Propane Q & A

Does propane have a shelf life or does it get "old" like gasoline?
Unlike gasoline, propane does not go bad over time. In a sealed cylinder propane has an indefinite shelf life. Additionally, because the system is sealed under a relatively low pressure no air or water can contaminate the fuel.

Does the manufacturer warranty remain intact on a propane conversion?
In regards to the Exmark portion of the unit, it does not void the warranty on the entire unit but in the event an Exmark component failed as a result of the way the tank was mounted or other components of the conversion the Exmark part would not be warrantable. Most importantly, see the below warning that is published in our Operator's manuals.

> "Removal or modification of original equipment, parts and/or accessories may alter the warranty, controllability, and safety of the machine. Unauthorized modifications to the original equipment or failure to use original Exmark parts could lead to serious injury or death. Unauthorized changes to the machine, engine, fuel or venting system, may violate applicable safety standards such as: ANSI, OSHA and NFPA and/or government regulations such as EPA and CARB."

I have been told by Kohler that conversion on Kohler engines does void warranty. Is this correct?
Regarding Kohler engines that have been converted to propane, Kohler will not warrant any engine failure or issue that is deemed to be caused by the propane conversion.

If the dealer does not provide feedback will he still be eligible for the demo rebate?
PERC will make every attempt to work closely with the dealer via phone, email, and fax capabilities. PERC will make numerous attempts to obtain the demo data and feedback from the participating dealer in a way that is both fast and efficient for the dealership. PERC will not deem any dealership ineligible so long as a good-faith effort has been made by the participant.

How would a dealer go about signing up for the demo unit?
See program document

Does the demo unit have to be ordered as propane or can it be a Lazer we converted?
The demo program is applicable to current purchases only with use of the appropriate floor plan number.

Are there added rebates over and above $1000/$500 in Ohio?
At this time the Ohio Propane Gas Association does not offer any additional incentives beyond the national $1,000/$500 incentive being offered through the Propane Education & Research Council. To learn more, or apply for the incentive, please visit

http://www.poweredbypropane.org. Federal, state, and municipal government incentives can usually be found via http://www.dsireusa.org, which is a website/database owned and maintained by the U.S. Department of Energy.

Do dealers need to be "state" certified to repair propane powered units?

At present each state must follow the National Fire Protection Agency 58 code for handling of liquefied petroleum gas (LP or propane) and National Fire Protection Agency 30-A code for motor fuel dispensing facilities and repair garages. Additionally, states may enforce additional regulations or requirements for the handling of gaseous fuels, such as propane. It is suggested that you check with the Propane Gas Association in your state. A list of contacts for each state association can be found at http://www.npga.org/i4a/pages/index.cfm?pageid=544. Finally, engine manufacturers and propane conversion kit manufacturers may have their own forms of required training and certification. Please check with the manufacturer of the engine or conversion kit for specifics.

If a customer buys his own tanks, what is the approximate cost of spare tanks?

As a general rule of thumb, spare propane mower cylinders (filled with propane!) can be supplied by a propane provider for a nominal fee or arranged as part of the fuel contract. If a customer wishes to own their mower cylinders outright they can expect a range from $200 - $400 per cylinder (empty). The final price is dependent upon size (20 lb., 33.5 lb., or 43.5 lb.), material (steel or aluminum), and any mark-up costs being tacked on at the final point of retail. Propane mower cylinders are available from Worthington Cylinders and Manchester Tank, as well as any number of propane equipment dealers and propane providers. Bulk quantity discounts are typically available as well.

Would Exmark consider a propane EFI repower package for existing next gen Lazers - 2009 and newer?

Because this is not a cost effective solution, Exmark will not offer a repower package.

Will there be a 52" Lazer option in propane on the horizon?

As we continue to grow the Propane/EFI line up, we will evaluate adding a 52” Lazer option.

RED technology for propane?

Long term, we will have RED Technology on propane. It only makes sense that we maximize fuel savings.

What all models will this be available in near future?

In immediate future, we are looking at adding a 52” in both the TTS and LZS. We will continue to expand our lineup as our opportunities continue to grow.

When will propane be offered on the 21” and 30”?

We have done some preliminary work on the WPM propane category. We do believe that long term we will likely have a propane offering on a 21” and 30” if the market continues to grow at the rate it is currently.

We seem to be getting far more interest in the Vantage machines -- propane powered -- than anything else....will they be soon??

We are continuing to evaluate our opportunities. The Vantage is close to the top of the list. We realize many customers have converted Vantages. Exmark is currently evaluating timing for the Vantage propane offering.

Can we get a list of suppliers willing to work with dealers in our AOR?

To identify propane suppliers in your area please visit http://www.autogasusa.org and click the **Find A Propane Retailer** tab in the top right hand corner of the page. Simply enter your zip code and identify the type of services you're seeking and you'll be shown a list of propane suppliers in your area. You can choose to contact them via email, phone, or have them contact you through this service.

Does the IRS still allow an alternative fuel credit on propane usage?

The Alternative Fuel Tax Credit passed as part of the Fiscal Cliff Legislation only applies to alternative fuels, such as propane, used in on-road applications and forklifts at this time. The tax credit is $0.50/gallon of odorized propane when used in an on-road or forklift motor fuel application. The tax credit does apply to alternative fuel infrastructure costs as well, but is limited to 30% or $30,000 of the total cost, whichever comes first. (Note: Please consult your tax attorney or professional for further clarification before filing!)

If we build a propane refueling station there is a 30% credit from the government?

The tax credit does apply to alternative fuel infrastructure (refueling station) costs, but is limited to 30% or $30,000 of the total cost, whichever comes first. The credit is available to the owner of the refueling station and refueling equipment. If you rent or lease refueling equipment your fuel provider will have to claim the tax credit. (Note: Please consult your tax attorney or professional for further clarification before filing!)

Is there a reduction in horsepower with the EFI/propane vs. gasoline powered units?

Engines fueled by gaseous propane typically do not produce as much hp as a gasoline fueled engine of equivalent configuration. A general rule of thumb is that a carbureted propane engine will produce 10% less hp than an equivalent carbureted gasoline engine. A propane EFI system however, is able to substantially reduce this loss of hp.

Can the customer run natural gas?

No. While Kohler has received some interest in NG fueled engines, our Propane EFI engine was designed to function only using Propane as a fuel.

What initial investment can we expect to service propane customers, including software and specialty tools?

Regarding the servicing of the Propane EFI engines, no specialty tools are required. Kohler will offer a Propane upgrade to the EFI Diagnostic Software that is currently used by technicians working with our gasoline EFI engines. The diagnostic software allows individuals to troubleshoot any issue that may occur by using SAE fault codes and will allow users to download run-time data.

What operator safety issues had to be addressed and/or overcome?

There are relatively no added safety concerns created by running and engine on propane compared to gasoline. The only added safety measure put in place was instilling a lock-off

switch in the pressure regulator that allows the engine to cut off fuel delivery to the injection system if pressure becomes low.

What additional training is required to properly service and maintain these propane units? Are training courses provided or made available?
Kohler is in the process of adding Propane EFI to their service update schools. Kohler is also finalizing the development of the Propane EFI upgrade to the EFI Diagnostic Software that will allow users to troubleshoot any issue that may occur by using SAE fault codes and will allow users to download run-time data.

Aside from the engine manufacturer's technical training, there may be certifications required by local or state laws. (PERC should address this issue more).

Is there a return-on-investment calculator for end users?
There is no interactive tool or cost-calculator at this time available from PERC. This PDF of a side-by-side comparison from 2011 shows the quickest method to compare costs; however, the user would need to do some simple math on their own after plugging in their local prices for gasoline and propane. The sample comparison does not factor in the available incentives from PERC and any state propane gas association or other agencies.

When we talk propane, customers always ask about conversions. Does Exmark have a solution for dealers regarding conversions?
Exmark does not currently offer a field conversion kits nor do we have any future plans at this time to do so.

Local propane representative promotes end-user cost savings by performing oil changes 150hrs versus 50hr OEM manuals. Which is correct during the warranty period?
We strongly encourage our customers to follow the engine manufacture's recommended oil change interval. Kohler's recommended oil change interval remains unchanged as compared to the gasoline-fueled engines. It is true that propane does burn much cleaner than gasoline and therefore produces less combustion by-products that contaminate the oil. The cleaner looking oil gives the impression that the oil will last longer before an oil change is needed. However, this is a misconception as the oil still experiences roughly the same amount of "thermal breakdown" due to heat, regardless of fuel and it is not readily visibly apparent.

2011 & 2012 Exmark models needed adjustment on propane out of the box (Used excessive amounts) will that be the same for the 2013 models or will they come correct?
Kohler Engines Propane EFI engine uses a closed-loop EFI system that will automatically adjust itself to perform optimally under any condition. As a result, unlike carbureted propane engines, there are no calibrations or adjustments required.

In negotiating fuel contracts, it's usually a volume question. Any tools to help end-users project volume needs based on hours or other criteria?
At this time no gallon/volume estimator tools exist, but as shown in the sample comparison PDF one can assume a slight increase in fuel needs and estimate the volume needs per mower.

What is the reason for the special thread on the first purging valve, suppliers we talked to do not have access to that valve. We end up taking the valve apart to first purge tank.

The propane systems that we offer require the use of a special "**vapor** draw" tank as compared to a "**liquid** draw" tank that is typically used in the forklift industry. Liquid propane entering the fuel system may cause damage and render the unit inoperative. The "**vapor** draw" tanks also include a special baffle system to reduce the potential of liquid propane entering the fuel supply line. In order to prevent the use of the more common "**liquid** draw" tanks and subsequent damage to the propane fuel system, the service valve coupling on a "**vapor** draw" tank incorporates a LH thread as opposed to a RH thread on the "**liquid** draw" tank.

Are there deeper discounts for propane if used "off road" like diesel has?

Unlike diesel, there is no off-road specification or differences in propane used in on-road vehicles or off-road applications.

HD5 grade propane is "consumer grade" propane and is the most widely sold and distributed grade of propane in the U.S. market. HD5 is the highest grade propane available to consumers in the United States and is what propane companies ordinarily sell to their customers. What does HD5 propane mean in terms of specification to an ordinary consumer? It means that the propane is suitable and recommended for engine fuel use, which was the original purpose of the HD5 grade propane specification. HD5 spec propane consists of:

- Minimum of 90% propane
- Maximum of 5% propylene - propylene is used in the manufacture of plastics
- Other gases constitute the remainder (iso-butane, butane, methane, etc.)

The HD5 specification is based on "allowable" contents. For instance, 99% propane and 1% propylene is HD5 grade propane the same as 95% propane and 5% propylene is HD5 propane. Although the product consistency and purity is different, both mixtures are considered HD5 propane because they fall within the allowable limits for the product to be named and labeled as such. Consider this: **10,000 gallons of pure propane (100% propane) is classified as HD-5 grade propane.**