

GENERIC · POWERTRAIN

P2321

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2321

Ignition Coil 'H' Primary Control Circuit Low

P2321 means the engine computer has detected a low-voltage condition on the primary control circuit for ignition coil 'H', which is one of the individual coils in a coil-on-plug or distributorless ignition system. The computer commands the coil to fire by grounding the primary circuit, and it monitors the voltage on that circuit to confirm the coil is being controlled as expected; a low reading tells it the circuit is shorted to ground or the coil's internal switching component has failed.

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

Symptoms you may notice

- The check engine light is illuminated, often with no other noticeable symptoms besides the warning light.
- A noticeable misfire or rough running condition, especially under acceleration or load.
- The engine may stumble, hesitate, or feel down on power because one cylinder is not firing reliably.
- A flashing check engine light in severe cases, indicating a misfire that can damage the catalytic converter.
- Poor fuel economy or a strong fuel smell from the exhaust due to unburned fuel passing through the engine.
- In some vehicles, the engine may enter limp mode or shut down the affected cylinder to protect the catalytic converter.

Common causes, most likely first

- A failed ignition coil 'H' with an internally shorted primary winding or failed switching transistor.
- A short to ground in the primary control wire between the coil and the engine computer, often from chafed insulation or a pinched harness.
- Corroded, loose, or damaged electrical connector pins at the coil or at the engine computer.
- A faulty engine computer driver circuit for that coil, though this is less common than coil or wiring faults.
- Water intrusion or oil contamination in the spark plug well causing the coil to short internally.
- A shorted spark plug or failed spark plug boot that overloads the coil primary circuit.
- Aftermarket or incorrect coil installed that does not match the vehicle's electrical requirements.



How to diagnose and fix it

- 1 Scan all stored and pending codes and record freeze-frame data to confirm P2321 is the primary fault and not a secondary code.
- 2 Visually inspect the coil 'H' connector and harness for corrosion, loose pins, chafing, or signs of overheating, and repair as needed.
- 3 Swap coil 'H' with a known-good coil from another cylinder and clear the code; if the misfire or code moves with the coil, replace the coil.
- 4 Measure resistance of the primary and secondary windings of coil 'H' with a multimeter and compare to the manufacturer's specification.
- 5 Check the primary control wire for a short to ground using a multimeter or a test light with the computer disconnected, and repair the harness if a short is found.
- 6 Inspect the spark plug and boot for the affected cylinder, replacing the plug if it is fouled, worn, or cracked.
- 7 If all external checks pass, perform a driver circuit test at the engine computer to rule out a failed internal driver before replacing the computer.

What a low primary circuit really means

- A low primary control circuit code does not automatically mean the coil is bad; a short to ground in the control wire or a corroded connector can set the same code and is often overlooked.
- Swapping the coil to another cylinder is the fastest way to separate a coil fault from a wiring or computer fault, because the code will follow the coil if the coil is the problem.
- Oil or water pooling in the spark plug well can cause an intermittent short that only appears when the engine is hot or after a car wash, so inspect the well carefully before condemning the coil.
- A failing spark plug or a worn boot can overload the coil primary circuit and set this code even though the coil itself tests good on the bench.
- Some vehicles set P2321 when the engine computer detects an unexpected voltage drop during the coil dwell period, which can be caused by a weak battery or poor ground connection rather than the coil circuit itself.

Can I keep driving with P2321?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration and prolonged driving because a persistent misfire can overheat and damage the catalytic converter. If the check engine light is flashing, stop driving as soon as it is safe and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement
- Test light or logic probe for checking control circuit signals
- Socket set and spark plug socket for coil and plug removal
- Wire terminal pick and electrical contact cleaner for connector inspection



Reading P2321

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

Often seen with

P0300 Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P0351** Ignition Coil A Primary/Secondary Circuit Malfunction · **P0352** Ignition Coil B Primary/Secondary Circuit Malfunction · **P2322** Ignition Coil 'H' Primary Control Circuit High

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/p2321/>

