Dear Sir or Madam

This service letter contains important information concerning recommended inspections to be carried out on engines in the unlikely event that an uncontrolled overspeed incident has occurred.

Engine over speed can be categorized as follows:

1. **Controlled overspeed**, the engine has been stopped by the overspeed protection device. This is usually set to stop the engine at rated speed X 1.15%, e.g. during the overspeed test carried out in connection with the quarterly test of the engine's safety equipment.

2. **Uncontrolled overspeed**, is defined as any engine speed >1.25 X rated speed, independent of the duration.

If it is not possible to determine the engine's rpm level during the overspeed incident, it is considered to be an uncontrolled overspeed incident and the precautions in this service letter must be followed.

Each overspeed incident is a special case, and therefore it is not possible to give a specific guideline that covers all cases.

The involved work scope may not be limited to the mentioned scope described in the following steps, but have to be evaluated case by case.

NOTICE

Before any attempt to restart the engine after an overspeed incident, the reason for the overspeed must be identified and rectified.

Action code: AT FIRST OPPORTUNITY

Overspeed

SL2023-740/JNN June 2023

Concerns Owners and operators of MAN four-stroke engines. Type: Marine: L16/24, L21/31, L27/38, L23/30H, L23/30H Mk2, L23/30H Mk3, L28/32H Stationary: L16/24S, L21/31S, L27/38S, L23/30S, L28/32S, V28/32H, V28/32S Propulsion: L21/31, L27/38, L23/30A, L28/32A, V28/32A Dual Fuel: L23/30DF, L28/32DF

Reference

Prevention of overspeed SL2015-600/JEC



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Step 1 – Alternator

In case of a GenSet, check that the alternator stator and the rotor have not been in direct contact, and that the insulation is not damaged. If in doubt, please contact the alternator specialist for further investigation.

Check that the coils on the rotor have not been displaced due to excessive centrifugal force during the high revolution. Disassemble the alternator bearing(s) and check for scoring.

Step 2 – Cylinder cover

Remove all cylinder covers and inspect the inlet/exhaust valves for punch marks and signs of bending.

If pieces have broken off, please inspect and clean all inlet/exhaust pockets and channels for debris preventing possible loose pieces from entering the turbocharger during starting-up of the engine.

Check all rocker arms, valve bridges, springs, fuel injection valves, rotocaps, conical locking pieces, and lock clips for contact damage or cracks.

Step 3 - Cylinder liner, piston, and connecting rod

Remove all pistons for inspection of cylinder liner surface.

Separate the connecting rods from the pistons and inspect the pistons for seizures or cracks.

Check the plugs in the pistons to see if they have come lose.

Check the piston pins for cracks, preferably by means of Magnaflux.

Clean the serration on each connecting rod and inspect for cracks.

Assemble the connecting rod without bearing shells and tighten according to Instruction Manual.

Check the ovality of the big end bore and record it.

Check the condition of the bearing bush in the small end for scoring and replace, if necessary.

If the connecting rod is found in good condition then remount with new bearing shells and new connecting rod screws.

Furthermore, the two circlips for the piston pins are to be replaced.

Step 4 - Operating gear for valves and fuel injection pumps

Check all roller guide housings and rollers for seizures or scoring.

At the same time look for scoring on the camshaft cams.

All roller guide housing bolts must be checked and retightened. Check all push rods for bending and for loose thrust pieces. Replace, if signs of the last-mentioned incidents.

Dismantle and check the fuel pumps for seizures.

At the same time check the thrust piece in the roller guide under the pump for cracks/damage.

The camshaft bearings are usually not affected by overspeed situations; however, carefully check the edges of the camshaft bearings for any visual signs of loose or squeezed material from the bearings. If in doubt, remove the camshaft sections for further inspection.

Check the gearwheel on the camshaft and the intermediate gearwheel(s) as thoroughly as possible through the inspection covers in the aft shield near the flywheel.

If necessary, dismantle the gearwheel(s) until satisfactory inspection has been performed.

If the engine is equipped with a mechanically driven fuel oil booster pump the pump must be removed and dismantled for inspection.

Check if rotating seals or bearing bushes have been damaged. It may prove suitable to replace the rotating seals in this connection to avoid leaking when starting up.

Step 5 – Crankshaft

Inspect all main bearing shells and corresponding journals.

If the main bearing shells have more than 12-16,000 running hours it is recommended to replace them with new ones and inspect the gearwheel on the crankshaft alternator end.

Inspect all crankpin journals for scoring marks.

Inspect all counterweights and check the tightening torques. If the torque is out of specification, the counterweights must be removed and the screws/studs must be replaced with new ones (hydraulically tightened version, only).

Retighten the bolt assembly between crankshaft and alternator / output shaft. If the bolts have lost the tension, the bolts must be replaced.

Step 6 - Pumps, resilient gear and damper

Remove any mechanically driven lube oil pumps, LT cooling water pumps and HT cooling water pumps from the front end of the engine.

Check that the drive gearwheel has not been damaged.

Dismantle each pump and check if rotating seals or bearing bushes have suffered any damage. It may prove suitable to replace the rotating seals in this connection to avoid leaking when starting up.

Check the resilient gearwheel for damage.

NOTICE

Only older engine types may have a resilient gearwheel. The gearwheel is fixed on engines with a front-end box.

Check the vibration damper for damage, see the instruction manual for further information.

NOTICE

Only some engine types are equipped with a vibration damper.

Step 7 – Turbocharger and exhaust

Check the entire exhaust pipe for debris or deposits.

Check the turbocharger for any damage, both on the compressor side and on the turbine side.



If you have any questions to this Service Letter please contact your local PrimeServ agent or our PrimeServ department by email to:

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Yours faithfully

In

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