

BMW · POWERTRAIN

P1346

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1346 · BMW

Misfire During Start Cylinder 3

P1346 on BMW vehicles means the engine computer detected a misfire specifically during the startup phase on cylinder 3, using crankshaft speed fluctuations to identify which cylinder is not contributing power. The fault is logged when the misfire exceeds a threshold while the engine is cranking or immediately after it fires, and it often points to a weak ignition coil, fouled spark plug, or a fuel injector that is not delivering enough fuel when cold.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Rough idle or shaking immediately after a cold start, often smoothing out once the engine warms up
- A flashing or steady check engine light, sometimes accompanied by a message to service the engine soon
- Extended cranking time before the engine catches, or a brief stumble right after it starts
- A noticeable loss of power or hesitation during the first few seconds of driving after startup
- Often no symptoms besides the warning light, especially if the misfire is intermittent and only occurs under specific cold-start conditions

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder 3, especially if maintenance intervals have been stretched
- 2 Failing ignition coil on cylinder 3 that breaks down under the higher load of a cold start
- 3 Leaking or clogged fuel injector on cylinder 3, causing a lean or rich condition during startup
- 4 Intake manifold gasket leak near cylinder 3 that leans out the mixture when the engine is cold
- 5 Low fuel pressure from a weak fuel pump or restricted fuel filter, affecting cylinder 3 first due to its position in the fuel rail
- 6 Carbon buildup on the intake valves of cylinder 3, common on direct-injected BMW engines, which absorbs fuel during cold starts
- 7 Mechanical issue such as a sticking valve or worn camshaft lobe on cylinder 3, though this is less common



How to diagnose and fix it

- 1 Scan all stored and pending codes with a BMW-capable scan tool to confirm P1346 is the only misfire code and check for related faults in other modules
- 2 Inspect the spark plug on cylinder 3 for wear, fouling, or incorrect gap, and replace it if it does not meet specifications
- 3 Swap the ignition coil from cylinder 3 with a known-good coil from another cylinder and see if the misfire moves, which confirms a faulty coil
- 4 Check fuel injector operation on cylinder 3 by listening for a consistent click or using a noid light, and compare fuel trim data during cold start
- 5 Perform a cold-start smoke test to check for intake leaks around cylinder 3, and inspect vacuum lines and the intake manifold gasket
- 6 Measure fuel pressure at the rail during cranking and compare with specifications, and check for a restricted fuel filter if pressure is low
- 7 If all electrical and fuel checks pass, perform a compression test and cylinder leak-down test on cylinder 3 to rule out mechanical faults

Cold-start misfires that fool BMW technicians

- A P1346 can be set by a perfectly healthy engine if the battery voltage drops too low during cranking, causing the engine computer to misread crankshaft speed signals and falsely flag a misfire on cylinder 3.
- Carbon buildup on intake valves is a frequent culprit on BMW direct-injection engines, and it often causes cold-start misfires that disappear once the engine warms up, leading many to replace ignition parts unnecessarily.
- The code specifically flags a startup misfire, so a misfire that only occurs while driving at operating temperature is more likely to be a different fault, such as a failing coil under load, and should not be diagnosed as P1346.
- A leaking injector on cylinder 3 can flood the cylinder during shutdown, causing a rich misfire on the next cold start that clears quickly, and this often leaves no trace in fuel trim data once the engine is running.
- BMW's misfire detection is sensitive to engine speed fluctuations, so a worn dual-mass flywheel or a failing crankshaft position sensor can create phantom misfire codes, including P1346, without any actual combustion problem.

Can I keep driving with P1346?

You can usually drive the car to a workshop if the misfire is mild and only occurs at startup, but avoid hard acceleration and long trips until it is repaired. If the check engine light flashes or the engine runs very rough, stop driving and have the vehicle towed to prevent damage to the catalytic converter.



Tools that help

- BMW-capable OBD-II scan tool with live data and misfire counter capability
- Spark plug socket and torque wrench
- Ignition coil puller or trim removal tool
- Fuel pressure gauge
- Smoke machine for intake leak testing
- Compression tester and cylinder leak-down tester

Reading P1346

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (BMW): its meaning depends on the make.

3 Ignition system and misfire.

46 The exact fault within that area.

Often seen with

P1345 Ignition Coil Output Stage 3 Short To Ground · **P1347** Bank 2 Crankshaft Camshaft Position Sensor Signal Out Of Seq · **P1345** VVT Sensor Circuit Malfunction Bank 1 · **P1345** No CMP or SGC Signal · **P1345** No SGC Signal 1.6L · **P1345** Camshaft to Crankshaft Position Correlation Fault · **P1345** CKP/CMP Correlation · **P1345** Misfire Cylinder 2 With Fuel Cut-off · **P1347** Misfire Cylinder 3 With Fuel Cut-off · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0303** Cylinder 3 Misfire Detected

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-p1346/>

