

Homemade fuel extender uses air movement to get more complete vaporization of fuel.



## Fuel Vaporizer Boosts Gas Mileage

A 50 percent increase in mileage saved Mike Toppen a lot of money over several years, and will soon be saving him even more thanks to today's record fuel prices. He says his homemade fuel extender uses air movement to get more complete vaporization of fuel.

"It's a matter of giving the fuel time to vaporize. I increase the length of time the fuel mixes with air before it goes into the engine," explains Toppen. "I went from 13 mpg on my '93 Ford half-ton pickup to 19."

Toppen's device consists of a 2-in. pvc pipe inside a 4-in. pvc pipe. He mounted a fuel injector inside the inner pipe. The pipe is also hooked to the air intake system. The fuel line is plumbed to a port on the main fuel rail on the motor, with the entire system mounted between the air cleaner and the carburetor.

Toppen set the system up so once the gas pedal/throttle is depressed to a certain point, the line opens and fuel is pulled from the main line to be directed through the device. A dial mounted on the dash lets him adjust the amount of fuel that passes through the device based on in-town (less) or open-road (more) driving.

A series of fins creates turbulence as the air moves through the tube. When it gets to the end of the tube, it passes into the second



Dial mounted on dash lets Toppen adjust amount of fuel that passes through device based on in-town or open-road driving.

tube and reverses direction, passing across a second set of fins. This creates still more turbulence, which Toppen credits for the enhanced vaporization.

"I don't know if the spins caused by the fins were necessary, but it worked," says Toppen. He recently sold his pickup with the device and is in the process of building a new system he hopes will work even better. He's willing to put together detailed plans for his fuel device if there's enough interest.

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Tractor pto-powered pump puts out 300 plus gpm with a 25-ft. suction head. "It's an ideal alternative to heavy gas engine-powered pumps," says manufacturer Chris Pappalardo.



## Little 3-Pt. Pump Is A Big Hit

Chris Pappalardo thought he had a great little pump for golf courses when he began marketing the TrunkPump. The tractor pto-powered pump would be an ideal alternative to heavy gas engine-powered pumps. He soon found golf courses weren't the only potential customers.

"I began getting calls from municipal governments, contractors, farmers, and even duck hunters," says Pappalardo. "A fire department saw it and wanted one for pumping out basements. We have a livestock farmer using it to pull water off a manure lagoon. Landscapers in the dry Southeast are using it to load their hydroseeders from ponds and streams when they can't access hydrants."

The pump is built to last with cast iron pulleys and a coated steel frame. The 3-in. self-priming pump puts out 300 plus gpm with a 25-ft. suction head. The polyester pump, with coated seals and stainless steel

internal hardware, can handle water, salt water, and chemicals without a problem.

The TrunkPump attaches to any Cat. I tractor, weighs only 195 lbs., and measures only 32 by 26 by 34 in., making it easy to handle. The unit is priced at \$3,289 without hoses.

"We included a hose at first, but everyone wants a different length," explains Pappalardo. "We also offer accessories, like a custom strainer that lets the user pump at depths as shallow as a half inch. Most pumps require at least a 5-in. depth."

The accessory nozzle pushes water 40 to 50 ft. from the end of the hose, thanks to the pump's maximum 52 psi pressure rating. "It's not quite fire hose pressure, but it's close," says Pappalardo.

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## Lighter Guardrail Made Specifically For Farm Use

Due to high steel prices, used highway guardrail is no longer the bargain it used to be. That has prompted companies to manufacture rails for farm use that are lighter and less expensive than standard steel rail.

All Rail of Rutherfordton, N.C., and Kahn Steel Co. of Overland Park, Kansas, make galvanealed guardrail, which uses an electrolysis process to apply zinc, rather than galvanizing by hot-dipping steel into zinc. Less zinc is used, and with 13 and 14 gauge steel, instead of the 12 gauge used on highways, galvanealed guardrail weighs about 1 1/2 lbs./ft. less but is still plenty strong.

"We're trying to handle cattle, not a semi," says Curtis Buckler of Kahn Steel. Because the company stockpiled steel, it has been able to sell new galvanealed guardrail for 25 to 50 cents less per foot than used guardrail.

Due to fluctuating steel prices, Kahn Steel and All Rail say it's difficult to quote prices. To keep costs down, All Rail manufactures modified guardrail that is 11 in. wide and costs about 40 cents less per foot than the standard 12-in. rail.

All Rail recently introduced a complete fencing system, says salesman Tom Calton, which comes in custom lengths to make gates and chutes. They also modify used 6-ft. highway posts by welding on 2 or 3-ft. sections, so they can be used for fence posts that cost about \$17 per 9-ft. post.

"Many ag users also use the W-beam 12-gauge galvanealed panel for upright posts. The 26-ft. long rails can provide three 8 1/3-ft. posts.

"Our guardrails are multipurpose," he adds. Placed around a facility, a guardrail fence serves as a corral and a windbreak - some livestock owners leave gaps between guard rails to hold treated lumber that provide a solid windbreak in winter, and are removed in the summer. Cattlemen say their animals are calmer going through guardrail squeeze chutes because there is less visibility.

While most often used for feedlots, guard-



Galvanealed guardrail uses less zinc, which keeps the price down.



Lightweight guardrail works great for feedlots and feed bunks, says the company.

rail is also used for feed bunks, mobile pens, and even landscaping.

With pre-stamped holes assembly is easy, and installing guardrail is an investment that will last for generations, both companies say.

Kahn Steel sells 26-ft. galvanealed guardrail and ships out of Kansas, Iowa and Texas.

All Rail sells 13 1/2 and 26-ft. and custom length galvanealed guardrail in 11 and 12-in. widths. They ship out of Chicago, Glasgow, Ky., and Rutherfordton, N.C.

Both companies also sell new and used highway guardrail.

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Two-piece set of magnetic-based "angles" attach to either side of truck box opening, funneling grain in a narrower flow.

## Magnetic Mount Grain Diverters

Gackle, N. Dak., farmer Roger Gutschmidt found an easy way to streamline grain flow from his truck box.

"When unloading grain, it normally fans out wider than the width of the end gate so it's hard to hit the target. A lot of grain ends up on the ground," he explains. "The Easy Angle solves the problem. It's a 2-piece set of magnetic-based 'angles' that attach to either side of the opening. They funnel grain in a narrower flow into the hopper."

Gutschmidt says the diverters are ideal for the small hopper of an air seeder, but they're handy on any grain box "especially if you didn't get the truck backed up quite straight."

The Easy Angle is made from flat iron and uses rare earth magnets, which are so strong that the weight of the flowing grain cannot budge them.

"Many of my neighbors have an Easy Angle and love it. It's easy to move when you need it," he explains. "I've sold about 30 of them to farmers in my area."

Gutschmidt sells the Easy Angle for \$45 plus S&H.

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