

JAGUAR · POWERTRAIN

P1397

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1397 · Jaguar

Variable Valve Timing Solenoid B Circuit Low Input

P1397 on a Jaguar indicates that the engine control module has detected a low input voltage on the electrical circuit for the variable valve timing solenoid on bank B, which is the side of the engine that does not contain cylinder number one. The computer expects to see a voltage within a specific range when the solenoid is commanded on, and a reading below that threshold for a set period triggers this fault.

SYSTEM

Powertrain

CODE TYPE

Jaguar specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or uneven engine operation, particularly when the engine is cold
- Reduced engine performance and sluggish acceleration due to incorrect valve timing
- Poor fuel economy as the engine management system defaults to a fixed timing strategy
- In some cases, the engine may enter limp mode or exhibit hesitation during light throttle applications

Common causes, most likely first

- 1 A faulty variable valve timing solenoid on bank B, such as an open or shorted internal coil
- 2 Damaged, corroded, or disconnected electrical connector at the solenoid
- 3 Broken or chafed wiring in the circuit between the solenoid and the engine control module
- 4 High resistance in the ground circuit for the solenoid, often due to a loose or corroded ground point
- 5 A failed engine control module driver for that solenoid circuit, though this is less common
- 6 Oil sludge or debris blocking the solenoid screen, which can cause the solenoid to draw excessive current and set a low voltage code



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other systems before proceeding
- 2 Inspect the solenoid connector and wiring for signs of damage, corrosion, or loose pins, and repair as needed
- 3 Measure the resistance of the variable valve timing solenoid on bank B and compare it to the manufacturer's specification
- 4 Check the voltage supply and ground circuit to the solenoid with a multimeter or test light to confirm the integrity of the wiring
- 5 If the solenoid fails the resistance or functional test, replace it with a quality part and clear the code
- 6 Clear the adaptive learning values and perform a road test to confirm the repair and ensure the code does not return
- 7 If the code persists after all electrical checks, diagnose the engine control module driver circuit or consult a Jaguar specialist

What a low VVT solenoid code really means

- A low input code does not automatically condemn the solenoid; a poor ground or a chafed wire in the harness often causes the same voltage drop and is frequently overlooked.
- Oil sludge or a clogged solenoid screen can cause the solenoid to bind and draw excessive current, which the module interprets as a low voltage condition, so an oil change and screen cleaning may resolve the issue without parts replacement.
- On some Jaguar engines, the bank B solenoid is difficult to access, and technicians sometimes replace the easier-to-reach bank A solenoid by mistake, leaving the fault unresolved.
- The engine control module may set this code intermittently if the connector is only loose when the engine is cold or vibrating, so a wiggle test while monitoring live data is essential.
- A failing variable valve timing solenoid can also affect camshaft phaser operation, leading to timing chain noise or poor performance that may be misdiagnosed as a mechanical timing fault.

Can I keep driving with P1397?

You can generally drive the vehicle with this code, but avoid aggressive acceleration and heavy load until the fault is repaired, as incorrect valve timing can reduce performance and fuel economy. If the engine runs roughly or enters limp mode, have it checked promptly to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light
- Wire repair kit with crimping tools
- Socket set and Torx bits for solenoid removal
- Manufacturer service information for wiring diagrams and resistance specifications



Reading P1397

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Jaguar): its meaning depends on the make.
- 3** Ignition system and misfire.
- 97** The exact fault within that area.

Often seen with

P1396 Engine Speed Sensor Missing Tooth · **P1398** Engine RPM Signal Short To Ground · **P1396** Variable Valve Timing Solenoid B Circuit · **P1398** Variable Valve Timing Solenoid B Circuit High Input · **P1396** Wheel Speed Sensor 2 G-Sensor Circuit Performance · **P1398** Wheel Speed Sensor 2 G-Sensor Circuit High Voltage · **P1396** Glow Plug Monitor Fault Bank 2 · **P1396** Wheel Speed Sensor 2, G-Sensor Circuit Performance · **P1398** PCM Is Unable To Learn The Crankshaft Position Sensor's Sign · **P1396** Crankshaft Position Sensor Segment Timing Plausibility · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0012** 'A' Camshaft Position - Timing Over-Retarded (Bank 1) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/jaguar-p1397/>

