

GENERIC · POWERTRAIN

P2052

OBD-II TROUBLE CODE

P2052

Reductant Injector Circuit High (Bank 2 Unit 1)

P2052 means the engine computer has detected an abnormally high current or voltage on the control circuit for the reductant injector that serves bank 2 unit 1 of the selective catalytic reduction system. The computer commands the injector to spray diesel exhaust fluid, or DEF, into the exhaust, and the feedback circuit reports a signal above the expected range, so the computer flags the circuit as high.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A message on the dash warning of low DEF quality, incorrect DEF, or a reductant system fault
- Reduced engine power or a limp-home mode once the fault repeats on several drive cycles
- Rough running or misfire-like behavior if the injector is stuck open and flooding the exhaust
- White crystallized DEF residue around the injector or exhaust pipe joint
- A driver information message counting down the remaining starts before the vehicle is disabled

Common causes, most likely first

- 1 Chafed, pinched, or shorted wiring between the reductant injector and the engine control module, especially where the harness passes near hot exhaust components
- 2 A reductant injector coil that has failed internally and draws excessive current or shorts to voltage
- 3 Corroded or water-intruded connector pins at the injector or at the control module, often from DEF spillage or road splash
- 4 A short to voltage on the injector control wire caused by insulation damage or a poor repair splice
- 5 A failed reductant injector driver inside the engine control module, which is uncommon but does occur after a shorted injector
- 6 DEF contamination or crystallization that seizes the injector pintle and forces the driver circuit to work against a stuck armature



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P2052, then inspect the reductant injector harness for chafing, heat damage, and DEF residue before touching any parts
- 2 Disconnect the injector and measure resistance across its terminals, comparing the reading to the manufacturer's specification for that injector
- 3 Check for short-to-voltage and short-to-ground on each injector control wire with the key on and the injector unplugged, wiggling the harness to reveal intermittent faults
- 4 Inspect and clean the injector connector and the corresponding module connector pins, looking for corrosion, pushed-back terminals, or water tracks
- 5 If wiring and resistance test good, command the injector with a bidirectional scan tool and watch the current feedback to confirm whether the driver or the injector is at fault
- 6 Replace the reductant injector only after the circuit tests prove the injector is the source, then clear the code and run the SCR dosing test to verify repair
- 7 If the fault returns with a known-good injector and intact wiring, test or replace the engine control module and perform any required programming or adaptation

Why a high circuit code is not always the injector

- A high circuit code is set by current or voltage feedback, so a shorted harness section or a corroded connector can trigger P2052 even when the injector itself tests perfectly on the bench.
- Technicians often replace the reductant injector first and find the code returns because the real fault is a chafed wire near the exhaust that only shorts when the engine bay is hot and the harness expands.
- DEF crystallization around a leaking injector seal can bridge connector pins and create a high-resistance or shorted path that mimics an electrical failure, so always clean and dry the area before testing.
- A weak battery or low charging voltage can cause the module to misreport injector feedback, so verify system voltage and ground integrity before condemning any component.
- P2052 is bank 2 unit 1 specific, and on vehicles with two SCR dosing injectors a swapped harness connector or a mislabeled injector can send you chasing the wrong bank entirely.

Can I keep driving with P2052?

You can usually drive short distances to a repair shop while the light is on, but avoid long trips and heavy loads because repeated faults can trigger a speed-limited limp mode or a start countdown. Do not tow a trailer or climb long grades until the circuit is repaired, and never continue driving if the engine runs rough or white smoke pours from the exhaust.



Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with min/max recording
- Back probe pins and a wiring diagram for the reductant injector circuit
- Hand tools for connector and harness access
- Flashlight and inspection mirror for exhaust-area wiring

Reading P2052

- 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.
- 52** The exact fault within that area.

Often seen with

P2051 Reductant Injector Circuit Low (Bank 2 Unit 1) · **P2053** Reductant Injector Circuit/Open (Bank 1 Unit 2) · **P2054** Reductant Injector Circuit Low (Bank 1 Unit 2) · **P20B9** Reductant Heater A Control Circuit/Open · **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/p2052/>

