MAN Nutzfahrzeuge Aktiengesellschaft

SERVICE INFORMATION

for high-speed industrial and marine engines

Date 22.10.1990 SI number 51

MAN D 28 marine diesel engines

FILLING THE INTERNAL ENGINE COOLANT CIRCUIT

To avoid damage to engines as a result of overheating, this Service Information is intended to draw your attention to the importance of correctly filling the internal engine coolant circuit.

This applies both when filling new engines for the first time before entry into service and when subsequently changing the coolant (during repair work and at the prescribed intervals, for example).

The coolant is to be prepared according to MAN brochure "*Fuels, Lubricants, Coolants for Industrial and Marine Diesel Engines*" which is delivered together with the Engine / Generating Set. Heat-exchanger cooling systems supplied by MAN are filled via the filling neck on the expansion tank (larger filling cap). The coolant must be poured in slowly (approx. 5 l/min).

When models D2848 LE/LXE, D2840 LXE, D2842 LXE / LYE / LZE as well as D2848 LE4xx, D2840 LE4xx, D2842 LE4xx Vee-engines are filled, air must be bled out of the water-cooled turbochargers at the same time. An oval flange with a bleed screw (13mm spanner) is fitted on the rear of the turbine casing and must be kept open still until coolant runs out.

Similarly, various plugs (19mm spanner) are to be found on the heat exchanger side of the water-cooled exhaust manifold, one of which must be open on each side during filling. These are to be closed as soon as water runs out. The other cooling system components are self-bleeding.

WARNING

If a cabin heater is connected to the engine cooling system, the heater breathers are to be opened during filling and are to be kept open until pure coolant is running out.

Once the coolant water heat exchanger has been filled to the prescribed level, the system is to be closed up and the engine run at idle speed for approximately 5 minutes.

The coolant level is then to be checked and, if necessary, topped up. If topping up is required, the bleed screws described above are to be briefly opened until pure coolant runs out. For safety reasons, this procedure should be repeated after the engine has run for a further 5-10 minutes.

After another test run of approximately 30 minutes, this time under load, the coolant level is to be checked again and, if necessary, topped up. During subsequent operation we recommend strongly that the coolant level is checked daily before the engine is first started.

NOTE:

Before putting into service engines which have either been in storage or out of service for some time, check that the working valve (relief/vacuum valve or the small filler caps) is fully functional by removing the small expansion tank cap and actuating the spring-loaded valve (large plate) and the spring-loaded vacuum valve (small plate) several times by hand against the spring pressure.

Furthermore, ensure that the rubber seal is not damaged ant that the sealing surfaces of both valves are not clogged with dirt.

Cooling systems should never be opened while still hot. Should this be absolutely necessary, however, (when refilling the system, for example), first rotate the small cap to notch, allow the pressure to escape and carefully close the cap again. The large filler cap on the filler neck can then be removed without risk of scalding.

Coolant must be poured in only through the filler neck, Cold coolant must never be poured into an engine which is at operating temperature! If no hot water is available, water at room temperature is to be poured in very slowly while the engine is running until the correct level is reached.

WARNING!

To ensure adequate anti-corrosion protection, coolant water should be mixed at least 40% volume anti-freeze.

The anti-freeze must be approved under MAN works standard 234.

MAN Diesel-Service

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SERVICE INFORMATION

for high-speed industrial and marine engines

Date 25.04.1994 SI number 57

MAN D 28 marine diesel engines

When commissioning new marine diesel engines ensure without fail that the coolant circuit is property filled.

The occasion has arisen to again point out the importance of properly filling engines with coolant. Especially when new engines are filled for the first time, overheating damage (piston seizure) caused by the coolant circuits not having been completely filled occurs again and again. An instruction on the filling procedure can be found in the service information No. 51 of 22nd Oct 1990.

Here again are the most important details in brief:

The engines are filled via the large cap on the coolant heat exchanger. Before filling starts the small cap on the heat exchanger and the bleed screws on the water-cooled exhaust gas turbochargers are to be opened also.

Slowly fill with coolant by means of a can until coolant emerges free of bubbles at the aforementioned openings. Subsequently fit both caps on the heat exchanger and close the bleed screws on the turbochargers and start the engine. After letting the engine idle for approx 5 minutes without load, switch if off and open both caps and the bleed screws on the turbocharger again and top up with coolant. Start the engine again and let it idle for 5 minutes, topping up the coolant once more if necessary.

CAUTION:

The heat exchanger caps must be closed while the engine is idling. If one cap is open, no sufficient pre-pressure can build up in the cooling system, which may result in the loss of coolant, in the formation of air bubbles in the cooling system and, consequently, in engine overheating.

If engine damage is caused by overheating as a result of insufficient filling with coolant, no warranty claim will be accepted.

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