	<b>GROUP</b> <b>Product Improvement</b>	<b>MODEL</b> <b>2011-2014MY Optima (QF/TF)</b> <b>2012-2014MY Sorento (XMa)</b> <b>2011-2013MY Sportage (SL)</b>
	<b>NUMBER</b> <b>1803 (Rev 5, 03/16/2020)</b>	<b>DATE</b> <b>November 2018</b>

## PRODUCT IMPROVEMENT CAMPAIGN

**SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU  
LOGIC IMPROVEMENT (PI1803)**

### ★ 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:

- All 2011-2013 MY Optima (QF/TF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima (QF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

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. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

**Printed TSB copy is for reference only; information may be updated at any time.  
Always refer to KGIS for the latest information.**

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

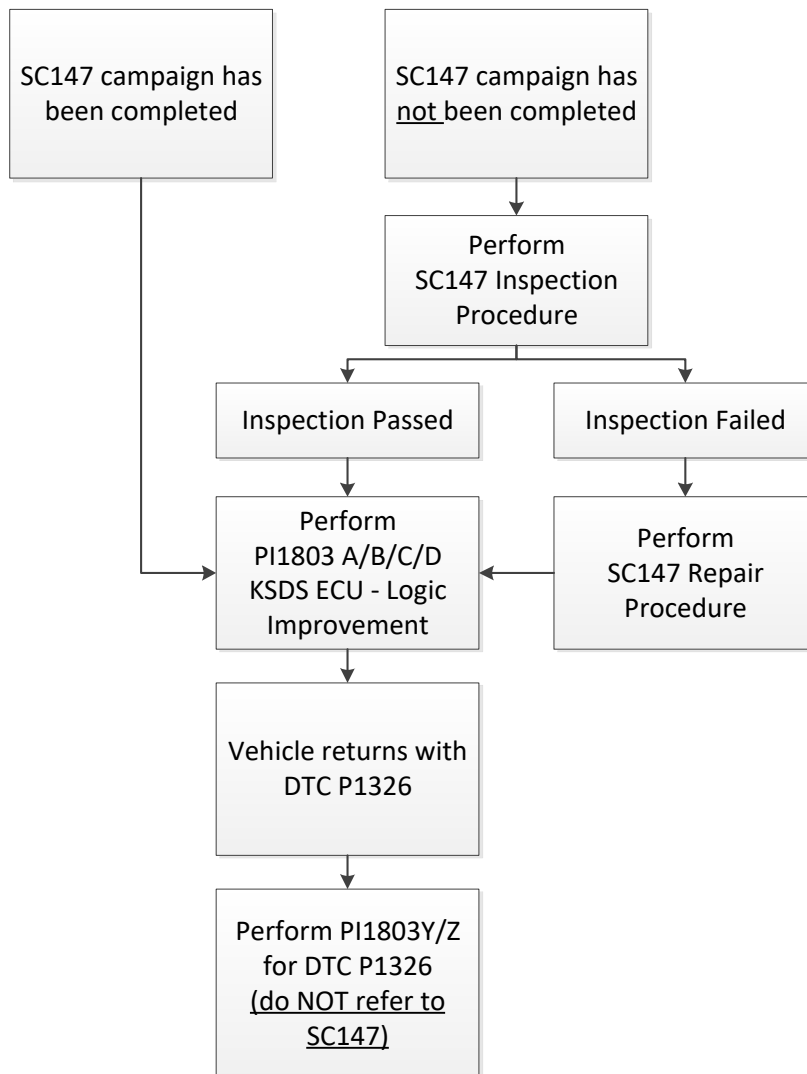
**\* NOTICE**

Prior to conducting the procedure described in this bulletin, please make certain the SC147 inspection/repair procedure has been completed on the affected vehicles. If the SC147 inspection/repair procedure has not been completed, please complete the SC147 inspection/repair procedure **BEFORE** you perform the software update requested in this bulletin.

**\* 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.

**SC147 → PI1803 Flow Chart**



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

### ECU Upgrade Procedure:

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


Upgrade Event Name
453. TF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)
454. QF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
455. SL THETA 2.0T-GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)
469. XMA THETA 2.4 KSDS LOGIC IMPROVEMENT (12~14MY, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)
470. TF THETA 2.4 KSDS LOGIC IMPROVEMENT (12~14MY, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)
471. QF THETA 2.4 KSDS LOGIC IMPROVEMENT (12~14MY, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)

### \* NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that a battery charger is used in ECU mode during reflashing or the use of a fully charged jump starter box connected to the battery.
- DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- Ensure the KDS or GDS is sufficiently charged prior to reflash.
- 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 and 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.



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

### \* NOTICE

It is recommended to **ALWAYS** check the **Electronic Parts Catalog (EPC)** to locate the **ECU Part Number** respective to **Auto/Manual Mode ROM IDs**. **DO NOT** reference the parts label affixed to the ECU.

#### ROM ID INFORMATION TABLE:

Upgrade Event #453 (TF), #454 (QF), #455 (SL), #469 (XMa), #470 (TF) and #471 (QF)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12MY Sor. (XMa)	2.4L 2WD	Yes	39113-2G770 39113-2G775	XCC4RB3A XCC4RB3B XCC4RB3C XCC4RB3D XCC4RB3E XCC4RB3F XCC4RB3K XCC4RB3M	XCC4RB3O
	2.4L AWD		39114-2G770	XCC4RB3A XCC4RB3B XCC4RB3C XCC4RB3D XCC4RB3E XCC4RB3F XCC4RB3L XCC4RB3N	XCC4RB3P
	2.4L 2WD	No	39113-2G760 39113-2G765	XCC4MB3A XCC4MB3B XCC4MB3C XCC4MB3D XCC4MB3E XCC4MB3F XCC4MB3K XCC4MB3M	XCC4MB3O
	2.4L AWD		39114-2G760	XCC4MB3A XCC4MB3B XCC4MB3C XCC4MB3D XCC4MB3E XCC4MB3F XCC4MB3L XCC4MB3N	XCC4MB3P
13MY Sor. (XMa)	2.4L 2WD	Yes	39113-2G771	XDC4RE0A XDC4REAA XDC4REAB XDC4REAC XDC4REAE XDC4REAG XDC4REAK XDC4REAO	XDC4REAS
	2.4L 2WD		39113-2G771	XDC4READ XDC4REAF XDC4REAH XDC4REAM XDC4REAQ	XDC4REAU
	2.4L AWD	Yes	39114-2G771	XDC4RE0A XDC4REAA XDC4REAB XDC4REAC XDC4REAE XDC4REAG XDC4REAL XDC4REAP	XDC4REAT
	2.4L AWD		39114-2G771	XDC4READ XDC4REAF XDC4REAH XDC4REAN XDC4REAR	XDC4REAV

Printed TSB copy is for reference only; information may be updated at any time. Always refer to KGIS for the latest information.

TSB: PI1803 (Rev 5) Multiple Models November 2018



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Sor. (XMa)	2.4L 2WD	No	39113-2G761	XDC4ME0A XDC4MEAA XDC4MEAB XDC4MEAC XDC4MEAE XDC4MEAG XDC4MEAK XDC4MEAO	XDC4MEAS
				XDC4MEAD XDC4MEAF XDC4MEAH XDC4MEAM XDC4MEAQ	XDC4MEAU
	2.4L AWD		39114-2G761	XDC4ME0A XDC4MEAA XDC4MEAB XDC4MEAC XDC4MEAE XDC4MEAG XDC4MEAL XDC4MEAP	XDC4MEAT
				XDC4MEAD XDC4MEAF XDC4MEAH XDC4MEAN XDC4MEAR	XDC4MEAV
14MY Sor. (XMa)	2.4L 2WD	Yes	39113-2GBK5 39114-2GBK5	FDC4RF3A FDC4RG0A FDC4RG0B FEC4RG0C FEC4RG1K FEC4RG1M	FEC4RG1O
				FEC4RH2A FEC4RH2B FEC4RH2K FEC4RH2M	FEC4RH2O
	2.4L AWD		39113-2GBL5	FDC4RF3A FDC4RG0A FDC4RG0B FEC4RG0C FEC4RG1L FEC4RG1N	FEC4RG1P
				FEC4RH2A FEC4RH2B FEC4RH2L FEC4RH2N	FEC4RH2P
	2.4L 2WD	39113-2GBK0 39114-2GBK0	No	FDC4MF3A FDC4MG0A FDC4MG0B FEC4MG0C FEC4MG1K FEC4MG1M	FEC4MG1O
				FEC4MH2A FEC4MH2B FEC4MH2K FEC4MH2M	FEC4MH2O
2.4L AWD	39113-2GBL0		No	FDC4MF3A FDC4MG0A FDC4MG0B FEC4MG0C FEC4MG1L FEC4MG1N	FEC4MG1P
				FEC4MH2A FEC4MH2B FEC4MH2L FEC4MH2N	FEC4MH2P



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G870 39112-2G870	TBC4R85A TBC4R86A TBC4R86B TBC4R86D TBC4RB3K TBC4RB3M	TBC4RB3O
			39111-2G871 39112-2G871	TBC4R86C TBC4R88A TBC4R88B TBC4RB3A TBC4RB3B TBC4RB3C TBC4RB3L TBC4RB3N	TBC4RB3P
		No	39111-2G860 39112-2G860	TBC4M85A TBC4M86A TBC4M86B TBC4M86D TBC4MB3K TBC4MB3M	TBC4MB3O
			39111-2G861 39112-2G861	TBC4M86C TBC4M88A TBC4M88B TBC4MB3A TBC4MB3B TBC4MB3C TBC4MB3L TBC4MB3N	TBC4MB3P
11MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G875	TBS4R85A TBS4R86A TBS4R86B TBS4RF3E TBS4RF3G TBS4RF3K TBS4RF3M	TBS4RF3O
			39111-2G876	TBS4R86C TBS4R88A TBS4R88B TBS4RB3A TBS4RB3B TBS4RF3F TBS4RF3H TBS4RF3L TBS4RF3N	TBS4RF3P
		No	39111-2G865	TBS4M85A TBS4M86A TBS4M86B TBS4MF3E TBS4MF3G TBS4MF3K TBS4MF3M	TBS4MF3O
			39111-2G866	TBS4M86C TBS4M88A TBS4M88B TBS4MB3A TBS4MB3B TBS4MF3F TBS4MF3H TBS4MF3L TBS4MF3N	TBS4MF3P

SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G873 39112-2G873	TCC4RB3K TCC4REAK TCC4REAL TCC4REAM TCC4REA5 TCC4REA6	TCC4REA7
		No	39111-2G863 39112-2G863	TCC4MB3K TCC4MEAK TCC4MEAL TCC4MEAM TCC4MEA5 TCC4MEA6	TCC4MEA7
	2.4 (SULEV)	Yes	39111-2G878	TCS4RB3K TCS4REAK TCS4REAL TCS4REAM TCS4REA5 TCS4REA6	TCS4REA7
		No	39111-2G868	TCS4MB3K TCS4MEAK TCS4MEAL TCS4MEAM TCS4MEA5 TCS4MEA6	TCS4MEA7
13MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G902 39112-2G902	TDC4REAK TDC4RF0K TDC4RF3K TDC4RG1K TDC4RG1L TDC4RG1M TDC4RG15 TDC4RG16	TDC4RG17
		No	39111-2G900 39112-2G900	TDC4MEAK TDC4MF0K TDC4MF3K TDC4MG1K TDC4MG1L TDC4MG1M TDC4MG15 TDC4MG16	TDC4MG17
13MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G903	TDS4REAK TDS4RF0K TDS4RF3K TDS4RG1K TDS4RG1L TDS4RG1M TDS4RG15 TDS4RG16	TDS4RG17
		No	39111-2G901	TDS4MEAK TDS4MF0K TDS4MF3K TDS4MG1K TDS4MG1L TDS4MG1M TDS4MG15 TDS4MG16	TDS4MG17
13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G895	TDC0RG1K TDC0RG1L TDC0RG15	TDC0RG16
		No	39111-2G885	TDC0MG1K TDC0MG1L TDC0MG15	TDC0MG16



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11-13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G890 39111-2G892 39111-2G894	TBC0R95C TBC0R96A TBC0R97A TBC0R97B TBC0RB3A TBC0RC0A TDC0RF3L TCC0RC0K TCC0RC0L TCC0RC0M TDC0REAK TDC0RE5K TDC0RF3K TBC0R91A TBC0R92A TBC0R93A TBC0R94A TBC0R95A TBC0R95B TDC0RF35	TDC0RF36
		No	39111-2G880 39111-2G882 39111-2G884	TBC0M95C TBC0M96A TBC0M97A TBC0M97B TBC0MB3A TBC0MC0A TDC0MF3L TCC0MC0L TCC0MC0K TCC0MC0M TDC0MEAK TDC0ME5K TDC0MF3K TBC0M91A TBC0M92A TBC0M93A TBC0M94A TBC0M95A TBC0M95B TDC0MF35	TDC0MF36
12MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G872 39112-2G872	TCC4RB3A TCC4REAA TCC4REAB TCC4REAC TCC4REA1 TCC4REA2	TCC4REA3
		No	39111-2G862 39112-2G862	TCC4MB3A TCC4MEAA TCC4MEAB TCC4MEAC TCC4MEA1 TCC4MEA2	TCC4MEA3
	2.4 (SULEV)	Yes	39111-2G877	TCS4RB3A TCS4REAA TCS4REAB TCS4REAC TCS4REA1 TCS4REA2	TCS4REA3
		No	39111-2G867	TCS4MB3A TCS4MEAA TCS4MEAB TCS4MEAC TCS4MEA1 TCS4MEA2	TCS4MEA3



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G874 39112-2G874	TDC4REAA TDC4RF0A TDC4RF3A TDC4RF3B TDC4RF3C TDC4RF31 TDC4RF32	TDC4RF33
		No	39111-2G864 39112-2G864	TDC4MEAA TDC4MF0A TDC4MF3A TDC4MF3B TDC4MF3C TDC4MF31 TDC4MF32	TDC4MF33
	2.4 (SULEV)	Yes	39111-2G879	TDS4REAA TDS4RF0A TDS4RF3A TDS4RF3B TDS4RF3C TDS4RF31 TDS4RF32	TDS4RF33
		No	39111-2G869	TDS4MEAA TDS4MF0A TDS4MF3A TDS4MF3B TDS4MF3C TDS4MF31 TDS4MF32	TDS4MF33
14MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ0 39118-2GBJ0	TEC4RH2A TEC4RH2B TEC4RH21 TEC4RH22	TEC4RH23
		No	39108-2GBH0 39118-2GBH0	TEC4MH2A TEC4MH2B TEC4MH21 TEC4MH22	TEC4MH23
	2.4 (SULEV)	Yes	39108-2GBJ5	TES4RH2A TES4RH2B TES4RH21 TES4RH22	TES4RH23
		No	39108-2GBH5	TES4MH2A TES4MH2B TES4MH21 TES4MH22	TES4MH23
12-13MY Opt. (QF)	2.0T (ULEV)	Yes	39111-2G891 39111-2G893	TCC0RC0A TCC0RC0B TCC0RC0C TDC0RF3B TDC0RE3A TDC0RE5A TDC0REAA TDC0RF3A TDC0RF31	TDC0RF32
		No	39111-2G881 39111-2G883	TCC0MC0A TCC0MC0B TCC0MC0C TDC0MF3B TDC0ME3A TDC0ME5A TDC0MEAA TDC0MF3A TDC0MF31	TDC0MF32



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12-13MY Opt. (QF)	2.0T (ULEV)	Yes	39111-2G895	TDC0RG1A TDC0RG1B TDC0RG11	TDC0RG12
		No	39111-2G885	TDC0MG1A TDC0MG1B TDC0MG11	TDC0MG12
14MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK5	TEC0RH2A TEC0RH2B TEC0RH21	TEC0RH22
		No	39108-2GBK0	TEC0MH2A TEC0MH2B TEC0MH21	TEC0MH22
11-13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G870 39114-2G870 39113-2G871 39114-2G871 39113-2G872 39114-2G872	SCC0RB1A SCC0RB3A SCC0RC0A SDC0RF3B SCC0RC0B SDC0RE3A SDC0RE5A SDC0REAA SDC0RF3A SDC0RF3K	SDC0RF3K
		No	39113-2G860 39114-2G860 39113-2G861 39114-2G861 39113-2G862 39114-2G862	SCC0MB1A SCC0MB3A SCC0MC0A SDC0MF3B SCC0MC0B SDC0ME3A SDC0ME5A SDC0MEAA SDC0MF3A SDC0MF3K	SDC0MF3K
13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G873 39114-2G873	SDC0RG1A SDC0RG1B SDC0RG1K	SDC0RG1K
		No	39113-2G863 39114-2G863	SDC0MG1A SDC0MG1B SDC0MG1K	SDC0MG1K

**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.**

SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

### ★ NOTICE

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

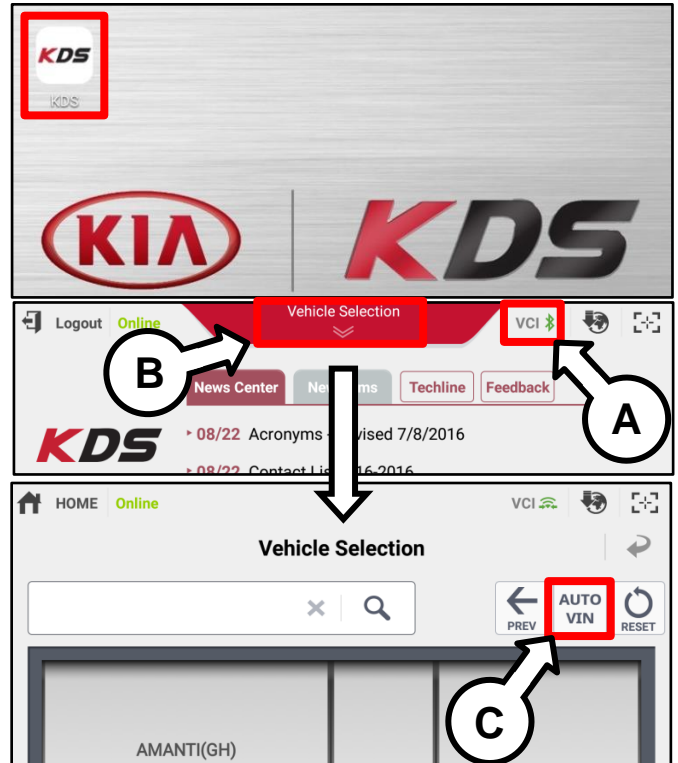
1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.

### ★ NOTICE

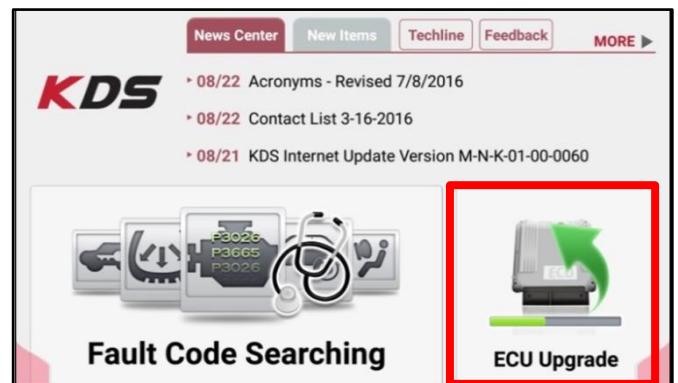
**The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**



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**.



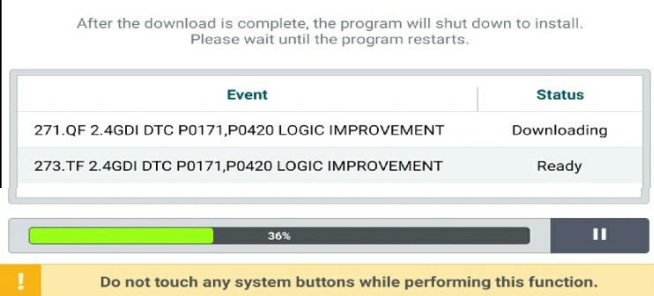
SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

- The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #452 (XMa), #453 (TF), #454 (QF), or #455 (SL)**.

### ★ NOTICE

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



After the download is complete, the program will shut down to install.  
Please wait until the program restarts.

Event	Status
271.QF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Downloading
273.TF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Ready

36%

! Do not touch any system buttons while performing this function.

KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

- Select Auto Mode.

### ★ NOTICE

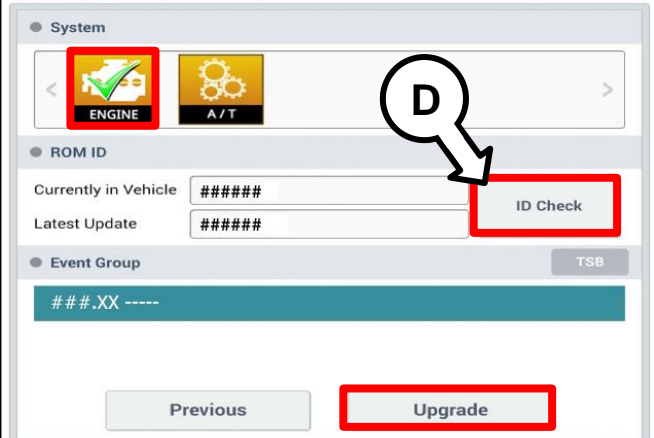
Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



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

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

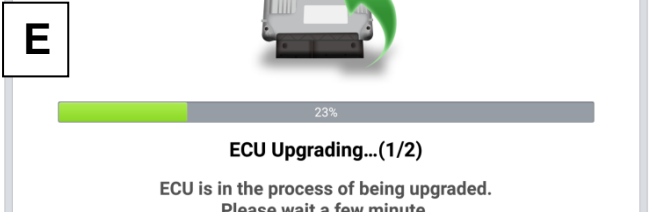
Select **Upgrade Event #452 (XMa), #453 (TF), #454 (QF), or #455 (SL)** and select **Upgrade** to continue.



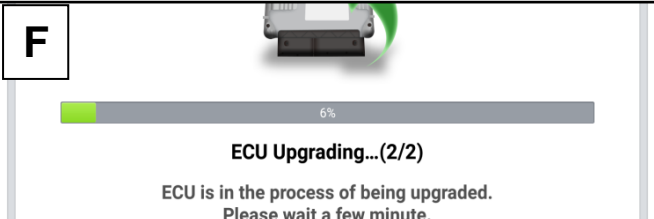
- The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

### ★ NOTICE

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



E



F

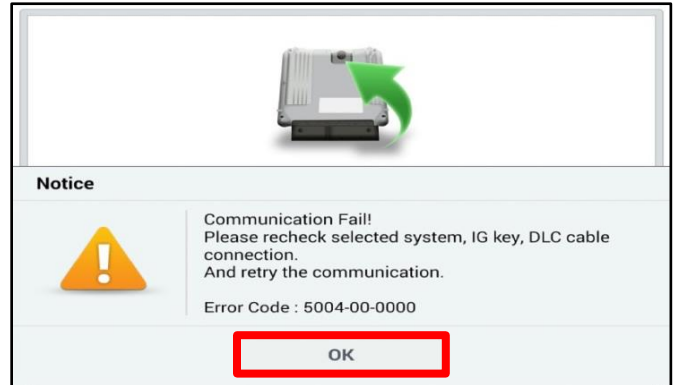
SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

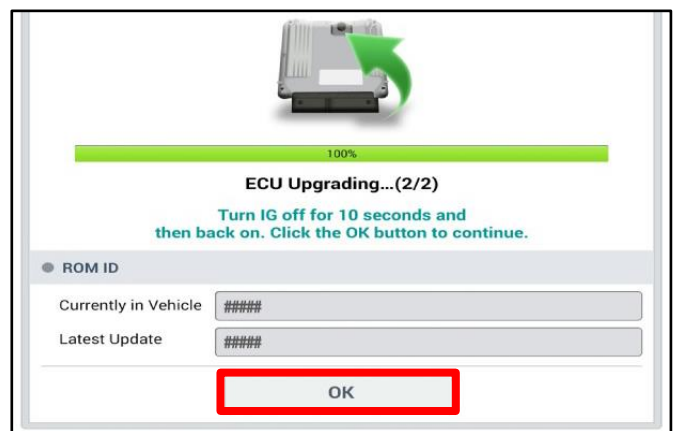
9. If a “Communication Fail” screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

### \* NOTICE

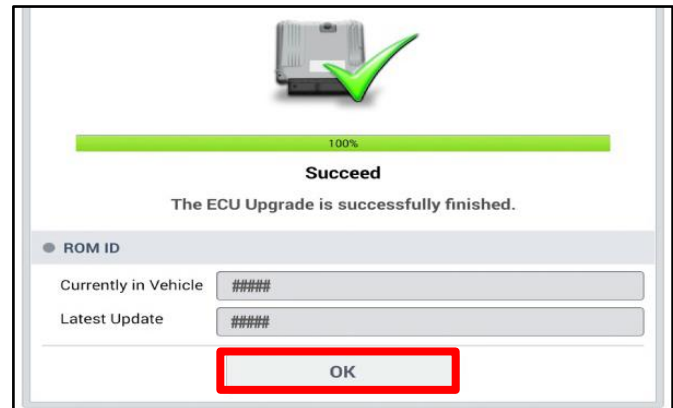
**If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**



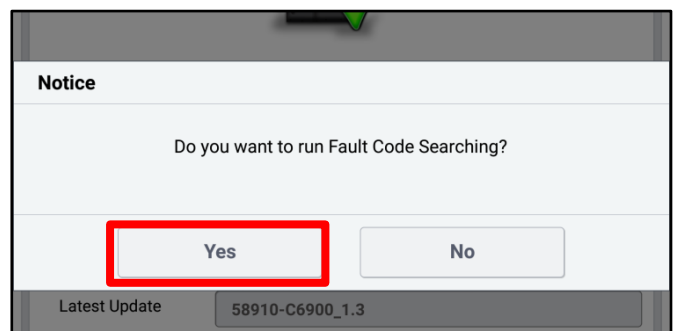
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



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.

**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.

**\* NOTICE**

It is recommended to **ALWAYS** check the Electronic Parts Catalog (EPC) to locate the ECU Part Number respective to Manual Mode upgrade passwords. **DO NOT** reference the parts label affixed to the ECU.

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #453 (TF), #454 (QF), #455 (SL), #469 (XMa), #470 (TF), #471 (QF)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-8, 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 (PI1803)

### Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMA	XMA 2.4GDI -IMMO 12MY(2WD) : 39113-2G760/65 [2WD_XCC4MB3A/3B/3C/3D/3E/3F/3K/3M]	5201
	XMA 2.4GDI -IMMO 12MY(4WD) : 39114-2G760 [4WD_XCC4MB3A/3B/3C/3D/3E/3F/3L/3N]	5202
	XMA 2.4GDI +IMMO/SMK 12MY(2WD) : 39113-2G770/75 [2WD_XCC4RB3A/3B/3C/3D/3E/3F/3K/3M]	5203
	XMA 2.4GDI +IMMO/SMK 12MY(4WD) : 39114-2G770 [4WD_XCC4RB3A/3B/3C/3D/3E/3F/3L/3N]	5204
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4ME0A/AA/AB/AC/AE/AG/AK/AO]	5205
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4MEAD/AF/AH/AM/AQ]	5206
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4ME0A/AA/AB/AC/AE/AG/AL/AP]	5207
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4MEAD/AF/AH/AN/AR]	5208
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4RE0A/AA/AB/AC/AE/AG/AK/AO]	5209
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4READ/AF/AH/AM/AQ]	5210
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4RE0A/AA/AB/AC/AE/AG/AL/AP]	5211
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4READ/AF/AH/AN/AR]	5212
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FDC4MF3A/G0A/G0B/G0C/G1K/G1M]	5213
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FEC4MH2A/2B/2K/2M]	5214
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FDC4MF3A/G0A/G0B/G0C/G1L/G1N]	5215
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FEC4MH2A/2B/2L/2N]	5216
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FDC4RF3A/G0A/G0B/G0C/G1K/G1M]	5217
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FEC4RH2A/2B/2K/2M]	5218
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FDC4RF3A/G0A/G0B/G0C/G1L/G1N]	5219
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FEC4RH2A/2B/2L/2N]	5220
TF	TF 2.4 GDI -IMMO 11MY(ULEV/4WD) : 39111/12-2G860	5301
	TF 2.4 GDI -IMMO 11MY(ULEV/4WD) : 39111/12-2G861	5302
	TF 2.4 GDI +IMMO/SMK 11MY(ULEV/4WD) : 39111/12-2G870	5303
	TF 2.4 GDI +IMMO/SMK 11MY(ULEV/4WD) : 39111/12-2G871	5304
	TF 2.4 GDI -IMMO 11MY(SULEV/4WD) : 39111-2G865	5305
	TF 2.4 GDI -IMMO 11MY(SULEV/4WD) : 39111-2G866	5306
	TF 2.4 GDI +IMMO/SMK 11MY(SULEV/4WD) : 39111-2G875	5307
	TF 2.4 GDI +IMMO/SMK 11MY(SULEV/4WD) : 39111-2G876	5308
	TF 2.4 GDI -IMMO 12MY(ULEV/4WD) : 39111/12-2G863	5309
	TF 2.4 GDI +IMMO/SMK 12MY(ULEV/4WD) : 39111/12-2G873	5310
	TF 2.4 GDI -IMMO 12MY(SULEV/4WD) : 39111-2G868	5311
	TF 2.4 GDI +IMMO/SMK 12MY(SULEV/4WD) : 39111-2G878	5312
	TF 2.4 GDI -IMMO 13MY(ULEV/4WD) : 39111/12-2G900	5313
	TF 2.4 GDI +IMMO/SMK 13MY(ULEV/4WD) : 39111/12-2G902	5314
	TF 2.4 GDI -IMMO 13MY(SULEV/4WD) : 39111-2G901	5315
	TF 2.4 GDI +IMMO/SMK 13MY(SULEV/4WD) : 39111-2G903	5316
	TF 2.0 T-GDI -IMMO 11~13MY(ULEV/4WD) : 39111-2G880/82/84	5317
	TF 2.0 T-GDI -IMMO 13MY(ULEV/4WD) : 39111-2G885	5318
	TF 2.0 T-GDI +IMMO/SMK 11~13MY(ULEV/4WD) : 39111-2G890/92/94	5319
	TF 2.0 T-GDI +IMMO/SMK 13MY(ULEV/4WD) : 39111-2G895	5320



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## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Menu	Password
QF	QF 2.4 GDI -IMMO 12MY(ULEV/4WD) : 39111/12-2G862	5401
	QF 2.4 GDI +IMMO/SMK 12MY(ULEV/4WD) : 39111/12-2G872	5402
	QF 2.4 GDI -IMMO 12MY(SULEV/4WD) : 39111-2G867	5403
	QF 2.4 GDI +IMMO/SMK 12MY(SULEV/4WD) : 39111-2G877	5404
	QF 2.4 GDI -IMMO 13MY(ULEV/4WD) : 39111/12-2G864	5405
	QF 2.4 GDI +IMMO/SMK 13MY(ULEV/4WD) : 39111/12-2G874	5406
	QF 2.4 GDI -IMMO 13MY(SULEV/4WD) : 39111-2G869	5407
	QF 2.4 GDI +IMMO/SMK 13MY(SULEV/4WD) : 39111-2G879	5408
	QF 2.4 GDI -IMMO 14MY(ULEV/4WD) : 39108/18-2GBH0	5409
	QF 2.4 GDI +IMMO/SMK 14MY(ULEV/4WD) : 39108/18-2GBJ0	5410
	QF 2.4 GDI -IMMO 14MY(SULEV/4WD) : 39108-2GBH5	5411
	QF 2.4 GDI +IMMO/SMK 14MY(SULEV/4WD) : 39108-2GBJ5	5412
	QF 2.0 T-GDI -IMMO 12~13MY(ULEV/4WD) : 39111-2G881/83	5413
	QF 2.0 T-GDI -IMMO 13MY(ULEV/4WD) : 39111-2G885	5414
	QF 2.0 T-GDI +IMMO/SMK 12~13MY(ULEV/4WD) : 39111-2G891/93	5415
	QF 2.0 T-GDI +IMMO/SMK 13MY(ULEV/4WD) : 39111-2G895	5416
	QF 2.0 T-GDI -IMMO 14MY(ULEV/4WD) : 39108-2GBK0	5417
	QF 2.0 T-GDI +IMMO/SMK 14MY(ULEV/4WD) : 39108-2GBK5	5418
SL	SL 2.0T-GDI -IMMO 11~13MY(ULEV/4WD) : 39113/14-2G860/61/62	5501
	SL 2.0T-GDI -IMMO 13MY(ULEV/4WD) : 39113/14-2G863	5502
	SL 2.0T-GDI +IMMO/SMK 11~13MY(ULEV/4WD) : 39113/14-2G870/71/72	5503
	SL 2.0T-GDI +IMMO/SMK 13MY(ULEV/4WD) : 39113/14-2G873	5504



SUBJECT:

## KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

## AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

## WARRANTY INFORMATION (PI1803A/B/C/D):

**N Code: N99 C Code: C99**

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (11-13MY)	R	39111 2G870	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180133R0	0.3 M/H	N/A	0
QF (12-14MY)	R	39111 2G872	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A22R0	0.3 M/H	N/A	0
XMa (12-14MY)	R	39113 2G770	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A21R0	0.3 M/H	N/A	0
SL (11-13MY)	R	39113 2G860	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180134R0	0.3 M/H	N/A	0

**\* NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference **PI1803\*** when accessing the WebDCS system.

