

GENERIC · POWERTRAIN

P033A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P033A

Knock/Combustion Vibration Sensor D Circuit

P033A indicates that the powertrain control module has detected an abnormal signal on the circuit for knock sensor D, one of several combustion vibration sensors used to detect engine knock. The computer compares the sensor's signal against expected values and flags the circuit when the voltage or response falls outside the normal range, which can be caused by wiring faults, a failed sensor, or an engine mechanical issue that alters vibration.

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 noticeable symptoms
- Reduced engine performance or power due to the computer retarding ignition timing as a protective measure
- Audible engine knock or pinging under acceleration if the sensor is not reporting correctly
- Poor fuel economy resulting from the computer running a conservative timing strategy
- Intermittent hesitation or sluggish acceleration when the fault is present only under certain conditions
- Rough running or misfire-like symptoms in severe cases where the sensor signal is completely lost

Common causes, most likely first

- 1 Damaged, corroded, or disconnected wiring or connector at the knock sensor D circuit
- 2 Failed knock sensor D due to age, heat exposure, or physical damage
- 3 Improperly installed sensor, such as incorrect torque or debris between the sensor and engine block
- 4 Engine mechanical problems like excessive carbon buildup or a loose component creating false vibration
- 5 Faulty powertrain control module or a software issue affecting signal interpretation
- 6 Electrical interference from aftermarket accessories or poor grounding affecting the sensor signal



How to diagnose and fix it

- 1 Perform a visual inspection of the knock sensor D and its wiring harness for obvious damage, corrosion, or loose connections
- 2 Use a scan tool to check for related codes and freeze-frame data to understand when the fault occurs
- 3 Test the sensor circuit with a multimeter to check for continuity, shorts to ground, and proper resistance according to the manufacturer's specification
- 4 Inspect the sensor mounting area for debris, proper torque, and condition of the threads or mounting surface
- 5 If the circuit tests good, swap the sensor with a known-good unit to see if the code follows the sensor
- 6 Check for engine mechanical issues such as carbon buildup or loose components that could cause abnormal vibration
- 7 If all else fails, diagnose the powertrain control module and its software, updating or replacing as needed

What a knock sensor code really tells you

- A P033A code often sets because of a poor connection at the sensor connector, not a failed sensor, so always inspect the plug and terminals before replacing parts.
- The knock sensor D circuit may be affected by engine mechanical noises that mimic knock, such as a loose heat shield or worn accessory drive components, leading to false codes.
- On some vehicles, the knock sensor is buried under the intake manifold, making replacement labor-intensive; a thorough circuit test before teardown can save significant time and cost.
- The computer may set this code intermittently if the sensor signal is only lost during certain driving conditions, so check freeze-frame data to replicate the fault.
- Aftermarket performance modifications that alter engine vibration or electrical grounding can trigger this code even when the sensor and circuit are functioning normally.

Can I keep driving with P033A?

You can generally continue driving with a P033A code, but avoid aggressive acceleration or heavy loads because the computer may not be able to optimize ignition timing, which can reduce performance and fuel economy. If the engine is audibly knocking or running poorly, have it diagnosed promptly to prevent potential long-term damage.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Socket and ratchet set
- Torque wrench
- Vehicle service information or wiring diagrams



Reading P033A

- 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.
- 3A** The exact fault within that area.

Often seen with

P0325 Knock Sensor 1 Circuit Malfunction (Bank 1) · **P0327** Knock Sensor 1 Circuit Low Input (Bank 1) · **P0330** Knock Sensor 2 Circuit · **P0332** Knock Sensor 2 Circuit Low · **P0333** Knock Sensor 2 Circuit High

See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p033a/>

