

Reference	SSM76507
Models	New Range Rover / L460 New Range Rover Sport / L461
Title	AJ20P6 PHEV Combustion Instability
Category	Engine
Last modified	16-Sep-2026 09:10:00
Symptom	499000 Basic Engine

Content**Model / Model Year / Derivative**

Range Rover / 24MY onwards / AJ20P6 PHEV

Range Rover Sport / 24MY onwards / AJ20P6 PHEV

Situation:

JLR Engineering investigations have found customer reports of an illuminated Malfunction Indicator Lamp (MIL). In some cases, customers may also report:

- 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 of the above misfire DTCs are stored, or if none are present, this SSM remains applicable if any of the following DTCs are stored:

- **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**

Cause:

The cause is currently under investigation. The actions within this SSM may resolve the concern without requiring component replacement.

Action:

Refer to the Service Request below.

Service Request

NOTE: Do not replace any components for this concern.

1. Connect the JLR approved Battery Support Unit and JLR approved diagnostic equipment.
2. Run 'Network Integrity Test' to confirm the DTCs stored match the primary or secondary criteria. **If any high-voltage system-related DTCs are also stored, they must be investigated prior to continuing with this SSM.**
3. Ensure the following modules are all at the latest available software level: **Anti-Lock Brake System Control Module (ABS), Battery Energy Control Module (BECM), Battery Charger Control Module (BCCM), Electronic Power Inverter Converter Control Module (EPIC), HVAC Control Module (HVAC), Powertrain Control Module (PCM), Transmission Control Module (TCM)**
4. Run 'Clear All DTCs'
5. Run 'PCM - Reset All Adaptions'
6. Run 'PCM - Learn Variable Valve Lift Adaption'
7. Run 'Network Integrity Test'
8. Disconnect the JLR approved Battery Support Unit and JLR approved diagnostic equipment.
9. Road test the vehicle up to full operating temperature (for at least ten miles / sixteen kilometres).
10. Connect the JLR approved Battery Support Unit and JLR approved diagnostic equipment.
11. Run 'Network Integrity Test'

12. If the DTCs or symptoms do not return, the vehicle can be released to the customer. **NOTE: Advise the customer to regularly charge the high-voltage battery, as a low state of charge may contribute to this concern.**

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

Raise a TA for the attention of PTS_160, reference SSM 76507.

NOTE: Jaguar Land Rover recommends the use of premium unleaded fuel with a minimum octane rating of 95 RON (91 AKI). 98 RON (93 AKI) unleaded fuel, where available, may be used as an alternative. Using the correct fuel specification helps maintain vehicle performance, fuel economy, and driveability. Using a lower octane-rated fuel may reduce engine performance, increase fuel consumption, or cause audible engine knock and other driveability concerns.

(Ref: 000403578 / 11142)

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