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Availability: ISIS, FleetISIS

Major System: ENGINES

Current Language: English

Other Languages: NONE

Viewed: 22260

Document ID: IK1200739

Revision: 22

Created: 3/16/2012

Last Modified: 5/27/2015

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Coding Information

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Title: Big Bore EGR Valve Diagnostics
Applies To: 2010 Emissions MaxxForce 11 & 13 Liter Engines, MaxxForce 15

CHANGE LOG

2015/05/27: Added note to step 3 in Diagnostic Steps when Fault 27-7 is present without 27-4

2015/05/11: Fixed link to Actuator Test

2015/04/30: Reordered steps for checking ECM software level. Inserted link to Actuator Test and removed graphs. Removed N13 references

2015/04/19: Updated 15L EGR valve kit number

DESCRIPTION

This document provides users with Exhaust Gas Recirculation (EGR) Valve diagnostics and repair information for the three most likely fault codes. It covers all 2010 and newer MaxxForce 11, 13 and 15.

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SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

Fault	Description
SPN 27 FMI 4	EGRP Signal Out of Range Low
SPN 27 FMI 7	EGRP Does Not Agree With Commanded Position
SPN 2659 FMI20	EGR High Flow Rate Detected

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PARTS

Kit Description	Part Number	Qty	Notes
Kit, EGR Valve	7092735C94	1	2010-2013 MaxxForce 11/13 ONLY
Kit, Harness Repair*	2513174C91	1	ONLY if necessary
Tape	7096462C1	1	ONLY if necessary
Kit, EGR Valve	3016004C92	1	2011-2012 MaxxForce 15
Gasket, EGR Valve	3006736C2	2	MaxxForce 15 EGRV Gaskets

*Harness Installation Kit Instructions Click [Here](#)

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DIAGNOSTICS

NOTE:

- If faults 27-4 and 27-7 are both present, **diagnose the 27-4 fault first.**
- There are two diagnostic sections--proceed to the section respective to fault code.
- If **NO EGR Valve Faults are present** DO NOT replace the EGR Valve. No repairs are required for the EGR system.

Diagnostic Steps when Fault 27-4 is present:

Step	Action	Decision
1	Check the vehicle build date.	Yes: Continue to Step 2.
	Was the vehicle built BEFORE 07/01/2012?	No: Continue to Step 3.

Step	Action	Decision
2	Check the warranty history to determine if an updated pigtail, 3017846C91 or 2513174C91, has already been installed.	Yes: Continue to Step 3.
	Does vehicle history show previous installation?	No: Replace the EGR Valve wiring pigtail with PN : 2513174C91. Apply dielectric grease on the new terminals. Continue to Step 3.

Step	Action	Decision
3	Clear all faults with EST. Run EGR Valve Actuator Test in ServiceMaxx.	Yes: Release the vehicle to the customer.
	Did the Actuator test pass?	No: Replace EGR Valve.

Diagnostic Steps when Fault 27-7 is present without 27-4:

Step	Action	Decision
1	Check for active fault codes	Yes: Continue to Step 2.
	• Using EST (Electronic Service Tool), Check the EST DTC list for fault codes.	No: Continue to Step 3.
	Does the Vehicle have a 2659-20 Present?	

Step	Action	Decision
2	Perform Visual inspection of the EGR Valve.	Yes: Replace the EGR Valve and continue to Step 5.
	• Remove Exhaust Manifold Bellows tubes to view EGR Valve. • Remove EGR valve.	Note: For 2010 EPA MaxxForce 11/13 and vehicle built BEFORE 07/01/2012, replace the EGR Valve wiring pigtail with splice kit. Apply dielectric grease on the new terminals.
	Is the EGR Valve damaged (i.e. broken shaft and/ or butterfly plate) ?	No: Continue to Step 3.

Step	Action	Decision
3	Verify ECM Calibration.	
	For 11L and 15L, check the Scorecard on Service Portal. If the scorecard shows current, then the vehicle has the latest version of the calibration. For 13L, Check the vehicle's ECM calibration ID (i.e. OEFXATMB) in ServiceMaxx™ vehicle information section of default session. Are the 5th and 6th digits in ECM calibration ID "AT" or above (ie "AT" or "AU")? Is the ECM calibration current or at level "AT" or above?	Yes: Replace the EGR Valve. After repairs are complete, retest for SPN 27 FMI 7 and(or) SPN 2659 FMI 20. Note: For 2010 EPA MaxxForce 11/13 and vehicle built BEFORE 07/01/2012, replace the EGR Valve wiring pigtail with splice kit. Apply

		dielectric grease on the new terminals.
		No: Update ECM calibration, then continue to Step 4.

Step	Action	Decision
4	Perform EGR Valve Actuator Test . Does EGR Valve Actuator test pass?	Yes: Reinstall EGR Valve if necessary. Retest for SPN 27 FMI 7 and(or) SPN 2659 FMI 20. After performing all tests, if no problem is found, verify that each step was completed correctly and the proper decision was made. Open Tech Services case file if needed. No: Replace EGR Valve. After repairs are complete, retest for SPN 27 FMI 7 and(or) SPN 2659 FMI 20. Note: For 2010 EPA MaxxForce 11/13 and vehicle built BEFORE 07/01/2012, replace the EGR Valve wiring pigtail with splice kit. Apply dielectric grease on the new terminals.

REPAIR PROCEDURE

See the [Service Manual \(direct link to EGRV\)](#) for EGR Valve installation and removal.

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WARRANTY INFORMATION

Special Requirements:

- PocketMaxx or EZ-Tech Health Report with Fault Codes is required for warranty reimbursement, per [WPL13-009G](#).

EGR VALVE REPLACEMENT:

Warranty Claim Coding:

Group:	12000 - Engine
Noun:	893 - Valve, EGR

Standard Repair Times:

Time	SRT	Chassis Model	Engine Model
2.8	N12-6893U	7600	MaxxForce 11/13
2.8	Q12-6893U	8600	MaxxForce 11/13
2.9	R12-6893U	ProStar	MaxxForce 11/13
2.5	R12-6893O	ProStar	MaxxForce 15
2.8	T12-6893U	5000	MaxxForce 11/13
2.5	S12-6893O	LoneStar	MaxxForce 15

2.5	TC12-6893	CAT CT660	MaxxForce 15
3.8	TC12-6893U	CAT CT660	MaxxForce 11/13

ECM CALIBRATION:**Warranty Claim Coding:**

Group:	12000 - Engine
Noun:	716 - Reprogram Engine Calibration

Standard Repair Times:

Time	SRT	Chassis Model	Engine Model
0.5	A12-3510U	All	MaxxForce 11/13

EGR Valve Actuator Test :

Time	SRT	Chassis Model	Engine Model
<u>0.1</u>	<u>T-Time</u>	<u>All</u>	<u>All</u>

EGR Valve Pigtail Replacement :

Time	SRT	Chassis Model	Engine Model
0.2	A08-2001A	All	All

Engine Cover Removal and Installation

(Use only if EGR Valve Pigtail is repaired, not for use on EGR Valve Replacement)

Time	SRT	Chassis Model	Engine Model
0.8	A16-7555A	ProStar	MaxxForce 11/13
0.8	T- Time	All	MaxxForce 11/13

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