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Service Information Bulletin

SUBJECT	DATE
SPN 2659 (MCM) (GHG14)	February 2018

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	GHG14 HD	SPN 2659 FMI 0 - GHG4 - MCM	Removed the step for inspecting the EGR system for a restriction because a restriction in the system will not cause high EGR flow. Updated some of the steps with reference to the electrical connector inspections and repair. Update the CAC - IMT sensor comparison to have the tech start and run the truck.

DiagnosticLink users: Please update the troubleshooting guides in DiagnosticLink with this newest version. To update the tool troubleshooting guide, open DiagnosticLink and from the Help – Troubleshooting Guides menu, select the appropriate troubleshooting manual, then click Update.

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2 SPN 2659/FMI 0 - GHG14

Exhaust Gas Recirculation Flow Target Error Diagnostic - High Flow

Table 1.

SPN 2659/FMI 0	
Description	This Fault Code Sets when the Difference Between the Actual EGR Flow and the Commanded EGR Flow is Higher than a Calibrated Threshold.
Monitored Parameter	EGR Flow
Typical Enabling Conditions	CAC greater than 0°C (32°F) Engine Speed 1080 to 2500 rpm Coolant Temperature Greater than 65°C (149°F) Ambient Temperature Greater than -8°C (18°F) Ambient Barometric Pressure Greater than 755 mbar (11 psi)
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	20 seconds
Dash Lamps	MIL, CEL
Engine Reaction	Engine Derate
Verification	Start Engine, Warm Up Such that Coolant Temperature Greater than 65°C (149°F) Ensure Ambient Temperature Greater than -8°C (18°F) Ambient Ambient Barometric Pressure Greater than 755 Mbar (11 Psi) Road Test the Vehicle While Keeping the rpm Between 1080 and 2500

Check as follows:

1. Connect DiagnosticLink ®.
2. Turn the ignition ON (key ON, engine OFF).
3. Check for multiple fault codes. Are any of the following fault codes present?
   - SPN 411/FMI 2, FMI 3, FMI 4, FMI 13
   - SPN 1636/FMI 3, FMI 4
   - SPN 2791/FMI 2, FMI 7, FMI 9, FMI 11, FMI 12, FMI 13, FMI 14, FMI 16, FMI 18, FMI 31
   - SPN 3563/FMI 3, FMI 4, FMI 10
   a. Yes; diagnose the other fault codes first.
   b. No; Go to step 4.
4. Check the DPF Zone; is the DPF zone greater than zero?
   a. Yes; perform a parked regeneration.
   b. No; Go to step 5.
5. Monitor the EGR delta pressure voltage at Key ON, Engine OFF. Is the voltage between 0.55 and 0.83 volts?
   a. Yes; Go to step 12.
   b. No; Go to step 6.
6. Turn the ignition OFF.
7. Disconnect and inspect the EGR Delta Pressure sensor electrical connector. Is there damage, corrosion or fretting present?
   a. Yes; Refer to section "Electrical Connector Repair". Verify repair.
   b. No; Go to step 8.
8. Remove and inspect the EGR Delta Pressure sensor ports. Is there a restriction or contamination present?
   a. Yes; clean the Delta Pressure sensor and clean the ports in the venturi pipe. Refer to section "Cleaning of the Exhaust Gas Recirculation Venturi Pipe Delta P Sensor Ports". Verify repair.
   b. No; Go to step 9.
9. Reconnect the EGR Delta Pressure sensor connector while the sensor is still removed from the venturi pipe.

10. Turn the ignition ON (key ON, engine OFF).
11. Monitor the EGR Delta Pressure voltage at Key ON, Engine OFF. Is the voltage between 0.55 and 0.83 volts?
    a. Yes; clean the ports on the venturi pipe. Refer to section "Cleaning of the Exhaust Gas Recirculation Venturi Pipe Delta P Sensor Ports". Verify repair.
    b. No; replace the Delta Pressure sensor. Refer to section "Removal of the Delta P Sensor". Verify repair.
12. Compare the barometric pressure reading to the local barometric pressure for your area. Is the barometric pressure within 69 mbar (1 psi) of the barometric pressure for your area?
    a. Yes; Go to step 13.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.
13. Compare the Intake Manifold Pressure sensor reading to the Barometric pressure sensor reading. Is the Intake Manifold Pressure sensor reading within 103 mbar (1.5 psi) of the Barometric pressure reading?
    a. Yes; Go to step 15.
    b. No; Go to step 14.
14. Disconnect and inspect the Intake Manifold Pressure sensor electrical connector. Is there damage, corrosion or fretting present?
    a. Yes; Refer to section "Electrical Connector Repair". Verify repair.
    b. No; replace the Intake Manifold Pressure sensor. Refer to section "Removal of the Intake Pressure/Temperature Sensor". Verify repair.

WARNING: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.

WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

15. Start and run the engine for five minutes.
16. Shut the engine OFF.
17. Turn the ignition ON (key ON, engine OFF).
18. Compare the intake manifold temperature to the Charge Air Cooler outlet temperature. Is the intake manifold temperature within plus or minus 10°C (18°F) of the Charge Air Cooler outlet temperature?
    a. Yes; Go to step 20.
    b. No; Go to step 19.
19. Remove the EGR Delta Pressure sensor and inspect the ports. Is there a restriction or contamination present?
    a. Yes; Refer to section "Electrical Connector Repair". Verify repair.
    b. No; replace the Intake Manifold Temperature sensor. Refer to section "Removal of the Intake Manifold Air Temperature Sensor". Verify repair.
20. Move EGR pull rod back and forth while watching the EGR valve. Does the EGR flap fully close when the pull rod is moved to the end of its travel?
    a. Yes; replace the Delta p sensor. Refer to section "Removal of the Delta P Sensor". Verify repair.
    b. No; replace the EGR valve. Verify repair.

Refer to section "Removal of the GHG14 DD15 AT Exhaust Gas Recirculation Valve/Hot Pipe".
Refer to section "Removal of the DD15 and DD16 Exhaust Gas Recirculation Valve".
Refer to section "Removal of the Exhaust Manifold" for the DD13 engine.

