

Simple Hydrogen System Nearly Ready For Market

A High River, Alberta company has spent more than four years and over \$3 million to develop an economical system that lets you burn water in gas or diesel-powered tractors, pickups, semi trucks and other vehicles.

The Hydro Power Pak was invented by Ira Nissley of Williamsburg, Iowa.

By passing electrical current through a solution of purified water mixed with an electrolyte, the device splits water into hydrogen and oxygen, which are then injected into the engine's combustion chamber for cleaner, more efficient performance with higher horsepower.

"Purified water alone would work, but adding the electrolyte solution makes a superior 'water-fuel,'" says company president Doug Bender.

He says the primary market for the Hydro Power Pak is large users of diesel fuel, so early in 2004 the product will become commercially available to trucking firms for use on highway tractor units.

"For the past four years, we've had a working semi in Iowa testing one of our prototype Power Paks. It has put on 500,000 miles without one bit of trouble," Bender says. "The truck owner has saved between \$7,000 and \$10,000 in fuel costs each year. Based on this, we anticipate a six to nine-month payback for semi-truck owners."

Mounted on the frame of the rig, the Hydro

Power Pak has a 10-gal. reservoir which allows the "water-fuel" to last for about two weeks of highway driving before being topped up.

"You need to add one gallon of water for every 1,000 miles you travel," he says. "A big advantage offered by our product is that engine oil stays cleaner because there are less carbon contaminants being produced. Since the oil is cleaner, there's less wear on the engine. We've analyzed the oil after 100,000 miles, and it still comes back okay. However, we can't contradict manufacturers' guidelines and we don't recommend you extend the time between oil changes."

The Hydro Power Pak has been tested in both hot and cold climates with success. Its reservoir is an insulated container and the "water-fuel" has a lower freezing point than ordinary water. The system can be engineered specifically to any application, whether it be on a small lawn tractor or a giant earth mover. It works on engines that burn gasoline, diesel, propane, natural gas, or ethanol blends.

"We plan to start the process of setting up exclusive dealers across the U.S. and Canada by the end of this year," says Bender.

He says he is hoping the product will be available to owners of agricultural tractors and stationary irrigation pumping systems by late 2004.

Pricing for the highway tractor market will



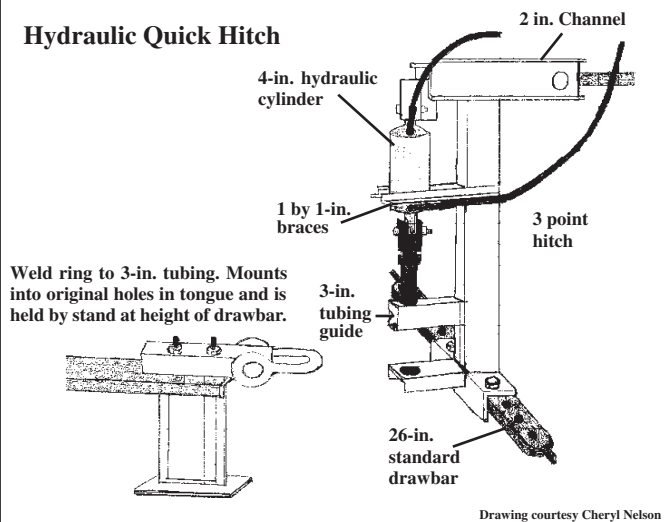
Hydro Power Pak lets you burn water in gas or diesel-powered tractors, pickups, semi trucks and other vehicles.

be in the \$5,000 (Canadian) range, and the unit will come with a 500,000-mile warranty.

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Hydraulic Quick Hitch



Drawing courtesy Cheryl Nelson

Hydraulic-Powered Hitch Pin

John Nelson, Foster, Ky., wanted to hook up his tractor to his wagon without having to get out of the tractor. He couldn't use a manually-controlled, screw-type top link because his tractor has a cab. So he made his own 3-pt. powered hitch pin that operates off tractor hydraulics.

The "power pin" is activated mechanically by a lever in the cab. Lever movement controls a hydraulic cylinder which sends the pin down through a pair of steel brackets and into a ring-type implement receiver that bolts onto his wagon's tongue.

"It's one of the handiest ideas I've ever come up with," says Nelson, who made the conversion on his Zetor 7745 tractor. "I don't need help and I don't have to leave the cab to hook or unhook implements."

The unit consists of a three-bolt hitch attachment, a 4-in. hydraulic cylinder and two connecting hoses. A drawbar attaches to the lower arms of the tractor's 3-pt. hitch, while the cylinder is mounted on a steel frame that attaches to the 3-pt.'s top link. A "jackstand" is fitted to the bottom side of the tongue on the wagon.

To hook up the wagon, he lowers the 3-pt.

hitch while backing up until the ring-type implement receiver lines up between the two brackets, then extends the cylinder to drop the pin through the holes in the brackets. To unhook, he simply raises the cylinder.

"The jackstand matches the height of the hitch pin when the attachment is all the way down," says Nelson. "I built the entire unit from scrap metal. I paid \$100 for the cylinder and hoses and another \$150 for parts."

Contact: FARM SHOW Followup, John D. Nelson, Box 360 Day Hill Rd., Foster, Ky. 41043 (ph 606 747-5894).



Hydraulic cylinder sends pin down through pair of steel brackets and into ring-type implement receiver that bolts onto wagon tongue.



K-Line system consists of a series of tough plastic pods spaced 50 ft. apart and connected by flexible poly pipe. Pods protect sprinklers from livestock.

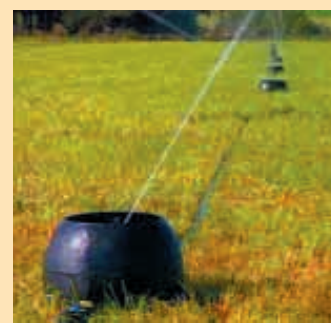
Portable Pasture Irrigation System

"It's easy to use and requires much less labor and expense than conventional sprinkler or flood irrigation systems," says Don Trott, Alpha Ag, Inc., Pleasant Plains, Ill., about the new portable K-Line pasture irrigation system, developed in New Zealand.

The system is designed to be quickly moved using an ATV or garden tractor. It consists of a series of tough plastic pods that protect small nozzles. The pods are connected by flexible poly pipe. The pods, spaced 50 ft. apart, protect the sprinklers from livestock and also keep them from tipping over as they're pulled from place to place.

The unit operates on low pressure and is designed to distribute water more slowly than conventional irrigation systems, without pounding the pasture with large volumes of water over a short period of time. The result is reduced runoff and more efficient use of water.

"It uses water more efficiently than anything on the market and can be used anywhere, without a lot of labor and expensive equipment," says Trott. "The system requires a minimum of only 35 lbs. of pressure and therefore works great for low flow application which greatly reduces run-off. As a result, you can leave the system in place without having to move it several times a day.



Row of sprinklers can be easily towed from field to field behind ATV or tractor.

Livestock can continue to use the paddock even as it's being irrigated.

"We can customize the system to the shape and size of your paddock."

K-Line can be designed to operate from an existing livestock water system. A 1 hp pump can cover 4 1/2 acres with an inch of water per week.

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