

GENERIC · POWERTRAIN

P0366

OBD-II TROUBLE CODE

P0366

Camshaft Position Sensor 'B' Circuit Range/Performance (Bank 1)

P0366 means the engine computer has detected an out-of-range or erratic signal from the camshaft position sensor circuit for Bank 1 sensor 'B', which is typically the exhaust camshaft sensor on engines with variable valve timing. The computer compares the camshaft signal against the crankshaft signal and sets this code when the expected correlation or signal pattern is not met during a specified test window.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- Rough idle or intermittent engine stumble, especially when the engine is cold or under light load
- Reduced engine power or a limp-home mode with limited RPM
- Hard starting or extended cranking before the engine fires
- Poor fuel economy or increased emissions noticeable over time
- Occasional stalling when coming to a stop or during deceleration

Common causes, most likely first

- 1 Faulty camshaft position sensor 'B' on Bank 1, often due to heat damage or internal failure
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, particularly near the exhaust manifold or timing cover
- 3 Loose or contaminated sensor connector pins causing intermittent signal loss
- 4 Metal debris or sludge buildup on the sensor tip or tone wheel, disrupting the magnetic signal
- 5 Stretched timing chain or worn timing belt causing camshaft-to-crankshaft correlation to drift out of range
- 6 Failed variable valve timing solenoid or phaser affecting camshaft timing and sensor signal
- 7 Engine computer software or internal fault, though this is the least common cause



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then record freeze-frame data to see the conditions when P0366 set
- 2 Visually inspect the sensor, connector, and wiring harness for damage, corrosion, or oil contamination, and repair as needed
- 3 Remove the sensor and check the tip and tone wheel for metal shavings, sludge, or physical damage, then clean or replace if necessary
- 4 Measure sensor resistance and check the signal waveform with an oscilloscope while cranking or running, comparing it to the manufacturer's specification
- 5 Verify camshaft-to-crankshaft timing correlation with a scan tool or oscilloscope to rule out a stretched chain or belt
- 6 Test the variable valve timing solenoid and phaser operation if the sensor and wiring check out good
- 7 Replace the camshaft position sensor 'B' with a quality part, clear codes, and road-test to confirm the repair

Before you replace the camshaft sensor

- A stretched timing chain often sets P0366 without any sensor fault at all, so always verify cam-to-crank correlation before condemning the sensor.
- Oil sludge or metal debris on the sensor tip can mimic a failed sensor, and simply cleaning it may resolve the code on high-mileage engines.
- Intermittent wiring faults near the exhaust manifold are common because heat cycles harden insulation and cause internal breaks that only act up when hot.
- A failing variable valve timing solenoid can alter camshaft timing enough to trigger P0366 even when the sensor signal itself looks perfect on a scope.
- This code does not always mean the sensor is dead; a poor ground or reference voltage drop at the computer can produce the same range/performance fault.

Can I keep driving with P0366?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or long highway trips because the engine may enter limp mode or stall unexpectedly. If the engine runs rough, stalls, or loses power, stop driving and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for checking resistance, voltage, and continuity
- Oscilloscope for viewing camshaft and crankshaft signal waveforms
- Basic hand tools including socket set and torque wrench
- Electrical contact cleaner and dielectric grease for connector repair
- Manufacturer service information for wiring diagrams and specifications



Reading P0366

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 3** Ignition system and misfire.
- 66** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1) · **P0341** Camshaft Position Sensor A Circuit Range/Performance · **P0365** Camshaft Position Sensor 'B' Circuit (Bank 1) · **P0367** Camshaft Position Sensor 'B' Circuit Low (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/p0366/>

