

LUBE

TECHNI-GRAM



FROM:

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WINTER LUBRICATION CHECK LIST

Winter is tough on all equipment. Fleet managers within the trucking and heavy equipment industries must consider the unique demands of winter time lubrication and take protective measures to minimize the risk of winter weather-related problems.

The following are a few hints from Caterpillar Equipment:

PRE-SEASONED CONDITIONING

1. Store diesel fuel outside. This permits the moisture to freeze after it has settled out of the fuel. Storing fuel outside also immediately indicates ambient temperature affect on fuel. Fuel stored underground or in a heated area will pump readily, but any moisture in the fuel will not freeze until it is in the machine. If the fuel does not have a low enough pour point, this will not be discovered until it congeals in the tank and lines.
2. If the viscosity of oil is changed in anticipation of colder weather, also change the filter. The oil soaked filter housing can become a solid mass if the heavy oil is not drained. Drain hydraulic cylinders and lines to remove the heavy oil. Then after changing oil, run machine to circulate the thinner oil.
3. Cooling System: Store ethylene glycol mixed with water, to prevent pure ethylene glycol from freezing. 100% ethylene glycol freezes at -10°F (-12°C), but a mixture of 68% ethylene glycol with 32% water will not freeze until the temperature is below -65°F (-54°C).
4. Keep engine crankcase breather pipe clean of obstruction by ice or snow to prevent engine seal and gasket damage.
5. Precondition the hydraulic hoses on machines, also new hose assemblies, before temperatures of below -40°F (-40°C) are encountered.
6. Prepare the vehicle by using heaters, compartment enclosures and storage facilities as required for the climatic conditions anticipated.



... to keep it running

In addition to these general tips from Caterpillar, various industry authorities and publications offer the following more specific tips:

Engine Oil

Most Original Equipment Manufacturers (OEM's) have low temperature viscosity recommendations for engine oils (and other components such as hydraulic fluids, transmission fluids and gear lubricants), but do not hesitate to call your SWEPCO Representative for help if you do not understand the OEM guidelines or have application questions. As the temperature dips to near zero, the 15W-40 Engine Oil typically recommended by most major Diesel Engine Manufacturers may become too viscous to achieve the most effective lubrication at start-up. Many OEM's recommend that fleets consider using SAE 10W-30 or 5W-30 for winter use to provide easier cold cranking and start-up.

The lower viscosity of properly blended heavy-duty 5W-30 or 10W-30 Engine Oil results in quicker oil pick up and oil film protection in the critical engine wear zones during cold weather start-ups. It also maintains excellent oil film protection at high operating temperatures. The result is less incidents of metal-to-metal contact...regardless of the temperature. Match the pour point properties °F, Max (°C) of the various weights of SWEPCO 306 Supreme Formula Engine Oil to match the best performance and protection for your winter temperatures...5W-30 / -31F (-35C), 10W-30 / -22F (-30C) and 15W-40 / -9F (-23C).

A significant performance advantage of synthetic lubricants is their low temperature fluidity, but by keeping equipment in a heated area or following preheating of coolant and oil practices as recommended by the equipment manufacturer, trucking and heavy equipment fleet managers can avoid the unnecessary higher cost of synthetic lubricants. A good common sense practice is to check the oil's fluidity by removing the dipstick. If the oil will drip from the dipstick, then it is fluid enough for the machine to be started.

Whatever you do, do not mix kerosene, diesel fuel or solvent with lubricants to "thin" them for low temperature performance. This will significantly lower the flash point of the lubricant, which can not only be a safety hazard, but will also be very harmful to the seals in the equipment and will accelerate seal failure.

Grease

Chassis and wheel bearing lubrication is another cold weather challenge. The consistency or thickness of grease is determined by its National Lubricating Grease Institute (NLGI) grade, with the most common chassis and wheel bearing lubricant classified as NLGI #2 grade. During winter operation, it may be necessary to use an NLGI #1 grease because it is easier to pump. Corrosion poses another potential threat to grease applications in the winter when moisture levels increase and corrosive salts or chemicals are used in conjunction with snow and ice removal. SWEPCO's 105 H I Plus Grease and 103 Moly H I Plus Grease provide added protection against corrosive environments.