

## State-Of-The-Art Propane Injection Boosts Diesel Power

"Our DieselFlex injection system blends measured amounts of CNG or LPG into diesel engines using state-of-the-art fuel management technology," says Lance Hartman, branch manager of Maxquip, in Saskatoon, Sask. "Power can be increased by 20 to 25 percent and fuel intake can be reduced by 10 to 15 percent using this system, especially when engines are under heavy load conditions."

The DieselFlex system works by injecting gas vapor into the engine's fresh air stream behind the air cleaner and in front of the turbo air intake. Hartman says the gas vapor combines with diesel to help fuel burn more efficiently, which creates more power and uses less fuel. "Molecules in propane gas are smaller than those in diesel fuel," says Hartman, "so by blending the two fuels, the combined product burns cleaner. Another

added benefit is lower particulate emissions, so the exhaust is actually cleaner." Hartman says cleaner burning fuel should also help reduce engine maintenance and possibly lengthen the oil change interval because fewer impurities are collected by the engine oil.

"Farmers using the DieselFlex system on combines and tractors pulling heavy tillage equipment tell us they don't see any black smoke from the exhausts," says Hartman. "That means the engine is working efficiently and producing maximum power." One operator reported saving about 25 percent on his fuel bill during 2 seasons of planting and harvesting.

The fully-computerized DieselFlex system mounts above the turbo air intake and precisely injects gas vapor proportional to the turbocharge intake pressure, up to 70 psi. The kit has self-diagnostic safeguards built

into its operating system to ensure optimal operation and automatic de-activation when decelerating and engine braking.

"Gas vapor can only be injected into the air stream at exact ratios because the ignition point is very precise," says Hartman. "The gas vapor is injected into the air stream on the intake stroke, but it ignites slightly after the diesel fuel. The propane can't be injected in a pressurized system because then it would turn into a liquid, which wouldn't work."

It takes about 2 days to install a DieselFlex kit on a combine or high-horsepower tractor. The electronic control unit mounts on the firewall or body of the engine, a wiring harness feeds into the cab to switches and the controller, and the injector taps into the air intake. A 42 to 60-gal. propane tank is needed for the system, depending on the size of the engine being configured.

"A mechanically minded person who can follow a manual should be able to handle the process," says Hartman. "We also install the systems from the factory and help the operator program it exactly to their needs."

Current DieselFlex kits are designed for engines running without DEF fuel, but Hartman says the company is researching how the kits operate with the new Tier 4 technology. Prices for DieselFlex kits in the ag sector start around \$3,000, and are slightly higher for over-the-road trucks. Those systems need to be put in by certified installers. The DieselFlex system complies with rigorous CSA and UL fuel standards for safety and performance.

Contact: FARM SHOW Followup, Maxquip, 6235A-86<sup>th</sup> Ave. S.E., Calgary, Alta., Canada T2C 2S4 (ph 866 629-7847 or 800 667-5886; lhartman@maxquip.ca).

## PTO Shaft Experts Can Fix Any Machine

If you need a pto shaft fast, PaulB Parts has them. If your equipment takes a German, Italian or North American driveline or a conventional or constant velocity driveline, they have it. If you don't know what kind it takes, they can help.

"All pto shafts are not created equal," says Gerald Martin, PaulB Parts. "While having a heavier shaft doesn't hurt, having too light a shaft can be a problem. It can cause a bearing to burn out or even twist and ruin a shaft."

If you're unsure which shaft is right for your equipment, Martin suggests you give them a call. How much horsepower is moved through the shaft is a key factor. Other facts needed to identify the proper shaft include the size and style bore on the end yoke of the equipment and the tractor. The length of shaft and how much telescoping is also important.

"If the shaft is too long, when it tries to flex, it can come together too far," explains Martin. "It can bottom out and ruin equipment components on either end."

If the shaft is too short, that can be as much of a problem and more dangerous. Flexing can pull the telescopic shafts apart.

"The shaft under power can spin

uncontrollably and be a danger to bystanders," explains Martin.

The wide variety of shafts available can provide options for using lower cost alternatives, suggests Martin.

One of the strengths of the company, he adds, is being able to custom build drivelines from scratch. Whether for a one-off design or repeat parts, the company can help.

"If a customer comes in, we often can sit down at the drawing board and design a shaft that will work," says Martin. "We have a shop that can fabricate the new design. Our wholesale division provides a similar service for small manufacturers."

PaulB offers multiple resources on the company website for pto shaft customers. That includes diagrams for identifying shaft styles, the series of the shaft, and a video on measuring and cutting a pto shaft. The company also carries a wide variety of parts for sprayers and other equipment.

Contact: FARM SHOW Followup, PaulB Parts, 50 Wood Corner Rd., Lititz, Penn. 17543 (ph 717 738 7355, ext. 280; www.paulbparts.com).



Tom Haney turned an old golf cart into this portable power tool cart. A ramp makes it easy to load his emergency generator.

## Cart Brings Power And Tools

Tony Haney needed portable power more than he needed an old golf cart, so he turned it into a towable cart. A ramp for loading his emergency generator and clamps for tools make it easy to use.

"I wanted to be able to use the generator for emergency power when necessary," says Haney. "With the cart, I can roll the generator into place and strap it down, and move it more easily when I want power away from the buildings."

Haney stripped the E-Z Go electric golf cart down to its frame and axles. He removed the front running gear and fabricated a hitch in its place. He used 3/4-in. scrap plywood

he had on hand to fashion a deck. Steel and other parts also came from a scrap pile.

"I left the steering assembly and front wheels on at first," recalls Haney. "I quickly found it difficult to back up. It would jackknife rapidly."

Haney says the extra deck space leaves lots of room for tools like his electric chain saw and pole saw. With the now-portable generator, he gets added use of these corded power tools.

Contact: FARM SHOW Followup, Tony Haney, 2138 Redwood Rd., Irwin, Iowa 51446 (ph 712 782-3378).

## They Sell Bearings By The Thousands

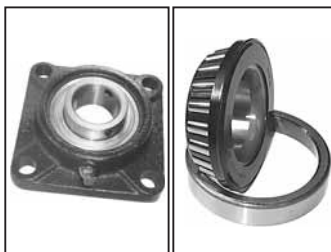
With more than 1,000 different makes and models of bearings on hand, Georgetown Hydraulics likely has the bearing you need. The company offers 4 different lines of bearings, 2 imported and 2 made in the U.S.

"We match the right bearing to the application at a reasonable price," says Menno Beiler, Georgetown Hydraulics.

It makes sense that a high speed, high vibration shaft that gets heavy use requires a different bearing quality than one that operates at low speed under light use. Why pay a premium for a quality bearing you don't need?

"We may have 4 bearings that look the same, but vary in price and quality," says Beiler. "For example, our KML bearings are a premium line of imported bearings. Our premium domestic bearings are very high quality, but they're often 4 times the cost of an equivalent KML bearing."

Beiler says the company's recent addition of the KML line of bearings came only after a lot of testing. "They have excellent quality control," says Beiler. "In some cases they have a superior design as well. Their pillow



Georgetown Hydraulics offers 4 different lines of bearings, so they can match nearly any bearing.

block bearings have reinforcing ears on them. We would recommend them in applications where greater strength is needed."

Beiler says Georgetown can match up just about any bearing. "Call us with the bore, shaft size, mounting pattern and shaft height of the old bearing," he says. "Be sure to include the application as well."

Contact: FARM SHOW Followup, Georgetown Hydraulics, 343 Christiana Pike, Christiansburg, Penn. 17509 (ph 610 593-2753).

## Adapter Kit Makes Taps Easier To Use

"I came up with this adapter because it's always a pain to use a Vise-Grip or a crescent wrench to turn a conventional tap," says Iowa farmer and machinist Eliot Evans. "Standard wrenches don't fit conventional taps, so my tap adapter, which has a pattern like a bolt head, just fits over the top of the tap so common wrenches can be used to turn it."

Evans worked on his invention almost 3 years before finalizing and patenting the product, which he calls Make Sense Tap Adapters. They fit all common fractional taps up to 3/4-in. standard and 22 mm metric. He sells the adapters as a set that includes a stand, set screws and an allen wrench for \$60. "The adapters are fully-machined CNC parts made from 4140 heat-treated steel," Evans says.

Evans' adapters made quite a splash nationally when he was invited out to California to show them to Jay Leno. He got to visit Leno's famous garage where he stores his collection of more than 200 cars and motorcycles.

Make Sense Tap Adapters are simple and unique. "You might not need them every day, but they're very handy to have around."



Make Sense Tap Adapters fit over the head of a tap and can then be turned with conventional wrenches or sockets.

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