

Reference	SSM75724
Models	Defender / L663 Discovery / L462 Discovery Sport / L550 New Range Rover Evoque / L551 Range Rover / L405 Range Rover Sport / L494 Range Rover Velar / L560
Title	INGENIUM I4 2.0L PETROL – Misfire or rough running
Category	Engine
Last modified	17-Jul-2023 00:00:00
Symptom	499000 Basic Engine
Attachments	1SSM Attachment1.pdf (1SSM Attachment1.pdf)

Content**Issue:**

JLR is investigating INGENIUM I4 2.0L PETROL vehicles misfiring/rough running with the following Diagnostic Trouble Codes (DTCs) stored in the Powertrain Control Module (PCM):

- P1315 - Persistent Misfire - No sub type information
- P0316 - Engine Misfire Detected On Start-up (First 1000 Revolutions) - No sub type information
- P0300 - Random/Multiple Cylinder Misfire Detected - No sub type information
- P0301 - Cylinder 1 Misfire Detected - No sub type information
- P0302 - Cylinder 2 Misfire Detected - No sub type information
- P0303 - Cylinder 3 Misfire Detected - No sub type information
- P0304 - Cylinder 4 Misfire Detected - No sub type information

After primary and secondary diagnosis, it is concluded that the Continuous Variable Valve Lift (CVVL) system is at fault.

Cause:

Under investigation.

Action:

If you see these conditions present on a vehicle, perform the following actions prior to renewing the Continuous Variable Valve Lift (CVVL) system:

1. Confirm if any of the DTCs above are stored within the PCM using TOPIx Cloud Diagnostics and then clear all DTCs
2. With vehicle stationary, run an engine speed sweep from to idle to 2500rpm in approximately 500rpm increments to identify the speed where misfire is most prominent
3. Recheck for any misfire DTCs using TOPIx Cloud Diagnostics
4. If after following TOPIx 303-01: Engine - INGENIUM I4 2.0L Petrol diagnosis the conclusion is to replace the Continuous Variable Valve Lift (CVVL) unit:
 - Take a 100ml sample of engine oil in a clean container

- Renew the engine oil and oil filter element – oil must be drained from the sump
 - With vehicle stationary, run an engine speed sweep from to idle to 2500rpm in approximately 500rpm increments
 - Recheck for any misfire DTCs using TOPIx Cloud Diagnostics
 - If misfire DTCs are still present then complete steps 5 and 6 below
 - If misfire DTCs are NOT still present then no further action is necessary.
5. Renew the CVVL then carefully package the removed CVVL unit with the oil sample making sure it is secure within a suitable box, paying particular attention to protecting the solenoid connectors which are very vulnerable to damage in transit – see attached photo
6. Raise an EPQR detailing the diagnosis steps taken and confirm the old CVVL unit and oil sample are available for PRR. Attach a photo showing the underside of the existing CVVL unit.

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