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Coding Information

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Title: MaxxForce 7 EGR Valve Command Faults
Applies To: 2010-2013 MaxxForce 7

CHANGE LOG

03/26/2015 - Edited to not diagnose "inactive" codes
 02/25/2015 - Added warnings for stopping the Output State Tests before engine operation.
 12/19/2014 - Initial Article Release - 2013 OBD Calibration to Address Concern (PRS24***)

DESCRIPTION

This document will guide the user through necessary steps to properly diagnose Exhaust Gas Recirculation Valve (EGRV) faults. Note, after extended periods of down time during freezing ambient temperatures the EGRV may not cycle properly causing diagnostic trouble codes to become active. The DTCs may go "Inactive" or "Healing" after engine warm up.

Customer Interim Relief: Warm up engine, cycle key five times. Fault codes should become "inactive" or "healing" allowing for vehicle operation.

SYMPTOMS

Diagnostic Trouble Codes:

DTC/Light	Description	Status
SPN 27 FMI 7	EGRP Does Not Agree with Commanded Position	Pending/Active/Healing
SPN 2791 FMI 7	EGR Valve Unable to Achieve Commanded Position	Pending/Active/Healing
SPN 2659 FMI 10	EGR Slow Response Fault	Pending/Active/Healing

Customer Observations or Concerns:

Malfunction Indicator Lamp (MIL), when active

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
ServiceMaxx			
EGR Valve Puller	ZTSE6010		
Flat Bladed Screw Driver and Pick	Locally		

[Tools Resource Center](#)

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
VALVE ASSY EGR W/ O-RINGS	1881385C94	1	
RING O 2-140 2.62 X 56.82ID	1881383C1	1	
RING O 2-226 3.53 X 50.39 ID	1881384C1	2	

DIAGNOSTIC STEPS

Step	Action	Decision
1	Vehicle Health Report	Yes. STEP 2
	Generate Vehicle Health Report and Upload to Navistar's System, update the ECM calibration if required.	No. Release to the customer. If this DTC is a repeat offender for this truck continue with; STEP 2
	Was the DTC Pending/Active/Healing?	

Step	Action	Decision
2	Verify valve operation.	Yes. STEP 3
	In ServiceMaxx perform Output State High & Low Test 5 times. Monitor EGRV movement. Does EGRD & EGRP match movements?	No. STEP 4

ATTENTION

THE OUTPUT STATE TESTS MUST BE STOPPED BY HITTING  ON THE MENU BAR OF SERVICEMAXX BEFORE OPERATING THE ENGINE. THE TESTS WILL CONTINUE TO RUN IN THE BACKGROUND AND WILL CAUSE IMPROPER OPERATION OF ENGINE COMPONENTS WITH FALSE DTCS.

Step	Action	Decision
3	Review vehicle warranty history.	Yes. Gather previous repair information and review. Continue to STEP 4
	Search vehicle history and solicit any history from the customer. Has the unit been in the dealer recently for a similar issue?	No and the calibration required update. Release to customer
		No but calibration was up-to-date. STEP 4

Step	Action	Decision
4	Verify valve wiring integrity.	Yes. Repair, if no other issues are found release unit

	See Diagnostic Manual EGED 0000001681 and follow step based diagnostics for the EGR valve wiring harness. Were any faults found?	No and EGRV operates at this time. Release to customer
		No and EGRV operates at this time but as a repeat offender. STEP 7
		No and EGRV remains Inoperable. STEP 5

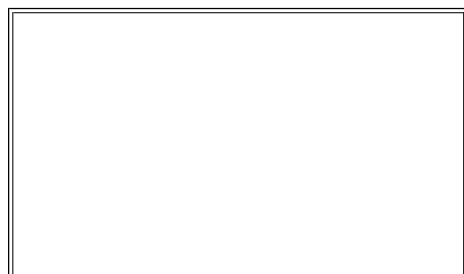
Step	Action	Decision
5	Inspect EGR valve operation. See REPAIR STEPS section below for valve operation. Did this solve the problem?	Yes. STEP 6
		No. STEP 7

Step	Action	Decision
6	Road test the vehicle. Did the fault codes remain inactive?	Yes. Release to customer
		No. STEP 7

Step	Action	Decision
7	Manually free valve. Remove the EGR Valve per 0000002383 . NOTE: Loosening the valve and soaking the mixing housing with penetrating lubricant may be required to free the valve. Once carbon deposits are removed cleaned off carbon deposits, cycle the valve using the <i>Output State High/Low Test</i> in ServiceMaxx. Monitor the valves physical movement. Does the valve move properly?	Yes. Replace the O-Rings 1881383C1 [Quantity 1] and 1881384C1 [Quantity 2] then follow the Installation Procedure per 0000002383 ; STEP 8
		No. Replace the valve assembly 1881385C94 following the Installation Procedure per Service Manual 0000002383 and ensure the new valve cycles properly; STEP 8

Step	Action	Decision
8	Road test the vehicle. Did the fault codes remain inactive?	Yes. Release to customer
		No. If the valve was not replaced, replace it at this time. Otherwise re-evaluate condition and double check diagnostics. If issue can not be resolved, open a case file with Navistar's Technical Support Team.

REPAIR STEPS



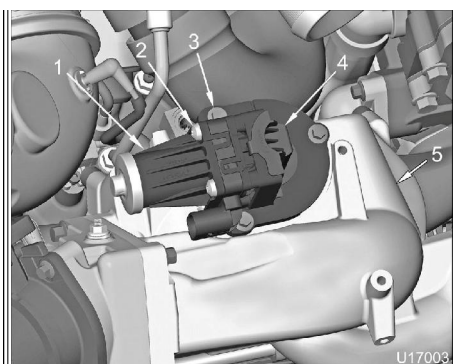


Figure 1: 2010-2013 MaxxForce 7 EGR Valve

- Item 1: DC Motor
- Item 2: T-30 Torx Screws (4)
- Item 3: M6 X 20 bolts (3)
- Item 4: Inspection Cover
- Item 5: Manifold Mixer

1. Remove EGR Valve Inspection Cover (Figure 1, Item 4) by gently pulling the two cover clips on both sides of the valve outward; then gently pry up on the cover.

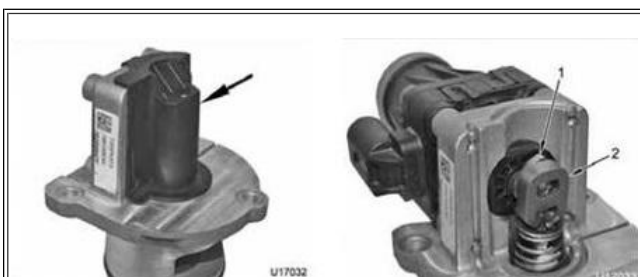


Figure 2: 2010-2013 MaxxForce 7 EGR Valve Inspection

- Item 1: Cam
- Item 2: Pivot Shaft Yoke

2. Use a small hammer and soft punch to tap the top of the EGR Valve Pivot Shaft Yoke (see **Figure 2**, Item 2).

3. Run the Output State High and Low Test 5-10 times and monitor valves movements with the cover off.

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4. Run the Air Management Test in ServiceMaxx and Monitor valves movement and if any codes come active. Return to [STEP 5](#)

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	12000 - ENGINE
Noun:	716 - REPROGRAM ENGINE - CALIBRATION

Group:	12000 - ENGINE
Noun:	893 - VALVE, EGR

Standard Repair Times:

Step	Description	Chassis	SRT Link	Hours
Step 1	Engine, Program	ALL	A12-3510X	0.4
Step 2	Electronic Engine Control Systems Diagnostics	ALL	A12-2053A	0.7
Step 3	EGR Valve, Diagnostics	CE	T-Time	0.7
Step 3	EGR Valve, Diagnostics	4100	T-Time	0.7
Step 3	EGR Valve, Diagnostics	4300	T-Time	0.7
Step 5	Road Test and Snapshot Perform	ALL	A12-2052A	0.4
Step 6	EGR Valve, Replace	CE/BE	GY12-6893X	1.5
Step 6	EGR Valve, Replace	4300/4400	KL12-6893X	1.5
Step 6	EGR Valve, Replace	TERMINAL TRACTOR	TT12-6893X	1.3
Step 6	EGR Valve, Replace	AC BUS	V12-6893X	1.6
Step 6	EGR Valve, Replace	TERRASTAR	TS12-6893X	1.6

OTHER RESOURCES

[Master Service Information Site](#)

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