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Service Information Bulletin

SUBJECT	DATE
SPN 3480 (MCM) (EPA07;EPA10;GHG14)	December 2016

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 3480/FMI 1 - EPA07 - EPA10 - GHG14	Additional steps for low fuel pressure.

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 3480/FMI 1 - EPA07 - EPA10 - GHG14

Hydrocarbon Doser Fuel Supply Pressure Abnormal

Table 1.

SPN 3480/FMI 1	
Description	This Code Sets when the Motor Control Module (MCM) Detects that the Fuel Compensation Pressure is Lower than 358 kPa (52 psi) for GEN1 and 399 kPa (58 psi) for GEN2 for 10 Minutes when Dosing is Enabled
Monitored Parameter	Hydrocarbon (HC) Doser Fuel Line Pressure Sensor
Typical Enabling Conditions	Dosing Enabled
Monitor Sequence	None
Execution Frequency	Continuous When Enabling Conditions Met
Typical Duration	10 Minutes for Parked Regeneration, One Minute During Driving Regeneration
Dash Lamps	MIL, CEL
Engine Reaction	Derate 10%
Verification	Parked Regeneration

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.

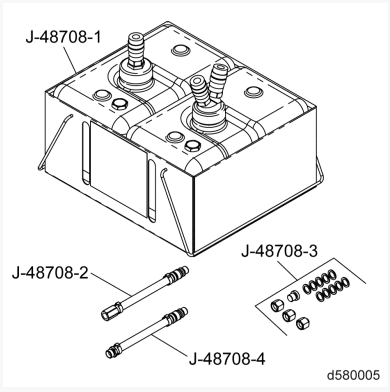
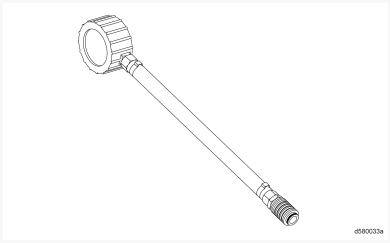
WARNING: PERSONAL INJURY

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.

Table 2.

Service Tools Used in the Procedure		
Tool Number	**Tool Description**	**Tool Graphic**
J-48708-1	Fuel Flow Tool	
J-48876	Priming Port Fuel Pressure Test Gauge	

Chacka s follows:

1. Connect DiagnosticLink ®.
2. Turn the ignition ON (key ON, engine OFF).

NOTE: Faults are listed in diagnostic priority from top to bottom.

3. Are any of the following faults present?
   - SPN 3480/FMI 3 or 4
   - SPN 3480/FMI 14
   - SPN 94/FMI 3 or 4
   - SPN 94/FMI 2
   a. Yes; repair fault with the highest priority listed above. Verify repair.
   b. No; Go to step 4.

NOTE: One drop of fuel can cause a failure.

WARNING: FIRE

To avoid injury from fire, contain and eliminate leaks of flammable fluids as they occur. Failure to eliminate leaks could result in fire.

4. Visually inspect the HC doser block for external fuel leaks. Are any external fuel leaks present?
   a. Yes; repair the external fuel leaks as necessary. Verify repair.
   b. No; Go to step 5.
5. Is the vehicle equipped with a three-filter fuel system?
   a. Yes; Go to step 6.
   b. No; Go to step 22.

6. Connect tool J-48876 Priming Port Fuel Pressure Test Gauge to the priming port valve.

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WARNING: ENGINE EXHAUST

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7. Start the engine.
8. Monitor the fuel pressure at 600 rpm and at 1800 rpm. Is the fuel pressure between 482 kPa (70psi) to 620 kPa (90psi) at 600 rpm and between 689 kPa (100psi) to 965 kPa (140 psi) at 1800 rpm?
    a. Yes; Go to step 13.
    b. No; Go to step 9.
9. Check fuel level in all tanks. Is fuel level greater than 25%?
    a. Yes; Go to step 10.
    b. No; add fuel and retest.
10. Check pre-filter for debris. Is debris found?
    a. Yes; replace fuel filters and retest. If debris is metallic,
    Refer to section "Metal in the Fuel System – Two-Filter Fuel System"
    Refer to section "Metal in the Fuel System – Three-Filter Fuel System"
    b. Go to step 11.

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. Using J-48708-1 Fuel Flow Tool, bypass the fuel supply lines and retest. Is priming port pressure within spec?
    a. Yes; repair fuel supply lines as necessary. Verify repair.
    b. No reinstall fuel supply lines and Go to step 12.
12. Replace the pressure relief valve.
    Refer to section "Removal of the Pressure Relief Valve -Two-Filter System"
    Refer to section "Removal of the Pressure Relief Valve - Three-Filter System"
    Perform a parked regen. Did the code come active?
    a. Yes; replace the low pressure fuel pump.
    Refer to section "Removal of the Low Pressure Fuel Pump - Two-Filter System"
    Refer to section "Removal of the Low Pressure Fuel Pump - Three-Filter System"
    Verify repair.
    b. No; release vehicle.
13. Shut off the engine.

14. Remove priming port tool J-48876.

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- 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

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15. Start the engine.
16. Using DiagnosticLink, perform the "Purge Hydrocarbon Doser" service routine.
17. Review the log file for the "Purge Hydrocarbon Doser" service routine.
18. Monitor the fuel compensation pressure when the fuel cut off valve is commanded to 100 percent. Is the fuel compensation pressure greater than 68 kPa (10 psi)?
    a. Yes; Go to step 19.
    b. No; replace the fuel compensation pressure sensor. Go to step 20.

NOTE: HC doser fuel supply pressure control valve inspection procedures are the same for two- and three-filter systems.

19. Remove and inspect the HC doser fuel supply pressure control valve. Refer to section "Inspection of the HC Doser Fuel Supply Pressure Control Valve – Two-Filter System". Does the inspection lead to replacing the HC doser fuel supply pressure control valve?
    a. Yes; replace the HC doser fuel supply pressure control valve.
    Refer to section "Removal of the HC Doser Fuel Supply Pressure Control Valve – Two Filter System"
    Refer to section "Removal of the HC Doser Fuel Supply Pressure Control Valve - Three-Filter System"
    Verify repairs.
    b. No; replace the high pressure fuel flange.
    Refer to section "Removal of the High Pressure Fuel Flange - Two-Filter System"
    Refer to section "Removal of the High Pressure Fuel Flange - Three-Filter System"
    Go to step 20.
20. Using DiagnosticLink, perform the "Purge Hydrocarbon Doser" service routine.
21. Review the log file for the "Purge Hydrocarbon Doser" service routine.

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.

22. Monitor the fuel compensation pressure when the fuel cut off valve is commanded to 100 percent. Is the fuel pressure greater than 448 kPa (65 psi)?
    a. Yes; perform a parked regeneration. Verify repair.

b. No; replace the hydrocarbon doser block. Refer to section "Removal of the Hydrocarbon Doser Block ". Go to step 23.

23. Perform the "Purge Hydrocarbon Doser" service routine again.
24. Review the log file for the "Purge Hydrocarbon Doser" service routine.

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.

25. Monitor the fuel compensation pressure when the fuel cut off valve is commanded to 100 percent. Is the fuel pressure greater than 448 kPa (65 psi)?
    a. Yes; perform a parked regeneration. Verify repair.
    b. No; replace the needle return line. Refer to section "Removal of the Needle, Amplifier, and Pressure Limiting Valve Return Lines - Three-Filter System". Verify repair.
26. Determine if the vehicle is equipped with a KM 59 Gen 1 or KM63 Gen 2 fuel system.

NOTE: KM59 GEN1 fuel filter module return lines are secured to the module with banjo bolts.

NOTE: KM63 GEN2 fuel filter module return lines are secured to the module with a mounting plate attached to the PLV return line.

27. Turn the ignition OFF.
28. Connect tool J-48876 Priming Port Fuel Pressure Test Gauge to the priming port fitting.

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WARNING: ENGINE EXHAUST

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29. Start the engine.
30. Monitor the fuel pressure at the priming port at 600 rpm and at 1800 rpm. Is the fuel pressure between 482 kPa (70psi) to 620 kPa (90psi) at 600 rpm and between 689 kPa (100psi) to 965 kPa (140 psi) at 1800 rpm?
    a. Yes; Go to step 32.
    b. No; Go to step 31.

Table 3.

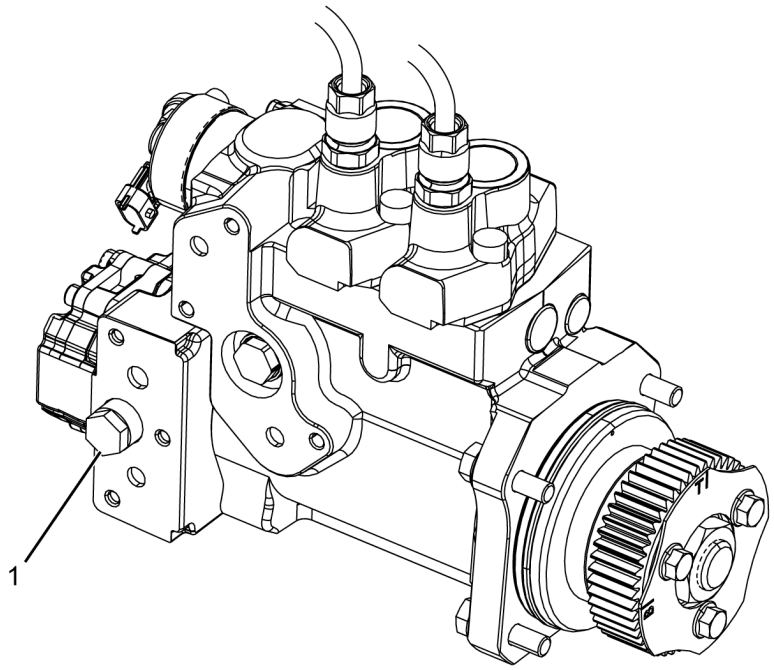
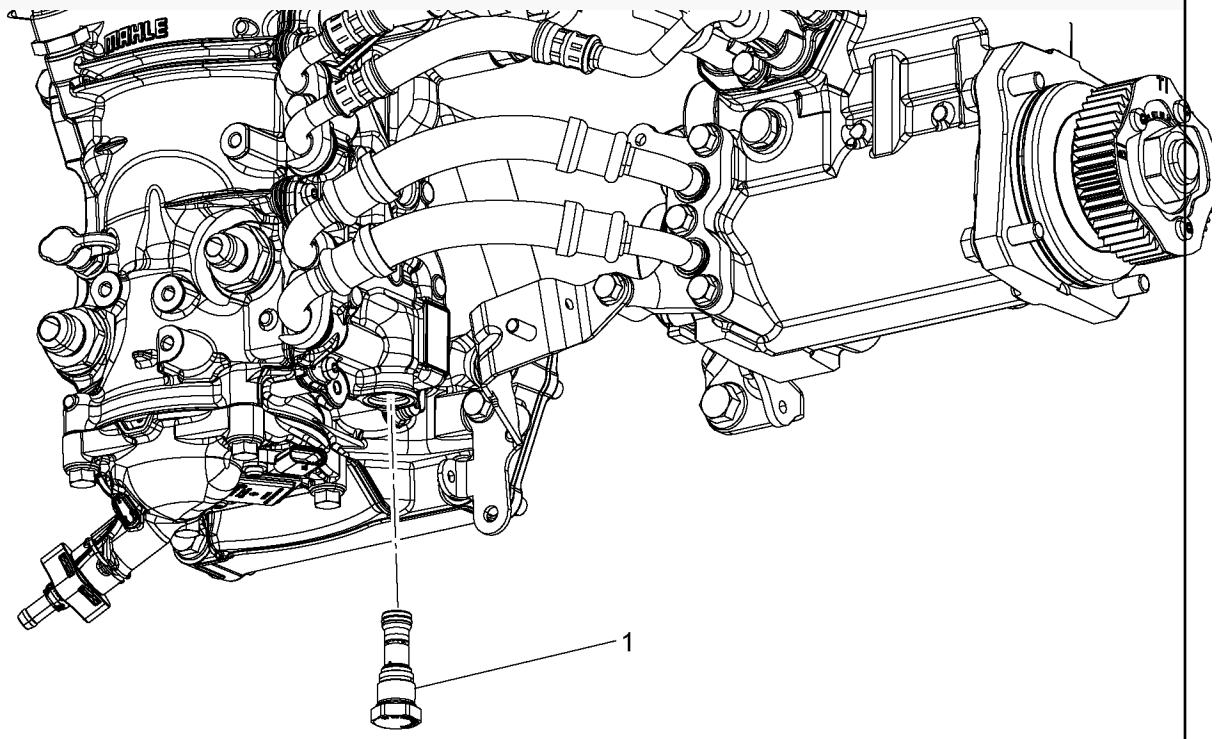
Note: For KM59 GEN1 the pressure relief valve (1) is incorporated on the low pressure fuel pump. The illustration shown below is a KM59 GEN1.


Table 4.

Note: For KM63 GEN2 the pressure relief valve (1) is incorporated into the fuel filter module. The illustration shown below is a KM63 GEN2.



31. Inspect the pressure relief valve. Refer to section "Inspection of the Pressure Relief Valve - Two-Filter System". Was damage found with the low pressure relief valve?
    a. Yes; replace the pressure relief valve. Refer to section "Inspection of the Pressure Relief Valve - Two-Filter System". Verify Repairs.
    b. No; check for a restriction in the fuel supply. Verify repair.
32. Shut the engine OFF.
33. Remove tool J-48876.

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WARNING: ENGINE EXHAUST

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34. Start the engine.
35. Using DiagnosticLink, perform the "Purge Hydrocarbon Doser" service routine.
36. Review the log file for the "Purge Hydrocarbon Doser" service routine.
37. Monitor the fuel compensation pressure when the fuel cut off valve was commanded to 100 percent. Is the fuel compensation pressure greater than 68 kPa (10 psi)?
    a. Yes; Go to step 38.
    b. No;
       For Gen 1, replace the fuel compensation pressure sensor. Refer to section "Removal of the Fuel Compensation Pressure Sensor". Verify repair.
       For Gen 2, replace the hydrocarbon doser block. Refer to section "Removal of the Hydrocarbon Doser Block ". Verify repair.
38. Is the unit a KM59 GEN1?
    a. Yes; Go to step 39.
    b. No; replace the high pressure fuel flange.
       For Two-Filter Fuel System, Refer to section "Removal of the High Pressure Fuel Flange - Two-Filter System". Go to step 40.
39. Remove and inspect the HC doser fuel supply pressure control valve. Refer to section "Inspection of the HC Doser Fuel Supply Pressure Control Valve – Two-Filter System". Does the inspection lead to replacing the HC doser fuel supply pressure control valve?
    a. Yes; replace the HC doser fuel supply pressure control valve. Refer to section "Removal of the HC Doser Fuel Supply Pressure Control Valve – Two Filter System" . Verify repairs.
    b. No; replace the high pressure fuel flange. Refer to section "Removal of the High Pressure Fuel Flange - Two-Filter System". Go to step 40.
40. Perform the "Purge Hydrocarbon Doser" service routine again.
41. Review the log file for the "Purge Hydrocarbon Doser" service routine.

WARNING: HOT EXHAUST

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42. Monitor the fuel compensation pressure when the fuel cut off valve is commanded to 100 percent. Is the fuel pressure greater than 448 kPa (65 psi)?
    a. Yes; perform a parked regeneration. Verify repair.
    b. No; replace the hydrocarbon doser block. Refer to section "Removal of the Hydrocarbon Doser Block ". Verify repair.

