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Title: EGR Valve OutputTest and Inspection

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Applies To: 2010 Maxxforce DT, 9, and 10
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DESCRIPTION

This article describes how to visually inspect and evaluate 2010 emissions I6 engine EGR valve operation. This article assumes EGR electric circuit is ok; it does not include electrical malfunction tests. For electrical malfunction related codes and diagnostics please refer to latest version of EGES 455 available on ISIS.

SYMPTOMS

- Frequent regeneration
- Rough idle
- MAP sensor soot restriction
- EBP sensor soot restriction
- EGDP sensor and/or hoses and/or pipes soot restriction
- IAH soot restriction
- Hard Start

POSSIBLE DIAGNOSTIC TROUBLE CODES

DTC	SPN	FMI	MODULE	DESCRIPTION	
-	27	7	ECM Sticking or failed EGR valve		
	2659	all	ECM	Engine Exhaust Gas Recirculation (EGR) Mass Flow Rate	

SNAPSHOTS

Case files for this issue require a KOER Air Management test performed. When sending Air Management Snapshots to Technical Services follow these directions:

- 1. Open ServiceMaxx.
- 2. Warm up engine to n.o.t.
- Run the standard test.
 Go to 'Tests' tab and uncheck 'Load Test Specific Session'.

File View Sessions	Tests Procedures Tools Help
49 輝 😧 🧶 💈	Load Test Specific Session 📕 🥪 Stop Tests
Instructions	Engine Indicates if the session specified by the Engine Running Tests
	Aftertreatment Tests

Vehicle Identification: Verify Information matches your vehicle If your veh show up in this session, select it from the File / Select engine drop down m

5. Go to 'View' and check 'Display Metric Units of measure'.

s S	erviceMaxx - Default						
File	View Sessions Tests Procedures T	ools Help					
49	✓ Display metric units of measure	s Signals Stop Tests 🛽 👗 Vehicle					
Instr	✓ Datalink Traff <mark>Display metric units of measure</mark>						
	 Diagnostic Trouble Codes Permanent Diagnostic Trouble Codes 	: 🔽 Lock					
Vehi	Instructions	es your vehicle If your vehicle does no Select engine drop down menu.					
shov	Parameters						
	Signals						
	✓ Sniffer						
Vehic	Stand Alone Real Time Clock						
	✓ Vehicle Information						
De	tection Progress						

6. Start a performance session.

File View	Sessions Tests Procedures	Tools Help		
4 F	Load Session Save Session Rename Session	ameters Signals Stop Tests 🛆 Vehicle		
Vehicle Id not show	Default	t Vock matches your vehicle If your vehicle does the File / Select engine drop down menu.		
	Driver Switch Controls HD-OBD Monitors Parameters Programming Signals Simple			
	Hard Start - No Start			
	Performance			
	2008 BB Actuator 2010 BB Actuator Aftertreatment			

- 7. Record an air management test with the performance session.
- 8. Attach recoding to case file.

OPERATIONAL TEST

NOTE: • The EGR valve does not seal perfectly: When closed, light will shine through; this is normal.
 • EGR Output Test High WILL NOT run with active DTC's present. Diagnose and clear all DTC's before

continuing.

To check EGR valve:

- 1. Remove EGR valve.
 - a. Use Essential Tool ZTSE4941 EGR Puller to remove the valve.
 - i. A soapy water solution may be used as a lubricant.
 - b. Clear all active codes!
 - c. Inspect valve: with plug disconnected and at rest the valve must be closed.
 - d. Inspect O-rings for knicks, cuts, flat spots, burn spots.
- 2. Connect electric plug.
- 3. Use ServiceMaxx to Run Output Test High:
 - a. Maintain battery voltage with trickle charger.
 - b. Run test up to 5 times to confirm results are consistent.
 - c. Observe valve movement from closed to open and back to closed.
 - i. Look for valve to open fully.
 - ii. Look for valve to contact seats when closed.
 - iii.Output Test High EGR Ctrl percent will range from 80-90%.
 - iv. Output Test High EGR Ctrl percent will display 35% when active codes exist-see 3b above,

clear codes!

NOTE: It is OK for light to shine through when valve is closed; DO NOT replace valve.

RESOLUTION

NOTE: DO NOT replace EGR Valve or ECM if EGR Ctrl stays at 35% during Output Test High.

- 1. Replace valve if:
 - a. Valve does not contact seats with plug disconnected.
 - b. Valve sticks, moves slow, or otherwise does not complete the open/close movement during actuation.
 - c. Valve is stuck open
- 2. Re-orings and re-install valve if:
 - a. Valve opens and closes fully with output test high.
 - b. No other physical damage to the valve is apparent.

NOTE: Use a soapy water solution as a lubricant while reinstalling.

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		DYYKXN8	You received the following feedback From: dyykxn8 - Keith Newton Email Address: keith.newton@clarkstruckcenter.com Job Classification: SE008, Service Technician Dealer: CLARK'S TRUCK CENTER Feedback: The fact that the EGR position and EGR ctrl will ramain at 35% with an active code should be more prominently indicated or This information should be send out in a dedicated letter. IK1200894 states if the OBFCT does not meet temperature specs to perform an AMT. When I did it failed the EGR portionlikely due to the active soot load code. Been chasing a non existant EGR code for a while			

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