Reference	SSM000030
Models	New Range Rover / L460 2024 → Onwards New Range Rover Sport / L461 2024 → Onwards
Title	AJ20P6 Combustion Instability
Category	Engine
Last modified	26-Mar-2026 17:17:00
Attachments	AJ20P6 Misfire_AFR_CVVL.zip (AJ20P6 Misfire_AFR_CVVL.zip)

Content

Model / Model Year / Derivative

Range Rover / 24MY onwards / AJ20P6 MHEV / AJ20P6 PHEV

Range Rover Sport / 24MY onwards / AJ20P6 MHEV / AJ20P6 PHEV

Situation:

Customers may report that the Malfunction Indicator Lamp (MIL) is illuminated on the instrument panel. In some cases, this may be accompanied by symptoms such as:

- Engine misfire
- Rough running
- Hesitation
- Lack of power during acceleration

NOTE: This SSM applies **only** to vehicles that meet the following diagnostic criteria:

Primary Criteria

At least **four** of the following misfire Diagnostic Trouble Codes (DTCs) must be stored in the Powertrain Control Module (PCM):

- **P0301-00** – Cylinder 1 Misfire
- **P0302-00** – Cylinder 2 Misfire

- **P0303-00** – Cylinder 3 Misfire
- **P0304-00** – Cylinder 4 Misfire
- **P0305-00** – Cylinder 5 Misfire
- **P0306-00** – Cylinder 6 Misfire

Secondary Criteria (SSM still applicable even if fewer than four misfire DTCs are present)

If fewer than four, or none, of the above misfire DTCs are stored, the SSM remains applicable if **any** of the following DTCs are logged:

- **P21A0-84**, **P21A1-84**
- **P21A0-85**, **P21A1-85**
- **P3498-71**, **P3499-71**
- **P219C-84**, **P219D-84**, **P219E-84**, **P219F-84**
- **P219C-85**, **P219D-85**, **P219E-85**, **P219F-85**
- **P0316-00** – Misfire Detected on Startup (First 1000 revolutions)
- **P349A-71, P349B-71, P349C-71, P349D-71**

Action:
Refer to the Service Request below.

Service Request

1. Connect the JLR approved diagnostic equipment and the approved Battery Support Unit.
2. Run the Powertrain Data Collect application.
3. Start a new Datalogger session.
4. Select ‘Manage Tests’
5. Select ‘Import from disk’, upload the file (AJ20P6 Misfire_AFR_CVVL.json) which is attached to this SSM. This file will automatically populate the list of required DIDs.
6. Start a new recording.
7. Attempt to replicate the customer concern by completing the following drive cycle:

- Start the engine from cold (minimum of eight hours engine off)
- Allow the engine to complete catalyst heating (idle speed returns to 700 rpm)
- Allow the engine coolant temperature to reach a minimum of 40 °C / 104 °F
- Drive the vehicle at a steady speed between 1200-2800 RPM in a minimum of 6th gear for ten minutes.

8. Stop the recording.
9. Run the Engine Health Check application.

If the customer concern was replicated:

- Raise a Technical Assistance (TA) for the attention of PTS_100 (reference SSM 000030) attaching the datalogger recording.

If the customer concern was not replicated:

- The Powertrain Control Module (PCM), Transmission Control Module (TCM) and Electric Power Inverter Converter Control Module (EPIC) must be at the latest available software level.
- Run ‘Clear All DTCs’
- Run ‘PCM - Reset All Adaptions’
- Run ‘PCM - Learn Variable Valve Lift Adaption’
- Run ‘Network Integrity Test’
- Road test the vehicle up to full operating temperature (at least ten miles / sixteen kilometres).
- Connect the JLR approved diagnostic equipment and the approved Battery Support Unit
- Run ‘Network Integrity Test’
- If the DTCs or symptoms do not return, release the vehicle to the customer.
- Do not replace any components.

If the DTCs return or this is a repeat visit for the DTCs listed:

Raise a TA for the attention of PTS_100 (reference SSM 000030) attaching the datalogger recording.

NOTE: JLR recommends the use of premium unleaded fuel with a minimum octane rating of 95 RON. 98 RON unleaded fuel, where available, may be used as an alternative to the standard 95 RON unleaded fuel. Using the correct fuel specification helps to maintain the vehicle's performance, fuel economy, and driveability. Using lower octane-rated fuel may reduce the engine's performance, increase fuel consumption, or cause an audible engine knock and other driveability problems.

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