



KIA MOTORS

GROUP
Engine

MODEL
Sedona, Sorento, Amanti,
Optima, Rondo

NUMBER
044 [Revised]

DATE
November 2009

TECHNICAL SERVICE BULLETIN

SUBJECT:

ECM UPGRADE WITH TP SENSOR REPLACEMENT – MIL ON WITH DTC P2135 / P0638

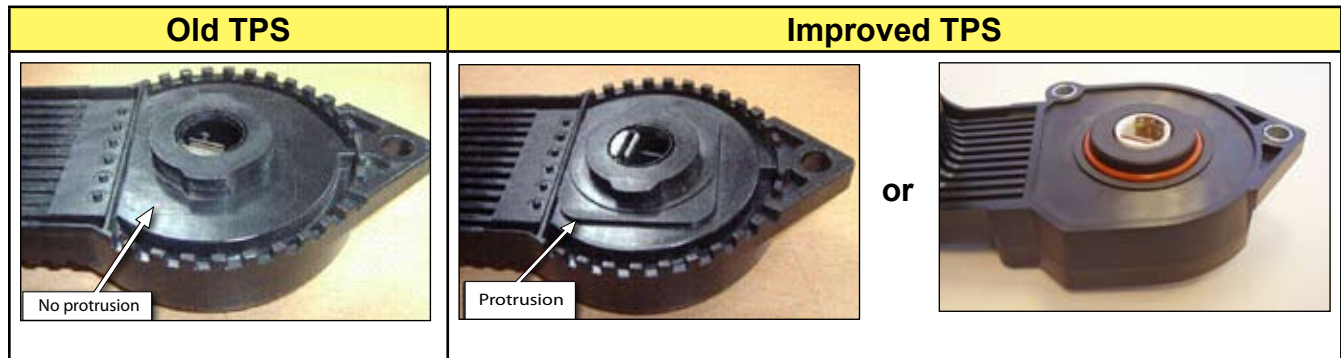
This bulletin provides information related to the ECM software and TP sensor upgrade on some Sedona (VQ), Sorento (BL) and Amanti (GH) with Delphi EMS, Optima (MG) and Rondo (UN) with 2.7L engines which may experience a Malfunction Indicator Lamp (MIL) illuminated with the Electronic Throttle Control (ETC) system-related DTC P2135 or P0638 or P2A00 or P2A03. Throttle body removal is not required to perform TP sensor replacement. The vehicle must have been produced prior to 4/1/2009.

- P2135: Throttle Position Sensor 1/2 Voltage Correlation
- P0638: Throttle Actuator Control Range / Performance
- P2A00, P2A03 or P2A04: Oxygen Sensor Related on 2.7L engine

These vehicles may set P1295 and/or P2106 as these are Forced Limited Power and Power Management DTC's. The main symptom of this condition is that the engine idles at a very low rate.

The ECM upgrade can improve DTC P0116 for vehicles equipped with block heater, catalyst damage related P0429, P0430 and P0300~306 (Due to poor fuel quality), oxygen sensor related DTC on Rondo (UN) equipped with 2.7L engine.

To correct this condition, the ECM should be reprogrammed using the GDS download as described in this bulletin, and the TP Sensor replaced.



Global Diagnostic System (GDS)

File Under: Engine

- Circulate To: General Manager Service Manager Parts Manager
 Service Advisor(s) Technician(s) Body Shop Manager Fleet Repair

SUBJECT:

**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

***NOTICE**

Global Diagnostic System (GDS) users should access the "Notice" function from the GDS Main Screen for instructions regarding ECU upgrade events.

UPGRADE EVENT

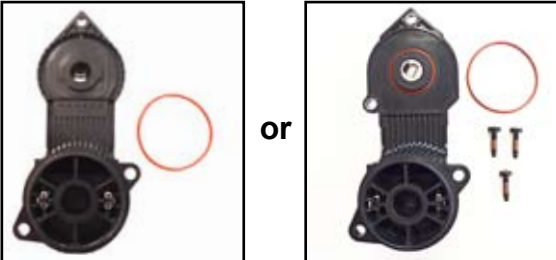
68. BL 3.8 P2135 AND P0638 DTC LOGIC - K LINE	73. MG 2.7 P2135 AND P0638 DTC LOGIC – CAN
69. BL 3.8 P2135 AND P0638 DTC LOGIC – CAN	75. VQ 3.8 P2135 AND P0638 DTC LOGIC – K-LINE
70. BL 3.3 P2135 AND P0638 DTC LOGIC – CAN	76. VQ 3.8 P2135 AND P0638 DTC LOGIC – CAN
71. UN 2.7 P2135 AND P0638 DTC LOGIC - CAN	77. GH 3.8 P2135 AND P0638 DTC LOGIC – K-LINE
72. MG 2.7 P2135 AND P0638 DTC LOGIC - K-LINE	78. GH 3.8 P2135 AND P0638 DTC LOGIC – CAN

Some ECM configurations will require VIN writing and/or key teaching will be necessary.

***NOTICE**

- **A fully charged battery is necessary before ECU upgrade can take place. DO NOT connect a battery charger to the vehicle during ECU upgrade. Make sure the blower motor is 'OFF' during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect any cables connected to the vehicle or GDS during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition key 'OFF' and wait 20 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year and engine size. Failure to do so may create other driveability issues due to the use of the incorrect ECM/PCM calibration.**

PARTS INFORMATION

Part Name	Part Number		Part Kit
Throttle Position Sensor (TPS)	Optima/Rondo with 2.7L	35107 3E000FFF or 35107 3E100FFF	
	Sedona, Sorento and Amanti with 3.3L or 3.8L	35107 3C000FFF or 35107 3C100FFF	

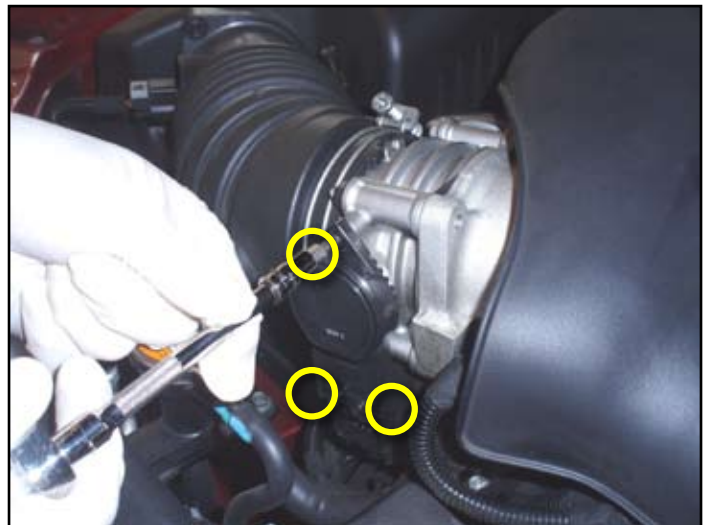
****Only supplied w/3C100FFF***

SUBJECT:**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

1. Open hood and remove the engine cover if necessary.
2. Disconnect the TP sensor electrical connector.



3. Remove the three (3) torx mounting screws (T-20).



4. Remove the TP sensor from the ETC actuator.

***NOTICE**

**The O-ring sometimes will stick to the housing during removal.
Be sure to remove if this occurs.**

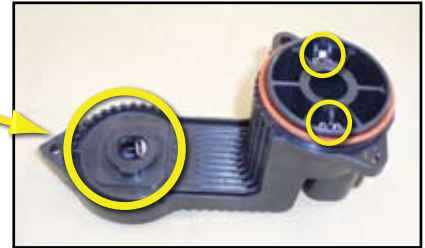
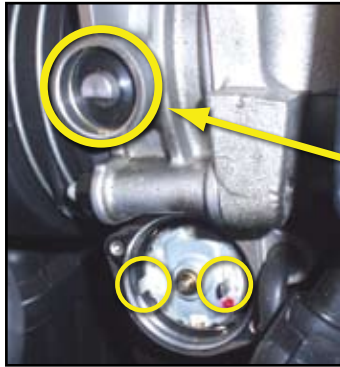


SUBJECT:

**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

Installation Procedure:

1. Lubricate the O-ring on the TP sensor and align the mating hole on the throttle shaft while aligning the electrical terminals.



2. Install the new TP sensor to the ETC actuator and tighten the Torx T-20 screws hand tight only. Use Loctite® Threadlocker Green 290 on screws during assembly.



***NOTICE**

On p/n 35107 3C100FF For 35107 3E100FF, the 4th hole is not used.

3. Install the electrical connector to the TP sensor.
4. Install engine cover if removed.
5. Proceed to the reflash instructions.
6. Road test when complete to ensure proper installation of the TP sensor and base setting of transaxle adaptive reset since reflash of PCM was performed. This only applies to vehicles with PCM, vehicles with ECM and TCM do not require transaxle adaptive learning.

SUBJECT: ECM UPGRADE WITH TP SENSOR REPLACEMENT – MIL ON WITH DTC P2135/PO638

ECM ROM TABLE INFORMATION:

BL 3.8L with K-line - Upgrade event #68				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2007	Without	39106 - 3C360	BL6N38*S2**653D*	BL6N38*S2**683AC
			BL6N38*S2**653E*	

BL 3.8L with CAN - Upgrade event #69				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2007	Without	39106 - 3C361	BL6N38*S2**7D0C*	BL6N38*S2**8JHBC
			(VIN writing procedure required)	
			BL7N38*S2**7F4C*	BL6N38*S2**8JHCC
			BL7N38*S2**7F4E*	
2008		39106 - 3C362	BL7N38*S2**7J1A*	BL7N38*S2**8JHDC
			BL7N38*S2**7J2E*	BL7N38*S2**8JHEC
			BL7N38*S2**7J2F*	BL7N38*S2**8JHFC
			BL7N38*S2**7J2H*	BL7N38*S2**8JHAC
2009	39106 - 3C363	BL8N38*S2**8J0A*	BL8N38*S2**8JHAB	
		BL8N38*S2**8JHAB		

BL 3.3L with CAN – Upgrade event #70				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2008 MY	Without	39106 - 3C261	BL7N33*S2**7J1A*	BL7N33*S2**7M0DD
			BL7N33*S2**7J2D*	
			BL7N33*S2**7J2E*	BL7N33*S2**7M0EE
2009 MY		39106 - 3C262	BL8N33*S2**8J0A*	BL8N33*S2**8JHBB

SUBJECT:

**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

UN 2.7L with CAN – Upgrade event #71

MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2007	Without	39109-3E631	UN7N27*S2AS7C1BB	UN8N27*S2AS7M0EA
			UN7N27*S2AS7D0BB	
			UN7N27*S2AS7D0CB	
			UN7N27*S2AS7F0BB	
			UN6N27*S2AS7F4AA	
			UN6N27*S2AS7F4CD	
		(VIN writing procedure required)		
		39109-3E650	UN6N27*S2AS7G3XZ	UN8N27*S2AS7M0FA
2008		39109-3E632	UN7N27*S2AS7G3CA	UN8N27*S2AS7M0GA
			UN7N27*S2AS7J0AA	
	UN7N27*S2AS7J1AA			
	39106-3E633	UN7N27*S2AS7K6BA		
2009	39106-3E634	UN8N27*S2AS8JFAA	UN8N27*S2AS8JHBA	
		UN8N27*S2AS8JHAA		

MG 2.7L with K-line – Upgrade event #72

MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2006	Without	39109 - 3E210	MG6N27*S2AS5E1DB	MG6N27*S2AS683EA
			MG6N27*S2AS5E1GB	
			MG6N27*S2AS5E1HB	
			MG6N27*S2AS5E1IC	
			MG6N27*S2AS5E1ID	
			MG6N27*S2AS5E3AA	
		MG6N27*S2AS5E4AA		
2007		39109 - 3E211	MG6N27*S2AS653AB	
			MG6N27*S2AS653CC	
			MG6N27*S2AS671BB	
	MG6N27*S2AS672AA			

SUBJECT:**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

MG 2.7L with CAN – Upgrade event #73				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2008	Without	39109 - 3E212	MG7N27*S2AS7G3BA	MG7N27*S2AS7M0EA
			MG7N27*S2AS7J0AA	
			MG7N27*S2AS7J1AA	
2009		39109 - 3E210	MG7N27*S2AS7K6AA	MG7N27*S2AS7M0EA
			MG7N27*S2AS7M0AA	
2009		39109 - 3E211	MG8N27*S2AS8JGEA	MG8N27*S2AS8JIBA
	MG8N27*S2AS8JHAA			
		39109 - 3E211	MG8N27*S2AS8JIAA	

SUBJECT:

**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
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VQ 3.8L with K-line – Upgrade event #75				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2006	With	39110-3C410	VQ5N38*M2AS5D1BA	VQ5N38*M2AS683CB
			VQ5N38*M2AS5D2AA	
			VQ5N38*M2AS5E1BB	
			VQ5N38*M2AS5E2AA	
			VQ5N38*M2AS5E3AA	
			VQ5N38*M2AS660AB	
			VQ5N38*M2AS660BB	
			VQ5N38*M2AS671CB	
			VQ5N38*M2AS671DB	
			VQ5N38*M2AS683BB	
	Without	39110-3C460	VQ5N38*S2AS5D1BA	VQ5N38*S2AS683CB
			VQ5N38*S2AS5D2AA	
			VQ5N38*S2AS5E1BB	
			VQ5N38*S2AS5E2AA	
			VQ5N38*S2AS5E3AA	
			VQ5N38*S2AS660AB	
			VQ5N38*S2AS660BB	
			VQ5N38*S2AS671CB	
			VQ5N38*S2AS671DB	
			VQ5N38*S2AS683BB	
2007	With	39110-3C415	VQ6N38*M2AS653DB	VQ6N38*M2AS683CB
			VQ6N38*M2AS660AB	
			VQ5N38*M2AS660BB	
			VQ6N38*M2AS671BA	
			VQ6N38*M2AS671DA	
			VQ6N38*M2AS671EA	
			VQ6N38*M2AS671FA	
			VQ6N38*M2AS683BB	
	Without	39110-3C465	VQ6N38*S2AS653DB	VQ6N38*S2AS683CB
			VQ6N38*S2AS660AB	
			VQ5N38*S2AS660BB	
			VQ6N38*S2AS671BA	
			VQ6N38*S2AS671DA	
			VQ6N38*S2AS671EA	
			VQ6N38*S2AS671FA	
			VQ6N38*S2AS683BB	

SUBJECT:**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

VQ 3.8L with CAN – Upgrade event #76				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2008	With	39110-3C416	VQ7N38*M2AS7G3BA	VQ7N38*M2AS7M0CA
			VQ7N38*M2AS7J0AA	
			VQ7N38*M2AS7J1AA	
			VQ7N38*M2AS7M0AA	
	Without	39110-3C466	VQ7N38*S2AS7G3BA	VQ7N38*S2AS7M0CA
			VQ7N38*S2AS7J0AA	
			VQ7N38*S2AS7J1AA	
			VQ7N38*S2AS7M0AA	
	With	39110-3C417	VQ7N38*M2AS7G3BP	VQ7N38*M2AS7M0CP
			VQ7N38*M2AS7J0AP	
			VQ7N38*M2AS7J1AP	
			VQ7N38*M2AS7J2AP	
			VQ7N38*M2AS7J2BP	
			VQ7N38*M2AS7M0AP	
	Without	39110-3C467	VQ7N38*S2AS7G3BP	VQ7N38*S2AS7M0CP
			VQ7N38*S2AS7J0AP	
VQ7N38*S2AS7J1AP				
VQ7N38*S2AS7J2AP				
VQ7N38*S2AS7J2BP				
VQ7N38*S2AS7M0AP				
With	39110-3C418	VQ7N38*M2AS7K6BP	VQ7N38*M2AS7M0CP	
		VQ7N38*M2AS7K6CP		
		VQ7N38*M2AS7M0AP		
Without	39110-3C468	VQ7N38*S2AS7K6BP	VQ7N38*S2AS7M0CP	
		VQ7N38*S2AS7K6CP		
		VQ7N38*S2AS7M0AP		
2009	With	39110-3C419	VQ8N38*M2AS8JACA	VQ8N38*M2AS8JHCA
			VQ8N38*M2AS8JFAB	
			VQ8N38*M2AS8JHAA	
	Without	39110-3C469	VQ8N38*S2AS8JACA	VQ8N38*S2AS8JHCA
			VQ8N38*S2AS8JFAB	
			VQ8N38*S2AS8JHAA	

SUBJECT:

**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

GH 3.8L with K-line: Upgrade event #77				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2007	With	39110-3C810	GH6N38*M2AS653BB	GH6N38*M2AS683CA
			GH6N38*M2AS660DC	
			GH6N38*M2AS660DD	
			GH6N38*M2AS671AA	
			GH6N38*M2AS671BA	
			GH6N38*M2AS683BA	

GH 3.8L with CAN: Upgrade event #78				
MODEL YEAR	IMMOBILIZER	ECM P/N	ROM ID	
			PREVIOUS	NEW
2008	With	39110-3C811	GH7N38*M2AS7G2BA	GH7N38*M2AS7M0CA
			GH7N38*M2AS7G3AA	
			GH7N38*M2AS7G3BA	
			GH7N38*M2AS7J0AA	
			GH7N38*M2AS7J1AA	
			GH7N38*M2AS7M0AA	
	With	39110-3C812	GH7N38*M2AS7G3BP	GH7N38*M2AS7M0CP
			GH7N38*M2AS7J0BP	
			GH7N38*M2AS7J1AP	
			GH7N38*M2AS7K6BP	
			GH7N38*M2AS7M0AP	
2009	With	39110-3C814	GH8N38*M2AS8JACA	GH8N38*M2AS8JHEA
			GH8N38*M2AS8JFAA	
			GH8N38*M2AS8JHBA	

1. Connect the power supply cable to the GDS tool.

***NOTICE**

If attempting to perform the ECU upgrade with the power supply cable disconnected from the GDS tool, be sure to check that the GDS tool is fully charged before ECU upgrade. If the GDS tool is not fully charged, failure to perform the ECU upgrade may occur. Therefore, it is strongly recommended that the power supply connector be connected to the GDS tool.

SUBJECT:**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638**

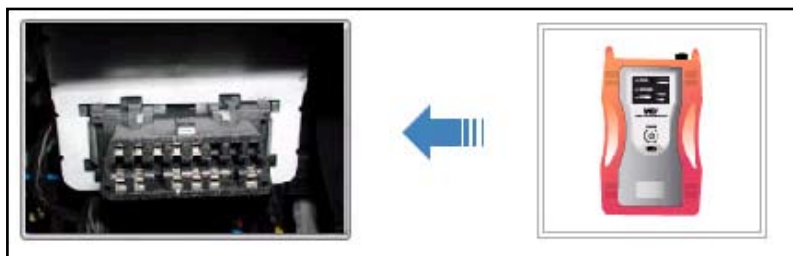
2. Connect the USB cable between the VCI and the GDS tool.

***NOTICE**

When performing the ECU upgrade using the GDS tool, wireless communication between the VCI and GDS tool is not available. Therefore, be sure to connect the USB cable between the VCI and the GDS tool.

3. Connect the Main 16-pin DLC cable (GHDM – 241000) to the VCI.

4. Connect the Main 16-pin DLC cable (GHDM – 241000) to the OBD-II connector, located under the driver's side of the instrument panel.



5. With the ignition key ON, turn ON the VCI and GDS tool. Access the GDS vehicle identification number (VIN) screen and configure the vehicle using the VIN AUTO DETECT Function.

***NOTICE**

Global Diagnostic System (GDS) users should access the "Notice" function from the GDS Main Screen for instructions regarding ECU upgrade events.

6. Once back at the GDS Main Screen, select ECU upgrade from the bottom right-hand corner. Next select **Auto Mode**, Engine. Perform the ECU upgrade in accordance with normal GDS tool ECU upgrade procedures.

***NOTICE**

DO NOT attempt to perform a Manual Mode ECU upgrade unless Auto Mode fails. Always follow the instructions given on the GDS tool in either Auto or Manual mode. See table for Manual Mode passwords. In addition, a ECU reset is required if Auto Mode fails; refer to the table below for procedure.

SUBJECT:**ECM UPGRADE WITH TP SENSOR REPLACEMENT –
MIL ON WITH DTC P2135/PO638****MANUAL MODE ECU UPGRADE PASSWORDS:**

68. BL 3.8 P2135 AND P0638 DTC LOGIC - K LINE	
MENU	PASSWORD
BL 3.8 07MY NON IMMO: 39106-3C360	3360

69. BL 3.8 P2135 AND P0638 DTC LOGIC – CAN	
MENU	PASSWORD
BL 3.8 07MY NON IMMO: 39106-3C361[~7D0C*]	3361
BL 3.8 07MY NON IMMO: 39106-3C361[~7F4C*,~7F4E*]	3362
BL 3.8 08MY NON IMMO: 39106-3C362[~7J1A*,~7J2E*]	3362
BL 3.8 08MY NON IMMO: 39106-3C362[~7J2F*]	3363
BL 3.8 08MY NON IMMO: 39106-3C362[~7J2H*]	3364
BL 3.8 09MY NON IMMO: 39106-3C363	3365

70. BL 3.3 P2135 AND P0638 DTC LOGIC – CAN	
MENU	PASSWORD
BL 3.3 07MY NON IMMO: 39106-3C260[~7D0F*]	3260
BL 3.3 07MY NON IMMO: 39106-3C260[~7F4A*,~7F4C*]	3261
BL 3.3 08MY NON IMMO: 39106-3C261[~7J1A*,~7J2D*]	3262
BL 3.3 08MY NON IMMO: 39106-3C261[~7J2E*]	3263
BL 3.3 09MY NON IMMO: 39106-3C262	3263

71. UN 2.7 P2135 AND P0638 DTC LOGIC - CAN	
MENU	PASSWORD
UN 2.7 NON IMMO: 39109 - 3E631	3631
UN 2.7 NON IMMO: 39109 - 3E650	3650
UN 2.7 NON IMMO: 39109 - 3E632/33	3633
UN 2.7 NON IMMO: 39109 - 3E634	3634

72. MG 2.7 P2135 AND P0638 DTC LOGIC - K-LINE	
MENU	PASSWORD
MG 2.7 NON IMMO: 39109-3E210/11	3211

73. MG 2.7 P2135 AND P0638 DTC LOGIC – CAN	
MENU	PASSWORD
MG 2.7 NON IMMO: 39109-3E212/13	3213
MG 2.7 NON IMMO: 39129-3E210/11	3211

75. VQ 3.8 P2135 AND P0638 DTC LOGIC – K-LINE	
MENU	PASSWORD
VQ 3.8 IMMO: 39110-3C410	3410
VQ 3.8 IMMO: 39110-3C415	3415
VQ 3.8 NON IMMO: 39110-3C460	3460
VQ 3.8 NON IMMO: 39110-3C465	3465

75. VQ 3.8 P2135 AND P0638 DTC LOGIC – K-LINE	
MENU	PASSWORD
VQ 3.8 IMMO: 39110-3C410	3410
VQ 3.8 IMMO: 39110-3C415	3415
VQ 3.8 NON IMMO: 39110-3C460	3460
VQ 3.8 NON IMMO: 39110-3C465	3465

76. VQ 3.8 P2135 AND P0638 DTC LOGIC – CAN	
MENU	PASSWORD
VQ 3.8 IMMO: 39110-3C416	3416
VQ 3.8 IMMO: 39110-3C417	3417
VQ 3.8 IMMO: 39110-3C418	3418
VQ 3.8 IMMO: 39110-3C419	3419
VQ 3.8 NON IMMO: 39110-3C466	3466
VQ 3.8 NON IMMO: 39110-3C467	3467
VQ 3.8 NON IMMO: 39110-3C468	3468
VQ 3.8 NON IMMO: 39110-3C469	3469

77. GH 3.8 P2135 AND P0638 DTC LOGIC – K-LINE	
MENU	PASSWORD
GH 3.8 IMMO: 39110-3C810	3810

78. GH 3.8 P2135 AND P0638 DTC LOGIC – CAN	
MENU	PASSWORD
GH 3.8 IMMO: 39110-3C811	3811
GH 3.8 IMMO: 39110-3C812	3812
GH 3.8 IMMO: 39110-3C814	3814

SUBJECT: ECM UPGRADE WITH TP SENSOR REPLACEMENT – MIL ON WITH DTC P2135/PO638

7. When the GDS tool reports that the ECU upgrade has been successfully completed, click OK, turn OFF the ignition key, and wait at least 10 seconds before attempting to start the engine.
8. Check for Diagnostic Trouble Codes (DTCs) using the GDS and erase any DTCs stored in the Engine and Transaxle Control Modules.
9. Road test when complete to ensure proper installation of the TP sensor and base setting of transaxle adaptive reset since reflash of PCM was performed. This only applies to vehicles with PCM, vehicles with ECM and TCM do not require transaxle adaptive learning.

AFFECTED PRODUCTION RANGE:

(Vehicles produced prior to 4/1/2009)

- 2006~2009 Sedona (VQ) with 3.8L engine equipped with PCM
- 2007~2009 Sorento (BL) with 3.3L and 3.8L engines equipped with ECM & TCM
- 2007~2009 Amanti (GH) with 3.8L engine equipped with PCM
- 2006.5 Optima (MG) with 2.7L engine equipped with PCM
- 2007 Rondo (UN) with 2.7L engine equipped with PCM

WARRANTY CLAIM INFORMATION:

Claim Type	Model	Causal P/N	Comm. Interface	Labor OP Code	Repair Description	Time	Related Parts	Qty.	N Code	C Code
W	BL 3.3/3.8	39106 3C361	CAN	35107F00	TPS REPLACEMENT & ECM UPGRADE	0.4	35107 3C000FFF or 35107 3C100FFF	1	N69	C40
	GH 3.8	39110 3C811	CAN	35107F01	TPS REPLACEMENT & ECM UPGRADE	0.6	35107 3C000FFF or 35107 3C100FFF			
	UN 2.7	39109 3E631					35107 3E000FFF or 35107 3E100FFF			
	MG 2.7	39109 3E212	CAN	35107F02	TPS REPLACEMENT & ECM UPGRADE	0.7	35107 3E000FFF or 35107 3E100FFF			
	VQ 3.8	39110 3C416					35107 3C000FFF or 35107 3C100FFF			
	BL 3.8	39106 3C360	K-LINE	35107F03	TPS REPLACEMENT & ECM UPGRADE	0.8	35107 3C000FFF or 35107 3C100FFF			
	GH 3.8	39110 3C810	K-LINE				35107 3C000FFF or 35107 3C100FFF			
	MG 2.7	39109 3E210	K-LINE	35107F04	TPS REPLACEMENT & ECM UPGRADE	0.9	35107 3E000FFF or 35107 3E100FFF			
	VQ 3.8	39110 3C410					35107 3C000FFF or 35107 3C100FFF			