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Service Information Bulletin

SUBJECT	DATE
SPN 2631 (MCM) (GHG14)	February 2018

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	GHG14 DD Platform	SPN 2631 / FMI 1 - GHG14	New procedure.

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.



13400 Outer Drive, West, Detroit, Michigan 48239-4001
 Telephone: 313-592-5000
www.demanddetroit.com

2 SPN 2631/FMI 1 - GHG14

Low Air Flow

Table 1.

SPN 2631/FMI 1			
Description	This Fault Code Sets When the Engine is in Smoke Mode Control for an Excessive Amount of Time Due to Inadequate Clean Airflow into the Engine.		
Monitored Parameter	Smoke Mode Operation		
Typical Enabling Conditions	General Enabling Condition: Engine is in Smoke Mode		
	Specific Enabling Conditions: See table below		
	Engine Parameter	Min	Max
	Engine Coolant Outlet Temperature	65°C (149°F)	
	Barometric Pressure (mbar)	755	
	Ambient Temperature	-8°C (18°F)	
Monitor Sequence	None		
Execution Frequency	Continuous When Enabling Conditions Met		
Typical Duration	13 Seconds		
Dash Lamps	MIL, CEL		
Engine Reaction	Derate 25%		
Verification	Once Engine is at Standard Operating Temperature, Operate Engine on Highway, Coast for 30 Seconds and then Snap Throttle and Keep Throttle at 100% for a Minimum of 15 Seconds.		

Check as follows:

1. Connect DiagnosticLink[®].
2. Turn the ignition ON (key ON, engine OFF).
3. Is the vehicle equipped with a DD16 engine?
 - a. Yes; Go to step 4.
 - b. No; Go to step 5.
4. Check for multiple fault codes. Are there any ITV fault codes present?
 - a. Yes; diagnose the other fault codes first.
 - b. No; Go to step 5.
5. Compare the Barometric pressure reading in the MCM to the local Barometric pressure. Is the Barometric pressure reading in the MCM within 6 kPa (1 psi) of the local Barometric pressure?
 - a. Yes; Go to step 6.
 - b. No; replace the MCM.
6. Compare the intake manifold pressure sensor reading to the barometric pressure reading. Is the intake manifold pressure sensor reading within 10.3 kPa (1.5 psi) of the barometric pressure reading?
 - a. Yes; Go to step 8.
 - b. No; Go to step 7.
7. Disconnect and inspect the intake manifold pressure sensor electrical connector. Is there any damage or corrosion present?
 - a. Yes; repair the connector as necessary.
 - b. No; replace the intake manifold pressure sensor.
8. Monitor the Exhaust Gas Recirculation (EGR) Delta Pressure sensor voltage. Is the voltage between 0.55 and 0.83 volts?
 - a. Yes; Go to step 15.
 - b. No; Go to step 9.
9. Turn the ignition OFF.

10. Disconnect and inspect the EGR Delta Pressure sensor electrical connector. Is there any damage, corrosion or fretting present?
 - a. Yes; replace the EGR Delta Pressure sensor and the pigtail. Verify repair.
 - b. No; Go to step 11.
11. Remove EGR Delta Pressure sensor from the mounting pad.
12. Reconnect the EGR Delta Pressure sensor electrical connector while the sensor is still removed.
13. Turn the ignition ON (key ON, engine OFF).
14. Monitor the EGR Delta Pressure sensor voltage again. Is the voltage between 0.55 and 0.83 volts?
 - a. Yes; clean the EGR Delta Pressure ports.
 - b. No; replace the EGR Delta Pressure sensor.
15. Monitor the Diesel Oxidation Catalyst (DOC) inlet pressure sensor voltage. Is the voltage between 0.44 and 0.56 volts?
 - a. Yes; Go to step 16.
 - b. No; replace the DOC inlet pressure sensor. Refer to section "Removal of the GHG14 Diesel Oxidation Catalyst Inlet Pressure Sensor". Verify repair.
16. Monitor the Diesel Particulate Filter (DPF) outlet pressure sensor voltage. Is the voltage between 0.44 and 0.56 volts?
 - a. Yes; Go to step 17.
 - b. No; replace the DPF outlet pressure sensor. Refer to section "Removal of the GHG14 Diesel Particulate Filter Outlet Pressure Sensor". Verify repair.
17. Disconnect and inspect the turbocharger inlet elbow and outlet pipe. Are there signs of oil residue, fluid contamination or debris?
 - a. Yes; replace the turbocharger. If the oil has contaminated the Aftertreatment Device (ATD), replace the ATD.
 - b. No; Go to step 18.
18. Remove and inspect the EGR delivery pipe, crossover pipe and hot pipe. Are there any restrictions present?
 - a. Yes; clean the EGR system components and reinstall the components.
 - b. No; reinstall the components. Go to step 19.
19. Disconnect and inspect the DOC inlet pressure and DPF outlet pressure hose and sensor. Are there any restrictions present?
 - a. Yes; clean or replace the hose sensor as necessary.
 - b. No; Go to step 20.


WARNING: HOT EXHAUST

During parked regeneration the exhaust gases will be extremely HOT and could cause a fire if directed at combustible materials. The vehicle must be parked outside.


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.

20. Perform a parked regeneration. Obtain a Regeneration log file and monitor the DOC Inlet and DPF Outlet Pressures. Refer to section "Performing a Parked Regeneration - EPA10/GHG14". Does the DOC inlet pressure ever go to zero during the regeneration?
 - a. Yes; replace the DOC inlet pressure sensor. Refer to section "Removal of the GHG14 Diesel Oxidation Catalyst Inlet Pressure Sensor". Verify repair.
 - b. No; Go to step 21.
21. Does the DOC Inlet pressure decrease during the regeneration?
 - a. Yes; the DOC was plugged during the time the code logged causing a restriction. Clear the code and release the vehicle.
 - b. No; the DOC is plugged. Perform a DOC Face Plug Cleaning service routine or use the air cleaning procedure. Refer to section "EPA10 and GHG14 Diesel Oxidation Catalyst Face Cleaning" and Refer to section "Diesel Oxidation Catalyst Air Cleaning". Verify repairs.