



Best Practices for

Machine Winterization

Follow these best practices to make sure your machine is ready for winter.



Check chain tanks, final drives, swing gear baths and gear boxes for water

Check the label to make sure you're using coolant that complies with ASTM standard D-621, with a freeze point low enough for your climate. If coolant freezes, it can crack the engine block and ruin the engine.

Add fuel conditioner

Fuel conditioner prevents your fuel from freezing and makes sure your engine starts in the cold. Check the manufacturer's recommendations for the amount of conditioner required. Match the fuel conditioner to the type of fuel you're using (e.g., low sulfur).

Check the fuel filter

If the fuel filter is clogged, moisture can build up and freeze in the winter, causing your machine to run improperly or fail to start. Empty the water traps in the filters before cold weather arrives. To avoid downtime, keep an extra set of fuel filters in your cab.

Check cold start aids

Diesel engines spray ether into the air system to help the engine start in cold weather. For older machines that have ether spray bottles, check the bottle to make sure it isn't empty. For new machines with an automatic ether system, inspect the connections and hoses for cracks or loose connections.

Check the block heater

Block heaters keep fluids at the right temperature and viscosity. If it isn't working, the oil can thicken, so it's harder to turn the engine over and adds stress on the battery. Plug in the block heater to check it, then touch the hoses to make sure they are warm.

Inspect lights, wipers, belts, cutting edges and back up alarms

Take the time to test the lights, wipers, belts, cutting edges, back up alarms and anything that might be an inconvenience to fix during the winter.

Inspect air pre-cleaners

Large dust particles and debris can build up during the summer and should be removed. Otherwise, snow and ice could collect around them, allowing moisture into the air system, which could cause engine failure.

Check battery and connections

Corrosion around battery connections causes less voltage to be transmitted, and increases the strain on the battery. Corroded connections can drain the battery, preventing your machine from starting. Periodic inspections for corrosion reduce the chance of having a drained battery.

Winter Storage

Drain the fuel tank if possible

If you have a diesel engine, either drain it or leave it completely full during winter months. Draining the fuel tank takes time and effort, but eliminates the possibility of condensation forming in the fuel tank and spreading. Condensation can clog the fuel filter, which can clog fuel lines, carburetors, and injectors.

Run the engine after cleaning

Run your machine's engine after cleaning the engine and replacing the oil so that a protective film of oil coats the internal parts. The oil coating acts as a rust preventative. Pour a 50/50 mixture of water and antifreeze into the coolant system before running as well to protect the cooling system to -34°F.

Clean & fully charge batteries, then disconnect the power leads

Never store discharged batteries. Colder temperatures slow the discharge rate of fully charged batteries.

Start machines once a month

Avoid starting the machines in extreme cold weather. Find a time when temperature is above freezing to start the machine and fully warm hydraulics after the engine comes to operating temperature.

Do not try to break crawler type machines from a badly frozen situation.

The result can be power train damage.



Cold Weather Operation

Protect your machine

If you can't keep your machine inside when it's not in use, at least keep a weather resistant tarp over the engine. With snow comes condensation, which can cause problems for the entire engine.

Manage productivity

Cold weather makes the earth harder, and frost can penetrate roadways and aggregates to make utility, road, and crushing jobs much more difficult and time consuming. Winter months have less daylight, so manage your time wisely.

Keep the jobsite clean

It is imperative to keep jobsites neat and clean during winter months. When not working, leave a layer of snow on the ground to keep frost from penetrating the ground – the snow will actually insulate the ground beneath. When working, make sure to clear all snow and ice to avoid accidents.

Clean areas designated for snow removal

Clean up debris or equipment that will be hidden by fallen snow. Mark any areas of concern with reflective stakes so snow removal crews can easily identify & stay away from those areas.

Plan for earthworks projects

Frozen chunks of ground need to be placed in designated areas. The frozen chunks of earth contain water that can cause major problems in the spring, such as sink holes.

Use the best fuel

Make sure you are using high quality winter diesel fuel. The fuel conditioner should match the type of fuel you are using (e.g., low sulfur) and should be approved by manufacturer.

Check starting devices

Make sure block heaters and cold weather starting devices are working properly.

Warm up the machine

Let machines come up to operating temperature before working.

Keep a spare fuel filter

Keep an extra fuel filter in the cab, and follow installation instructions in your operator's manual.

Check ice build up

Check for ice or snow build up in exhaust or intake if applicable. Inspect and clear ice or snow from throttle and brake area.

Warm up to improve steering response

Steering response on equipment with hydraulic steering may become very slow at low temperatures, even when the correct oils are used. Once the engine is started, let the machine idle until the engine reaches operating temperature.

Stay aware of safety

Mount and dismount your machine using three points of contact. Remember that when you are working with snow and ice, slips and falls are a common cause of injuries. Wear your seatbelt when operating equipment and stay alert.

Call the location nearest you for more informaton!

www.lubyequipment.com

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