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Case Number: S2018000007 REV. D

Release Date: July 2021

Symptom/Vehicle Issue: Diagnostic Trouble Code (DTC) P0299 – Turbocharger Underboost Additional Diagnostics

Discussion: When diagnosing a vehicle that has set DTC P0299, it is always important to closely follow the normal published diagnostics for the DTC. In addition to performing the steps outlined in the diagnostic flow chart, please also refer to the additional diagnostic steps listed below to ensure a proper repair.

Diagnosis:

1. Remove, and inspect the engine air filter. Ensure that the air filter is clean, and not restricted.
2. Inspect the bottom of the air filter to see if it utilizes glue strips to separate the pleats. Newer design OEM replacement air filters, and some aftermarket filters utilize glue strips to separate the pleats. Please see ([Figure 1](#)). There have been reports that filters using this design can potentially cause this DTC. If the air filter installed on the vehicle utilizes these glue strips, swap it with one that is not equipped with them, and retest.

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Contact STAR Center, or your Technical Assistance Center Via TechCONNECT or eCONTACT ticket if no solution is found



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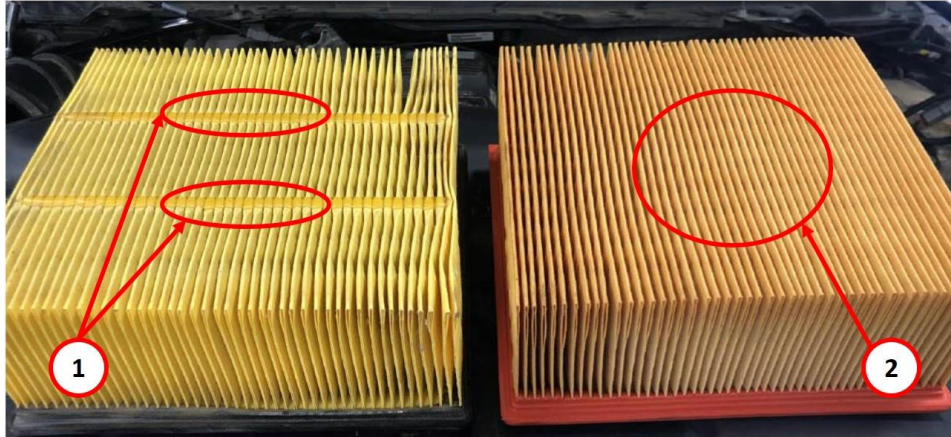


Figure 1

1. Glue Strips
2. No Glue Strips

3. Ensure that the Charge Air Cooler (CAC) system is properly pressure tested per the steps outlined in Service Library Service Information Section 09 – Engine, 6.7L Diesel > Turbocharger System > Diagnosis and Testing – Leaks. While performing the CAC leak testing, pay close attention to the CAC boot connected to the turbo outlet for leaks caused by the wire harness rubbing through the boot. Please see (Figure 2).

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Figure 2

4. If the boot is found damaged, replace as necessary, and retest the CAC system for any additional leaks. Repair as necessary.

NOTE: EGR valves with a rotated seat may also set DTC P0401 – EGR System Performance along with the P0299 DTC.

5. Remove the EGR Crossover tube from the EGR valve, and inspect the EGR inlet to see if there are signs that the valve internal seat has begun to rotate. Please see (Figure 3). The EGR internal shaft should be completely visible when looking into the crossover tube inlet.

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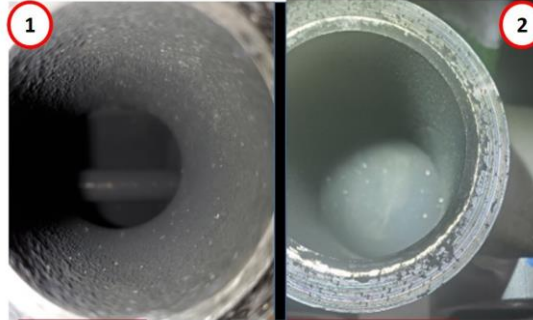


Figure 3

1. Healthy part
2. EGR with rotated seat

6. Thoroughly inspect the EGR valve end cap for signs of leaks (Figure 4). If found to be leaking, replace the EGR valve.



Figure 4

7. Inspect the DOC/DPF for signs of being face plugged, or for any other exhaust system restrictions. Refer to the Aftertreatment Inspection Guidelines located in Service Library Service Information Section 29 – Non DTC Diagnostics > Drivability Diesel, 6.7L > Diagnosis, and Testing > Aftertreatment Inspection Guidelines. If the DPF is face plugged, it will most likely need to be replaced. Before installing the new DOC/DPF, please be sure proper diagnosis to the fuel, air intake, EGR, and turbo systems have been performed and any defect repaired.

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8. Using wiTECH, perform the “Variable Geometry Turbocharger Sector Gear Hysteresis” test located in the PCM “Systems Tests”. If the test fails, the turbo will have to be replaced.
9. Ensure that the PCM is at the latest available calibration.

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