



## Turbo Compound 2nd Generation - EGR And/Or DPF Diagnostic Trouble Codes (DTC), Diagnostic And Repair Information



Internal Content

### Results – Back Office Info ONLY

Egr dp > 0.6 psi – **Suspect failed EGR valve**

(Combination of two conditions) Exhaust back pressure > 50 psi , Turbo speed > 80,000 , and gauge boost pressure > 15 psi– **Suspect failed turbo**

## Repair

Depending on engine test results send the following instructions via the eService case:

1. Remove the turbo and EGR valve to inspect the EGR valve for damage.

- **If damage is found to the EGR valve plates:**

1.1. Attempt to find any missing pieces in the EGR cooler inlet, hot pipe or exhaust manifold.

1.2. Replace the EGR Valve.

2. Evaluate the turbo.

- **If exhaust back pressure was greater than 50 psi during the engine test:**

2.1. Replace the turbo.

- **If exhaust backpressure was less than 50 psi during the engine test:**

2.2. Visually inspect the turbo turbine (outlet) and vane ring.



- A borescope is needed for the vane ring inspection and turbine wheel.

**2.3. If damage is found:** Replace the turbo.

3. Evaluate the EGR cooler.

- **If P0401 is logged close to the failure date:**

3.1. Replace the EGR cooler.

- **If P0401 is not logged close to the failure date:**

3.2. Visually inspect the EGR cooler inlet for debris and ensure the tubes and fins are not damaged.

3.3. **If damage is found:** Replace the cooler as necessary.

4. Provide photos of debris, damage, or cooler plugging found during inspections in the eService case.

5. Inspect and clean exhaust back pressure piping;

6. Perform a sulfur regen to clean soot accumulation from EATS system.

- **If smoke is observed or code P2002 is set:**

6.1. Inspect the EATS for damage.

## Repair Verification

1. Repeat the test from the Diagnosis section and attach the new results to the eService case.

### Target results - **BACK OFFICE ONLY**

- EGR dp < 0.3 psi
- Exhaust back pressure < 40 psi
- Turbo speed < 80,000 rpm
- Gauge boost pressure < 15 psi

2. Road test to confirm no fault codes, performance issues, or other drivability concerns.



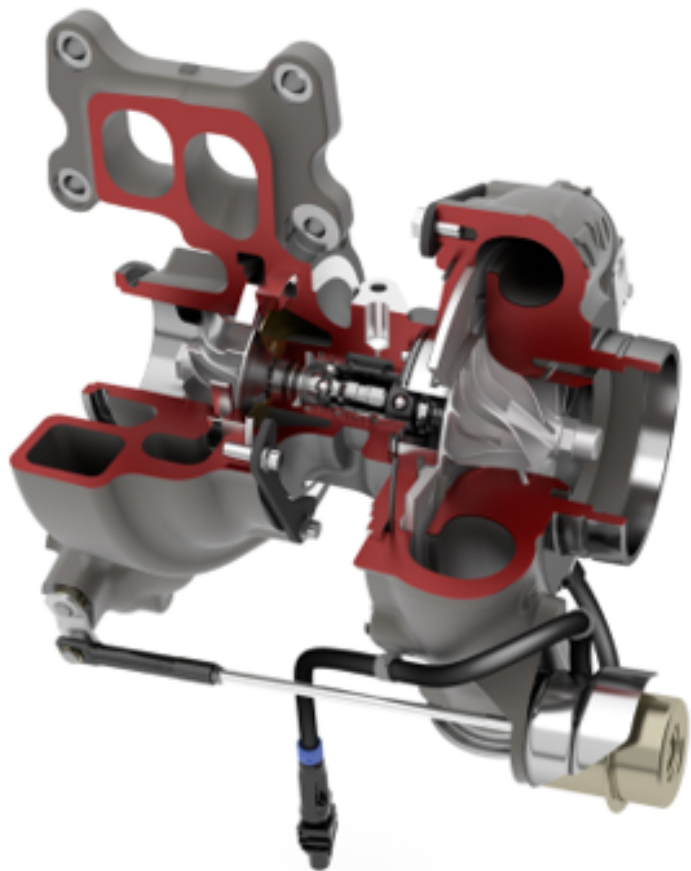
Live UI

Vehicles equipped with a second generation turbo compound engine may experience a combination of diagnostic trouble codes related to the EGR system and/or issues with regeneration.

**This solution should be reviewed and followed prior to performing other diagnostics.**

## Product Identification

Vehicles equipped with a 2nd Generation Turbo-compound unit will have a turbocharger equipped with a wastegate as seen below.



## Symptoms and Diagnostic Trouble Codes

**Important:** Affected vehicles will display a combination of **two or more** of the DTCs and/or symptoms listed below. Singular codes or symptoms should be investigated via normal diagnostic procedures.

<b>EGR DTC</b>	<b>DPF DTC</b>	<b>Exhaust Backpressure</b>	<b>Symptom</b>
P040100	P10FE00	P047164	Inability to perform a regeneration
P040200	P10E100		
P240F00	P245364		
P023400	P246300		
P029900	P24A400		

## Diagnosis

1. Electrically disconnect EGR valve and AVU.
2. Using Tech Tool, open operation [2589-08-03-02 Exhaust Aftertreatment System, Service Regeneration](#) for data monitoring and collection. (**DO NOT start a regen. This is for data collection only.**)
3. Start engine and increase engine speed to 2000 RPM for 3-5 minutes.
4. Finish work in PTT.
5. Start an eService case if there is not an existing one for this shop visit.
6. In the summary provide:
  - A detailed summary of symptoms and DTCs
  - Any relevant history
  - This solution number
7. Retrieve and attach the .csv data file to the eService case.

## Repair

- Instructions for how to proceed will be provided by Dealer Technical Support via the eService case.
- The eService case should be updated with findings based on the instructions provided.

 Tags

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- [p246300](#)
- [p24a400](#)
- [p047164](#)
- [p040100](#)
- [p040200](#)
- [p240f00](#)
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