P2258: SECONDARY AIR INJECTION SYSTEM CONTROL 'A' CIRCUIT HIGH

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$250-$648**
Can I Still Drive?	:	**Yes**

What Does The P2258 Code Mean?

When a P2258 has been stored, it means that the powertrain control module (PCM) has detected high voltage on the secondary air injection control circuit designated 'A'. Refer to a vehicle specific repair manual to determine the 'A' location for your application.

At the heart of the secondary air injection system is either a belt driven or electric pump. The pump injects ambient air into the engine exhaust system for the purposes of emission reduction.

Heat resistant, silicon-based hoses are used to supply the pump with cool ambient air. The ambient air is filtered before it is drawn in through the air filter housing or a remote inlet housing designed specifically for the secondary air injection system.

Ambient air is pumped into the exhaust system via high temp silicon and steel lines attached to ports in the exhaust down pipes and one-way check valves are fitted into each exhaust hose to prevent condensation from entering the pump and causing a malfunction; these valves fail regularly.

The PCM controls secondary air injection pump operation according to engine temperature, engine RPM, throttle position, etc. Factors vary with vehicle manufacturer.

If the PCM detects a degree of voltage on secondary air injection system control circuit 'A' that is

excessive, a code P2258 will be stored and a malfunction indicator lamp (MIL) will be illuminated. Multiple ignition cycles (with a failure) may be required for MIL illumination.

What Are The Symptoms Of The P2258 Code?

Symptoms of a P2258 trouble code may include:

- Secondary air injection system disabled
- No obvious symptoms may be exhibited
- Peculiar noises from engine compartment

What Are The Potential Causes Of The P2258 Code?

Causes for this code may include:

- Blown fuse/s
- Open or shorted control circuits
- Open or shorted pump motor
- Defective PCM or PCM programming error

How Can You Fix The P2258 Code?

You will need a diagnostic scanner, a digital volt/ohmmeter (DVOM), and a source of reliable vehicle information in order to accurately diagnose a code P2258.

You may save yourself time by searching for technical service bulletins (TSB) that replicate the code stored, vehicle (year, make, model, and engine), and symptoms exhibited. This information may be found in your vehicle information source. If you find the right TSB, it could yield a speedy solution to your diagnosis.

Step 1

After you connect the scanner to the vehicle diagnostic port and retrieve all stored codes and pertinent freeze frame data, write the information down (in case the code proves to be an intermittent one). After that, clear the codes and test drive the vehicle until one of two things happens; the code is restored or the PCM enters readiness mode.

The code may be more difficult to diagnose if the PCM enters readiness mode at this point, because the code is intermittent. The condition which caused the P2258 to be stored may need to worsen before an accurate diagnosis can be made. If the code is restored, continue with the diagnosis.

Step 2

You may obtain connector face views, connector pinout charts, component locator charts, wiring

diagrams, and diagnostic flow charts (pertaining to the code and vehicle in question) using your source of vehicle information.

Perform a visual inspection of related wiring and connectors. Repair or replace wiring that has been cut, burned, or damaged.

Step 3

Use the DVOM to test O2 sensor voltage at the appropriate connector pin (near the sensor). If no voltage is detected, check system fuses. Replace blown or otherwise defective fuses as required.

If voltage is detected, test the corresponding circuit at the PCM connector. If no voltage is detected there, suspect an open circuit between the sensor in question and the PCM. If voltage is discovered there, suspect a defective PCM or PCM programming error.

Step 4

To test O2 sensors: Start the engine and allow it to reach normal operating temperature. Allow the engine to idle (with the transmission in neutral or park). With the scanner connected to the vehicle diagnostic port, observe oxygen sensor input data on the data stream. Narrow the scope of the data stream to include only pertinent data and you will get a faster response.

Step 5

If the oxygen sensors are functioning normally, voltage on pre-cat oxygen sensors will cycle continuously between 1 and 900-millivolts once the PCM enters closed loop operation.

Post-cat sensors will cycle between 1 and 900-millivolts as well but they will settle at a certain point and remain relatively stable) compared to the pre-cat sensors). Oxygen sensors which fail to cycle adequately should be considered defective if the engine is in good working order.

Additional note:

- A blown O2 sensor fuse is not the cause of a stored code P2258, but a reaction to some type of short in the circuit

Severity Description

Conditions which contribute to a stored code P2258 could result in secondary air injection pump damage. It is for this reason that this code should be categorized as severe.

Reference Sources

P2258 Secondary Air Injection System Control 'A' Circuit High, OBD-Codes.