



No.: 13 TS-15
May 15, 2013

TO: Service Locations

FROM: Technical Service

SUBJECT: **EPA10 Diesel Oxidation Catalyst (DOC) Face Plugging And Code SPN 3251/FMI 2 – DOC Inlet Pressure Sensor Not Plausible**

ISSUE

Face plugging of the Diesel Oxidation Catalyst (DOC) is typically noted by code SPN: 3251/FMI 2 – DOC Inlet Pressure Sensor Not Plausible. A parked regeneration log file will usually identify when the DOC is plugged. If DOC Inlet Pressure starts out high AND stays high (10 kPa+ for a 1-Box ATS, 13 kPa+ for a Two-Box ATS), the DOC is plugged. If DOC Inlet Pressure starts out high and decreases, this indicates the Diesel Particulate Filter (DPF) was plugged, and the parked regeneration cleared it.

CAUSE

If the DOC is plugged, view DDEC Reports since it may be duty cycle related. A vehicle with a high idle time, low average speed, low drive load, etc., is susceptible to plugging the DOC. If not duty cycle related, look for other causes:

- faulty EGR Delta Pressure Sensor or Intake Manifold Temperature Sensor
- previous turbocharger failures where the ATS was not replaced and/or exhaust piping not cleaned out
- bad cam timing (intake or exhaust)
- failed EGR cooler
- faulty EGR valve actuators
- plugged air filters

Make sure Campaign 12C1 has been completed so the software is up to date.

Please note that features such as Auto Elevate, PTO Dosing, and parked DPF regenerations will NOT prevent or fix DOC plugging. To keep the DOC from plugging, you need high exhaust temperature going in to the DOC, such as from a normal on-highway duty cycle.

REQUIRED ACTION

If the DOC is confirmed to be plugged, determine the cause of the plugging and correct it.

If the DOC Inlet Pressure is less than 20 kPa (2.9 psi), test ACM and MCM fuel maps have been created that allow the repair shop to attempt to unplug the DOC when working with the Detroit Customer Support Center (CSC). The test maps will generate high exhaust temperature

into the DOC for about four hours in an attempt to clear it. This allows the truck to be fixed in as short a time as one day. The test maps are only used to attempt to unplug the DOC. The truck cannot be driven in service with the test maps, nor will they prevent the DOC from plugging in the future. With the test fuel maps, the engine will be limited to 5 mph and will quickly progress to DPF Zone 5, resulting in a Stop Engine Light and engine shutdown, making it difficult to move the truck.

If the DOC Inlet Pressure is greater than 20 kPa (2.9 psi), replace the DOC/SCR module (1-Box ATS) or DOC (Two-Box ATS). This is to protect the engine and turbocharger from excessive temperatures.

REPAIR PROCEDURE

To attempt to unplug the DOC, contact the Detroit CSC to have the server installed with the test ACM and MCM fuel maps. Then perform the following procedure:

NOTICE:
Do NOT attempt to drive the truck with the test fuel maps. The engine will be limited to 5 mph and will quickly progress to DPF Zone 5, resulting in Stop Engine Light and engine shutdown.

- 1) You MUST remain with the vehicle for the entire DOC unplugging procedure.
- 2) The vehicle MUST be parked outside and located in a safe area BEFORE reprogramming to the test fuel maps. With the test fuel maps, the engine will be limited to 5 mph and will quickly progress to DPF Zone 5, resulting in Stop Engine Light and engine shutdown, making it difficult to move the truck.
- 3) The exhaust system and outlet MUST NOT be near any combustible materials since exhaust system temps will be elevated during this procedure.
- 4) If possible and safe to do so, warm up the engine to operating temperature prior to programming.
- 5) To improve the chances of a successful procedure, engine load needs to be as low as possible. Turn off all unnecessary accessories in the truck such as the air conditioner, extra lighting, PTO, etc. Note that setting the HVAC system on Defrost typically turns on the air conditioner, so turn off the HVAC system or select a different setting.
- 6) The procedure will take over four hours. If you are using DDRS on a laptop computer to monitor the entire procedure, make sure you have an adequate corded power supply to your laptop to prevent it from shutting down due to a depleted battery. Note that a computer is not needed for the actual cleaning procedure, since the MCM and ACM will be controlling it.
- 7) Program the MCM and ACM to the software and fuel map numbers noted by the CSC. Also program the CPC if directed to do so by the CSC. You MUST use DDRS 7.09 software with Service Pack 2 (or higher).
- 8) Start the engine and allow it to idle at base (600 rpm) idle speed.

- 9) The ATS should quickly go into DPF zone 2 as indicated by the DPF lamp on the dash coming on solid. If the DPF lamp is flashing, this indicates DPF zone 3 or higher. The engine will quickly start going into DPF zones and reach DPF zone 5 within a few minutes. You do not have to wait until DPF zone 5 before proceeding.
- 10) Once the ATS is in DPF zone 2 or higher, start a parked regeneration by cycling the usual switches (clutch, park brake, dash DPF switch, etc.) or through DDRS in Service Routines on the DPF System tab. The engine will go to 1275 rpm instead of the usual 1100 rpm.
- 11) The Intake Throttle Valve (ITV) and Jake Brake 1 may begin cycling to raise DOC inlet temperature. This will cause engine rpm to fluctuate. This is normal.
- 12) After a few minutes, the ITV should become steady around 75% (DD13) or 88% (DD15). Jake Brake 1 will be steady at 100%. Engine rpm should then become stable around 1275 rpm.
- 13) Monitor DOC inlet temperature. It MUST be greater than 400°C (750°F). If it is not above 400°C (750°F), block off part of the radiator with cardboard. Be careful that coolant temperatures do not go high enough to cause a Check Engine light.
- 14) Continue to monitor the DOC inlet temperature to make sure it is greater than 400°C (750°F).
- 15) The engine will run for about four hours and then automatically ramp down to idle speed.
- 16) Let the engine idle for a few minutes to cool off the ATS and then turn off the engine. If the engine is not shut off, the DPF zones will quickly progress to zone 5 and the engine will automatically shut down.
- 17) If necessary, remove cardboard from the front of radiator.
- 18) Call or email the CSC to have the regular production fuel maps reset on the server for the MCM and ACM.
- 19) Program the MCM and ACM back to the regular production fuel maps. Leave the CPC alone.
- 20) Restart the engine, connect DDRS to all three modules (MCM, ACM, and CPC), and run a regular parked regeneration. The DOC inlet pressure should be less than 9 kPa (1.3 psi) for a 1-Box ATS and 12 kPa (1.74 psi) for a Two-Box ATS.
- 21) Send all log files to the CSC with the reference number in the subject line.

CLAIM PROCESS

Normal in-warranty procedures apply.

CONTACT INFORMATION

Please contact the Detroit Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.