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## Service Information Bulletin

SUBJECT	DATE
SPN 712 (CPC)(GHG17)	May 2016

### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN- 0193	GHG17 DD Medium Duty	SPN 712/FMI 3, 4, 5 - GHG17	New DD5 and DD8 diagnostic procedures
DDC-SVC-MAN-0191	GHG17 DD HD	SPN 712/FMI 3, 4, 5 - GHG17	Updated GHG17 HD 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.



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## 2 SPN 712/FMI 3 – GHG17

Digital Output 1 04 Circuit Failed High

**Table 1.**

SPN 712/FMI 3	
Description	CPC Output 1 04 Short to Voltage
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation



### **WARNING: ENGINE EXHAUST**

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

Check as follows:

1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
PGR035 Digital Outputs			
1 04 DO Selection	0 disabled		
1 05 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
1 13 DO Selection	check engine lamp ye...		
2 10 DO Selection	ground, analog sensors		
3 02 DO Selection	disabled		
3 07 DO Selection	disabled		
3 08 DO Selection	WIF-Lamp		
3 09 DO Selection	DEF Low Lamp		
3 10 DO Selection	Fuel Filter Restriction ...		
3 12 DO Selection	stop engine lamp red		
3 16 DO Selection	disabled		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the short to power between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.

### 3 SPN 712/FMI 4 – GHG17

Digital Output 1 04 Circuit Failed Low

**Table 2.**

SPN 712/FMI 4	
Description	CPC Output 1 04 Short to Ground
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation



Check as follows:



**WARNING: ENGINE EXHAUST**

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

1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
  PGR035 Digital Outputs			
1 04 DO Selection	<div style="border: 1px solid black; padding: 2px;">           0 disabled            1 ground, idle validation switches/analog accelerator pedal         </div>		
1 05 DO Selection	0 disabled		
1 13 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
2 10 DO Selection	check engine lamp ye...		
3 02 DO Selection	ground, analog sensors		
3 07 DO Selection	disabled		
3 08 DO Selection	disabled		
3 09 DO Selection	WIF-Lamp		
3 10 DO Selection	DEF Low Lamp		
3 12 DO Selection	Fuel Filter Restriction ...		
3 16 DO Selection	stop engine lamp red		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the short to ground between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.

## 4 SPN 712/FMI 5 – GHG17

Digital Output 1 04 Circuit Open

**Table 3.**

SPN 712/FMI 5	
Description	CPC Output 1 04 Open Circuit
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation

Check as follows:



**WARNING: ENGINE EXHAUST**

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1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
PGR035 Digital Outputs			
1 04 DO Selection	0 disabled		
1 05 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
1 13 DO Selection	check engine lamp ye...		
2 10 DO Selection	ground, analog sensors		
3 02 DO Selection	disabled		
3 07 DO Selection	disabled		
3 08 DO Selection	WIF-Lamp		
3 09 DO Selection	DEF Low Lamp		
3 10 DO Selection	Fuel Filter Restriction ...		
3 12 DO Selection	stop engine lamp red		
3 16 DO Selection	disabled		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the open circuit between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.

## 5 SPN 712/FMI 3 - GHG17

Digital Output 1 04 Circuit Failed High

**Table 4.**

SPN 712/FMI 3	
Description	CPC Output 1 04 Short to Voltage
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation





### **WARNING: ENGINE EXHAUST**

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1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
  PGR035 Digital Outputs			
1 04 DO Selection	<input type="text" value="0 disabled"/>		
1 05 DO Selection	0 disabled		
1 13 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
2 10 DO Selection	check engine lamp ye...		
3 02 DO Selection	ground, analog sensors		
3 07 DO Selection	disabled		
3 08 DO Selection	disabled		
3 09 DO Selection	WIF-Lamp		
3 10 DO Selection	DEF Low Lamp		
3 12 DO Selection	Fuel Filter Restriction ...		
3 16 DO Selection	stop engine lamp red		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the short to power between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.

## 6 SPN 712/FMI 4 - GHG17

Digital Output 1 04 Circuit Failed Low

**Table 5.**

SPN 712/FMI 4	
Description	CPC Output 1 04 Short to Ground
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation

Check as follows:



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1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
PGR035 Digital Outputs			
1 04 DO Selection	0 disabled		
1 05 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
1 13 DO Selection	check engine lamp ye...		
2 10 DO Selection	ground, analog sensors		
3 02 DO Selection	disabled		
3 07 DO Selection	disabled		
3 08 DO Selection	WIF-Lamp		
3 09 DO Selection	DEF Low Lamp		
3 10 DO Selection	Fuel Filter Restriction ...		
3 12 DO Selection	stop engine lamp red		
3 16 DO Selection	disabled		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the short to ground between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.

## 7 SPN 712/FMI 5 - GHG17

Digital Output 1 04 Circuit Open

**Table 6.**

SPN 712/FMI 5	
Description	CPC Output 1 04 Open Circuit
Monitored Parameter	CPC Output 1/4
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Engine On with Output Activation

Check as follows:



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1. Has the Common Powertrain Controller (CPC) recently been changed or reprogrammed?
  - a. Yes; verify that the correct CPC parameter list has been installed. If the correct calibration and correct parameter list have been installed, then Go to step 2.
  - b. No; Go to step 2.
2. Connect to DiagnosticLink<sup>®</sup>.

Parameter	Value	Units	Minimum
PGR035 Digital Outputs			
1 04 DO Selection	0 disabled		
1 05 DO Selection	1 ground, idle validation switches/analog accelerator pedal		
1 13 DO Selection	check engine lamp ye...		
2 10 DO Selection	ground, analog sensors		
3 02 DO Selection	disabled		
3 07 DO Selection	disabled		
3 08 DO Selection	WIF-Lamp		
3 09 DO Selection	DEF Low Lamp		
3 10 DO Selection	Fuel Filter Restriction ...		
3 12 DO Selection	stop engine lamp red		
3 16 DO Selection	disabled		
3 17 DO Selection	disabled		
4 01 DO Selection	disabled		
4 02 DO Selection	disabled		
4 06 DO Selection	grid heater lamp		
4 07 DO Selection	High Exhaust Temper...		
4 09 DO Selection	disabled		
4 10 DO Selection	disabled		

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3. Verify parameters - go to the parameters work window.
4. Verify that the parameter set to 1 04 DO Selection is set to the specific component to which this is configured. Are the parameters configured correctly?
  - a. Yes; Repair the open circuit between pin 4 of the CPC connector #1 and the wired component. For wiring schematic information, refer to Original Equipment Manufacturer (OEM) literature.
  - b. No; configure the parameters correctly.