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Coding Information

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Title: SPN 724 FMI 20: Oxygen (O2) Sensor Diagnostic

Applies To: EPA 10 MaxxForce 11, 13 & 15L Engines

CHANGE LOG

2015/04/08 - Removed steps 5 through 8. Modified steps to remove verbiage on N13 Engines. This article no longer applies to N13 Engines, see respective Fault Code Action Plan for Diagnostics on 724-20 code on N13 Engines. This article still applies to 2010 MaxxForce 11, 13 & 15L Engines. Added NOTE to description.
2014/12/02 - Modified format and search criteria for this document. If any changes were missed please resubmit them. Some change requests were lost in the transition.

DESCRIPTION

NOTE: This article is set to retire in 30 days. The information in this article has been transferred into the corresponding Engine Diagnostic Manuals for both N13 and 2010 MaxxForce 11, 13L Engines. See the respective Fault Code Action Plan (FCAP) for diagnostics.

This document provides a diagnostic procedure for SPN 724 FMI 20: O₂ adaptation value above maximum is present. The oxygen (O₂) sensor should not be replaced without troubleshooting and the procedure below must be followed. Contrary to prior repair requirements, the oxygen sensor should not be replaced in the event of oil or coolant contamination, unless the sensor is unable to meet the requirements.

SYMPTOMS

DTC	Description
SPN 724 FMI 20	O ₂ adaptation above maximum limit

SPECIAL TOOLS or SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Electronic Service Tool		EZ-Tech With ServiceMaxx Version 38.1 or Newer	

[Tools Resource Center](#)

SERVICE PARTS INFORMATION

	Quantity	Notes
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Kit Description	Part Number		
Sensor, Lambda	3006233C1	1	Applies to: EPA 10 MaxxForce 11, 13 & 15L Engines

DIAGNOSTIC STEPS

Note: Document any history of previous failure that could have resulted in coolant or oil in exhaust.

Step	Action	Decision
1	Verify ECM calibration/software Check vehicle calibration scorecard using Service Portal. Is calibration up to date?	Yes. Go to step 2
		No. Update calibration and go to step 2

Step	Action	Decision
2	Perform O2 calibration with EST Using EST, run O2 sensor calibration procedure (TL2900082) Note: After calibration is complete, document Oxygen Sensor adaptation value, and submit with warranty claim if applicable. Is the adaption value > 0.03?	Yes. Record adaptation value and go to step 3
		No. Clear SPN 724 FMI 20 and release truck to service

Step	Action	Decision
3	Replace O2 sensor Replace O2 sensor then using EST, run O2 sensor calibration procedure. Note: After calibration is complete, document Oxygen Sensor adaptation value, and submit with warranty claim if applicable. Is the adaption value > 0.03?	Yes. Verify steps were performed in proper sequence and completed correctly.
		No. Go to step 4

Step	Action	Decision
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4	Program O2 sensor programmable parameters Reset the following parameters to the values indicated below: - 99520, 99530, and 99540 need to be set to 0. - 99550 need to be set to 780 degC Were the parameters reset and programed successfully?	Yes. Clear SPN 724 FMI 20 and release truck to service No. Verify steps were performed in proper sequence and completed correctly.
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WARRANTY INFORMATION

Warranty Claim Coding:

Group:	12000 - Engine
Noun:	647 - Sensor, Oxygen

Standard Repair Times:

Use EPA 10 MaxxForce 11/13L O2S replacement and calibration SRTs for EPA 11 MaxxForce 15L Engines.

Step	Description	Chassis	Engine	SRT	Hours
	ECM Recalibration	All	All	A12-3510A-20	0.2
	O2 Sensor Replacement and Recalibration	7600	2010 MaxxForce 11/13L	N12-8647U	0.9
	O2 Sensor Replacement and Recalibration	8600	2010 MaxxForce 11/13L	Q12-8647U	0.9
	O2 Sensor Replacement and Recalibration	ProStar	2010 MaxxForce 11/13L	R12-8647U	0.9
	O2 Sensor Replacement and Recalibration	5000	2010 MaxxForce 11/13L	T12-8647U	0.9
	O2 sensor calibration	9900i	2010 MaxxForce 11/13L	F12-1768U-20	0.2
	O2 sensor calibration	Workstar	2010 MaxxForce 11/13L	N12-1768U-20	0.2
	O2 sensor calibration	Transtar	2010 MaxxForce 11/13L	Q12-1768U-20	0.2
	O2 sensor calibration	Prostar	2010 MaxxForce 11/13L	R12-1768U-20	0.2
	O2 sensor calibration	Lonestar	2010 MaxxForce 11/13L	S12-1768U-20	0.2
	O2 sensor calibration	5000	2010 MaxxForce 11/13L	T12-1768U-20	0.2
	O2 sensor calibration	CAT CT660	2010 MaxxForce 11/13L	TC12-1768U-20	0.2

OTHER RESOURCES

[TL2900082](#) O2 Oxygen Sensor Calibration Procedure

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