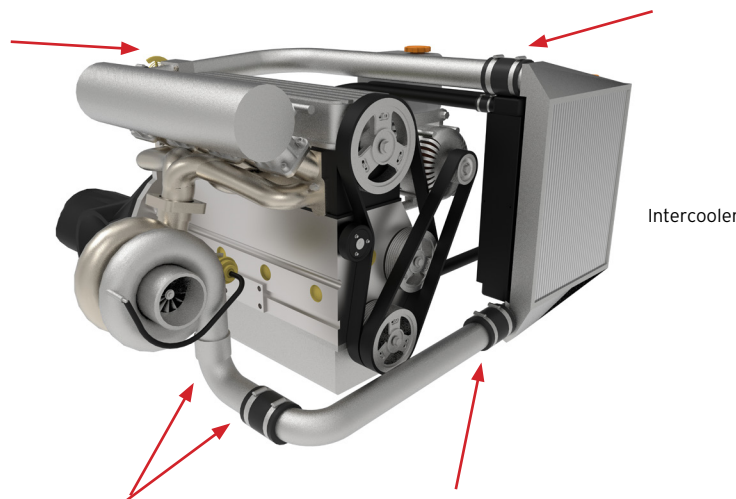


Fault P0299 May Not Be Caused By The Turbocharger

- ▶ **Symptoms:**
Under-boost causing a loss in vehicle performance and an illuminated orange MIL (Malfunction Indicator lamp) with the P0299 fault code stored. (Note: This issue can apply to many turbocharged vehicles.)
- ▶ **Cause:**
The misdiagnosis of under-boost symptoms leads to the return of turbochargers that have no issues and do not need replacing.
- ▶ **The Solution:**
Before replacing the turbocharger, be sure to perform a complete diagnosis and identify the true cause of the issue, as it may not be the turbo itself.



Carefully inspect all duct work for air leaks, loose connections, and damage which will affect boost and could cause the P0299 fault code.

Many components and conditions could cause a P0299 Code

One of the reasons for a P0299 fault code is the turbo may be experiencing low boost output. The ECU looks for a specific boost range, and when the ECU detects the low boost, it sets a P0299 code. This code will illuminate the orange MIL (Malfunction Indicator Lamp) in the instrument cluster and may put the vehicle in limp mode.

From a diagnostic perspective, many things can affect the turbocharger's performance: however, the turbocharger is rarely the source of the problem. Often various sensors, control valves, excessive internal crankcase vapors, or even faulty PCV valves can prompt codes for over and under boost conditions.

P0299 Under Performance (Boost):

The engine management system is calibrated to the expected level of boost pressure depending on specific engine requirements. A P0299 code indicates booster pressure is below the expected engine requirements. Many components and conditions could cause a P0299 code, such as a restricted air filter, blocked catalytic converter, exhaust leaks, leaks in the intake air system ducts/hoses, or faulty MAP, BARO, or Boost Pressure Sensors. Why? If the

engine can't ingest or expel enough air, the turbo will have problems creating boost.

On the control side, a solenoid can fail and cause the actuator for the wastegate to stay open. Another possible problem could be a failure of the PCV system, which can allow excessive crankcase vapors and oil to enter the engine and turbocharger, leading to excessive smoke from the tailpipe.

Leaks in the plumbing and intercooler can cause a P0299 code and often occur at the couplings between charge pipes. Finding the leaks can be difficult due to the packaging of the intercooler behind a bumper.

Tips: Check vehicle service information for P0299 and possible ECU programming updates.

A smoke machine can help find the Leaks in the plumbing and intercooler.

Refer to and carefully follow the vehicle manufactures diagnostic procedures to accurately diagnose a P0299 fault code as there can be differences in turbocharged systems and diagnostic procedures on different vehicles.

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