

GENERIC · POWERTRAIN

P045A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P045A

EGR B Control Circuit

P045A indicates that the powertrain control module has detected an electrical fault in the control circuit for the exhaust gas recirculation (EGR) valve on bank B, which is the side of the engine that does not contain cylinder number one. The computer monitors the voltage or current on the control wire and sets this code when the signal falls outside the expected range during commanded EGR operation.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or stumbling when the EGR valve is commanded open
- Slight decrease in fuel economy during normal driving
- Failed emissions test due to the check engine light being on
- Intermittent engine surging or hesitation under light acceleration

Common causes, most likely first

- 1 Open or shorted wiring in the EGR control circuit, including a broken wire or chafed insulation
- 2 Corroded or loose electrical connector at the EGR valve or at the powertrain control module
- 3 Failed EGR valve solenoid or stepper motor winding
- 4 Faulty powertrain control module driver for the EGR circuit, though this is rare
- 5 Aftermarket or damaged EGR valve that does not meet the original electrical specifications

How to diagnose and fix it

- 1 Inspect the EGR valve connector and the full length of the control circuit wiring for damage, corrosion, or loose pins
- 2 Measure resistance of the EGR valve control solenoid or motor and compare it to the manufacturer's specification
- 3 Check for battery voltage and ground at the EGR valve connector with the key on and engine off
- 4 Back-probe the control wire at the powertrain control module and command the EGR valve with a scan tool to verify the signal changes
- 5 Repair any open, short, or high-resistance wiring faults found during testing
- 6 Replace the EGR valve if the electrical tests confirm an internal failure
- 7 Clear the diagnostic trouble codes and perform a road test to verify the repair



Before you replace the EGR valve

- A loose or corroded ground connection at the engine block can cause this code by disrupting the EGR circuit's return path, so always verify grounds before condemning the valve.
- The bank B designation often confuses technicians on V6 and V8 engines because bank B is the side opposite cylinder one, and the EGR valve may be shared between banks on some engines.
- A scan tool that can command the EGR valve open and closed is essential for verifying the control circuit, because a simple resistance check can pass even when the driver inside the powertrain control module has failed.
- This code can be set by a wiring harness that has been pinched during a previous repair, so look for recent service work near the EGR valve or intake manifold.
- Do not overlook the possibility of a faulty aftermarket EGR valve that has the correct connector but the wrong internal resistance, which will set this code even though the part is new.

Can I keep driving with P045A?

You can usually continue driving with this code because the engine will default to a safe operating strategy, but avoid heavy acceleration and long uphill climbs until the fault is repaired. Prolonged driving with a failed EGR circuit can increase combustion chamber temperatures and may lead to detonation or damage to the catalytic converter over time.

Tools that help

- Scan tool with bidirectional control capability
- Digital multimeter
- Back-probe kit
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools

Reading P045A

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
5A	The exact fault within that area.



Often seen with

P0400 Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0403** EGR Circuit Malfunction · **P045B** EGR B Control Circuit Range/Performance

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p045a/>

