

P0034: TURBO CHARGER BYPASS VALVE CONTROL CIRCUIT LOW

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	\$100-\$400
Can I Still Drive?	:	No

What Does The P0034 Code Mean?

When this code is exhibited, it indicates that the powertrain control module (PCM) has detected a malfunction with the control circuit for the valve that is designed to relieve excessive turbocharger boost pressure. This particular code means that a low boost condition or low boost pressure bypass valve control circuit voltage has been detected.

Sometimes the boost controller is a stand-alone module but (more often) it is an integrated part of the PCM. It calculates input data from various engine and transmission sensors to determine how much boost pressure is required for the engine to perform at optimum levels; the boost pressure control valve is then opened or closed as commanded.

If actual boost pressure fails to coincide with the desired boost pressure, as regulated by the boost pressure control valve, this type of code will be stored and a service engine soon lamp may be illuminated.

Most OBD-II equipped vehicles utilize a turbo bypass control valve that is actuated with a small electric motor but there are a few manufacturers that still use a vacuum operated design. Check turbocharger bypass control system specifications for your vehicle before attempting diagnosis. Electronically controlled turbo bypass control valves are monitored via a signal circuit to the PCM. If signal voltage falls below a programmed range, for an unacceptable amount of time, this type of code will be stored.

Conditions for causing this code to be stored can lead to excessive or insufficient turbocharger boost pressure. This type of code should be addressed as soon as possible.

What Are The Symptoms Of The P0034 Code?

Symptoms of a P0034 trouble code may include:

- Irregular noises from the turbocharger wastegate and/or hoses
- Heavy black smoke from the exhaust
- Diminished engine performance
- Fouled spark plugs
- Higher engine and/or transmission temperatures
- Additional codes may also be stored, including other turbocharger boost related codes, engine misfire codes, or knock sensor codes
- Due to higher engine temperatures, cylinder detonation is also a definite possibility

What Are The Potential Causes Of The P0034 Code?

Potential causes for this P0034 code to trigger include:

- Faulty boost pressure sensor
- Bad turbocharger bypass valve
- Disconnected, cracked, or collapsed vacuum lines (vacuum actuated bypass valve)
- A defective turbocharger bypass valve actuator
- Boost control sensor circuit wiring may be shorted, burnt, cut, or disconnected
- Loose, corroded, or disconnected electrical connectors in the boost sensor reference circuit
- Defective PCM or boost controller

How Can You Fix The P0034 Code?

A good starting point is always to check for technical service bulletins (TSB) for your particular vehicle. Your issue may be a known issue with a known fix put out by the manufacturer and can save you time and money during diagnosis.

Most turbocharger boost controllers are programmed to effect between nine and fourteen-pounds of boost pressure. The boost pressure bypass control valve is opened and closed (via an electrical signal from the PCM) as much as is required to maintain an acceptable degree of turbocharger boost pressure.

When attempting a diagnosis for this code, I begin with a thorough inspection of all wiring and vacuum hoses related to the turbocharger and boost control system.

I would proceed by reading and recording all trouble codes, then clearing the codes from the

system. This serves two purposes; if the code fails to reset, you know that it is intermittent and, if your vehicle places the boost pressure bypass valve in the wide-open position when this type of code is stored, it will allow the system to return to a normal operating mode prior to further testing.

Notes:

- Be sure to disconnect system components and controllers prior to testing circuit continuity (with a DVOM) to prevent damage
- I have had several experiences in which the boost control valve was condemned in error, when the boost pressure sensor was actually the defective part
- I normally use a digital volt/ohmmeter (DVOM) to test system circuit voltage and continuity to ensure that it is within manufacturer's specifications. A system wiring diagram or manufacturer's service manual (with diagnostic flow charts) will be necessary

Reference Sources

[P0034: Turbo Charger Bypass Valve Control Circuit Low](#), OBD-Codes.