

GENERIC · POWERTRAIN

P20C6

OBD-II TROUBLE CODE

P20C6

Reductant Heater D Control Circuit Performance

P20C6 indicates that the powertrain control module (PCM) has detected a performance fault in the control circuit for the reductant heater 'D', which is one of the heating elements used to keep diesel exhaust fluid (DEF) from freezing in the selective catalytic reduction (SCR) system. The PCM commands the heater on and monitors the circuit for expected voltage or current changes, and when the response does not match the commanded state, it stores this code.

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 P20C6 code may be the only sign until a scan tool is connected.
- In some vehicles, the driver may see a message indicating that the DEF system requires service or that the vehicle will be speed-limited after a certain number of starts.
- Rough running or reduced engine power may occur if the PCM enters a protective strategy that limits torque.
- In cold weather, the reductant may not thaw properly, leading to poor SCR efficiency and possible additional codes.
- A slight decrease in fuel economy can occur if the engine management strategy alters injection timing to manage emissions.

Common causes, most likely first

- 1 Faulty reductant heater 'D' element, such as an open or shorted heating coil.
- 2 Damaged or corroded wiring or connector at the heater or PCM, including chafed harnesses or water intrusion.
- 3 Blown fuse or faulty relay that supplies power to the reductant heater circuit.
- 4 PCM internal driver failure or software issue affecting the heater control output.
- 5 Low DEF level or contaminated DEF that affects heater performance monitoring.
- 6 Poor ground connection for the heater circuit, causing voltage drop under load.



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then clear codes and test-drive to see if P20C6 returns.
- 2 Inspect the reductant heater connector and wiring for corrosion, damage, or loose pins, and repair as needed.
- 3 Check the fuse and relay that supply power to the reductant heater circuit, replacing any failed components.
- 4 Measure the resistance of the reductant heater 'D' element with a multimeter and compare to the manufacturer's specification to confirm if the heater is faulty.
- 5 Perform a voltage drop test on the power and ground circuits to the heater while commanding the heater on with the scan tool.
- 6 If the circuit and heater are good, check for PCM software updates or known issues, and reprogram or replace the PCM as required.
- 7 After repairs, clear codes and verify that the heater operates correctly and that no codes return during a complete drive cycle.

Reductant heater D circuit pitfalls

- A common misdiagnosis is replacing the reductant heater when the actual fault is a corroded connector or chafed wire that only shows up under vibration or temperature changes.
- The PCM may set P20C6 even if the heater works intermittently, so a heater that tests good when cold can still be the culprit if the fault occurs only when hot or after a cold soak.
- Some vehicles use a smart relay or solid-state driver for the reductant heater, and a failure there can mimic a faulty heater element.
- Low DEF quality or level can cause the heater to be commanded on more often, leading to overheating and eventual circuit performance faults.
- This code is often accompanied by other reductant heater codes (such as P20B9 or P20BA) if multiple heaters share a common power or ground circuit.

Can I keep driving with P20C6?

You can usually continue driving with P20C6, but avoid long trips or cold weather until it is repaired, because the SCR system may not function correctly and the vehicle could eventually enter a speed-limiting strategy. Do not ignore the code, as prolonged driving with a faulty reductant heater can lead to additional emissions system damage.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Test light or power probe
- Socket set and trim removal tools



Reading P20C6

- 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.
- C6** The exact fault within that area.

Often seen with

P20B9 Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance · **P20C4** Reductant Heater C Control Circuit High · **P20C5** Reductant Heater D Control Circuit/Open · **P20C7** Reductant Heater D Control Circuit Low

See it working

Watch the animated explainer [Excavator Simulator: Hydraulics You Can Operate](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20c6/>

