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Service Information Bulletin

SUBJECT	DATE
SPN 3251/FMI 0, 16, 20, 21 GHG14	January 2013

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	GHG14 DD Platform	SPN 3251/FMI 0 – GHG14	New diagnostics for GHG14.
		SPN 3251/FMI 16 – GHG14	
		SPN 3251/FMI 20 – GHG14	
		SPN 3251/FMI 21 – GHG14	



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2 SPN 3251/FMI 0 – GHG14

This diagnostic is typically Diesel Particulate Filter (DPF) Pressure Out of Range Very High.

Table 1.

SPN 3251/FMI 0	
Description	DPF Pressure Out of Range Very High
Monitored Parameter	Exhaust Pressure
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL, SEL
Engine Reaction	Derate 25%
Verification	Parked Regen

1. Disconnect the DPF outlet pressure sensor tube.
2. Connect DDDL/DDRS 7.08 SP2 or newer.

NOTE: Do not start the engine.

3. Turn the ignition ON (key ON, engine OFF).
4. Access the Selective Catalyst Reduction (SCR) and DPF voltages service routine.
5. Select “start acquiring.”
6. Monitor the DPF outlet pressure sensor voltage.
7. Is the voltage between 0.44 - 0.56 volts?
 - a. Yes; Go to step 9.
 - b. No; Go to step 8.
8. Inspect the electrical connections upstream of the Aftertreatment Control Module (ACM2.1): DPF outlet pressure sensor, Aftertreatment Device (ATD) harness 10-pin connector, VIH 37-pin connector, and ACM2.1 120-pin connector for corrosion and spread pins.
 - a. If corrosion, damaged, or bent pins are found, repair as necessary. Verify repairs.
 - b. If no corrosion or damage is found, replace the DPF outlet pressure sensor.
9. Turn the ignition OFF.
10. Inspect the DPF outlet pressure sensor tube and fittings for kinks, blockage, and restrictions.
 - a. If blockage or damage is found, repair the DPF outlet pressure sensor tube and fittings as necessary. Verify repairs.
 - b. If no obstructions are found, reconnect the DPF outlet pressure sensor tube.



WARNING: ENGINE EXHAUST

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



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.

11. Start the engine.

12. Access the DPF regeneration service routine.

NOTE: Regeneration safety entry conditions must be met before a regeneration can begin.



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.

13. Perform High Idle Regeneration.
14. When regeneration is complete, clear all fault codes.
15. Road test the vehicle.
 - a. If no fault codes appear, testing is complete. Verify repairs.
 - b. If the fault code returns, Go to step 16.
16. Remove the ATD from the vehicle.

Refer to section "Removal of the GHG14 1-BOX™ From the Vehicle".

Refer to section "Removal of the GHG14 Two-Box Option (2V2) from the Vehicle".
17. Perform a DPF inspection for excessive soot loading. Possible causes of soot contamination are:
 - Charge Air Cooler (CAC) and associated piping
 - Exhaust Gas Recirculation (EGR) valve stuck open
 - Turbocharger actuator (perform nozzle sweep test)
 - Damaged turbocharger blades/vanes
18. Make the necessary repairs for soot loading. Replace the DPF and install the ATD to the vehicle. Verify repairs.

Refer to section "Installation of the GHG14 1-BOX™ to the Vehicle".

Refer to section "Installation of the GHG14 Two-Box Option (2V2) to the Vehicle".

3 SPN 3251/FMI 16 – GHG14

This diagnostic is typically Diesel Particulate Filter (DPF) Pressure - Out of Range High.

1. Disconnect the DPF outlet pressure sensor tube assembly. Connect DDDL/DDRS 7.08 SP2 or newer.

NOTE: Do not start the engine.

2. Turn the ignition ON (key ON, engine OFF).
3. Access the SCR and DPF Voltages service routine.
4. Select “start acquiring.”
5. Monitor the DPF outlet pressure sensor voltage.
6. Is the voltage between 0.44 - 0.56 volts?
 - a. Yes; Go to step 8.
 - b. No; Go to step 7.
7. Inspect the electrical connections upstream of the Aftertreatment Control Module (ACM2.1): DPF outlet pressure sensor, Aftertreatment Device (ATD) harness 10-pin connector, VIH 37-pin connector, and ACM2.1 120-pin connector for corrosion and spread pins.
 - a. If corrosion, damaged, or bent pins are found, repair as necessary. Verify repairs.
 - b. If no corrosion or damage is found, replace the DPF outlet pressure sensor. Refer to section "Removal of the GHG14 Diesel Particulate Filter Outlet Pressure Sensor".
8. Turn the ignition OFF.
9. Inspect the DPF outlet pressure hose and fittings for kinks, blockage, and restrictions.
 - a. If blockage or damage is found, repair the DPF outlet pressure hose and fittings as necessary. Verify repairs.
 - b. If no obstructions are found, reconnect the DPF outlet pressure hose assembly.



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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.

10. Start the engine.

NOTE: Regeneration safety entry conditions must be met before a regeneration can begin.



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.

11. Perform High Idle Regeneration.
12. When regeneration is complete, clear all fault codes.
13. Road test the vehicle.
 - a. If no fault codes appear, testing is complete. Verify repairs.
 - b. If the fault code returns, Go to step 14.
14. Remove the ATD from the vehicle.
Refer to section "Removal of the 1-BOX™ from the Vehicle".
Refer to section "Removal of the GHG14 Two-Box Option (2V2) from the Vehicle".

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15. Perform a DPF inspection for excessive soot loading. Possible causes of soot contamination are:
 - Charge Air Cooler (CAC) and associated piping
 - Exhaust Gas Recirculation (EGR) valve stuck open
 - Turbocharger actuator (perform nozzle sweep test)
 - Damaged turbocharger blades/vanes
 16. Make the necessary repairs for soot loading. Replace the DPF and install the ATD to the vehicle. Verify repairs. Refer to section "Installation of the GHG14 1-BOX™ to the Vehicle". Refer to section "Installation of the GHG14 Two-Box Option (2V2) to the Vehicle".

4 SPN 3251/FMI 20 - GHG14

This diagnostic is typically Diesel Oxidation Catalyst (DOC) Inlet Pressure - Not Plausible.

Table 2.

SPN 3251/FMI 20	
Description	DOC Inlet Pressure Sensor - Not Plausible
Monitored Parameter	Exhaust Pressure
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Parked Regen

1. Visually inspect the entire exhaust system for signs of leaks or damage.
 - a. If damage is found, repair as necessary. Verify repairs.
 - b. If no damage is found, Go to step 2.
2. Connect DDDL/DDRS 7.08 or newer.
3. Using the Selective Catalytic Reduction (SCR) voltage service routine, monitor the DOC inlet pressure sensor (pin 87) and Diesel Particulate Filter (DPF) outlet pressure sensor (pin 72) voltages with key ON and engine OFF.
4. Are the DOC inlet pressure sensor and DPF outlet pressure sensor voltages between .44 – .56 volts?
 - a. Yes; Go to step 5.
 - b. If the voltage is greater than 0.56 volts, replace the suspect sensor.
 - c. If the voltage is less than 0.44 volts, inspect electrical connections between suspect sensor connector and Aftertreatment Control Module (ACM2.1) for bent, spread, or corroded pins. Repair as necessary.
5. Inspect the DOC pressure sensor tube and elbow and the DPF pressure sensor tube and elbow for leaks, kinks, or blockages.
 - a. If leaks, kinks, or blockages are found, repair as necessary.
 - b. If no damage is found, Go to step 6.
6. Obtain a log file with the following conditions:



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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.

- a. Start the engine and run at idle for one minute.



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.

- b. Perform High Idle Regeneration.
- c. Contact the Detroit™ Customer Support Center (800-445-1980) with the log file information for further instructions.

5 SPN 3251/FMI 21 - GHG14

This diagnostic is typically Diesel Oxidation Catalyst (DOC) Inlet / Outlet Pressure - Not Plausible.

Table 3.

SPN 3251/FMI 21	
Description	DOC Inlet / Outlet Pressure Not Plausible
Monitored Parameter	Exhaust Pressures
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL
Engine Reaction	None
Verification	Parked Regen

1. Visually inspect the entire exhaust system for signs of leaks or damage.
 - a. If damage is found, repair as necessary. Verify repairs.
 - b. If no damage is found, Go to step 2.
2. Connect DDDL/DDRS 7.08 SP2 or newer.
3. Using the Selective Catalytic Reduction (SCR) voltage service routine, monitor the DOC inlet pressure sensor (pin 87) and Diesel Particulate Filter (DPF) outlet pressure sensor (pin 72) voltages with key ON and engine OFF.
4. Are the DOC inlet pressure sensor and DPF outlet pressure sensor voltages between .44 – .56 volts?
 - a. Yes; Go to step 5.
 - b. If the voltage is greater than .56 volts, replace the suspect sensor.
 - c. If the voltage is less than .44 volts, inspect electrical connections between suspect sensor connector and Aftertreatment Control Module (ACM2.1) for bent, spread, or corroded pins. Repair as necessary.
5. Inspect the DOC pressure sensor tube and elbow and the DPF pressure sensor tube and elbow for leaks, kinks, or blockages.
 - a. If leaks, kinks, or blockages are found, repair as necessary.
 - b. If no damage is found, Go to step 6.



WARNING: ENGINE EXHAUST

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



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.

6. Obtain a log file with the following conditions:
 - a. Start the engine and run at idle for one minute.



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.

- b. Perform High Idle Regeneration.
- c. Contact the Detroit™ Customer Support Center (800-445-1980) with the log file information for further instructions.