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<b>Current Language:</b>	English	<b>Last Modified:</b>	10/24/2014
<b>Other Languages:</b>	NONE	<b>Author:</b>	Jaime Ochoa
<b>Viewed:</b>	756		

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Coding Information

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**Title: SPN 5397 FMI 31 Aftertreatment DPF Regeneration Too Frequent Diagnostics**

**Applies To: EPA 2014 N9 and N10 SCR ESN 3540000 +**

**CHANGE LOG**

**NOTE: DO NOT delete this Change Log.**

Dealers: Please refer to the change log text box below for recent changes to this article:

8/08/2014 - Initial Article Release 10/08/2014 - Add CAC Decay Test requirements to steps 10/24/2014 - Added new step 1 for calibration update.

**DESCRIPTION**

The purpose of this article is to provide diagnostic steps for N9/N10 SPN 5397 FMI 31 (DPF Regenerations occurring to frequently) fault.

MIL will illuminate after this fault is detected during two subsequent drive cycles.

**SYMPTOM(s)**

**Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):**

SPN	FMI	Descriptions
5397	31	DPF regenerations occurring too frequently

**Customer Complaint(s):**

- Frequent regens
- Aftertreatment lights/MIL

**SPECIAL TOOL(s) or SOFTWARE**

Tool Description
EZTech
ServiceMaxx

Tool Description	Tool Number
Charge Air Cooler Test Kit	ZTSE-4341

**DIAGNOSTIC STEP(s)**

Step	Action	Decision
	Does dealer scorecard reflect calibration up to date?	Yes: Go to step 4

1	Using Electronic Service Tool (EST) with ServiceMaxx software, check if the last four characters in the calibration MDR3?	No: Update calibration via NETs and ensure the last four characters change to MDR3.
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Step	Action	Decision
2	Using Electronic Service Tool (EST) with ServiceMaxx software, check for fault codes.  Is SPN 5397 FMI 31 the only fault code present?	Yes: Go to step 5  No: Go to step 3

Step	Action	Decision
3	Using Electronic Service Tool (EST) with ServiceMaxx software, check Diagnostic Trouble Code (DTC) list for SPN 132 FMI 11, 13 and 14 (MAF calibration needed/failed).  Are SPN 132 FMI 11, 13 and 14 fault codes present?	Yes: Repair SPN 132 FMI 11, 13 and 14 (refer to diagnostic manual and <a href="#">IK1200526</a> . After repairs are complete, retest for SPN 5397 FMI 31.  No: Go to step 4

Step	Action	Decision
4	Using Electronic Service Tool (EST) with ServiceMaxx software, check Diagnostic Trouble Code (DTC) list for SPN 3251 FMI 2, 3 and 4 (DPFDP/outlet pressure).  Is EST DTC list free of SPN 3251 FMI 2, 3 and 4?	Yes: Go to step 5  No: Repair SPN 3251 FMI 2, 3 and 4. After repairs are complete, retest for SPN 5397 FMI 31.

Step	Action	Decision
5	Using terminal test kit, inspect connections at Diesel Particulate Filter Differential Pressure (DPFDP) sensor. With key OFF, disconnect DPFDP sensor. Check DPFDP sensor and connector terminals for: damaged or pinched wires; corroded terminals, loose, bent or broken pins; or broken connector housing.  Are the DPFDP sensor connector, harness, and terminals clean and undamaged?	Yes: Go to step 6  No: Repair connector, harness, or terminal damage. After repairs are complete, retest for SPN 5397 FMI 31

Step	Action	Decision
6	Check DPFDP sensor hoses for correct routing and restrictions. Inspect the DPFDP sensor hoses for kinks, improper hose routing, restriction or damage.  Are the DPFDP sensor hoses routed correctly, free of damage, and unrestricted?	Yes: Go to step 7  No: Repair or replace DPFDP sensor hose(s). After repairs are complete, retest for SPN 5397 FMI 31.

Step	Action	Decision
7	Check air management system for boost leaks: A. Inspect air intake system from air filter to engine intake manifold for air leaks, damage, or restrictions. B. Pressurize the Charge Air Cooler (CAC) system to 30 psi using Charge Air Cooler (CAC) Tester ZTSE4341. If pressure	Yes: Go to step 8  No: Repair air intake restrictions, leaks or physical damage. After repairs are complete retest for SPN 5397 FMI 31.

decay exceeds 5 psi in 15 seconds, inspect CAC connections/joints for leaks. (refer to <a href="#">IK0900104</a> - Charge Air Cooler Leak Test for additional steps) C. Inspect hoses and clamps, interstage cooler, and CAC.  Is the CAC system and air intake system free of restrictions, leaks, or physical damage?	
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Step	Action	Decision
8	Inspect exhaust system restrictions, leaks or physical damage (PreDOC/DOC/DPF/SCR Systems). Inspect exhaust manifold for large leaks/soot traces.  Is the exhaust system free of restrictions, large leaks or physical damage?	Yes: After completing all diagnostic steps, if SPN 5397 FMI 31 remains, verify each step was completed correctly and proper decisions were made.  <b>Open a Technical Service case file.</b> Include all diagnostic steps performed and attach a 0-60 WOT performance snapshot to the case.  No: Repair exhaust leaks. After repairs are complete retest for SPN 5397 FMI 31

**NOTE:** These steps have been added to the latest N9/N10 diagnostic manual available on the Service Portal ([0000003721](#)). The article will stay active until a later date.

**WARRANTY INFORMATION**

**Warranty Claim Coding:**

	After Treatment Lights On
<b>Group:</b>	12000 Engines
<b>Noun:</b>	235 DPF-Diesel particulate filter

**Standard Repair Time(s):**

Description	Model	SRT Link	Hours
DPFDP sensor replace	All	A12-8575A	0.3
DPFDP sensor diagnostics	4400	L12-2193K	0.6
DPFDP sensor diagnostics	7300, 7400, 7500	M12-2193K	0.6
DPFDP tubes, replaced	4300, 4400	KL12-6577A	0.4
DPFDP tubes, replaced	7300, 7400, 7500	M12-6577A	0.4
Charge Air Cooler, Pressure Test	MAXXFORCE DT/9/10	KL09-3925T-1	0.5
ECM - Engine, Program	MAXXFORCE DT/9/10	A12-3510T	0.4

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**Feedback Information**

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