Check engine light with fault code P3005CA in MRD1 (CDI)

Topic number	LI49.20-N-078466
Version	4
Function group	49.20 - Exhaust gas aftertreatment
Date	5/8/26
Validity	Sprinter 907 OM654
Reason for change	Remedy update

Complaint

The check engine light is on, with a possiblility in a reduction of power and the presence of soot in the exhaust system.

Fault code P3005CA: The diesel particulate filter efficiency is insufficient.

Additional information:

Additional fault codes may be present, related to the Diesel Particulate Filter (DPF) system or the Exhaust Gas Recirculation (EGR) system.

Cause

This fault code sets due to the following factors:

1. Damage to the Diesel Particulate Filter (DPF) unit.
2. The N74 (Soot Particulate Sensor Control Unit) identifies soot or debris located downstream of the SCR Catalyst (underbody).

Remedy

Note:

The guided tests for fault code P3005CA have been revised in the XENTRY unit. It is important to complete these guided tests thoroughly. TIPS cases are NO longer required unless there is an absence of soot at the outlet of the Diesel Particulate Filter (DPF) unit.

If there are any other fault codes present for component 'N74 (Soot Particulate Sensor Control Unit)', process these first.

1. Damage to the Diesel Particulate Filter (DPF) unit.

• Complete the XENTRY guided tests:

• Check the Exhaust system for leaks - Perform a visual inspection of the exhaust system from the Combustion Engine to Diesel Particulate Filter (DPF). Verify that there are no external damages and that all clamps and sensors are installed and leak-free.

• Check component 'Exhaust pipe and Filter screen of Exhaust Gas Recirculation (low pressure)' for carbon fouling. If no soot is present at the Tailpipe outlet, recommended to separate the exhaust pipe downstream of the Diesel Particulate Filter (DPF) at the outlet to inspect.

NOTE: There should be ZERO soot or debris downstream of the Diesel Particulate Filter (DPF), which includes the underbody SCR catalyst and the low-pressure EGR system.

• If soot IS found during the Tailpipe inspection:

• Check the 'Filter screen of Exhaust Gas Recirculation (low pressure)' for carbon fouling:

• If soot IS found in the 'Filter screen of Exhaust Gas Recirculation (low pressure)' replace the component Diesel Particulate Filter (DPF), check components Y87/5 (Exhaust Gas Recirculation Actuator, low pressure) and the Cooler for soot deposits. If soot is found, replace as needed.

• If soot IS NOT found in the 'Filter screen of Exhaust Gas Recirculation (low pressure)', replace only the Diesel Particulate Filter (DPF) component.

NOTE: If soot is found past the Diesel Particulate Filter (DPF), please also see repair in step 2.

NOTE: If soot IS NOT found during the Tailpipe inspection:

Open a TIPS case with the following information: Initial Quick Test, CDI control unit log, Guided test results, and CDI & CPC performance data (found under Special procedures > Collation of diagnosis performance data).

Information:

After the replacement or repair of the component 'Diesel Particulate Filter', the following teach-in processes must be performed:

• Reset the learned values for the following components: 'Diesel Particulate Filter' and 'SCR Catalytic Converter'.

• Reset the learned values for the following components: 'Exhaust Gas Recirculation (low pressure)'.

2. The N74 (Soot Particulate Sensor Control Unit) identifies soot or debris located downstream of the 'SCR Catalytic Converter, underbody'.

• If soot was found during step 1 or if this vehicle had the Diesel Particulate Filter (DPF) replaced prior due to failure and the fault returned, please complete the below steps:

• Remove the 'SCR Catalytic Converter, underbody', place a white cloth/rag on the floor, and lightly tap the 'SCR Catalytic Converter, underbody' onto the floor to see if any soot comes out. Repeat this inspection on both ends of the SCR catalytic converter. If soot is found on the rag, please replace the 'N74 (Soot Particulate Sensor Control Unit)' and 'SCR Catalytic Converter, underbody' with the needed components.

Information:

After the replacement or repair to the components 'N74 (Soot Particulate Sensor Control Unit)' and 'SCR Catalytic Converter, underbody', the following teach-in processes must be performed:

• Reset the learned values for the following components: 'N74 (Soot Particulate Sensor Control Unit)'.

• Reset the learned values for the following components: 'SCR Catalytic Converter, underbody'.

After completing all repairs and required teach-in processes, confirm that the MRD1 (Motor Electronics Diesel Control Unit) / CDI (Common Rail Diesel Injection) control unit software is at the latest available level.

• If the software is not current, perform the update before releasing the vehicle.

• Production introduction (clean points):

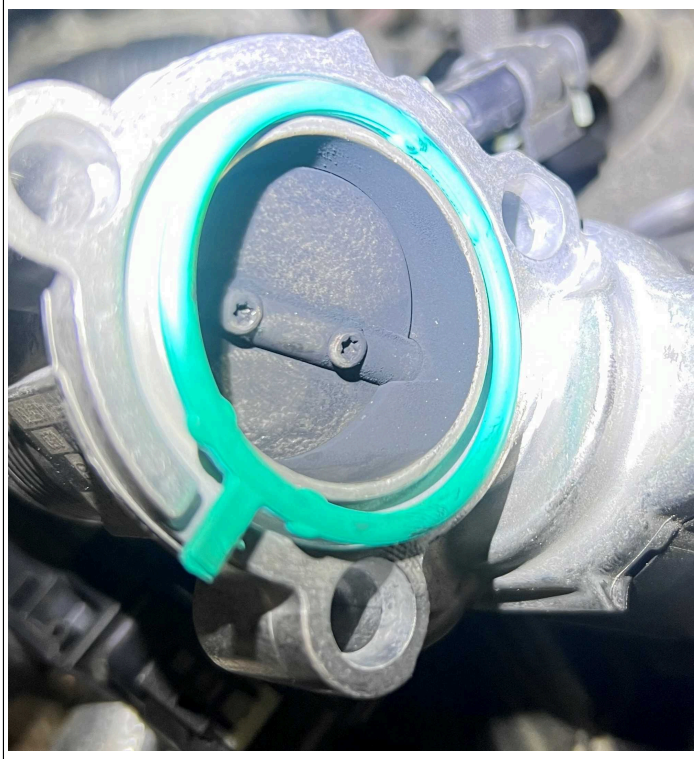
• Charleston (CHS): 04/01/2026, first VIN W1Z4KFHY1TT611481

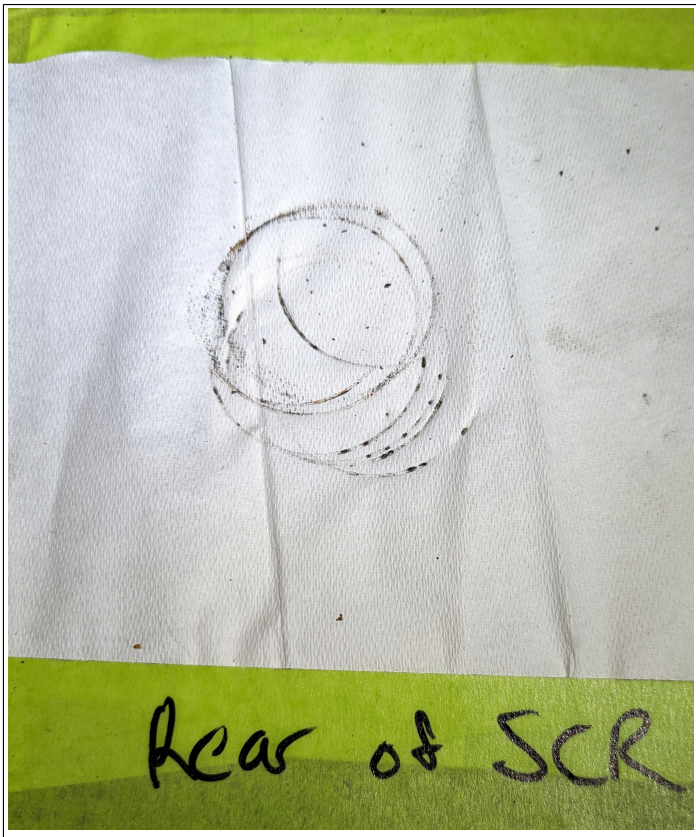
• Düsseldorf: 04/09/2026, first VIN W1Y4KBHY2TP922519

• Ludwigsfelde: 04/09/2026, first VIN W1X8N33Y2TN387620

• If fault code P3005CA is present on vehicles produced after the applicable clean point, or on vehicles confirmed to have the latest available MRD1/CDI software, open a TIPS case routed to the Powertrain Team Inbox. Include MRD1/CDI control unit logs and a current Quick Test.

NOTE: Please inform the client if the vehicle is predominantly used for short-distance driving or has extended non-operational times, this could lead to a malfunction in the automatic cleaning function of the diesel particulate filter. As a result, the diesel particulate filter may become blocked. Fuel may also accumulate in the engine oil and cause engine damage. Refer to the owner's manual section on 'Diesel Particulate Filter' for further guidance.

Attachments	
File	Description
LP EGR Cooler.jpg 	Low-Pressure EGR Cooler
LP EGR.jpg 	Low-Pressure EGR Valve
SCR Back.jpg	White Cloth SCR Back Side

	
SCR Front.jpg	White Cloth SCR Front Side

Soot Sensor.jpg

Soot Sensor Covered in Soot

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Symptoms
Power generation > Engine management > Indicator lamp > Engine diagnosis > lit

Control unit/fault code	
Control unit	Fault text
N3/40 - Motor electronics 'MRD1' for combustion engine 'OM654' (CDI) (MRD1NFZ)	P3005CA - The efficiency of the diesel particulate filter is not sufficient.

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
495920	Replace SCR catalytic converter diesel particulate filter unit	2.4 H	14370	Refer to XENTRY Operation Time Guide for complete operations.