

Reference	SSM76454
Models	Defender / L663 Discovery / L462 New Range Rover / L460 New Range Rover Sport / L461 Range Rover Velar / L560
Title	AJ20P6 Continuous Variable Valve Lift (CVVL) system concern
Category	Engine
Last modified	12-May-2026 13:02:00
Symptom	499000 Basic Engine
Attachments	CVVL Diagnostics.json (CVVL Diagnostics.json) CVVL Diagnostics.zip (CVVL Diagnostics.zip)
Content	<p>Model / Model Year / Derivative Defender / 25MY onwards / AJ20P6 MHEV Discovery / 25MY onwards / AJ20P6 MHEV Range Rover / 25MY onwards / AJ20P6 MHEV / AJ20P6 PHEV Range Rover Sport / 25MY onwards / AJ20P6 MHEV / AJ20P6 PHEV Range Rover Velar / 25MY onwards / AJ20P6 MHEV</p> <p>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:</p> <ul style="list-style-type: none"> • Engine misfire / engine noise • Rough running • Lack of power during acceleration <p>Action: Refer to the service request below</p>

Service Request

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

Diagnostic Trouble Codes (DTCs) stored in the Powertrain Control Module (PCM):

P3498-64 - Cylinder 1 Deactivation/Intake Valve Performance
P3498-86 - Cylinder 1 Deactivation/Intake Valve Performance
P3499-64 - Cylinder 2 Deactivation/Intake Valve Performance
P3499-86 - Cylinder 2 Deactivation/Intake Valve Performance
P349A-64 - Cylinder 3 Deactivation/Intake Valve Performance
P349A-86 - Cylinder 3 Deactivation/Intake Valve Performance
P349B-64 - Cylinder 4 Deactivation/Intake Valve Performance
P349B-86 - Cylinder 4 Deactivation/Intake Valve Performance
P349C-64 - Cylinder 5 Deactivation/Intake Valve Performance
P349C-86 - Cylinder 5 Deactivation/Intake Valve Performance
P349D-64 - Cylinder 6 Deactivation/Intake Valve Performance
P349D-86 - Cylinder 6 Deactivation/Intake Valve Performance

1. Connect the JLR approved Battery Support Unit and JLR approved diagnostic equipment.
2. Run 'Network Integrity Test' to confirm DTCs stored

If any of the above DTCs are recorded on the same cylinder (for example, P3498-64 and P3498-86 cylinder 1), replace the relevant Continuous Variable Valve Lift (CCVL), front assembly for cylinder 1 to 3 and rear assembly for cylinder 4 to 6. Refer to TOPIx Workshop Manual section 303-01: Engine – INGENIUM I6 3.0L Petrol – Removal and Installation – Continuous Variable Valve Lift. Upon completion of the repair, raise an Electronic Product Quality Report (EPQR) quoting SSM 76454.

If any of the above DTCs are recorded on different cylinders (for example, P3499-64 cylinder 2 and P349D-86 cylinder 6), start the engine and allow the engine coolant temperature to reach a minimum of 70°C (158 °F) before proceeding with the instructions below.

- Start a new Datalogger session.
- Select 'Manage Tests'
- Select 'Import from disk', upload the file (CVVL Diagnostics.json) which is attached to this SSM as a standalone and ZIP file. This file will automatically populate the list of required DIDs.
- Start a new recording.

- Record for 1 minute at engine idle speed
- Record for 1 minute at 2000 RPM
- Stop the recording

Raise a Technical Assistance (TA) for the attention of PTS_100 (reference SSM 76454) attaching the datalogger recording.

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