



P20A5

Reductant Purge Control Valve A Stuck Closed

P20A5 indicates that the powertrain control module has commanded the reductant purge control valve A to open, but the circuit or valve response indicates it remains stuck closed. The computer typically detects this by monitoring the valve's electrical current or a pressure change in the reductant injection system and seeing no expected change when activation is commanded.

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

- Illumination of the check engine light, often with no other noticeable symptoms.
- A pending or stored P20A5 code with possible reduced engine power or limp mode.
- In some vehicles, a message on the driver information center indicating diesel exhaust fluid (DEF) system fault or service required.
- Slightly increased DEF consumption if the system attempts repeated purges.
- In rare cases, a sulfur smell or white exhaust smoke if reductant accumulates and is not properly purged.
- Possible failure to complete a forced regeneration or DEF system test.

Common causes, most likely first

- 1 Reductant purge control valve A mechanically stuck closed due to contamination, corrosion, or debris.
- 2 Open or shorted wiring in the purge valve control circuit, including chafed harness or corroded connector pins.
- 3 Failed purge valve solenoid coil or internal electrical fault.
- 4 Blocked or restricted reductant purge passage or filter screen.
- 5 Powertrain control module software issue or faulty driver circuit within the PCM.
- 6 Low reductant tank level or frozen reductant in cold climates causing temporary valve sticking.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related pending or stored codes in the reductant system.
- 2 Inspect the reductant purge valve A connector and wiring for corrosion, damage, or loose pins.
- 3 Measure the resistance of the purge valve solenoid and compare to manufacturer specifications.
- 4 Command the purge valve on and off with a bidirectional scan tool and listen for an audible click or verify a pressure change.
- 5 Check for reductant contamination or debris in the valve and clean or replace the valve if restricted.
- 6 Perform a voltage drop test on the control circuit to rule out high resistance in the wiring.
- 7 If all electrical and mechanical checks pass, reprogram or replace the PCM as a last resort.

What technicians often overlook on P20A5

- A stuck-closed purge valve can be caused by crystallized diesel exhaust fluid (DEF) from repeated short trips where the system does not complete a full purge cycle.
- The code may set intermittently if the valve is only partially stuck, so a resistance check at room temperature can pass while the valve still fails when cold or under vibration.
- A weak battery or low charging system voltage can cause the PCM to misreport a stuck-closed valve because the driver circuit cannot supply full current during the test.
- Some vehicles require a specific purge valve activation sequence with the engine off and key on, and skipping this step can lead to a false diagnosis.
- The reductant purge control valve A is sometimes confused with the reductant injection valve, but they are separate components and P20A5 does not indicate an injection valve fault.

Can I keep driving with P20A5?

You can usually drive the vehicle short distances to a repair shop, but avoid long trips or heavy loads because the reductant system may enter limp mode and reduce engine power. Do not ignore the warning light, as continued driving with a stuck-closed purge valve can lead to more extensive emissions system damage.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Basic hand tools
- Manufacturer service information for purge valve testing



Reading P20A5

- 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.
- A5** The exact fault within that area.

Often seen with

P20A4 Reductant Purge Control Valve A Stuck Open · **P20A6** Reductant Injection Air Pressure Control Valve Circuit/Open · **P20A7** Reductant Injection Air Pressure Control Valve Performance · **P20A8** Reductant Injection Air Pressure Control Valve Circuit Low · **P20A9** Reductant Injection Air Pressure Control Valve Circuit High

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/p20a5/>

