

GENERIC · POWERTRAIN

P20EE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20EE

NOx Catalyst Efficiency Below Threshold (Bank 1)

P20EE means the powertrain control module has determined that the selective catalytic reduction catalyst on bank 1 is not converting nitrogen oxides efficiently enough to meet the emissions target. The computer compares the nitrogen oxide sensor readings before and after the catalyst and flags the code when the downstream sensor reports too little reduction over a monitored drive cycle.

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

- Illumination of the check engine light, often with no other noticeable symptoms
- A stored code with no drivability complaint in many cases
- Reduced engine power or limp mode on some vehicles after repeated fault detection
- Slightly rougher running or hesitation under load if the fault is severe
- Increased diesel exhaust fluid consumption as the system attempts to compensate
- Emissions monitor readiness not setting, preventing a passing inspection

Common causes, most likely first

- 1 Degraded or contaminated selective catalytic reduction catalyst
- 2 Faulty or skewed nitrogen oxide sensor upstream or downstream of the catalyst
- 3 Incorrect diesel exhaust fluid quality, dilution, or contamination
- 4 Defective diesel exhaust fluid injector or dosing module delivering insufficient reagent
- 5 Exhaust leaks between the dosing point and the catalyst
- 6 Software calibration issue in the powertrain control module
- 7 Restricted or damaged exhaust system components affecting flow and temperature



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data, then verify the code is current rather than history
- 2 Inspect the diesel exhaust fluid level, concentration, and contamination, and correct or replace the fluid if needed
- 3 Check for exhaust leaks and physical damage between the injector and the catalyst
- 4 Command the diesel exhaust fluid dosing system with a scan tool and confirm the injector delivers the correct quantity
- 5 Compare upstream and downstream nitrogen oxide sensor readings live to confirm catalyst efficiency and sensor accuracy
- 6 Verify the powertrain control module has the latest calibration and reprogram if a known update applies
- 7 Replace the selective catalytic reduction catalyst only after the above checks confirm it is the failed component

Why this code often is not the catalyst

- A diluted or contaminated diesel exhaust fluid tank is one of the most common causes and is frequently overlooked because the fluid looks normal.
- A lazy or skewed nitrogen oxide sensor can mimic a failed catalyst, so sensor readings must be verified against a known-good reference before any catalyst replacement.
- Exhaust leaks upstream of the catalyst let untreated exhaust bypass the brick and set this code even when the catalyst is healthy.
- The code can be set by a dosing injector that sprays but delivers the wrong quantity, which a visual inspection will never reveal.
- Replacing the catalyst without correcting the root cause will usually result in the code returning within a few drive cycles.

Can I keep driving with P20EE?

The vehicle remains safe to drive in most cases, but continued operation with a failed catalyst will increase emissions and may eventually trigger power derate. Avoid long periods of heavy load or towing until the fault is diagnosed, and address it promptly to prevent secondary damage.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Diesel exhaust fluid refractometer
- Nitrogen oxide sensor test kit or known-good sensor
- Exhaust leak detector or smoke machine
- Digital multimeter
- Manufacturer service information for dosing system tests



Reading P20EE

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

Often seen with

P207F Reductant Quality Performance · **P20E8** Reductant Pressure Too Low · **P20E9** Reductant Pressure Too High · **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 [Car Won't Start? Step-by-Step No-Start Diagnosis](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20ee/>

