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Service Information Bulletin

SUBJECT	DATE
SPN 1663 (CPC) (EPA07/10/GHG14/GHG17)	April 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	EPA07/10/ GHG14 DD Platform HD	SPN 1663/FMI 7 - EPA07 - EPA10 - GHG14	Updated diagnostic procedures.
DDC-SVC-MAN-0191	GHG17 DD Platform HD	SPN 1663/FMI 7 - GHG17	
DDC-SVC-MAN-0193	GHG17 DD Platform MD	SPN 1663/FMI 7 - GHG17	

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 1663/FMI 7 - EPA07 - EPA10 - GHG14

Optimized Idle Safety Loop Faulted

Table 1.

SPN 1663/FMI 7	
Description	Optimized Idle Safety Loop Faulted
Monitored Parameter	Optimized Idle Safety Loop (Parking Brake, Hood Tilt Switch, Neutral Safety Switch and Vehicle Speed)
Typical Enabling Conditions	Fault is Set Active if a Maximum Number of Vehicle Speed Sensor Pulses During an Optimized Idle Engine Start is Exceeded or the Vehicle Speed is Above 0.25 Km/H or the Engine Torque is Above a Calibratable Threshold for 2 Seconds
Monitor Sequence	None
Execution Frequency	
Typical Duration	
Dash Lamps	CEL
Engine Reaction	None
Verification	Run an Optimized Idle Mode

NOTE: When creating log files for optimized idle issues using DiagnosticLink ®, add the J1939 connection. This will create larger log files but the information needed will be available to reduce troubleshooting time.

Check as follows:

1. Open DiagnosticLink ®.
2. Go to the tools drop-down menu and select options.
3. Select the connection tab.
4. Is there a check mark in the box next to J1939ECU?
    a. Yes; Go to step 5.
    b. No; click on the box so the check mark will appear, then Go to step 5.

NOTE: If fault code SPN 1663/FMI 7 is inactive, it may indicate that the vehicle moved during optimized idle operation or that noise was detected on the Vehicle Speed Sensor (VSS).

5. Turn the ignition ON (key ON, engine OFF)
6. Connect to DiagnosticLink.

NOTE: The Optimized Idle Safety Loop is made up of the parking brake, hood tilt switch, neutral safety switch and vehicle speed.

7. Use DiagnosticLink to monitor the Optimized Idle Safety Loop. Cycle the switches that make up the safety loop and make sure they operate correctly. Is a failure present with the Optimized Idle Safety Loop?
    a. Yes; repair the failed Optimized Idle Safety Loop component.
    b. No; Go to step 8.
8. Is the vehicle equipped with a GHG14 engine?
    a. Yes; Go to step 10.
    b. No; Go to step 9.
9. Clear the fault codes, run through an Optimized Idle cycle. Does the fault become active?
    a. Yes; this indicates an issue with the Vehicle Speed Sensor (VSS) or VSS circuit. Refer to Original Equipment Manufacturer (OEM) literature.
    b. No; release the vehicle.

10. Use DiagnosticLink to monitor the following:
    Latest OI Dropout Reason t0
    Latest OI Dropout Reason t-1
    Latest OI Dropout Reason t-2
    Latest OI Dropout Reason t-3
    Latest OI Dropout Reason t-4
11. Does the value for any of the above indicate OI overtorque?
    a. a. Yes; update device software to following or greater:
       MCM 4.7.0.0 A0294489935 ZGS 002
       CPC to R34_00_000A
       ACM to 5.57.0.0 A0164483054 ZGS 003
       TCM to NAMT070700 (if applicable)
    b. No; the value indicated by the Latest OI Dropout Reason indicates the failure causing the code to come active. "t0" indicates the most resent and "t-4" indicates the least recent. Repair the failure as indicated by the Latest OI Dropout Reason.

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Optimized Idle Safety Loop Faulted

Table 2.

SPN 1663/FMI 7	
Description	Optimized Idle Safety Loop Faulted
Monitored Parameter	Optimized Idle Safety Loop (Parking Brake, Hood Tilt Switch, Neutral Safety Switch and Vehicle Speed)
Typical Enabling Conditions	Fault is Set Active if a Maximum Number of Vehicle Speed Sensor Pulses During an Optimized Idle Engine Start is Exceeded or the Vehicle Speed is Above 0.25 Km/H or the Engine Torque is Above a Calibratable Threshold For 2 Seconds
Monitor Sequence	None
Execution Frequency	
Typical Duration	
Dash Lamps	CEL
Engine Reaction	None
Verification	Run an Optimized Idle Mode

NOTE: When creating log files for optimized idle issues using DiagnosticLink ®, add the J1939 connection. This will create larger log files but the information needed will be available to reduce troubleshooting time.

Check as follows:

1. Open DiagnosticLink ®.
2. Go to the tools drop-down menu and select options.
3. Select the connection tab.
4. Is there a check mark in the box next to J1939ECU?
    a. Yes; Go to step 5.
    b. No; click on the box so the check mark will appear, then Go to step 5.

NOTE: If fault code SPN 1663/FMI 7 is inactive, it may indicate that the vehicle moved during optimized idle operation or that noise was detected on the Vehicle Speed Sensor (VSS).

5. Turn the ignition ON (key ON, engine OFF)
6. Connect to DiagnosticLink.

NOTE: The Optimized Idle Safety Loop is made up of the parking brake, hood tilt switch, neutral safety switch and vehicle speed.

7. Use DiagnosticLink to monitor the Optimized Idle Safety Loop. Cycle the switches that make up the safety loop and make sure they operate correctly. Is a failure present with the Optimized Idle Safety Loop?
    a. Yes; repair the failed Optimized Idle Safety Loop component.
    b. No; Go to step 8.
8. Use DiagnosticLink to monitor the following:
   Latest OI Dropout Reason t0
   Latest OI Dropout Reason t-1
   Latest OI Dropout Reason t-2
   Latest OI Dropout Reason t-3
   Latest OI Dropout Reason t-4

9. The value indicated by the Latest OI Dropout Reason indicates the failure causing the code to come active. "t0" indicates the most recent and "t-4" indicates the least recent. Repair the failure as indicated by the Latest OI Dropout Reason.