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

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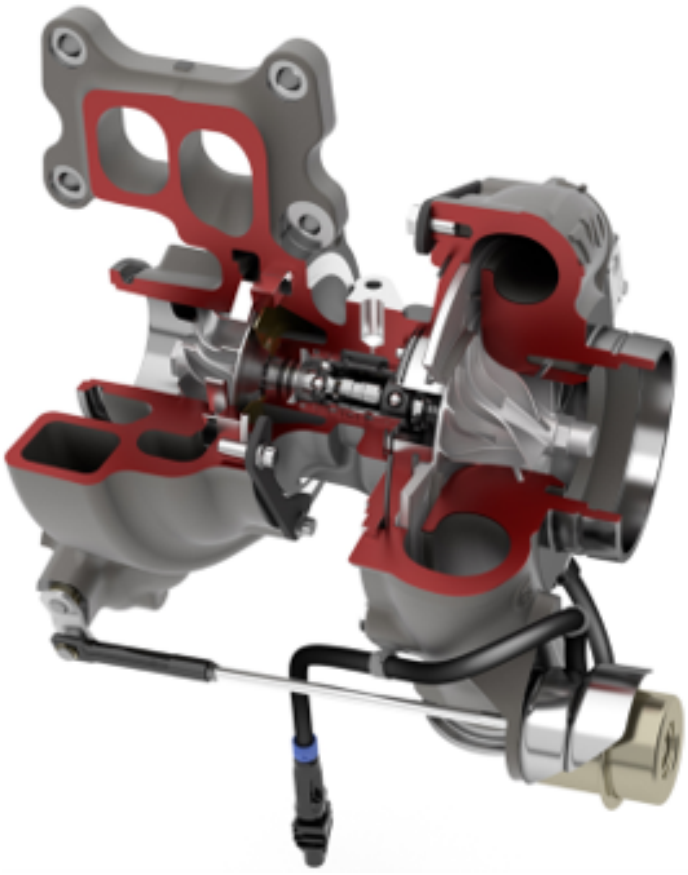
Valid for VN, AN, PI model years 2020 to present

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.

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

Diagnosis

Perform EGR Analysis Test Operation 2939-08-03-01 or steps 1 thru 3.
NOTE: The remaining steps 4 thru 7 will need to be completed with either option.

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

Live UI

for data colection 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.

Related links and attachments

No links or attachments available

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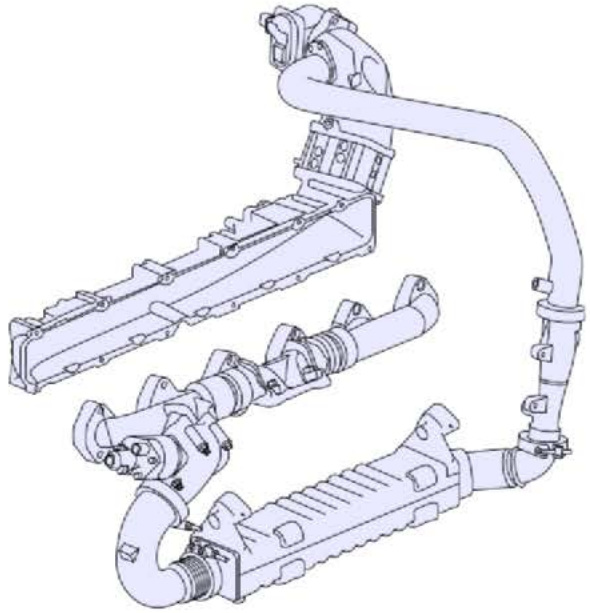


2939-08-03-01 Exhaust Gas Recirculation Function

Simulation

Information >> Conditions >> Execution

Purpose

Check the function of the EGR Valve

Description

- The purpose of this operation is to monitor the conditions which control the EGR valve. The EGR Valve can be activated in order to check its function.
- The EGR valve is actuated by engine oil pressure so the engine must be running in order to check the function

Continue > Cancel

1

2939-08-03-01 Exhaust Gas Recirculation Function

Simulation

Information >> **Conditions** >> Execution

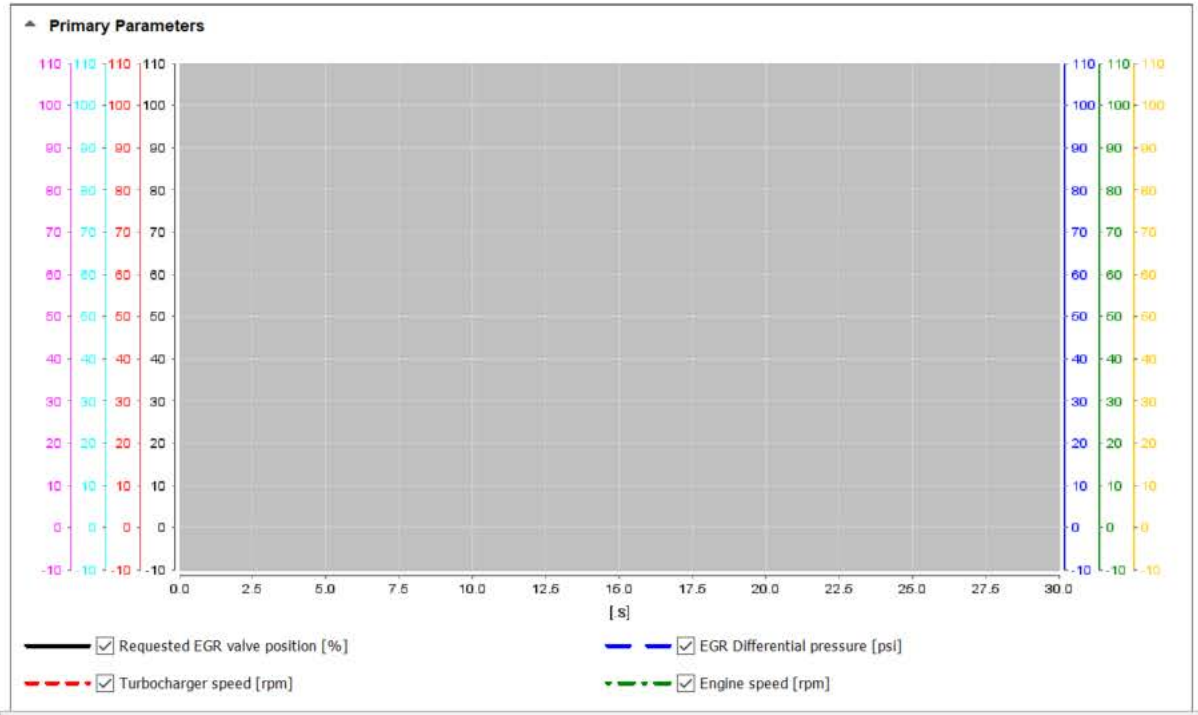
Manual conditions

1 Parking brake applied

☑ Confirmed

Continue > Cancel

EGR Valve Activation



2939-08-03-01 Exhaust Gas Recirculation Function

Simulation

Information >> Conditions >> **Execution**

Information

Action

1 - Ignition Key ON and Engine OFF

- Read out the status of the operating conditions
- Check that all signals and values are stable and without abnormal deviations
- Check that all signals are displaying realistic values according to the actual conditions

2 - Start the engine

- For best test results the engine coolant temperature should be below 68°C (155°F) and engine speed 750 – 900 rpms
- Activate the function
- Check that the EGR values change when the EGR valve is activated

The EGR valve position should be approximately 90 - 100% during manual activation. Once the engine warms up or reaches normal operating temperature the valve position should open to the requested position from the ECM.

If activation does not work on second attempt, it may be necessary to shut the engine off and cycle the ignition key off for a few seconds before next attempt

Evaluation

Primary Parameters

Secondary Parameters

The values on some of the readouts will vary more than others based on the valve activation

Test result

Select one of the following alternatives

- (•) OK
- ( ) Not OK

Continue >