Make the maceration of the wastepaper easy by attaching a rod (by weld or threaded nut) to an old circular saw blade and power it with a drill.

Once the material is broken down into a pulpy mass, remove the inner container.

Use any of several methods to press the material. Suggestions include setting a piece of wood slightly undersized to the perforated container on top of the wet mass and pressing down on it. Even stomping on it with a foot will do.

Several YouTube videos suggested using a caulk gun to make briquettes. Cut a slice down most of the length of a pvc pipe sized to fit the gun. Fill the tube with wet materials, slide two ring clamps over it and tighten down lightly. Pump the gun and force the moisture out.

Regardless of how the water is forced out, what is left is a cake of material or briquettes that need to be dried to roughly 20 percent moisture or less. Cakes can be sliced, crumbled, or burned whole.

If plans are to burn the logs in an enclosed space, consider any toxins that might be released from glossy printed material. Even cardboard may be chemically treated, and food packaging often contains PFAS, the so-called forever chemicals.

Search for paper fire logs or bricks on any browser or in the search window on YouTube.