Genset Storage

Engine Storage Guidelines:

1. John Deere engines can be stored outside for up to three (3) months with no long term preparation IF COVERED BY WATERPROOF COVERING. No outside storage is recommended without a waterproof covering.

2. John Deere engines can be stored in a standard overseas shipping container for up to three (3) months with no long term preparation.

3. John Deere engines can be stored inside for up to six (6) months with no long term preparation.

4. John Deere engines expected to be stored more than six (6) months MUST have long term storage preparation. (See PREPARING ENGINE FOR LONG TERM STORAGE, later in this section.)

5. Long term storage includes the use of a stabilized rust preventive oil to protect internal metal components of the engine. This oil should be an SAE 10 oil with 1-4 percent morpholine or equivalent vapor corrosion inhibitor. These rust preventive oils are available from area distributors.

Preparing Engine for Long Term Storage

The following storage preparations are used for long term engine storage up to one year. After that, the engine should be started, warmed up, and retreated for an extended storage period.

IMPORTANT: Any time your engine will not be used for over six (6) months, the following recommendations for storing it and removing it from storage will help to minimize corrosion and deterioration.

IMPORTANT: DO NOT USE BIODIESEL DURING MACHINE STORAGE. When using biodiesel blends, switch to petroleum diesel for long term storage. Before storage, operate engine on at least one complete tank of petroleum diesel fuel to purge the fuel system. Follow normal storage procedures once the fuel system has been purged.

1. Change engine oil and replace filter. (See CHANGE ENGINE OIL AND FILTER in Lubrication and Maintenance/500 Hour Section.) Used oil will not give adequate protection. Add one (1) ounce of rust preventive oil to the engine crankcase for every quart of oil. This rust preventive oil should be an SAE 10 oil with 1-4 percent morpholine or equivalent vapor corrosion inhibitor.

2. Ensure the machine fuel tank is filled with high quality petroleum diesel fuel. Filling the tank completely will ensure that water does not build up due to condensation. For storage of more than one year, use John Deere PREMIUM DIESEL FUEL CONDITIONER (or equivalent) at the specified concentration.

3. Service air cleaner. (See REPLACING AIR CLEANER FILTER ELEMENTS in Service As Required Section.)
4. Draining and flushing of cooling system is not necessary if engine is to be stored only for several months. However, for extended storage periods of a year or longer, it is recommended that the cooling system be drained, flushed, and refilled. Refill with appropriate coolant. (See RECOMMENDED ENGINE COOLANT in Fuels, Lubricants, and Coolant Section and ADDING COOLANT in Service As Required Section.)

5. If equipped pour three (3) ounces of rust preventive oil into the turbocharger intake. (It may be necessary to temporarily install a short intake elbow on the turbocharger inlet to receive the oil.)

6. Prepare a tank with a solution of diesel fuel and rust preventive oil, at ten (10) ounces of rust preventive oil per gallon of diesel fuel.

7. Remove existing lines/plugs as required, and run a temporary line from the tank to the engine fuel intake, and another temporary line from the fuel return manifold to the tank, so rust preventive oil solution is circulated through the injection system during cranking.

8. Crank the engine several revolutions with starter (do not allow the engine to start). This will allow rust preventive oil solution to circulate.

9. Remove temporary lines installed in Step 6 above, and replace any lines/plugs previously removed.

10. Loosen, or remove and store, fan/alternatorpoly-vee belt.

11. Remove and clean batteries. Store them in a cool, dry place and keep them fully charged.

12. Disengage the clutch for any driveline.

13. Clean the exterior of the engine with salt-free water and touch up any scratched or chipped painted surfaces with a good quality paint.

14. Coat all exposed (machined) metal surfaces with grease or corrosion inhibitor if not feasible to paint.

15. Seal all openings on engine with plastic bags and tape.

16. Store the engine in a dry protected place. If engine must be stored outside, cover it with a waterproof canvas or other suitable protective material and use a strong waterproof tape.
Removing Engine from Long Term Storage
Refer to the appropriate section for detailed services listed below or have your authorized servicing dealer or engine distributor perform services that you may not be familiar with.

1. Remove all protective coverings from engine. Unseal all openings in engine and remove covering from electrical systems.

2. Remove the batteries from storage. Install batteries (fully charged) and connect the terminals.

3. Install fan/alternator poly-vee belt if removed.

4. Fill fuel tank.

5. Perform all appropriate prestarting checks. (See DAILY PRESTARTING CHECKS in Lubrication and Maintenance/Daily Section.)

6. Crank engine for 20 seconds with starter (do not allow the engine to start). Wait 2 minutes and crank engine an additional 20 seconds to assure bearing surfaces are adequately lubricated.

7. Start engine and run at low idle and no load for several minutes. Warm up carefully and check all gauges before placing engine under load.

8. On the first day of operation after storage, check overall engine for leaks and check all gauges for correct operation.

IMPORTANT: DO NOT operate starter more than 30 seconds at a time. Wait at least 2 minutes for starter to cool before trying again.

NOTE: If using BIODIESEL blends after long term storage, frequency of fuel filter plugging may increase initially.

Storage
In the event that the generator is not to be installed on the prime mover immediately, it is recommended that it be stored in a clean, dry area which is not subject to rapid changes in temperature and humidity.

Storage Instructions
If the generator or gen-set is placed into storage, the following precautions should be taken to protect it:
A. Equipment must be kept clean.
   1. Store indoors.
   2. Keep covered to eliminate airborne dust and dirt.
3. Cover openings for ventilation, conduit connections, etc., to prevent entry of rodents, snakes, birds, insects, etc.

B. Equipment must be kept dry.
   1. Store in a dry area indoors.
   2. Temperature swings should be minimal to prevent condensation.
   3. If stored in an unheated or damp building, space heaters will be required to prevent internal condensation.
   4. Treat unpainted flanges, shafts, drive discs, and fittings with a rust inhibitor.
   5. Check insulation resistance of all windings before starting the generator. If readings are low, the windings must be dried.

C. Keep bearings lubricated.
   1. Every six months, rotate shaft several turns to distribute grease in bearings.
   2. If unit has been stored more than one year, add grease before start-up.

D. Review and follow instructions for handling and preparation for use as shown in the generator installation and operation manual.

**Preparation for Use**
Although the generator is carefully inspected and tested in operation before it leaves the factory, it is recommended that the unit be thoroughly inspected. The insulation on the wire should be inspected and all bolts should be checked for tightness. Remove all shipping tapes, bags, blocks, and skids which are used to prevent vibration and rotor movement during shipment. Dry, low-pressure compressed air of approximately 30 psi (206 KPa) can be used to blow out the interior of the generator. In the case of two bearing machines, it is possible to turn the rotor by hand to make sure that it rotates smoothly without binding.

If the machine has been in storage for a year or longer, it is recommended that it be lubricated according to the lubrication instructions and chart found in Section 5. If the machine has been exposed to damp, humid conditions, the insulation resistance should be checked. Refer to generator installation and operation manual.