

GENERIC · POWERTRAIN

P2059

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2059

Reductant Injection Air Pump Control Circuit/Open

P2059 indicates that the powertrain control module (PCM) has detected an open circuit or control fault in the wiring that operates the reductant injection air pump, which is part of the diesel exhaust fluid (DEF) dosing system on many diesel vehicles. The PCM commands the air pump to run during certain conditions to help vaporize and deliver the reductant into the exhaust, and when the expected electrical feedback is missing, it stores this code and illuminates the check engine light.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially if the pump is only used under specific conditions.
- Possible reduction in engine power or limp mode if the fault triggers a derate strategy.
- A noticeable increase in diesel exhaust fluid (DEF) consumption in some cases.
- Rough running or hesitation during regeneration events if the air pump is needed for proper reductant delivery.
- A stored freeze frame showing the fault occurred during a commanded air pump activation.

Common causes, most likely first

- 1 Open or damaged wiring in the air pump control circuit, such as a broken wire or corroded connector.
- 2 Failed reductant injection air pump motor or internal open circuit in the pump.
- 3 Blown fuse or faulty relay that supplies power to the air pump.
- 4 Poor ground connection for the air pump circuit, leading to an open circuit condition.
- 5 Corrosion or water intrusion at the air pump electrical connector, common on underbody components.
- 6 PCM internal driver failure for the air pump control circuit, though less common.
- 7 Aftermarket accessories or improper previous repairs that disturbed the air pump wiring.



How to diagnose and fix it

- 1 Perform a visual inspection of the air pump, its connector, and the wiring harness for damage, corrosion, or loose pins.
- 2 Check the fuse and relay that supply power to the reductant injection air pump and replace if faulty.
- 3 Use a scan tool to command the air pump on and off while listening for pump operation and checking for voltage and ground signals at the pump connector.
- 4 Measure resistance of the air pump motor and compare to specifications; replace the pump if it is open or shorted.
- 5 Perform a voltage drop test on the power and ground circuits to the air pump to identify excessive resistance.
- 6 Inspect the PCM connector and wiring for the control circuit, repairing any opens or shorts as needed.
- 7 Clear the code and verify the repair by running the appropriate monitor or test drive to confirm the air pump operates correctly.

Common Misdiagnosis of Reductant Air Pump Faults

- A failed air pump is often replaced unnecessarily when the real problem is a corroded connector or chafed wire in the underbody harness, so always check the circuit integrity first.
- The code can be set by a blown fuse that also powers other components, so a quick fuse check can save hours of diagnostic time.
- Some vehicles use the air pump only during specific conditions such as cold starts or regeneration, so the pump may not run during a simple key-on test, leading to false conclusions.
- An open circuit can be intermittent, especially if the wiring is routed near hot or moving components, so wiggle tests and load tests are essential.
- The PCM may set this code if the air pump is commanded on but the current draw is outside the expected range, which can be caused by a weak pump motor or high resistance in the circuit.

Can I keep driving with P2059?

You can generally continue driving with this code, but avoid long trips or heavy loads until it is repaired because the vehicle may enter limp mode or fail an emissions test. If the check engine light starts flashing or you notice reduced power, have the vehicle inspected promptly.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wire repair kit (splices, heat shrink, electrical tape)
- Fuse puller and relay tester
- Service information for wiring diagrams and component locations



Reading P2059

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 59** The exact fault within that area.

Often seen with

P2058 Reductant Injector Circuit High (Bank 2 Unit 2) · **P2060** Reductant Injection Air Pump Control Circuit Low · **P20B9** Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance · **P20BE** Reductant Heater B Control Circuit Performance

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/p2059/>

