

M139 Engine: Poor Performance Due to Broken Valve Spring(s)

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| Topic number | LI01.30-P-075439 |
| Version | 3 |
| Function group | 01.30 - Cylinder head |
| Date | 11/5/25 |
| Validity | All vehicles equipped with M139 engine |
| Reason for change | CP revision |

Complaint

Customer may complain of a CEL on in the instrument cluster, rough running, trouble starting, issues with ECO stop/start or a combination thereof.

Cause

One or more broken valve springs in the cylinder head.

Remedy

Run a PICO compression test before disassembling the engine for analysis. If no discrepancies are found between the cylinders with codes and those without codes, stop and open a TIPS case.

If the engine serial number is past the clean point for this concern and there is a discrepancy in the PICO compression readings: stop and open a TIPS case. Include your PICO compression test results in the attachments.

Cleanpoint for C43/SL43: Production date 17.11.2022 (Engine Number 13958060008852)

Cleanpoint for CLA45/GLA45: Production date 19.11.2022 (Engine number 13998060037847)

If nothing is found on the PICO compression test and the vehicle is after the cleanpoints above, work through the guided tests for any relevant fault codes.

For misfire related fault codes this will include:

- Inspect the injector performance data for abnormalities
- Pull the spark plugs and inspect for cracking or damage
- Using a smoke machine to inspect for air leaks

Replace any damaged components found via the above tests and release the car if there are no other issues.

If a discrepancy is found on the PICO compression test and the vehicle is before cleanpoint, remove the cylinder head cover and inspect the valve springs and lifters directly.

If a broken valve spring is found:

XENTRY Tips

- Inspect the valve, rocker, retainer, and keepers on that assembly for damage.
- Inspect the camshaft and camshaft lobe that operates that valve
- Inspect the piston face via borescope for piston/valve contact

Also perform a leak test once the valve is able to be fully seated to ensure no damage to the valve or seat has occurred.

If no damage to the piston or valve seat has occurred, replace the damaged components, ALL the valve springs and release the vehicle.

If valve seat or piston damage has occurred please open a TIPS case, upload the results of all tests, and outline what work has been conducted thus far.

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

Parts

| Part number | ES1 | ES2 | Designation | Quantity | Note | EPC |
|-------------|-----|-----|-----------------|-------------------|------|-----|
| A1390500400 | | | Exhaust Valve | Depends on damage | | X |
| A1390530200 | | | Intake Valve | Depends on damage | | X |
| A2640531400 | | | Valve Stem Seal | Depends on damage | | X |

Control unit/fault code

| Control unit | Fault text |
|---|---|
| N3/10 - Motor electronics 'MRG1AMGR4' for combustion engine 'M139' (ME) (MRG1AMGR4) | P030100 - Combustion misfiring of cylinder 1 has been detected. _ |
| | P030200 - Combustion misfiring of cylinder 2 has been detected. _ |
| | P030300 - Combustion misfiring of cylinder 3 has been detected. _ |

XENTRY Tips

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| P030400 - Combustion misfiring of cylinder 4 has been detected. _ |
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| Operation numbers/damage codes | | | | |
|--------------------------------|----------------|------|-------------|------|
| Op. no. | Operation text | Time | Damage code | Note |

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