1 8 09-14

Service Information Bulletin

SUBJECT	DATE
SPN 3361 (ACM) (GHG14)	August 2014

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 3361/FMI 3, 4, 5, 31 - (GHG14)	FMIs 3, 4, 5, and 31 are new for chassis wiring inspection.

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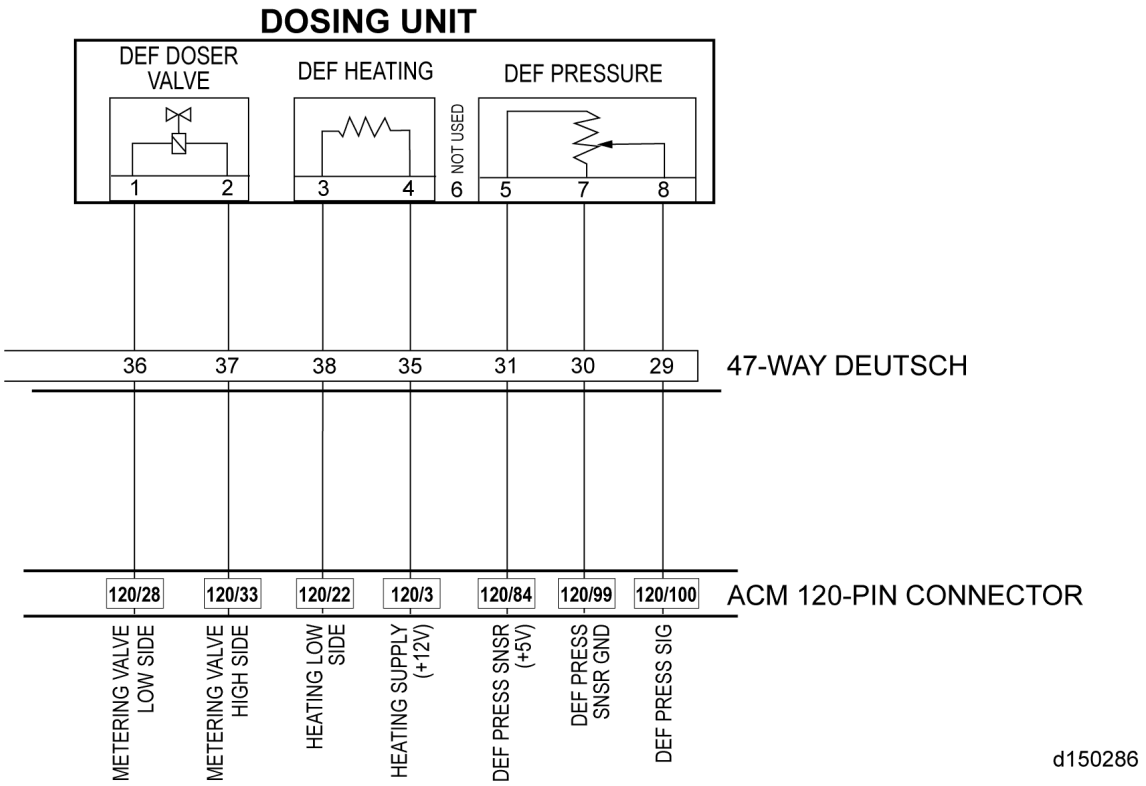
2 SPN 3361/FMI 3 - GHG14

Diesel Exhaust Fluid System Circuit Failed High

Table 1.

SPN 3361/FMI 3	
Description	Diesel Exhaust Fluid (DEF) System Circuit Voltage Above Normal, Or Shorted To High Source
Monitored Parameter	DEF Dosing Unit Voltage
Typical Enabling Conditions	DEF Dosing enabled
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 seconds
Dash Lamps	None
Engine Reaction	Derate 25%
Verification	Key OFF five minutes after repair



Check as follows:

1. Turn the ignition OFF.
2. Disconnect the DEF dosing unit harness connector.
3. Inspect the Dosing Unit connector and the Dosing Unit harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
   a. Yes; repair as needed. Verify repairs.
   b. No; Go to step 4.
4. Connect to DiagnosticLink ®.
5. Turn the ignition ON (key ON, engine OFF).

NOTE: Fault will remain active until key cycle with five-minute Aftertreatment Control Module (ACM) power down.

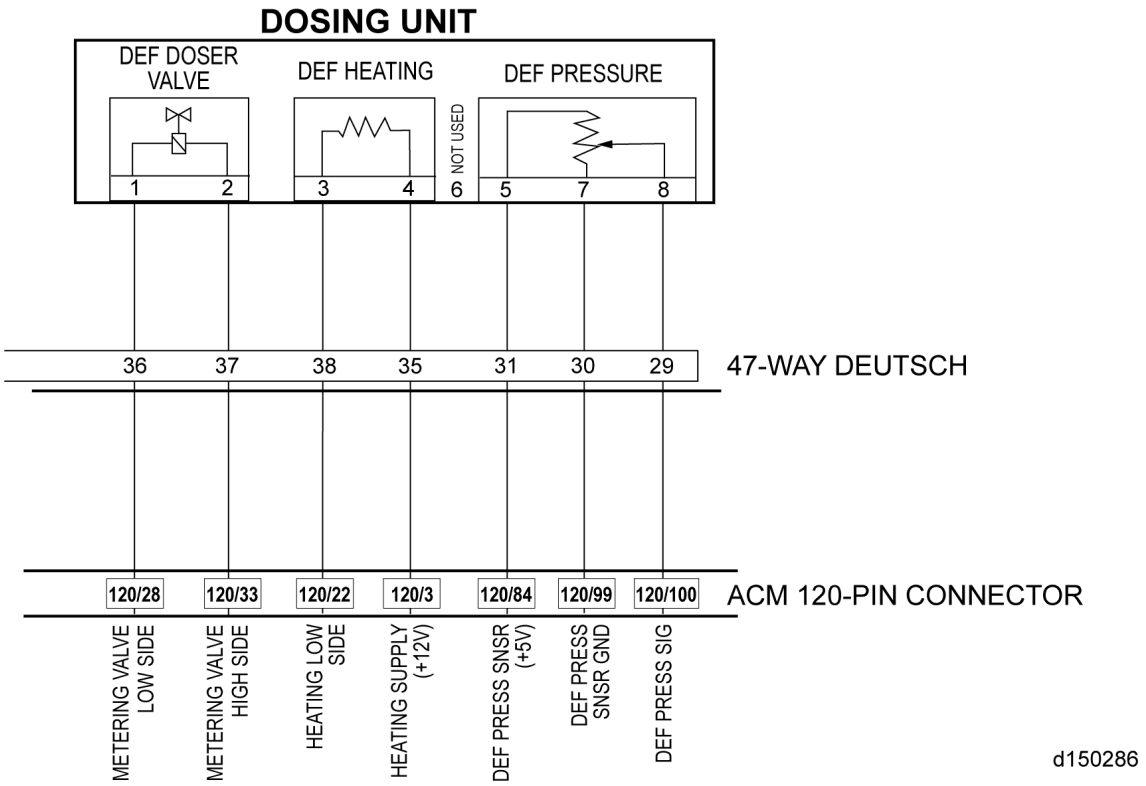
6. Clear fault codes. Does the fault code change from SPN 3361/FMI 3 to SPN 3361/FMI 5?
    a. Yes; replace the DEF Dosing Unit. Refer to section "Removal of the GHG14 Dosing System Doser". Verify repairs.
    b. No; Go to step 7.
7. Measure the voltage between the DEF dosing unit connector pin 1, harness side and ground. Is the voltage greater than 10 volts?
    a. Yes; repair the short to voltage between pin 1 of the DEF dosing unit connector and pin 28 of the ACM connector.
    b. No; Go to step 8.
8. Turn the ignition OFF.
9. Check intermediate connections in chassis wiring; refer to Original Equipment Manufacturer wiring diagrams for exact routing. Inspect for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
    a. Yes; repair as needed. Verify repairs.
    b. No; Go to step 10.
10. Disconnect the ACM 120-pin connector.
11. Inspect the ACM 120-pin connector and 120-pin harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
    a. Yes; repair as needed. Verify repairs.
    b. No; replace ACM. Refer to section "Removal of the Aftertreatment Control Module". Verify repairs.

3 SPN 3361/FMI 4 - GHG14

Diesel Exhaust Fluid System Circuit Failed Low

Table 2.

SPN 3361/FMI 4	
Description	Diesel Exhaust Fluid (DEF) System Circuit low voltage signal or short to ground
Monitored Parameter	DEF Dosing Unit Voltage
Typical Enabling Conditions	DEF Dosing enabled then disabled
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	50 seconds (max)
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Key Cycle OFF five minutes after repair



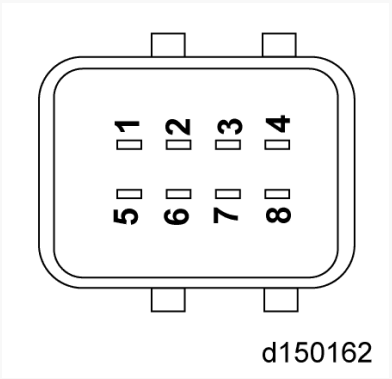
Check as follows:

1. Turn the ignition OFF.
2. Disconnect the DEF dosing unit harness connector.
3. Inspect the Dosing Unit connector and the Dosing Unit harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
   a. Yes; repair as needed. Verify repairs.
   b. No; Go to step 4.
4. Connect to DiagnosticLink ®.
5. Turn the ignition ON (key ON, engine OFF).

NOTE: Fault will remain active until key cycle with five-minute Aftertreatment Control Module (ACM) power down.

6. Clear fault codes. Does the fault code change from SPN 3361/FMI 4 to SPN 3361/FMI 5?
   a. Yes; replace the DEF Dosing Unit. Refer to section "Removal of the GHG14 Dosing System Doser". Verify repairs.
   b. No; Go to step 7.
7. Turn the ignition OFF.

Table 3.

8-Pin	Circuit	ACM - Pin	Connector
1	Dosing Unit Low Side	28	
2	Dosing Unit High Side	33	
3	Heating Low Side	22	
4	Heating Supply	3	
5	Sensor Supply 5V	84	
6	Not Used	Not Used	
7	Sensor Ground	99	
8	DEF Pressure Signal	100	

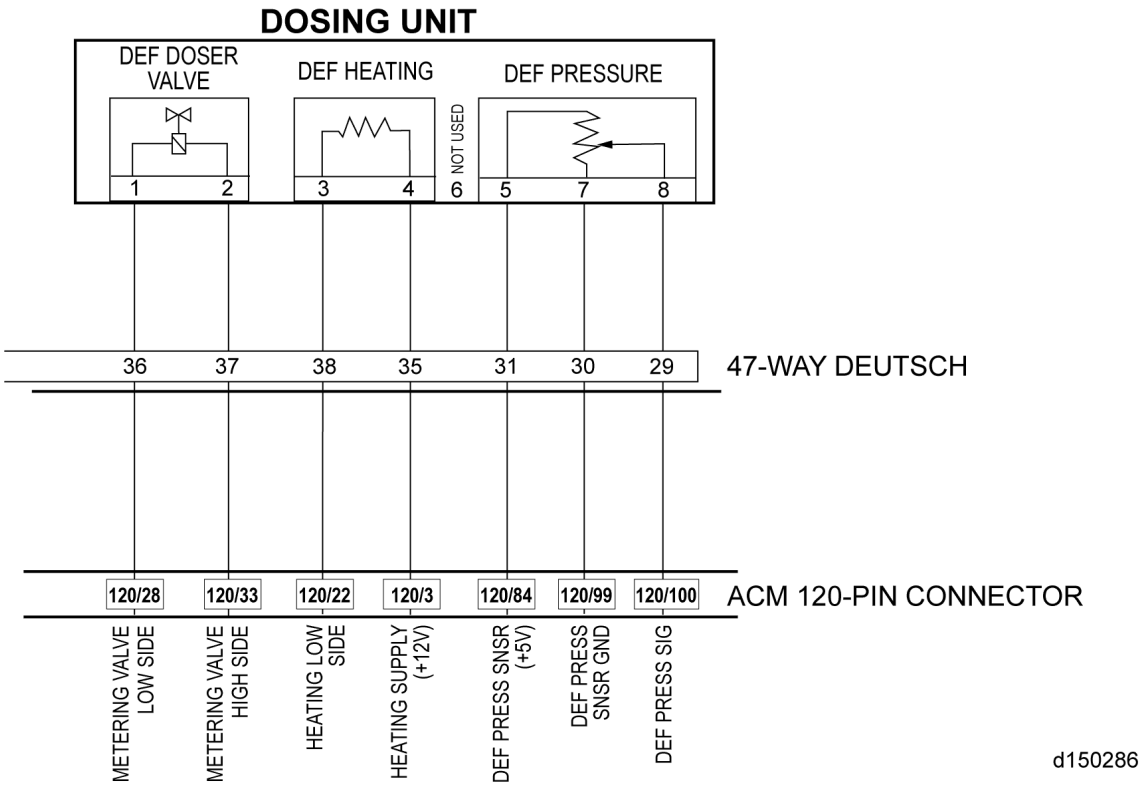
8. Measure the resistance between the DEF dosing unit connector pin 1, harness side and ground. Is the resistance greater than 10K ohms?
   a. Yes; Go to step 9.
   b. No; repair the short to ground between pin 1 of the DEF dosing unit connector and pin 28 of the ACM connector. Verify repairs.
9. Check intermediate connections in chassis wiring; refer to Original Equipment Manufacturer wiring diagrams for exact routing. Inspect for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
   a. Yes; repair as needed. Verify repairs.
   b. No; Go to step 10.
10. Disconnect the ACM 120-pin connector.
11. Inspect the ACM 120-pin connector and 120-pin harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
    a. Yes; repair as needed. Verify repairs.
    b. No; Go to step 12.
12. Measure the resistance between pins 1 and 2 on the DEF dosing unit harness connector. Is the resistance greater than 10K ohms?
    a. Yes; replace ACM. Refer to section "Removal of the Aftertreatment Control Module". Verify repairs.
    b. No; repair the shorted wires between pins 1 and 2 of the DEF dosing unit harness and pins 28 and 33 of the ACM harness connector. Verify repairs.

4 SPN 3361/FMI 5 - GHG14

Diesel Exhaust Fluid System Circuit Failed Open

Table 4.

SPN 3361/FMI 5	
Description	Diesel Exhaust Fluid (DEF) System Open Circuit Detected
Monitored Parameter	DEF Dosing Unit Voltage
Typical Enabling Conditions	DEF Dosing enabled then disabled
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	50 seconds (max)
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Key OFF five minutes after repair

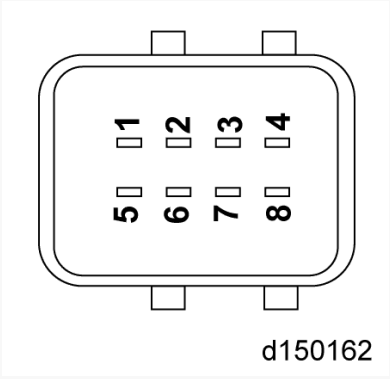


Check as follows:

1. Turn the ignition OFF.
2. Disconnect the DEF dosing unit harness connector.
3. Inspect the Dosing Unit connector and the Dosing Unit harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?
   a. Yes; repair as needed. Verify repairs.
   b. No; Go to step 4.
4. Disconnect the ACM 120-pin connector.
5. Inspect the ACM 120-pin connector and 120-pin harness connector for signs of damage, bent, spread, broken, pushed out (unseated) or corroded pins or wire damage near the connector. Was any damage found?

a. Yes; repair as needed.
b. No; Go to step 6.

Table 5.

8-Pin	Circuit	ACM - Pin	Connector
1	Dosing Unit Low Side	28	
2	Dosing Unit High Side	33	
3	Heating Low Side	22	
4	Heating Supply	3	
5	Sensor Supply 5V	84	
6	Not Used	Not Used	
7	Sensor Ground	99	
8	DEF Pressure Signal	100	

6. Measure the resistance between pin 1of the DEF dosing unit harness connector harness side and pin 28 of the ACM 120-pin harness connector, harness side. Is the resistance less than 5 ohms?
   a. Yes; Go to step 7.
   b. No; repair the open wire between pin 1 of the DEF dosing unit connector and pin 28 of the ACM connector. Verify repairs.
7. Measure the resistance between pins 1 and 2 on the DEF dosing unit component side. Is the resistance between 4 to 8 ohms?
   a. Yes; replace ACM. Refer to section "Removal of the Aftertreatment Control Module". Verify repairs.
   b. No; replace the DEF Dosing Unit. Refer to section "Removal of the GHG14 Dosing System Doser". Verify repairs.

5 SPN 3361/FMI 31 - GHG14

Diesel Exhaust Fluid Dosing Unit Error

Table 6.

SPN 3361/FMI 31	
Description	The fault indicates that the Diesel Exhaust Fluid (DEF) Dosing Unit was switched off before completing a cycle
Monitored Parameter	DEF Pressure
Typical Enabling Conditions	When service routine is enabled and during infrequent in-use checks under non DEF dosing conditions
Monitor Sequence	None
Execution Frequency	Service tool and infrequent in-use checks during DEF dosing conditions
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Selective Catalyst Reduction (SCR) Airless Dosing System (ADS) Self-Check Routine

Check as follows:

1. Connect DiagnosticLink ®.
2. Turn the ignition ON (key ON, engine OFF).
3. Check for multiple DEF system circuit failed faults; SPN (any) FMIs 3, 4, or 5; may also set SPN 3361/FMI 31. Are any other DEF system circuit-related faults also present?
   a. Yes; repair those faults first.
   b. No; Go to step 4.
4. Perform SCR ADS Self-Check Routine. Did the SCR ADS test pass with DEF pump speed and DEF pressure values in normal range?
   - Acceptable DEF Pump Speed: greater than 750 rpm and less than 1800 rpm.
   - Acceptable DEF Pressure: greater than 9000 mbar and less than 11000 mbar (130-160 psi).

   a. Yes; Go to step 5.
   b. No; replace the DEF Dosing Unit. Refer to section "Removal of the GHG14 Dosing System Doser". Verify repairs by running SCR ADS Self-Check Routine.
5. Turn the ignition OFF.
6. Disconnect the DEF dosing unit harness connector.
7. Inspect the DEF dosing unit harness wiring and connector for damage, wire chafing, bent, spread or corroded pins. Is any damage found?
   a. Yes; repair as necessary. Verify repairs by running SCR ADS Self-Check Routine.
   b. No; Go to step 8.
8. Check all intermediate connections in chassis wiring, including Aftertreatment Control Module (ACM), for damage, wire chafing, bent, spread or corroded pins. Refer to OEM wiring diagrams for exact routing. Is any damage found?
   a. Yes; repair as necessary. Verify repairs by running SCR ADS Self-Check Routine.
   b. No; Go to step 9.
9. Restore all connections except the DEF dosing unit harness connector. Leave the DEF dosing unit harness connector disconnected.
10. Turn the ignition ON (key ON, engine OFF).

NOTE: Fault will remain active until key cycle with five-minute ACM power down.

11. Clear fault codes. Does the fault code change from SPN 3361/FMI 31 to SPN 3361/FMI 5?

a. Yes; replace the DEF Dosing Unit. Refer to section "Removal of the GHG14 Dosing System Doser". Verify repairs by running SCR ADS Self-Check Routine.
b. No; replace ACM. Refer to section "Removal of the Aftertreatment Control Module". Verify repairs by running SCR ADS Self-Check Routine.