

Storing the generator sets for a long time, may cause negative effects on engine, alternator and other equipment and running the generator set in this condition may cause damage on any part. This bulletin is prepared to give information about what needs to be done before and after long term storage.



All the procedures mentioned below should be applied for generator sets that will be stored and will not operate for 3 months or more.

If the storage duration is less than 3 months, it is adequate to keep the generator set covered with a protective pack in a dry place and test/run it for a short time every 15 days.

All procedures must be applied by an authorized technician and by taking all the precautions for safety.

Before storing the generator set for a long time, operate it until it reaches nominal operating temperature (approximately 75°C) and check if there is any failure. In order not to have any problem during re-commissioning process of the generator set, this step should not be skipped.

Storage between 3 and 6 Months

- 1.** Change the engine oil and filter.
- 2.** Check the coolant level and anti-freeze ratio. If it does not include adequate anti-freeze ratio, then drain the coolant from the entire system and water filter.
- 3.** Change the fuel filter and drain any water or dregs from fuel tank and fill with fuel up to maximum level.
- 4.** Stop the generator after the test.
- 5.** Disconnect the battery cables. Clean the battery and leave it under charge continuously.
- 6.** Clean the generator completely with a wet cloth. Do not use pressurized water.
- 7.** Check the electrical connections and terminals.
- 8.** Spray the moisture repellent to electrical system and its components.
- 9.** Spray protective oil to air intake canals.
- 10.** Loosen the V-belts.
- 11.** Seal air inlet and exhaust outlet.
- 12.** Cover the entire generator and post a warning sign on it.
- 13.** Store the generator in a dry place where there are no temperature changes. Generator set should be protected from sun light and rain.

Storage more than 6 Months (up to 2 years)

- 1.** Drain the engine oil.
- 2.** Fill with diesel engine protective oil up to maximum level of the oil dipstick.
- 3.** Immerse the fuel intake and return canals to a pot which contains 1/3 protective oil (JIS K2246 NP9) and to a pot that contains 2/3 diesel oil mixture.
- 4.** Run the engine until it consumes 2 liters of this mixture and then stop.
- 5.** Drain the fuel system and connect the fuel intake and return canals to their normal location.
- 6.** Drain the fuel tank and clean.
- 7.** Drain the protective oil from the engine and filter.
- 8.** Spray protective oil to air intake manifold.
- 9.** Spray protective oil to compressor side of the turbocharger.
- 10.** Disassemble the cylinder head covers. Spray protective oil to valve, valve spring, valve guide, cylinder head and rocker arm, then close the cylinder head cover again.
- 11.** Seal air inlet and exhaust outlet.
- 12.** Loosen the V-belts.
- 13.** Disconnect the battery cables. Clean the battery and leave it under charge continuously.
- 14.** Clean the generator completely with a wet cloth. Do not use pressurized water.
- 15.** Check the electrical connections and terminals.
- 16.** Spray the moisture repellent to electrical system and its components.
- 17.** Cover the entire generator and post a warning sign on it.
- 18.** Store the generator in a dry place where there are no temperature changes. Generator set should be protected from sun light and rain.

Re-commissioning after Storage

- 1.** Remove the cover from the generator and remove sealing from air inlet and exhaust outlet.
- 2.** Inspect all sections of the engine.
- 3.** Pay attention that the installation is based on the rules and the commissioning procedures are completed before running the generator.
- 4.** Refresh the engine oil and filter.
- 5.** Clean the fuel tank and fill it with new fuel.
- 6.** Replace fuel filter.
- 7.** Clean the air filter, if necessary, replace it.
- 8.** Control and tighten the V-belt and pulleys.
- 9.** Disassemble the turbo lubricating pipe and lubricate the bearings. Then, rotate the turbo manually.
- 10.** Control valve tip clearances, if necessary, adjust them. (For storage more than 6 months)
- 11.** Disassemble the cylinder head covers. Lubricate the valve, valve spring, valve guide, cylinder head and rocker arm, then close the cylinder head covers again.
- 12.** Check all the hoses and pipes, tighten clamps and screws.
- 13.** If there is any disjointed screw or plug, assemble them.
- 14.** Check the coolant level and ratio of anti-freeze. If it is drained before storage, then fill it with a mixture of new 50% anti-freeze and 50% water.
- 15.** If it is realized that there is moisture in the storage ambient, stator winding isolation test should be done before operating the alternator. Before this process, AVR cable connections should be disconnected. If the measured value is less than 5 Ohm, then alternator should be cleaned, dried and tested again.
- 16.** Before the cranking, rotate the engine 2-3 cycles manually.
- 17.** Check that batteries are fully charged.
- 18.** Disconnect the fuel solenoid connection and rotate the engine for a short term via starter.
- 19.** Run the generator under no load until it warms.
- 20.** Check for excessive vibration, noise, oil-fuel-water leakage.
- 21.** Run the generator set under load and test it again.