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**Top Tips for Winterizing Propane Equipment**

WASHINGTON (November 21, 2013)– As harvest comes to a close, take a moment to winterize equipment. Proper storage and maintenance in the off-season lowers upkeep costs and reduces downtime from broken parts, helping ensure systems work safely and efficiently next season.

Nearly 40 percent of farms in the U.S. use propane to run pumps and engines, heat buildings, and dry and process crops. With propane-fueled equipment, winter preparation and storage is similar to that of conventional fuels, but there are some key advantages and considerations to keep in mind. Together with leading grain dryer, irrigation engine, and work truck manufacturers, the Propane Education & Research Council (PERC) compiled a list of tips on preparing your propane equipment for winter.

**Grain Dryers**

After a busy harvest, it is important to properly inspect and clean out grain dryers to prevent foreign material from degrading augers, auger troughs, and metering rolls of your dryer. Gary Woodruff, grain conditioning technology manager with GSI, gives producers the following advice to keep their propane fueled dryers safe during the off-season and ready for the next season:

* Carefully turn off and lock out any electrical and gas supplies before starting any maintenance or cleaning. Open all access doors on the grain basket of the dryer and completely clean out any debris with brushes or pressurized air. Leave these access doors open during the non-drying season.
* Inspect power and control panel boxes for accumulation of debris. Using soft brushes or the careful use of pressurized air, clean and wipe down these boxes thoroughly.
* Inspect burner ignition wires, flame detection wires, and control and power panel wiring for deterioration and replace if needed. Inspect wiring connections that might have loosened during the drying season and tighten.
* Visually inspect bearings to see if any need to be replaced. Do the same with drive belts and chains and lubricate the chains for the winter.
* Turn off the main supply valve from the LP gas tank and bleed out all gas from the entire gas train by running the burner until all pressure is gone. Carefully inspect all hoses and fittings and replace any that show wear, tear or deterioration, particularly any flexible gas hoses.

**Irrigation Engines**

According to Pete Stout, product manager at Origin Engines, today's propane irrigation engines do not require extensive winterization procedures beyond regular practices, such as removing debris and dirt that have collected on the engine, and changing the oil filter and spark plugs.

He offered the following additional tips to keep irrigation systems in shape over the winter months:

* Disconnect the engine battery, check front drive belts for proper tension and wear, inspect the wire harness for cracked or exposed wires, and make repairs as necessary.
* Use cylinder-fogging oil to prevent rust on the cylinder walls for engines that are stored outdoors or in buildings that are not temperature-controlled.
* If possible, remove irrigation power units from the field and store indoors during winter. If engines are left in the field, they should be protected by a semi-enclosed structure to prevent as much exposure to the elements as possible.

“I also urge farmers who store engines outdoors to cover the engine with a tarp,” Stout says. “Moisture, UV sunlight, and rodents are the cause of most startup problems in the spring.”

**Pickup Trucks**

Propane autogas powered pickup trucks require the same seasonal maintenance as gasoline- powered trucks. Additionally, there are no startup concerns with propane autogas during colder months, and propane autogas vehicles don’t have problems with fuel gelling like conventional diesel engines do in the colder climates.

“Cold climates are not a concern with liquid injection propane autogas engines,” says Todd Mouw, VP sales and marketing at Roush CleanTech, a Ford Qualified Vehicle Modifier. “The fuel remains in a liquid state until it gets to the cylinder, alleviating cold start issues associated with vapor technology propane systems of the past. In fact, most fuel systems provide unaided cold weather starts to minus 40 degrees Fahrenheit.”

Mouw recommended these additional tips for winterizing pickup trucks:

* Check all air filter and fluid levels, including oil, antifreeze, and washer fluid. Make certain the heater, defroster, and both windshield wipers are in good condition.
* Examine tires for tread wear and proper inflation and install snow tires, all-season radials or toss a set of chains in the back if you think you may need them.
* Inspect the brakes and exhaust system. Exhaust leaks vent carbon monoxide to the cab — a serious problem when windows are cranked up tight.

**Propane Safety Tips for Winter**

One of the key benefits of propane is that it doesn’t degrade or go bad like other fuels, making it safe and easy to store during the winter months. Still, here are some additional safety tips to keep your storage tanks and equipment safe in the cold, wind, and snow.

* Gather the unused propane cylinders bought for gas grills, mowers, or forklifts. Secure the cylinders in an outdoor storage cage or other protected storage area away from ignition sources.
* Mark your propane tank with a flag, pole, or stake higher than the average snow cover depth for your area. These markers will help you avoid plowing into or shoveling snow on top of your tank.
* Maintain winter access to your outdoor storage tank, keeping a path clear of snow and ice.
* Take advantage of automatic delivery options if available. This allows the propane retailer to efficiently plan a route and keep your tank adequately supplied.
* If you’re not part of an automatic delivery program, it’s recommended that you call for delivery when your tank is at 30 percent full. This will avoid running empty in times of heavy snowfall when roads may be inaccessible for delivery.

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