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## Service Information Bulletin

SUBJECT	DATE
SPN 4354/FMI 5, 4356/FMI 5, 4355/FMI 5, 4357/FMI 5	August 2012

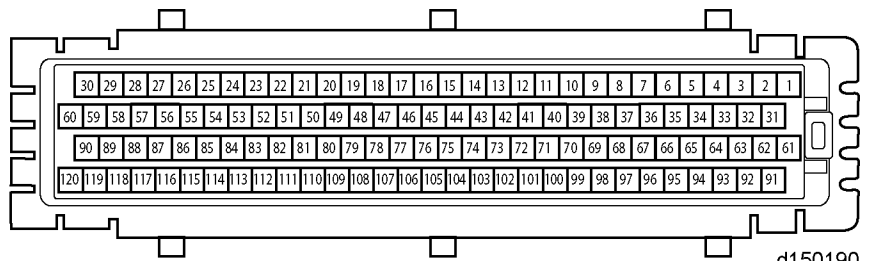
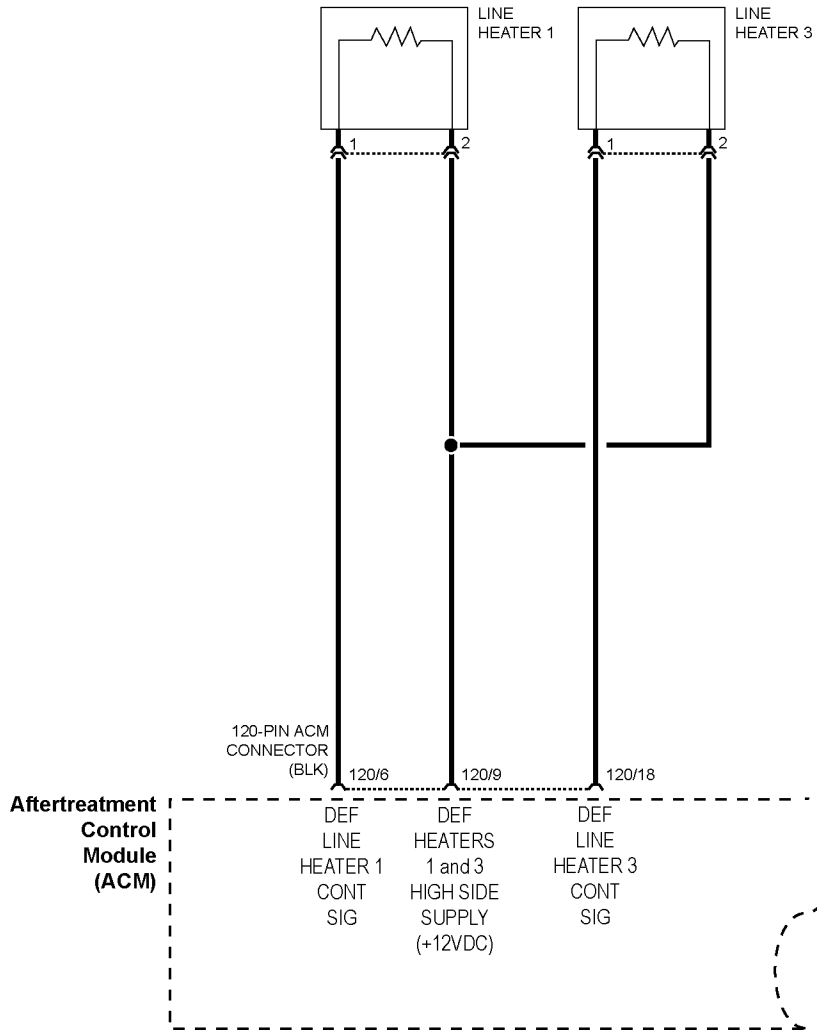
### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	GHG14 DD Platform	SPN 4354/FMI 5	This contains updated information.
		SPN 4356/FMI 5	
		SPN 4355/FMI 5	
		SPN 4357/FMI 5	



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## 2 Electronic Diagram



### 3 SPN 4354/FMI 5 - GHG14

This diagnostic is typically Line Heater 1 Open Circuit.

1. Check for multiple codes.
  - a. If SPN 4354/FMI 5 and SPN 4356/FMI 5 are present, repair open between pin 9 of the ACM2.1 120-pin connector and pin 2 of line heaters 1 and 3.
  - b. If only SPN 4354/FMI 5 is present, Go to step 2.
2. Disconnect line heater 1.
3. Turn the ignition ON (key ON, engine OFF).
4. Measure the voltage between pin 2 on the harness side of line heater 1 connector and ground.
  - a. If the voltage is greater than 11.75, Go to step 5.
  - b. If the voltage is less than 11.75, repair wire between pin 2 on the harness side of line heater 1 connector and pin 9 of the ACM2.1.
5. Measure the voltage between pin 1 on the harness side of line heater 1 connector and ground.
  - a. If the voltage is between 2.25 and 2.50, Go to step 6.
  - b. If the voltage is not between 2.25 and 2.50, repair wire between pin 1 on the harness side of line heater 1 connector and pin 6 of the ACM2.1.
6. Measure the resistance on the heating element side of line heater 1. If resistance is not within this range, replace the line heating element. Refer to table below for proper resistance values.

**Table 1.**

Diesel Exhaust Fluid Line Heater Resistance Chart				
Length (mm)	Length (inches)	Nominal Resistance (ohms)	Min Resistance (ohms)	Max Resistance (ohms)
500	19.6	16	12.8	19.2
1000	39.3	9.8	7.84	11.76
1200	47.2	8.6	6.88	10.32
1400	55.1	7.8	6.24	9.36
1600	62.9	7	5.6	8.4
1800	70.8	6.1	4.88	7.32
2000	78.7	5.6	4.48	6.72
2200	86.6	5.2	4.16	6.24
2400	94.4	4.9	3.92	5.88
2600	102.3	4.6	3.68	5.52

## 4 SPN 4356/FMI 5 - GHG14

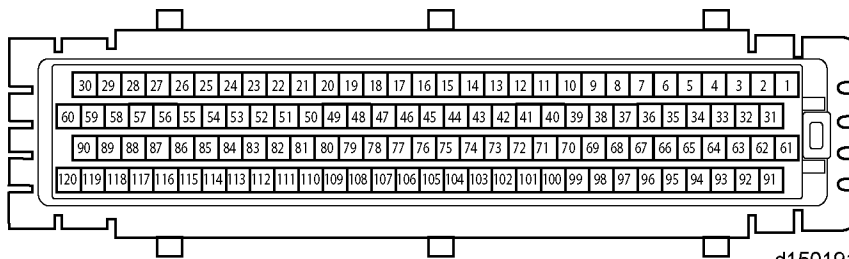
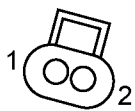
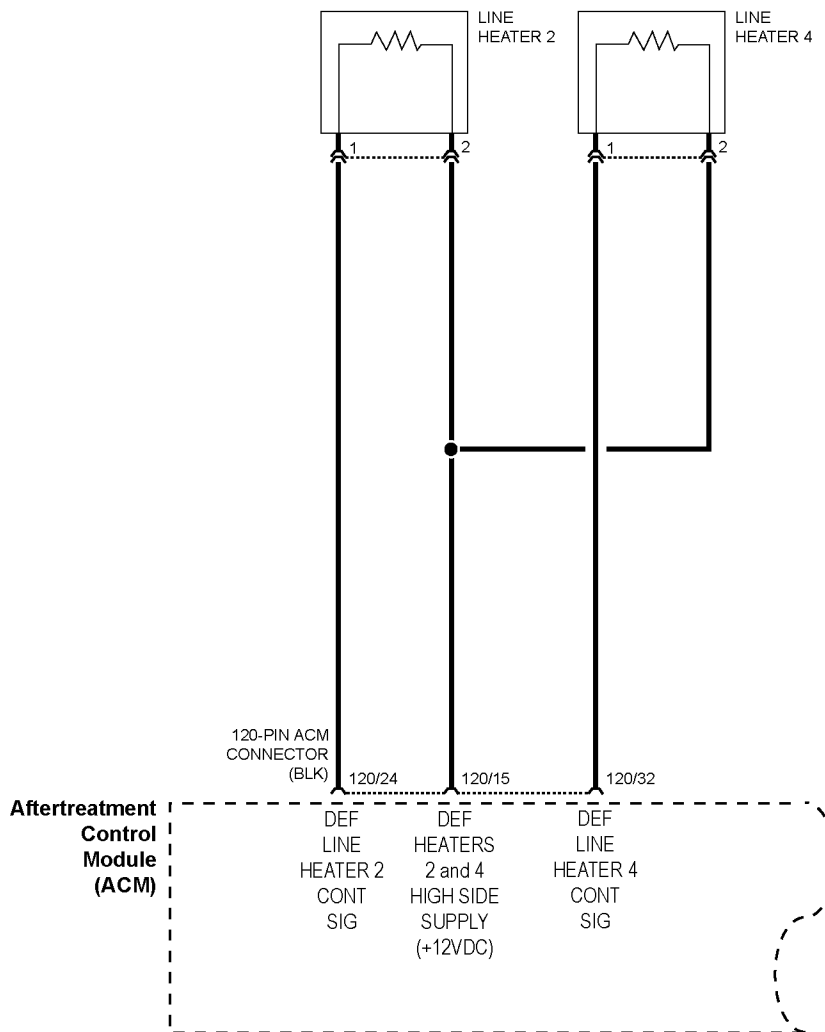
This diagnostic is typically Line Heater 3 Open Circuit.

1. Check for multiple codes.
  - a. If SPN 4356/FMI 5 and SPN 4354/FMI 5 are present, repair open between pin 9 of the ACM2.1 120-pin connector and pin 2 of line heaters 3 and 1.
  - b. If only SPN 4356/FMI 5 is present, Go to step 2.
2. Disconnect line heater 3.
3. Turn the ignition ON (key ON, engine OFF).
4. Measure the voltage between pin 2 on the harness side of line heater 3 connector and ground.
  - a. If the voltage is greater than 11.75, Go to step 5.
  - b. If the voltage is less than 11.75, repair wire between pin 2 on the harness side of line heater 3 connector and pin 9 of the ACM2.1.
5. Measure the voltage between pin 1 on the harness side of line heater 3 connector and ground.
  - a. If the voltage is between 2.25 and 2.50, Go to step 6.
  - b. If the voltage is not between 2.25 and 2.50, repair wire between pin 1 on the harness side of line heater 3 connector and pin 18 of the ACM2.1.
6. Measure the resistance on the heating element side of line heater 3. If resistance is not within this range, replace the line heating element. Refer to table below for proper resistance values.

**Table 2.**

Diesel Exhaust Fluid Line Heater Resistance Chart				
Length (mm)	Length (inches)	Nominal Resistance (ohms)	Min Resistance (ohms)	Max Resistance (ohms)
500	19.6	16	12.8	19.2
1000	39.3	9.8	7.84	11.76
1200	47.2	8.6	6.88	10.32
1400	55.1	7.8	6.24	9.36
1600	62.9	7	5.6	8.4
1800	70.8	6.1	4.88	7.32
2000	78.7	5.6	4.48	6.72
2200	86.6	5.2	4.16	6.24
2400	94.4	4.9	3.92	5.88
2600	102.3	4.6	3.68	5.52

## 5 Electronic Diagram



## 6 SPN 4355/FMI 5 - GHG14

This diagnostic is typically Line Heater 2 Open Circuit.

1. Check for multiple codes.
  - a. If SPN 4355/FMI 5 and SPN 4357/FMI 5 are present, repair open between pin 15 of the ACM2.1 120-pin connector and pin 2 of line heaters 2 and 4.
  - b. If only SPN 4355/FMI 5 is present, Go to step 2.
2. Disconnect line heater 2.
3. Turn the ignition ON (key ON, engine OFF).
4. Measure the voltage between pin 2 on the harness side of line heater 2 connector and ground.
  - a. If the voltage is greater than 11.75, Go to step 5.
  - b. If the voltage is less than 11.75, repair wire between pin 2 on the harness side of line heater 2 connector and pin 15 of the ACM2.1.
5. Measure the voltage between pin 1 on the harness side of line heater 2 connector and ground.
  - a. If the voltage is between 2.25 and 2.50, Go to step 6.
  - b. If the voltage is not between 2.25 and 2.50, repair wire between pin 1 on the harness side of line heater 2 connector and pin 24 of the ACM2.1.
6. Measure the resistance on the heating element side of line heater 2. If resistance is not within this range, replace the line heating element. Refer to table below for proper resistance values.

**Table 3.**

Diesel Exhaust Fluid Line Heater Resistance Chart				
Length (mm)	Length (inches)	Nominal Resistance (ohms)	Min Resistance (ohms)	Max Resistance (ohms)
500	19.6	16	12.8	19.2
1000	39.3	9.8	7.84	11.76
1200	47.2	8.6	6.88	10.32
1400	55.1	7.8	6.24	9.36
1600	62.9	7	5.6	8.4
1800	70.8	6.1	4.88	7.32
2000	78.7	5.6	4.48	6.72
2200	86.6	5.2	4.16	6.24
2400	94.4	4.9	3.92	5.88
2600	102.3	4.6	3.68	5.52

## 7 SPN 4357/FMI 5 - GHG14

This diagnostic is typically Line Heater 4 Open Circuit.

1. Check for multiple codes.
  - a. If SPN 4355/FMI 5 and SPN 4357/FMI 5 are present, repair open between pin 15 of the ACM2.1 120-pin connector and pin 2 of line heaters 2 and 4.
  - b. If only SPN 4357/FMI 5 is present, Go to step 2.
2. Disconnect line heater 4.
3. Turn the ignition ON (key ON, engine OFF).
4. Measure the voltage between pin 2 on the harness side of line heater 4 connector and ground.
  - a. If the voltage is greater than 11.75, Go to step 5.
  - b. If the voltage is less than 11.75, repair wire between pin 2 on the harness side of line heater 4 connector and pin 15 of the ACM2.1.
5. Measure the voltage between pin 1 on the harness side of line heater 4 connector and ground.
  - a. If the voltage is between 2.25 and 2.50, Go to step 6.
  - b. If the voltage is not between 2.25 and 2.50, repair wire between pin 1 on the harness side of line heater 4 connector and pin 32 of the ACM2.1.
6. Measure the resistance on the heating element side of line heater 4. If resistance is not within this range, replace the line heating element. Refer to table below for proper resistance values.

**Table 4.**

Diesel Exhaust Fluid Line Heater Resistance Chart				
Length (mm)	Length (inches)	Nominal Resistance (ohms)	Min Resistance (ohms)	Max Resistance (ohms)
500	19.6	16	12.8	19.2
1000	39.3	9.8	7.84	11.76
1200	47.2	8.6	6.88	10.32
1400	55.1	7.8	6.24	9.36
1600	62.9	7	5.6	8.4
1800	70.8	6.1	4.88	7.32
2000	78.7	5.6	4.48	6.72
2200	86.6	5.2	4.16	6.24
2400	94.4	4.9	3.92	5.88
2600	102.3	4.6	3.68	5.52