

# Guillotine Wood Splitter

By Jim Ruen, Contributing Editor

No chainsaw is needed with Darrell Inkster's firewood "guillotine". The double-edged blade slices through whole trees, cutting them into 16-in. lengths and splitting them at the same time.

"I go through 20 cords of firewood a winter and decided to find a way to make the job easier," says Inkster. "My wife uses a Bobcat to load logs onto the feeder chain, and I run the shears."

Everything about the guillotine shears is massive, starting with the log feeding channel. It's a 28-ft. long, 14-in. wide, 1-in. thick I-beam removed from a nearby bridge when it was rebuilt. To move logs in the 14-in. wide I-beam channel, Inkster used combine feeder chain, cutting down the cross bars to fit.

The cutting blade is 22 in. wide by 16 in. high and 1-in. thick. Recycled from the steel cutting edge of a Caterpillar dozer blade, Inkster says he got it for almost nothing, though he spent around 8 hours grinding the edge razor sharp with a disk grinder.

The splitter blade is a second piece of steel, 6 in. long and also 1-in. thick. One end of the wedge is welded to a 1/4-in. steel plate that is bolted to the shears blade. The wedge has been ground to a sharp edge. The splitting wedge is mounted at the blade's center point, but about 4 in. up from the blade edge. While only 6 in. long, Inkster says it's more than enough to split a 16-in. length of log after the shears have done their job.

"Green wood splits clean as a whistle," says Inkster. "When the blade and wedge hit older, dry wood, they tend to squash the wood fiber, pulverize and then split it."

To mount the blade, Inkster fabricated a reinforced arch above the output end of the feeder channel. He used sections of 1/4-in. thick, 3 by 4-in. rectangular steel tubing with curved ends. He welded them together at the peak to form a mount for the heavy-duty hydraulic cylinder that drives the blade.

"The curved arch distributes the pressure from the cylinder better than square beams

would have," says Inkster. "I run the cylinder off a hydraulic pump on my truck. I set the pressure at 2,100 psi, which gives the blade about 40 tons of down pressure."

The curved pieces were structurally sound, but had slight imperfections. They had been fabricated by a local bus manufacturer, but rejected for the intended bus frames.

"I was able to buy a truckload for scrap metal prices," says Inkster. "They were already bent just right for use as the arch and for support legs to raise the feeder chain I-beam off the ground. I just cut them to fit the width of the feeder track."

The arch creates a 22-in. high, 14-in. wide throat for trunks and branches to slide through. Inkster reinforced the arch with added lengths of steel tubing welded to either side. As the blade moves up and down, it's held in place by 1 by 2-in. steel bar stock that's welded to the sides of the arch. Inkster bolted pairs of 1-in. long, 2-in. dia. roller bearings to the output sides of the blade. They run against the steel retention bars and keep the blade from kicking sideways.

"I plan to add bearings on the input side of the blade as well," says Inkster. "I may grind a longer bevel into the blade also. Right now it is only tapered at the last 1 1/2 in., which creates quite an angle. I'd like it sloped more to work more like a cheese slicer than a cleaver."

Inkster mounted two hydraulic valves on the operator side of the shears. One works the blade, while the other controls the feeder chain. While he runs the shears, his wife loads logs onto the feeder chain and clears away split wood.

"We can process about two cords per hour," says Inkster. "I can cut and split a chunk every 25 seconds."

He estimates that total cash expenditures for new hydraulic hose, bearings and a few other new parts ran less than \$1,000. However, he thinks he may have spent around 100 hours building it, an investment that he says has paid off. When not using it to slice



Double-edged blade on firewood "guillotine" slices through whole trees, cutting them into 6-in. lengths and splitting them at the same time.



Guillotine's 22-in. wide by 16-in. high cutting blade was salvaged from a Caterpillar dozer blade.

and split whole trees, he can do individual sections of tree trunks.

"It goes through 12-in. poplar like nothing," he says. "The way it's designed, I can chainsaw logs up to 20-in. diameter, feed them through on end and use it like a

normal splitter."

Contact: FARM SHOW Followup, Darrell Inkster, Box 854, Dauphin, Man., Canada R7N 3J5 (ph 204 638-7297; darink@netlink.ca).

## Power Carts Not Just For Horses Any More

Power carts have long been popular with people farming with horses. The cart-mounted gas and diesel engines provide pto drives and hydraulics to run almost any equipment that can be pulled by a tractor. Looking at these carts, it's clear they have wider applications, being used as mobile or remote power sources and for non-horse drawn uses in field and pasture.

"Traditionally we have only sold our power carts to those farming with horses," says Jake Blank, I & J Mfg. "However, they could easily be pulled behind an ATV, pickup, or small tractor."

I & J offers power carts putting out from 13 to 35 hp with gas engines and 40 to 120 hp with diesel models. Their only limitations for use are traction and stopping power, though optional brakes on the carts can help with stopping.

"We have been making power carts for about 10 years," says Blank. "Our first diesels were rebuilt Volkswagen Rabbit diesels. To-

day we offer Deutz, Iveco and Deere diesels."

The carts can be ordered with rubber or steel wheels, optional brakes, and either a cast aluminum or cushion seat. The 53hp Deutz diesel power cart offers 540 or 1,000 rpm pto output and four live hydraulic outputs. The carts are equipped with hillside steering and a hydraulic stabilizer bar.

Prices range from \$6,300 for a 35hp gas engine on a two-wheel power cart to \$16,500 for a 99hp Iveco diesel on a four-wheel power cart. The 53-hp Deutz diesel power cart is priced midway at \$12,500. Forecarts (base price of \$700) are also available with smaller 9 to 24hp Honda motors with the 24hp adapter priced at \$3,200 and live hydraulics added for \$995. Options include hydraulic brakes and steering.

Contact: FARM SHOW Followup, I & J Mfg., 5302 Amish Road, Gap, Penn. 17527 (ph 717 442-9451; ijmf@epix.net; www.farmingwithhorses.com).



I & J offers power carts that put out from 13 to 35 hp with gas engines, and 40 to 120 hp with diesel models. They can be used behind horses, ATV's, pickups and small tractors.



Carts can be ordered with rubber or steel wheels, optional brakes, and either a cast aluminum or cushioned seat.

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