

GENERIC · POWERTRAIN

P2EB9

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2EB9

Reductant Injection Valve Circuit Range/Performance Bank 2 Unit 2

P2EB9 indicates that the powertrain control module (PCM) has detected an out-of-range or performance fault in the reductant injection valve circuit for bank 2 unit 2 of the selective catalytic reduction (SCR) system. The PCM monitors the valve's electrical circuit and expects a specific current or voltage response when commanding the valve; when the actual feedback falls outside the expected range, this code is stored.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode triggered by the PCM to protect the emissions system
- A driver information message indicating low diesel exhaust fluid (DEF) or a reductant system fault
- Increased DEF consumption if the valve is stuck open or leaking
- Rough running or misfire if the valve is stuck closed and excessive DEF accumulates in the exhaust
- White exhaust smoke or a pungent ammonia odor from the tailpipe in severe cases

Common causes, most likely first

- 1 Faulty reductant injection valve (bank 2 unit 2) with an open or shorted internal coil
- 2 Damaged or corroded wiring harness and connector at the valve
- 3 Poor electrical connection at the PCM or intermediate connectors
- 4 Clogged or restricted reductant injector nozzle causing abnormal circuit feedback
- 5 Failed reductant pump or pressure sensor affecting valve performance
- 6 Internal PCM driver circuit fault (rare)

How to diagnose and fix it

- 1 Verify the stored code and check for any related reductant system codes using a scan tool
- 2 Inspect the reductant injection valve connector and wiring for damage, corrosion, or loose pins
- 3 Measure the resistance of the reductant injection valve and compare to the manufacturer's specification
- 4 Check the reductant supply pressure and inspect the injector nozzle for clogging or carbon buildup
- 5 Perform a bidirectional test of the reductant injection valve with the scan tool to confirm operation
- 6 If the valve fails electrical or performance tests, replace it and clear the code
- 7 After repair, run the SCR system monitor to confirm the code does not return



Reductant valve faults often misdiagnosed

- A clogged reductant injector nozzle can cause a performance code without any electrical fault, so always inspect the spray pattern before replacing the valve.
- The PCM may set P2EB9 if the reductant pump pressure is low, mimicking a valve failure, so verify system pressure first.
- Corrosion inside the valve connector is a common cause that is easily overlooked during visual inspection.
- Bank 2 unit 2 refers to a specific valve in a multi-bank SCR system; misidentifying the location leads to replacing the wrong part.
- After replacing the valve, the SCR system may require a relearn or adaptation procedure to prevent repeat codes.

Can I keep driving with P2EB9?

You can usually drive the vehicle with this code, but the engine may enter limp mode or derate power, and continued driving can increase DEF consumption or cause exhaust system damage. Avoid long trips and schedule diagnosis promptly.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter
- Fuel pressure gauge (for reductant system)
- Socket and wrench set
- Inspection mirror and flashlight

Reading P2EB9

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
B9	The exact fault within that area.

Often seen with

P207F Reductant Quality Performance · **P20B9** Reductant Heater A Control Circuit/Open · **P20BD** Reductant Heater B Control Circuit/Open



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/p2eb9/>

