

## 1 01 15-17



## Service Information Bulletin

SUBJECT	DATE
SPN 3226 (ACM) (EPA10;GHG14)	January 2017

### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	EPA10/ GHG14 DD Heavy Duty	SPN 3226/FMI 2 - EPA10 - GHG14	Two new steps added.

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 3226/FMI 2 - EPA10 - GHG14

Selective Catalyst Reduction Outlet NOx Sensor – Drift

**Table 1.**

SPN 3226/FMI 2	
Description	Outlet NOx Sensor is Drifted
Monitored Parameter	Selective Catalyst Reduction (SCR) Outlet NOx
Typical Enabling Conditions	Engine Speed Between 1000 to 2000 rpm Engine Load Between 25 to 100% SCR Temperature greater than 390°C (734°F) for 10 Seconds Inlet NOx to Outlet NOx Deviation greater than 200 ppm
Monitor Sequence	Once per Drive Cycle
Execution Frequency	Continuous When Enabling Conditions Met
Typical Duration	20 Seconds
Dash Lamps	None
Engine Reaction	Dosing is Disabled
Verification	Parked Regeneration



### WARNING: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.



### WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.



### 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. Check Aftertreatment System (ATS) for visible exhaust leaks/damage. Are leaks or damage found?
  - a. Yes; repair as necessary.
  - b. No; Go to step 2.
2. Connect DiagnosticLink<sup>®</sup>.
3. Unbolt the DEF doser from the aftertreatment; do not disconnect the DEF lines or electrical connector.



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**Figure 1. Normal DEF Crystallization in the DEF Doser Port Hole**

4. Use the graduated cylinder provided in DEF test kit W060589001900.
5. Perform a DEF Quantity Test service routine.  
For EPA10, Refer to section "Diesel Exhaust Fluid Quantity Test - EPA10"  
For GHG14, Refer to section "Diesel Exhaust Fluid Quantity Test - GHG14"
6. Monitor the amount of DEF dispensed into the DEF-safe container included in DEF test kit W060589001900. Is the amount of DEF dispensed between 108 and 132 mL (3.7 and 4.5 oz.)?
  - a. Yes; Go to step 7.
  - b. No; for EPA10, replace the DEF Metering Unit. Refer to section "Removal of the Diesel Exhaust Fluid Metering Unit". For GHG14, replace the DEF Dosing Unit; Refer to section "Removal of the GHG14 Dosing System Doser". Go to step 7.
7. Disconnect the DEF dosing unit electrical connector. Perform a High Idle Parked Regeneration.

**Table 2.**

**NOTE: Excessive DEF build-up can cause inaccurate NOx readings. Excessive DEF build-up in the exhaust can be caused by a vehicle with a high speed, high average drive load.**

**Normal DEF crystallization inside the SCR mixing chamber.**



Looking inside SCR Mixing Chamber with DPF removed. Note: Doser Port Location

Table 3.

Normal DEF crystallization inside the SCR mixing chamber.



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Doser Port

**Table 4.**

**NOTE:** This can be seen by looking inside the mixing chamber through the DEF doser mounting port.



Doser Port, restricted by solid mass of crystalized DEF

8. Run the Performance Check – Low Temperature ATD.

For EPA10, Refer to section "EPA10 Perform Performance Check - Low Temperature ATD"

For GHG14, Refer to section "GHG14 Perform Performance Check - Low Temperature ATD"

Are the inlet NOx sensor and outlet NOx sensor readings within 50 PPM of each other?

- a. Yes; excessive DEF build-up can cause inaccurate NOx readings. The DEF build-up was cleared during the High Idle Parked Regeneration.  
FOR GHG14 VEHICLES ONLY: DEF build-up in the exhaust can be caused by a vehicle with a high speed, high average drive load.  
Install DEF awning Kit P/N: A0004921911 to help prevent this failure in the future. Refer to section "GHG14 1-BOX™ Diesel Exhaust Fluid (DEF) Awning".
- b. No; replace the SCR outlet NOx sensor.