

GENERIC · POWERTRAIN

P204F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P204F

Reductant System Performance

P204F means the engine computer has detected that the selective catalytic reduction (SCR) system is not reducing nitrogen oxides (NOx) as efficiently as it should, based on the NOx sensors upstream and downstream of the catalyst. The computer compares the expected NOx conversion efficiency with the actual measured values and sets this code when performance falls outside the calibrated threshold.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode in some vehicles
- A message on the dashboard indicating diesel exhaust fluid (DEF) system fault or service required
- Increased DEF consumption as the system attempts to compensate
- Possible rough running or poor fuel economy if the fault is severe
- Exhaust smell or visible white vapor from the tailpipe in some cases

Common causes, most likely first

- 1 Degraded or contaminated diesel exhaust fluid (DEF), such as diluted, expired, or wrong-specification fluid
- 2 Faulty NOx sensor upstream or downstream of the SCR catalyst
- 3 Clogged or failing DEF injector (reductant injector) preventing proper urea delivery
- 4 Exhaust leaks before or after the SCR catalyst affecting sensor readings
- 5 Aging or damaged SCR catalyst with reduced conversion efficiency
- 6 DEF pump or dosing module malfunction causing incorrect pressure or flow
- 7 Software calibration issues or outdated ECU programming



How to diagnose and fix it

- 1 Verify DEF quality with a refractometer and replace if contaminated or out of specification
- 2 Check for exhaust leaks and repair any loose or damaged components
- 3 Inspect the DEF injector for clogging or carbon buildup and clean or replace as needed
- 4 Test the NOx sensors with a scan tool to compare readings and replace faulty sensors
- 5 Perform a DEF system pressure and flow test to confirm the pump and dosing module are working correctly
- 6 Check for technical service bulletins (TSBs) or software updates for the ECU that address SCR performance
- 7 If all else fails, perform a SCR catalyst efficiency test and replace the catalyst if it is degraded

DEF quality and sensor traps to check first

- Contaminated or diluted DEF is a leading cause of P204F that many technicians overlook because the fluid looks normal; always verify with a refractometer before replacing expensive parts.
- A faulty NOx sensor can mimic a failed SCR catalyst, so comparing live sensor data is essential to avoid unnecessary catalyst replacement.
- Exhaust leaks upstream of the SCR catalyst can cause false NOx readings and set this code without any obvious noise or soot tracking.
- Some vehicles require a specific driving cycle or scan tool routine to complete the SCR monitor after repairs, and the code may not clear immediately.
- P204F can be set by a DEF injector that is partially clogged but not completely failed, leading to intermittent performance issues that are hard to reproduce.

Can I keep driving with P204F?

You can usually continue driving with P204F, but avoid heavy loads or long trips until it is diagnosed, because the system may enter limp mode and reduce power. Prolonged driving with a faulty SCR system can lead to more severe derating and increased emissions.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- DEF refractometer
- Exhaust leak detector or smoke machine
- Digital multimeter
- Fuel pressure gauge (for DEF system pressure testing)



Reading P204F

- 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.
- 4F** 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 · **P229F** NOx Sensor Circuit Range/Performance Bank 1 Sensor 2 · **P2BAF** NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sen

See it working

Watch the animated explainer [How a Manual Transmission Works: Four-Speed Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p204f/>

