

Service Information No. 06 / 06

Date: 22.02.2006

Fault Tracing after Oil Mist Alarm

GENERAL M25 – M601C

We have created a new job card.

Fault tracing
Oil mist detector
A3.11.18.01.01

This job card shall be a guideline and help the crew on board to find the root cause of an oil mist alarm as quickly as possible.

Please forward this information to your ship(s) as soon as possible. This information should be inserted **completely** to the corresponding chapter of the instruction manual.

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Introduction:

The crankcase monitoring device (oil mist detector) monitors the oil mist concentration in the crankcase. During engine operation there is always a slight oil mist concentration.

If, however, the actual oil mist concentration exceeds a preset, fixed value first an alarm and then, in case of a further increase in concentration, an automatic engine stop will be triggered!

An increased oil mist concentration in the crankcase may be indicative of operational disturbances, with bearing damages, timing gear train damages, piston seizure or blowby from the combustion chamber being the most frequent causes.

Attention:

With increased oil mist concentration there is a risk of crankcase explosion. This may lead to severe personal injuries and engine damages.

When an alarm is triggered, the cause of it must be identified as quickly as possible. In case of doubt stop the engine immediately by hand.

Attention:

Do not restart an engine that has run hot without first eliminating the cause of the alarm!

After standstill of an engine that has run hot, wait 10 to 15 minutes before opening the crankcase doors in order to prevent a possible explosion by air supply from outside. If necessary, contact the Caterpillar/ MaK-Customer Service!

Checks after an engine stop due to oil mist alarm:**1. Check of the oil mist detector:**

Check the oil mist detector for correct function according to the documentation of the manufacturer (siehe C5.05.11.02.03. nn).

Note:

Besides carrying out a normal functional check of the oil mist detector the measuring chamber should be examined for traces of water. Water vapour may trigger a false alarm. If there should be any traces of water, the measuring chamber and the sensors must be cleaned.

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Extended checks:**2. Check of the main running gear:**

- Remove all crankcase doors.
- Check the main running gear for ease of movement by turning the crankshaft.
- Visually inspect the main running gear (bearings, piston skirts, liners, etc.) for discoloration and traces of seizing.
- Measure all bearing temperatures, pay particular attention to major differences.
- Check the oil pan for chips.
- Check the lubrication oil filters for metallic material.

3. Check of the timing gear train:

- Remove all inspection doors from both sides.
- Visually inspect the timing gear train for discoloration, traces of seizing, and chips.
- Visually inspect the drives of all attached pumps.

4. Inspection of the camshaft casing:

- Remove all camshaft casing covers.
- Visually inspect camshaft, cam followers and rollers of all valve and injection pump drives for discoloration, wear (seizing), and chips.
- Measure the temperatures of all camshaft bearings.

5. Inspection of the combustion chamber:

- Admit compressed air to each cylinder via opened indicator valves.
If the pressure drops very quickly or no pressure builds up, the cause of this must be identified.

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6. Check of the turbocharger:**Note:**

An incipient turbine bearing damage will also be indicated via the oil mist detector.

- Remove intake air filter.
- Check the turbine shaft for ease of movement.

Attention:

Only after having completed all the above checks and if no failure causes have been identified the engine may be restarted. Prior to starting the engine is to be blown through with open indicator valves for a sufficient period of time by means of starting air! While doing so, check the indicator valves for emerging oil, fuel or water.

The engine may then only be started with fully functional oil mist detector.

If an emergency stop should occur again after a short time, the root cause must absolutely be found out.

The engine must not be restarted until the disturbance or damage has been eliminated.

Contact the Caterpillar / MaK Customer Service!

Note:

The indicated checks are intended to assist in troubleshooting and will allow to identify the main causes of an oil mist alarm. However, they cannot cover the full range of all possible causes.