



GROUP
Product Improvement

MODEL
**2015MY
Sorento (XMa)
2014-2015MY
Optima (TF, QF)
Sportage (SL)**

NUMBER
1802 (Rev 1, 08/28/2018)

DATE
July 2018

SUBJECT: **PRODUCT IMPROVEMENT CAMPAIGN**

**KNOCK SENSOR DETECTION SYSTEM - ECU
LOGIC IMPROVEMENT (PI1802)**

*** NOTICE**

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- Some 2014MY Optima (TF) vehicles equipped with 2.4L GDI engines, manufactured at KMC from August 29, 2013 through April 25, 2014;
- All 2015MY Optima (TF/QF) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2015MY Sportage (SL) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

File Under: <Product Improvement>

Circulate To: **General Manager** **Service Manager** **Parts Manager**
 Service Advisors **Technicians** **Body Shop Manager** **Fleet Repair**

KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:


To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade

★ NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- All ECU upgrades must be done with the ignition key in the 'ON' position.
- Be careful not to disconnect the VCI-II connected to the vehicle 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 'OFF' and wait 10 seconds before starting the engine.
- ONLY use approved ECU upgrade software designated for the correct model, year.

CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback. 

★ NOTICE









For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

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ROM ID INFORMATION TABLE:








Upgrade Event #374, #375, #376, #377

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes 	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAK
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAK
14MY Opt. (TF)	2.4 (ULEV)	Yes 	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L	TEC4RH25
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L	TEC4MH25
	2.4 (SULEV)	Yes 	39108-2GBF5	TES4RH2K TES4RH2L	TES4RH25
		No	39108-2GBE5	TES4MH2K TES4MH2L	TES4MH25
15MY Opt. (TF)	2.4 (ULEV)	Yes 	39108-2GBF1	TFC4RH4K TFC4RH4L	TFC4RH45
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L	TFC4MH45
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L	TFS4MH45
14MY Opt. (TF)	2.0T (ULEV)	Yes 	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L	TEC0RH25
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L	TEC0MH25
15MY Opt. (TF)	2.0T (ULEV)	Yes 	39108-2GBG7	TFC0RH4K TFC0RH4L	TFC0RH45
14MY Spo. (SL)	2.4 (ULEV)	Yes 	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K
	2.4 (SULEV)	Yes 	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K

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Continued...

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Spo. (SL)	2.4 (ULEV)	Yes 	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes 	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes 	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes 	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes 	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A	TFC4RH41
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B	TFC4MH41
	2.4 (SULEV)	Yes 	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B	TFS4RH41
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B	TFS4MH41
15MY Opt. (QF)	2.0T (ULEV)	Yes 	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B	TFC0RH41
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B	TFC0MH41

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

* NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

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1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.

* NOTICE

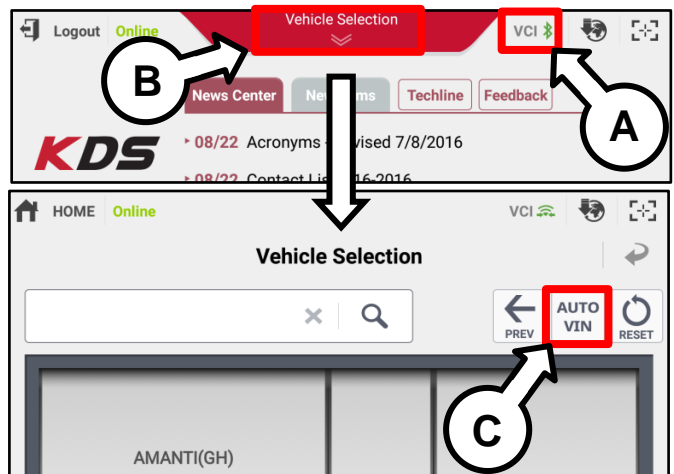
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



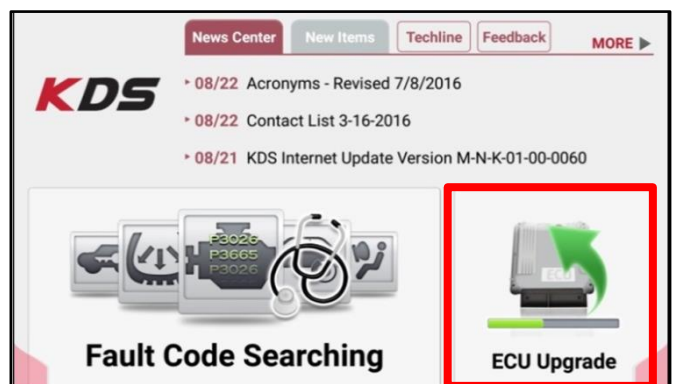
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



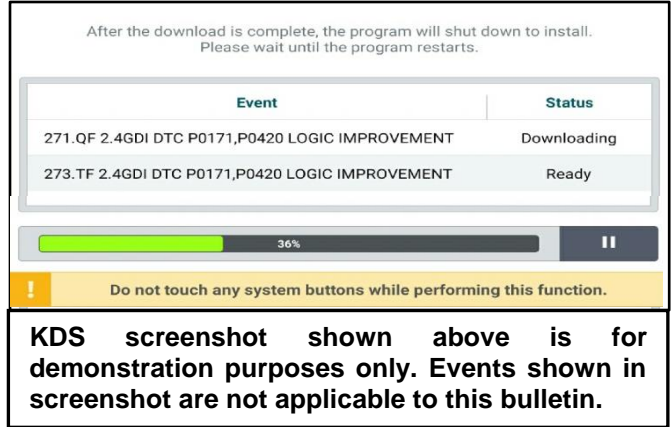
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- The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)**.

★ NOTICE

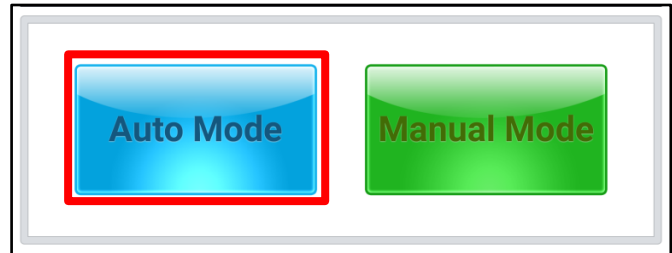
The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



- Select **Auto Mode**.

★ NOTICE

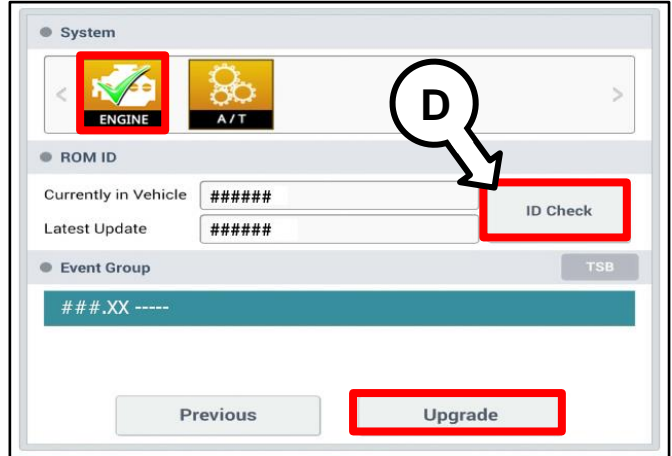
Do **NOT** attempt to perform a Manual Mode upgrade **UNLESS Auto Mode fails**. Always follow the instructions given on the KDS in either Auto or Manual mode.



- Select the **ENGINE** system under the System selection menu.

Touch **ID Check** (D) and confirm that the latest update is available.

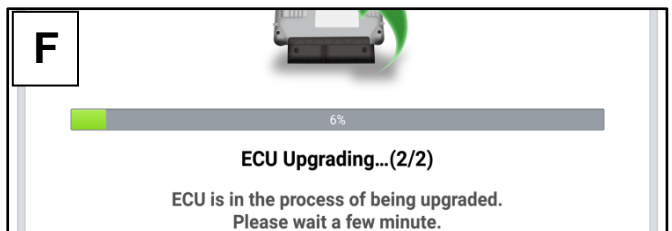
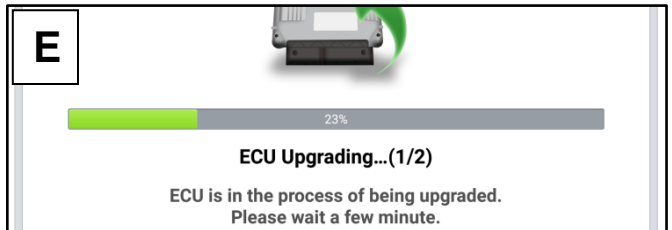
Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.



- The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.



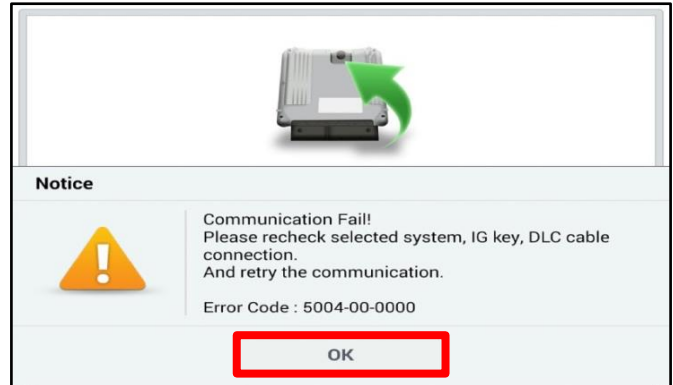
SUBJECT:

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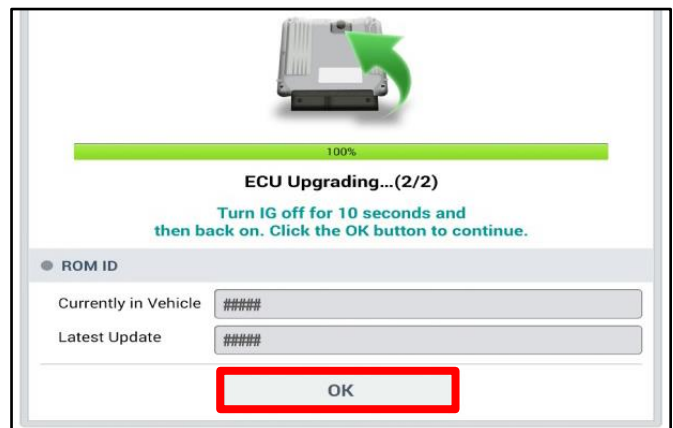
9. If a “Communication Fail” screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

* NOTICE

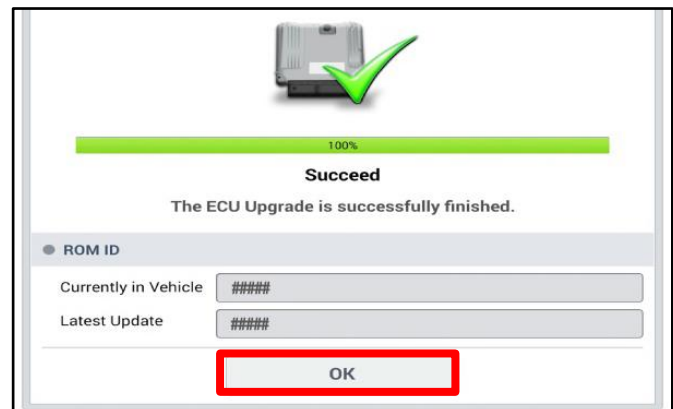
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



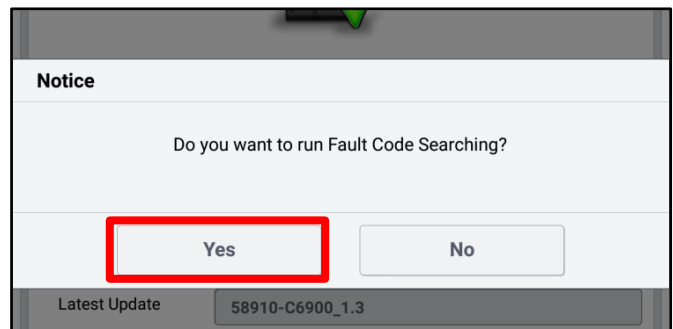
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

* NOTICE

The manual upgrade should **ONLY** be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition **OFF** for about **10 seconds** then place it back in the **ON** position to reset the control unit **BEFORE** performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMa	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK6/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.

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2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-4, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT:

KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
15MY Sorento (XMa) (2.4)	January 3, 2014 through December 11, 2014
14MY Optima (TF) (2.4)	August 29, 2013 through April 25, 2014
14-15MY Sportage (SL) (2.4 & 2.0T)	September 30, 2013 through April 8, 2015
15MY Optima (QF/TF) (2.4 & 2.0T)	April 16, 2014 through October 2, 2015

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.