P2BAC: NOX EXCEEDANCE - DEACTIVATION OF EGR

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	**$150-$3000**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P2BAC Code Mean?

The P2BAC code differs from many other codes in that it is an information only code. It is not meant to be diagnosed but to make you aware that another problem exists and the exhaust gas recirculation (EGR) system has been deactivated. A P2BAC should always be accompanied by other exhaust or EGR related codes. The other codes must be diagnosed and repaired before this code is diagnosed, as this code will almost always be rectified by repairing the conditions that caused the other codes to be stored. Obviously, this type of code should be exhibited in diesel powered vehicles only.

When this code is stored, it means that the PCM has detected a level of nitrogen oxide (NOx) that exceeds a programmed limit. This detection may have taken place in the NOx trap or the diesel particulate filter (DPF). It may also be due to a defective DPF pressure sensor or NOx sensor.

As an added note: Some diesel powered 2007 through 2012 Dodge and Ram trucks are equipped with catalytic converters and oxygen (O2) sensors. These vehicles have proven particularly vulnerable to these types of codes. In these vehicles, the P2BAC usually accompanies an O2 sensor code. Diagnose and repair the O2 sensor code and the P2BAC will literally disappear.

Most late model diesel powered vehicles are equipped with DPF systems that reduce soot particles and the resultant black smoke. The DPF is part of the exhaust system and it is equipped with pressure sensors that are monitored by the powertrain control module (PCM). When DPF pressure exceeds a programmed level, the filtration element should be rejuvenated. Filtration element

rejuvenation methods include active and passive. Active filtration occurs when the vehicle is being operated and is automatic. Passive rejuvenation typically occurs after the vehicle has been parked and requires manual activation. Consult a reliable vehicle information source to find out the type of system with which your vehicle is equipped.

If the rejuvenation process is not fully completed, or if the process isn't taking place at regular intervals, DPF pressure codes will be stored; they may also be accompanied by a P2BAC.

Other diesel powered vehicles use NOx trap systems as an added emission reduction measure. A few vehicles even use both a PDF and a NOx trap to really clean up emissions. The NOx trap is another in-line exhaust component that catches NOx particles and must be rejuvenated regularly. Just like with the DPF, if the NOx trap isn't rejuvenated regularly, exhaust pressure is elevated and a NOx trap code will be stored. Also like the DPF system, a code P2BAC may also accompany NOx system codes.

The EGR system is designed to supply the engine induction system with a portion of spent exhaust gases. In the engine, excessive fuel is burned from the exhaust, reducing the amount of NOx that is produced by exhaust emissions.

When the PCM detects a level of exhaust pressure that is indicative of an unacceptably high level of NOx (in the DPF, NOx trap, or catalytic converter), the EGR system will be deactivated in order to reduce stress on the affected component and diminish exhaust pressure. In this case, the P2BAC will be stored. An illuminated malfunction indicator lamp (MIL) will not be illuminated just because the P2BAC is stored. MIL illumination will take place because of the accompanying DPF, NOx, and O2 sensor codes that are stored.

What Are The Symptoms Of The P2BAC Code?

Symptoms of accompanying codes may include:

- Diminished engine performance
- Increased black smoke from exhaust
- Decreased fuel efficiency

What Are The Potential Causes Of The P2BAC Code?

Possible causes for this engine code include:

- Improper DPF or NOx trap rejuvenation fluid
- Not enough rejuvenation fluid
- Inefficient DPF or NOx trap rejuvenation due to driving habits
- Defective catalytic converter (if applicable)
- Faulty DPF, NOx trap, or O2 sensor/s

How Can You Fix The P2BAC Code?

A diagnostic scanner, a digital volt/ohmmeter (DVOM), an infrared thermometer, and a vehicle information source (like All Data) will be needed to diagnose the codes that accompany a P2BAC.

I would begin by making sure that an adequate amount and the right type of DPF or NOx trap regeneration fluid was present in the vehicle. Since this code is a direct result of a DPF, NOx trap, or an O2 sensor code being stored, I would diagnose and repair any other codes that are present first. Tending to DPF and/or NOx trap regeneration fluid may rectify the conditions causing these types of codes to be stored.

Certain driving habits can also affect DPF and NOx trap regeneration. Short trips, and trips that don't require the engine to be effectively loaded, may not permit sufficient DPF and/or NOx trap regeneration. Use the appropriate diagnostic information for the codes that accompany a P2BAC, diagnose and repair them first, and it should disappear.

Additional diagnostic notes:

- Attempting to diagnose this code independent of other stored codes is a waste of time
- This code is often associated with PCM programming errors

Severity Description

The severity of a stored code P2BAC is dependent upon which accompanying codes are present. The P2BAC should not have any symptoms directly related to it.

Reference Sources

P2BAC NOx Exceedance - Deactivation of EGR, OBD-Codes.