

BMW · POWERTRAIN

P1313

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1313 · BMW

A Camshaft Position Plausibility

P1313 on BMW vehicles indicates that the engine control module (DME) has detected a plausibility error in the camshaft position signal, meaning the reported camshaft angle does not match the expected value derived from the crankshaft position sensor and VANOS operation. The computer compares the camshaft sensor input against a calculated model and flags the code when the deviation exceeds a calibrated threshold, often due to a faulty sensor, wiring issue, or VANOS solenoid problem.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	BMW specific	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Rough idle or intermittent stalling, especially when the engine is cold.
- Reduced engine performance or lack of power during acceleration.
- Poor fuel economy or increased fuel consumption.
- Difficulty starting or extended cranking times.
- In some cases, the engine may enter limp mode with reduced power.

Common causes, most likely first

- 1 Faulty camshaft position sensor (most common).
- 2 Wiring or connector issues at the camshaft sensor, such as corrosion or chafed wires.
- 3 Contaminated or degraded engine oil affecting VANOS solenoid operation.
- 4 Faulty VANOS solenoid or stuck VANOS solenoid valve.
- 5 Timing chain stretch or skipped timing chain teeth.
- 6 Engine control module (DME) software issue or internal fault (rare).



How to diagnose and fix it

- 1 Perform a visual inspection of the camshaft sensor and its wiring for damage or corrosion.
- 2 Use a BMW-specific scan tool to read live data and compare camshaft and crankshaft position signals for consistency.
- 3 Check engine oil condition and level; replace oil and filter if contaminated or overdue.
- 4 Test the camshaft position sensor with a multimeter or oscilloscope to verify signal output.
- 5 Remove and inspect the VANOS solenoid for debris or malfunction; clean or replace as needed.
- 6 Verify timing chain alignment and condition using timing marks or a scope; repair if stretched or jumped.
- 7 After repairs, clear the fault memory and perform a road test to confirm the code does not return.

Camshaft Plausibility: Beyond the Sensor

- A dirty or failing VANOS solenoid often mimics a bad camshaft sensor, so testing both before replacing parts saves time and money.
- Low oil pressure or sludged oil can cause the VANOS system to react slowly, triggering P1313 even when the sensor is good.
- The code can be set by a loose timing chain that has jumped a tooth, which is a mechanical issue that a sensor replacement will not fix.
- Intermittent wiring faults at the camshaft sensor connector are common on higher-mileage BMWs and may not show up in static tests.
- Always check for related codes like P0010 or P0011, as they can indicate a VANOS solenoid issue that is the root cause of P1313.

Can I keep driving with P1313?

You can usually drive the car with P1313 set, but avoid aggressive acceleration and high speeds until the fault is diagnosed. If the engine runs rough, stalls, or enters limp mode, have it inspected promptly to prevent further damage.

Tools that help

- BMW-specific OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope (for signal analysis)
- Socket set and Torx bits for sensor removal
- Oil filter wrench and drain pan for oil change



Reading P1313

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

Often seen with

P0010 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0012** 'A' Camshaft Position - Timing Over-Retarded (Bank 1) · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1)

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/bmw-p1313/>

