

Cold Weather Tech Tips

Engine performance varies with operating and ambient circumstances (altitude, humidity and temperature). It is important to adapt the engine to winter operating conditions. The guidelines listed below will assist in maximizing generator and sleeper berth heating performance:

Glow Plug Preheating:

Starting Procedures – The START rocker switch has a 3 function feature. By continuously holding the rocker switch in the START position the following sequence will take place:

1. The red LED light will illuminate for 8 seconds while the glow plug is activated.
2. Then the green LED light will illuminate to show that the glow plug & engine starter is engaging for a maximum 17-second duration. When you hear the engine come to life, let go of the switch.
3. To prevent starter burn-up, there is a 5 second delay programmed into the switch before another start cycle can begin.

****For cold weather starts, there is a manual preheat override by simply pushing the manual glow/stop rocker switch down for 30 seconds before applying sequence 1 and 2 above.**

Oil Viscosity:

- Oil viscosity changes in cold weather as crystallization of the wax element contained in oil proceeds and fluidity is lost. Wrong selection of oil will increase resistance of engine starting, and also affect the lubrication of each part. Ice cold conditions cause oil to be thick like molasses. Oils designed for cold temperatures that lower the pour point should be used.
- For temperatures of –10 to –20 degrees, use a multi-grade SAE 5W40 viscosity lubricant. Ensure that oil is filled to the top hash mark on the dipstick, and NOT overfilled.

Winter Grade Diesel Fuel:

- A choice of No. 1-D (ASTM D975-94) diesel fuel is recommended. When temperatures are very low, or if using any “BIO-fuel”, use an additive to prevent “gelling” that may inhibit fuel flow and filter performance.

Truck Batteries:

- Battery discharging capacity varies with ambient temperature changes- hence cold conditions reduces output.
- From the viewpoint of start ability, the battery capacity should be as high as possible. Old batteries with leaking cells should be replaced as required.
- Keep parasitic loads to a minimum.
- Inspect ground wires and battery cable lug connections for clean, non-corroded and secure attachments.

Engine Coolant:

- Engine coolant needs to be regulated to prevent freezing. A mixture of high quality anti-freeze must be used at all times. Use only a 50/50 mix of H₂O and ethylene glycol.
- Change the anti-freeze mixture once a year.

WARNING: NEVER USE ETHER!!

This will severely damage the engine and automatically void the warranty.

Fuel Filter:

- It is important that water is eliminated from the fuel system. Ensure that the fuel filter element on the Kubota engine, and the In-Line fuel filter cartridges are replaced with clean ones.

Air Filter:

- Ensure that clogged air filter elements are cleaned or replaced. Restrictions for engine breathing will diminish operability.

Truck Sleeper Warmth:

- Optimized heating in the truck sleeper berth can be achieved by closing the bunk curtains during the generators operation. The driver's compartment window glass and poor insulation do little to shield out cold outside ambient temperatures.
- Put the generator under a "load". By plugging in a block heater for example, the Kubota engine will exercise thereby creating hot engine coolant. The coolant provides the heat for the under-bunk unit when the dial on the control panel is turned to "heat". (An option to consider might be using a common 1500-watt electric ceramic heater to supplement warmth.)
- **CAUTION- System limitations on power will not allow BOTH a block heater and 1500 watt space heater at the same time. Choose one or the other.**
- Check to make sure there are no restrictions to the air delivery components in the sleeper berth. The under-bunk unit must be free to breathe and all conduit hoses must not be buckled, folded, crushed or blocked.

Insulation of Hot Water Coolant Lines:

- Frigette offers an optional winterizing material at low cost. This foam hose wrap will insulate coolant water lines to protect it from heat loss in cold temperatures.

Water Valve:

- Ensure that the servo arm of the coolant water valve is free to move. Rotate the temperature dial on the control panel back and forth once a week.

HOT Weather Tech Tips

Engine performance varies with operating and ambient circumstances (altitude, humidity and temperature). It is important to adapt the engine to summer operating conditions. The guidelines listed below will assist in maximizing generator and sleeper berth cooling performance.

1. Ensure the radiator/condenser/fan assembly is clean. Cooling components cannot release heat energy if they are clogged with excessive road debris. Using a degreaser fluid and a LOW-pressure garden hose, lightly spray the unit to get rid of grime/grease etc..
2. Use summer grade 5W-40 motor oil in the Kubota crankcase.
3. When possible, park the vehicle in the shade rather than direct sunlight.
4. Heat magnifies through glass. Use windshield reflective shades to block out summer ambient sunlight from entering the cab. While in the bunk, close the sleeper berth curtains to allow maximum air conditioning performance.
5. Use a multi-grade 5W-40-diesel grade oil. Ensure that oil is filled to the top hash mark on the Kubota engine dipstick. Do not overfill.
6. Ensure that there are no visible AC leaks on hoses or fittings. Evacuate system and repair and replace any AC components if needed. Recharge with 1.8 lbs of R134a refrigerant.
7. Replace all filters. Ensure that clogged air filter elements are cleaned or replaced. Restrictions for engine breathing will diminish operability.
8. Replace the main AC drive belt if required.
9. Inspect ground wires and battery cable lug connections for clean, non-corroded and secure attachments.
10. Engine coolant should be changed once a year. A mixture of high quality anti-freeze must be used at all times. Use only a 50/50 mix of H₂O and ethylene glycol.
11. Water Valve: Ensure that the servo arm of the coolant water valve is free to move. Rotate the temperature dial on the control panel back and forth once a week.

Check to make sure there are no restrictions to the air delivery components in the sleeper berth. The under-bunk unit must be free to breathe and all conduit hoses must not be buckled, folded, crushed or blocked. Ensure tools, flares, etc. do not block blower inlet for airflow.