1 08 04-16

Service Information Bulletin

SUBJECT	DATE
SPN 5444 (MCM) (GHG17)	August 2016

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0191	GHG17 DD Platform	SPN 5444/FMI 1 - GHG17	Updates to GHG17 diagnostic procedures.
DDC-SVC-MAN-0084	GHG14 DD Platform	SPN 5444/FMI 1 - GHG14	Updates to GHG14 diagnostic procedures.

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.

DEMAND PERFORMANCE™

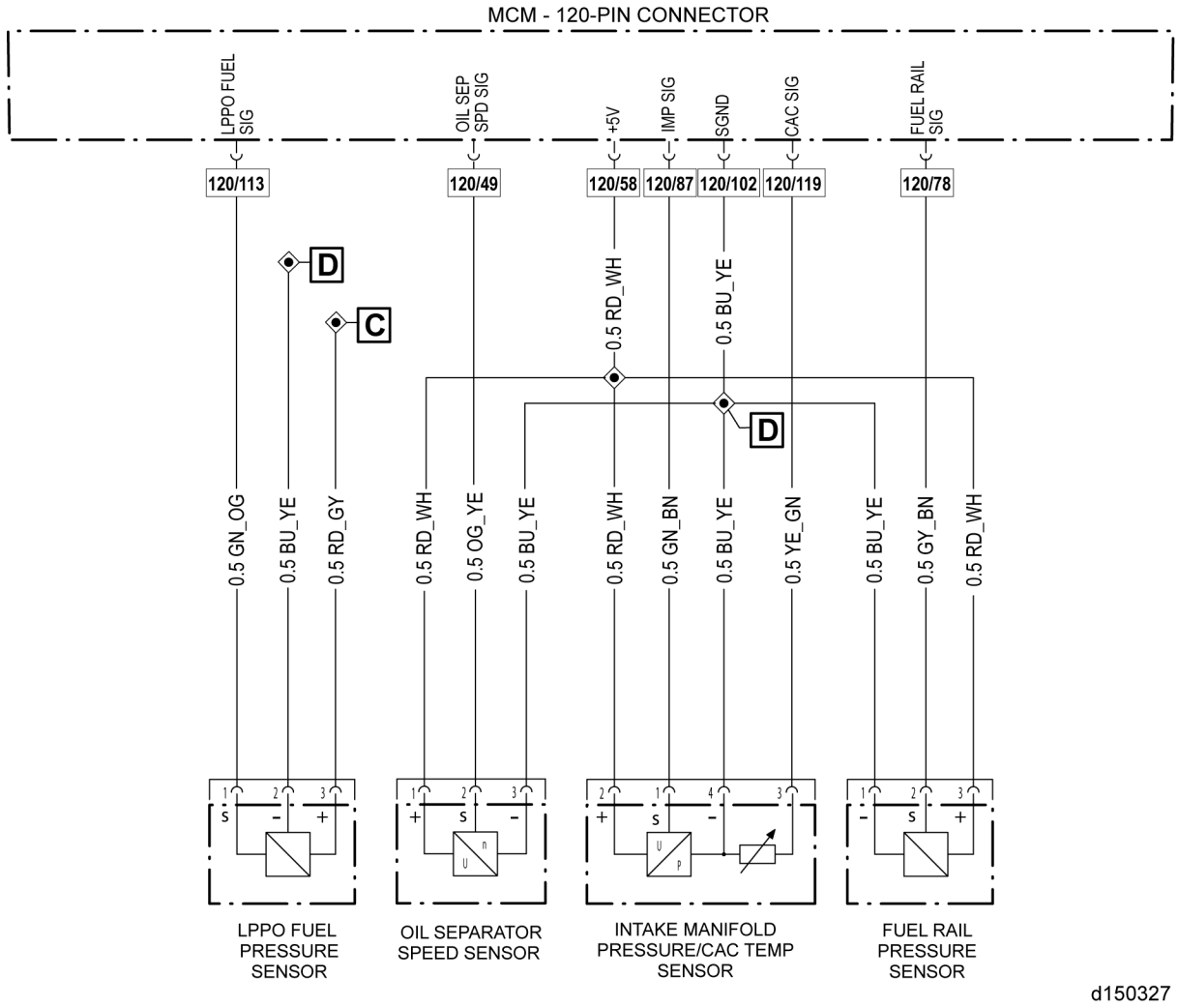
13400 Outer Drive, West, Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.demanddetroit.com

2 SPN 5444/FMI 1 - GHG17

Engine Crankcase Breather Oil Separator Speed Too Low

Table 1.

SPN 5444/FMI 1	
Description	Fault Code Sets When the Engine Oil Separator Speed is less than 3,000 rpm for 45 Seconds
Monitored Parameter	Crankcase Ventilator Oil Separator Speed
Typical Enabling Conditions	Engine Coolant Temperature Greater than 65°C (149°F), Engine Oil Temperature Greater than 65°C (149°F), Engine rpm Greater than 900 rpm, Ambient Temperature Greater than -8°C (17.6°F), Barometric Pressure Greater than 10.9 psi (755 mbar)
Monitor Sequence	None
Execution Frequency	None
Typical Duration	45 seconds
Dash Lamps	None
Engine Reaction	None
Verification	Engine Running for Greater than One Minute with the Typical Enabling Conditions Met



Check as follows:

1. Connect DiagnosticLink ®.

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.

2. Start and run the engine at idle.
3. Monitor the crankcase ventilator oil separator speed. Is the crankcase ventilator oil separator speed zero rpm?
   a. Yes; Go to step 5.
   b. No; Go to step 4.
4. Monitor the crankcase ventilator oil separator speed. Is the crankcase ventilator oil separator speed less than 3,000 rpm?
   a. Yes; replace the crankcase breather. Refer to section "Removal of the Crankcase Breather Assembly".

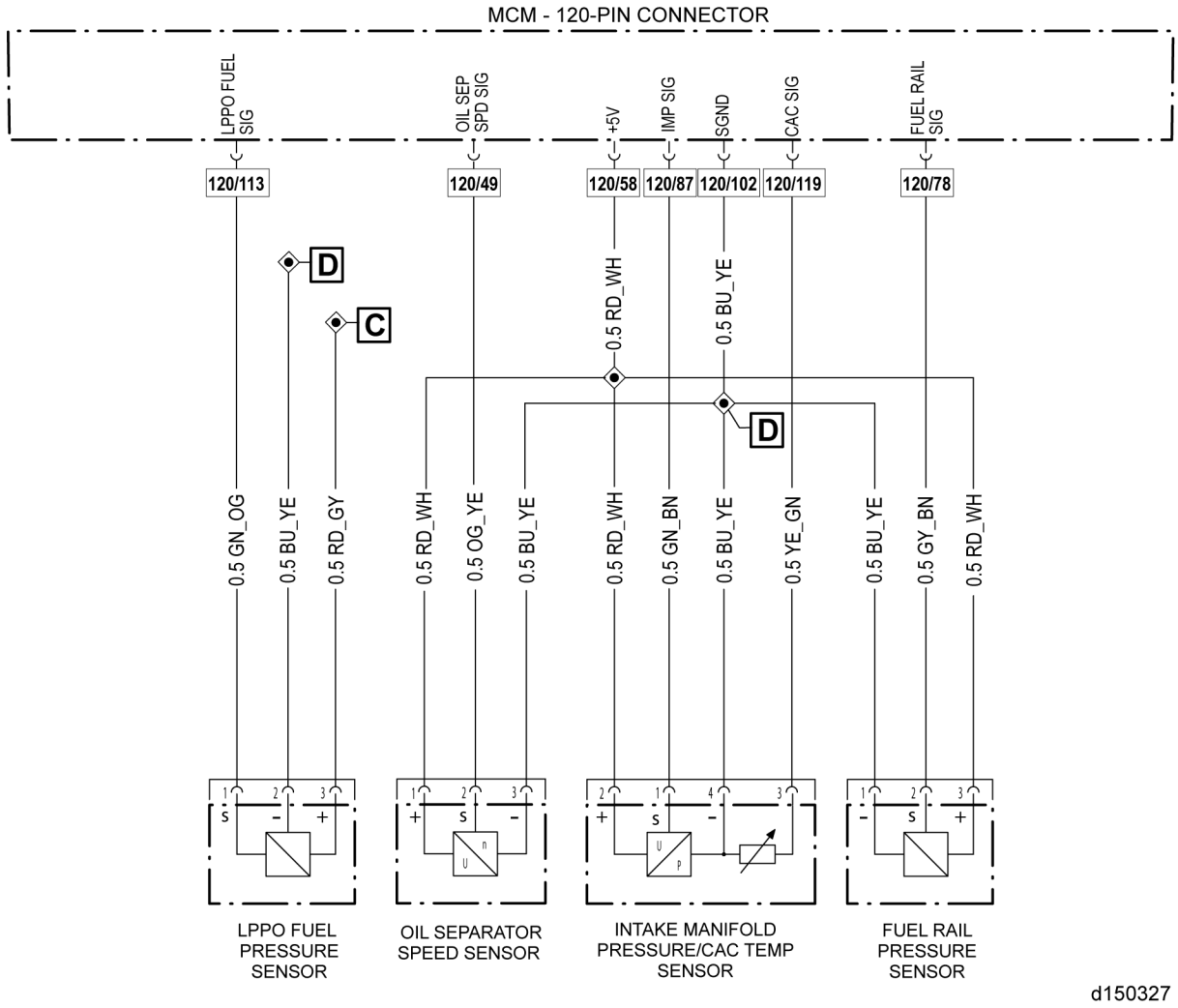
   b. No; replace the engine crankcase breather oil separator speed sensor and the pigtail. Refer to TS letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf) for additional information.
5. Turn the engine OFF.
6. Disconnect and inspect the engine crankcase breather oil separator speed sensor electrical connector. Is there damage or corrosion present?
   a. Yes; replace the engine crankcase breather oil separator speed sensor and the pigtail. Refer to TS letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf) for additional information.
   b. No; Go to step 7.
7. Turn the ignition ON (key ON, engine OFF).
8. Measure the voltage between pins 1 and 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side. Is the voltage between 4.5 to 5.5 volts?
   a. Yes; Go to step 10.
   b. No; Go to step 9.
9. Measure the voltage between pin 1 of the engine crankcase breather oil separator speed sensor electrical connector harness side and ground. Is the voltage between 4.5 to 5.5 volts?
   a. Yes; repair the circuit between pin 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side and the circuit splice.
   b. No; repair the circuit between pin 1 of the engine crankcase breather oil separator speed sensor electrical connector harness side and the circuit splice.
10. Turn the ignition OFF.
11. Measure the resistance between pins 2 and 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side. Is the resistance more than five ohms?
    a. Yes; repair the circuit between pin 2 of the engine crankcase breather oil separator speed sensor electrical connector harness side and pin 49 of the MCM 120-pin electrical connector.
    b. No; replace the engine crankcase breather oil separator speed sensor and the pigtail using J-48385-1.

3 SPN 5444/FMI 1 - GHG14

Engine Crankcase Breather Oil Separator Speed Too Low

Table 2.

SPN 5444/ FMI 1	
Description	Fault Code Sets When the Engine Oil Separator Speed is less than 3,000 rpm for 45 Seconds
Monitored Parameter	Crankcase Ventilator Oil Separator Speed
Typical Enabling Conditions	Engine Coolant Temperature Greater than 65°C (149°F), Engine Oil Temperature Greater than 65°C (149°F), Engine rpm Greater than 900 rpm, Ambient Temperature Greater than -8°C (17.6°F), Barometric Pressure Greater than 10.9 psi (755 mbar)
Monitor Sequence	None
Execution Frequency	None
Typical Duration	45 seconds
Dash Lamps	None
Engine Reaction	None
Verification	Engine Running for Greater than One Minute with the Typical Enabling Conditions Met



Check as follows:

1. Connect DiagnosticLink®.

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.

2. Start and run the engine at idle.
3. Monitor the crankcase ventilator oil separator speed. Is the crankcase ventilator oil separator speed zero rpm?
   a. Yes; Go to step 5.
   b. No; Go to step 4.
4. Monitor the crankcase ventilator oil separator speed. Is the crankcase ventilator oil separator speed less than 3,000 rpm?
   a. Yes; replace the crankcase breather. Refer to section "Removal of the Crankcase Breather".

   b. No; replace the engine crankcase breather oil separator speed sensor and the pigtail. Refer to TS letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf) for additional information.
5. Turn the engine OFF.
6. Disconnect and inspect the engine crankcase breather oil separator speed sensor electrical connector. Is there damage or corrosion present?
   a. Yes; replace the engine crankcase breather oil separator speed sensor and the pigtail. Refer to TS letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf) for additional information.
   b. No; Go to step 7.
7. Turn the ignition ON (key ON, engine OFF).
8. Measure the voltage between pins 1 and 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side. Is the voltage between 4.5 to 5.5 volts?
   a. Yes; Go to step 10.
   b. No; Go to step 9.
9. Measure the voltage between pin 1 of the engine crankcase breather oil separator speed sensor electrical connector harness side and ground. Is the voltage between 4.5 to 5.5 volts?
   a. Yes; repair the circuit between pin 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side and the circuit splice.
   b. No; repair the circuit between pin 1 of the engine crankcase breather oil separator speed sensor electrical connector harness side and the circuit splice.
10. Turn the ignition OFF.
11. Measure the resistance between pins 2 and 3 of the engine crankcase breather oil separator speed sensor electrical connector harness side. Is the resistance more than five ohms?
    a. Yes; repair the circuit between pin 2 of the engine crankcase breather oil separator speed sensor electrical connector harness side and pin 49 of the MCM 120-pin electrical connector.
    b. No; replace the engine crankcase breather oil separator speed sensor and the pigtail using J-48385-1.

