# 1 04 11-17

# Service Information Bulletin

| SUBJECT | DATE |
|---|---|
| SPN 5741 (ACM) (GHG17) | April 2017 |

**Additions, Revisions, or Updates**

| Publication Number / Title | Platform | Section Title | Change |
|---|---|---|---|
| DDC-SVC-MAN-0191 | GHG17 Heavy Duty | SPN 5741/FMI 13 - GHG17 | Voltage check moved before the resistance check. |
| DDC-SVC-MAN-0193 | GHG17 Medium Duty | SPN 5741/FMI 13 - GHG17 | MDEG and HDEP procedures are similar. |

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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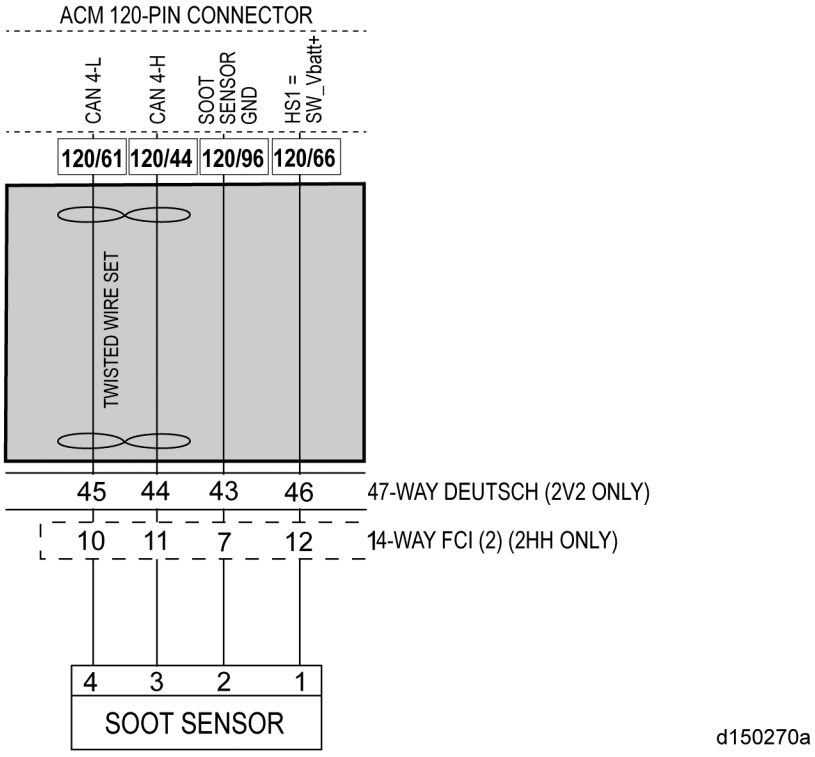
# 2 SPN 5741/FMI 13 - GHG17

Soot Sensor Controller Area Network Signal Missing

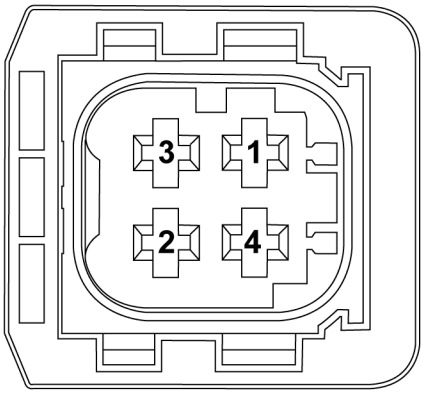
**Table 1.**

| SPN 5741/FMI 13 | |
|---|---|
| Description | Soot Sensor Controller Area Network (CAN) Feedback Signal Failure |
| Monitored Parameter | Soot Sensor CAN Communication |
| Typical Enabling Conditions | Soot Sensor Enabled |
| Monitor Sequence | Continuously |
| Execution Frequency | Always Enabled |
| Typical Duration | Five Seconds |
| Dash Lamps | MIL, CEL |
| Engine Reaction | None |
| Verification | Key Cycle |





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Check as follows:

1. Turn the ignition OFF.
2. Disconnect the soot sensor harness connector.
3. Inspect the harness and connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 4.
4. Inspect soot sensor wiring between the sensor probe and the sensor control unit. Is any damage found?
    a. Yes; replace the soot sensor. Refer to section "Removal of the Soot Sensor" or Refer to section "Removal of the 2V2/2HH Soot Sensor". Verify repairs.
    b. No; Go to step 5.
5. Inspect the harness and connectors between soot sensor and the Aftertreatment Control Module (ACM) for signs of damage, chaffing, overheating, or corrosion. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 6.
6. Turn the ignition ON (key ON, engine OFF).
7. Measure the voltage between pins 1 and 2 of the soot sensor harness connector, harness side. Is the voltage reading within .5 volts of battery voltage?
    a. Yes; Go to step 9.
    b. No; Go to step 8.
8. Measure the voltage between pin 1 of the soot sensor connector harness side and ground. Is the voltage within .5 volts of battery voltage?
    a. Yes; repair the open circuit between pin 2 of the soot sensor connector and pin 96 of the ACM 120-pin connector.
    b. No; repair the open circuit between pin 1 of the soot sensor connector and pin 66 of the ACM 120-pin connector.
9. Turn the ignition OFF.
10. Measure the resistance between pins 3 and 4 of the soot sensor connector harness side. Is the resistance between 55 and 65 ohms?
    a. Yes; replace the soot sensor. Refer to section "Removal of the Soot Sensor" or Refer to section "Removal of the 2V2/2HH Soot Sensor". Verify repairs.
    b. No; Go to step 11.
11. Measure the resistance between pin 3 of the soot sensor connector harness side and ground. Is the resistance greater than 10K ohms?
    a. Yes; Go to step 12.

b. No; repair the short to ground between pin 3 of the soot sensor connector and pin 44 of the ACM 120-pin connector. Verify repair.

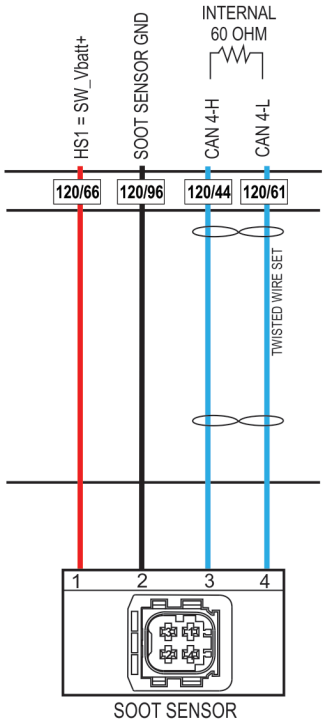
12. Measure the resistance between pin 4 of the soot sensor connector harness side and ground. Is the resistance greater than 10K ohms?
    a. Yes; Go to step 13.
    b. No; repair the short to ground between pin 4 of the soot sensor connector and pin 61 of the ACM 120-pin connector.
13. Disconnect the ACM 120-pin connector.
14. Inspect the ACM 120-pin harness connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 15.
15. Measure the resistance between pins 44 and 61 on the ACM 120-pin connector, component side. Is the resistance between 55 to 65 ohms?
    a. Yes; replace the aftertreatment harness. Refer to section "Removal of the 1-BOX™ Aftertreatment Harness". Verify repairs.
    b. No; replace the ACM.
    Refer to section "Removal of the 1-BOX™ Aftertreatment Control Module". Verify repairs.
    Refer to section "Removal of the Two-BOX (2V2) Aftertreatment Control Module". Verify repairs.

# 3 SPN 5741/FMI 13 - GHG17

Soot Sensor Controller Area Network Signal Missing

**Table 2.**

| SPN 5741/FMI 13 | |
|---|---|
| Description | Soot Sensor Controller Area Network (CAN) Feedback Signal Failure |
| Monitored Parameter | Soot Sensor CAN Communication |
| Typical Enabling Conditions | Soot Sensor Enabled |
| Monitor Sequence | Continuously |
| Execution Frequency | Always Enabled |
| Typical Duration | Five Seconds |
| Dash Lamps | MIL, CEL |
| Engine Reaction | None |
| Verification | Key Cycle |

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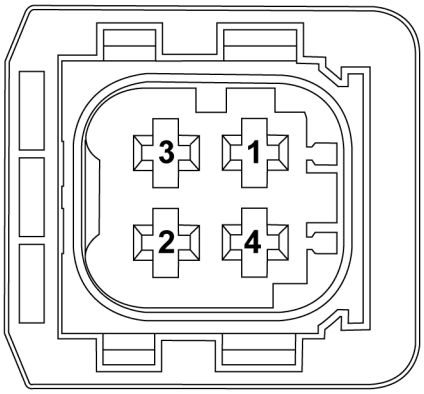


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Check as follows:

1. Turn the ignition OFF.
2. Disconnect the soot sensor harness connector.
3. Inspect the harness and connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 4.
4. Inspect soot sensor wiring between the sensor probe and the sensor control unit. Is any damage found?
    a. Yes; replace the soot sensor. Verify repairs.
    For DD5; Refer to section "Removal of the Soot Sensor"
    For DD8; Refer to section "Removal of the Soot Sensor"
    b. No; Go to step 5.
5. Inspect the harness and connectors between soot sensor and the Aftertreatment Control Module (ACM) for signs of damage, chaffing, overheating, or corrosion. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 6.
6. Turn the ignition ON (key ON, engine OFF).
7. Measure the voltage between pins 1 and 2 of the soot sensor harness connector, harness side. Is the voltage reading within .5 volts of battery voltage?
    a. Yes; Go to step 9.
    b. No; Go to step 8.
8. Measure the voltage between pin 1 of the soot sensor connector harness side and ground. Is the voltage within .5 volts of battery voltage?
    a. Yes; repair the open circuit between pin 2 of the soot sensor connector and pin 96 of the ACM 120-pin connector.
    b. No; fix the open circuit between pin 1 of the soot sensor connector and pin 66 of the ACM 120-pin connector.
9. Turn the ignition OFF.
10. Measure the resistance between pins 3 and 4 of the soot sensor connector harness side. Is the resistance between 55 and 65 ohms?
    a. Yes; replace the soot sensor. Verify repairs.
    For DD5; Refer to section "Removal of the Soot Sensor"
    For DD8; Refer to section "Removal of the Soot Sensor"
    b. No; Go to step 11.
11. Measure the resistance between pin 3 of the soot sensor connector harness side and ground. Is the resistance greater than 10K ohms?


 

a. Yes; Go to step 12.
b. No; repair the short to ground between pin 3 of the soot sensor connector and pin 44 of the ACM 120-pin connector. Verify repair.

12. Measure the resistance between pin 4 of the soot sensor connector harness side and ground. Is the resistance greater than 10K ohms?
    a. Yes; Go to step 13.
    b. No; repair the short to ground between pin 4 of the soot sensor connector and pin 61 of the ACM 120-pin connector.
13. Disconnect the ACM 120-pin connector.
14. Inspect the ACM 120-pin harness connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
    a. Yes; repair as necessary. Verify repairs.
    b. No; Go to step 15.
15. Measure the resistance between pins 44 and 61 on the ACM 120-pin connector, component side. Is the resistance between 55 to 65 ohms?
    a. Yes; replace the aftertreatment harness. Refer to section "Removal of the 1-BOX™ Aftertreatment Harness". Verify repairs.
    b. No; replace the ACM. Verify repairs.
    For DD5; Refer to section "Removal of the 1-BOX™ Aftertreatment Control Module"
    For DD8; Refer to section "Removal of the 1-BOX™ Aftertreatment Control Module"

 