



GROUP
Product Improvement

MODEL
**2019MY
Sorento (UMa)
Optima (JFa)
Sportage (QL)**

NUMBER
1805 (Rev 2, 03/18/2020)

DATE
October 2019

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT:

**KNOCK SENSOR DETECTION SYSTEM (KSDS)
LOGIC IMPROVEMENT (PI1805)**

★ 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 2019MY vehicles listed below:

Year	Model	Engine	Production Date
2019	Optima (JFa)	2.4L & 2.0L T GDI	5/21/2018 - 2/28/2019
2019	Sorento (UMa)	2.4L GDI	1/22/2018 - 3/6/2019
2019	Sportage (QL)	2.4L & 2.0T GDI	4/2/2018 - 1/14/2019

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.

★ 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.

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

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

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KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI1805)

ECU Upgrade Procedure:

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

Upgrade Event Name
458. JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) LOGIC IMPROVEMENT (19MY)
459. QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) LOGIC IMPROVEMENT (19MY)
479. UMA THETA 2.4 KSDS LOGIC IMPROVEMENT (19MY, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)
481. JF/JFA THETA 2.4 KSDS LOGIC IMPROVEMENT (19MY, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)
482. QL THETA 2.4 KSDS LOGIC IMPROVEMENT (19, MISDIAGNOSIS PREVENTION LOGIC IMPROVEMENT)

★ NOTICE

- A fully charged battery is necessary before the ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 be used in ECU mode during reflashing or the use of a fully charged jump starter box.
- 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.


★ 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.

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KNOCK SENSOR DETECTION SYSTEM (KS DS) ECU LOGIC IMPROVEMENT (PI1805)

* NOTICE

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. 

ROM ID INFORMATION TABLE:

Upgrade Event #479 (UMa), #458 & #481 (JFa) and #459 & #482 (QL).

Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	New
19MY (UMa)	2.4L GDI (ULEV)	6AT	Yes	39171-2GMN0	UPAJNC4ERE1A UPAJNC4ERE1B UPAJNC4ERE1C UPAJNC4ERE1D UPAJNC4ERG1A UPAJNC4ERG1B UPAJNC4ERG1C	(FWD) UPAJNC4ERG1D
				39171-2GMN1	UPAJNC4ERE1A UPAJNC4ERE1B UPAJNC4ERE1C UPAJNC4ERE1D UPAJNC4ERG1K UPAJNC4ERG1L UPAJNC4ERG1M	(AWD) UPAJNC4ERG1N
			No	39171-2GMA0	UPAJNC4EME1A UPAJNC4EME1B UPAJNC4EME1C UPAJNC4EME1D UPAJNC4EMG1A UPAJNC4EMG1B UPAJNC4EMG1C	(FWD) UPAJNC4EMG1D
				39171-2GMA1	UPAJNC4EME1A UPAJNC4EME1B UPAJNC4EME1C UPAJNC4EME1D UPAJNC4EMG1K UPAJNC4EMG1L UPAJNC4EMG1M	(AWD) UPAJNC4EMG1N



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Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	New
19MY (JFa)	2.4L GDI (ULEV)	6AT	Yes	39171-2GJK0	JPAJNC4ERE3A JPAJNC4ERE3B JPAJNC4ERE3C JPAJNC4ERE6D JPAJNC4ERE6E JPAJNC4ERE6F JPAJNC4ERG1G JPAJNC4ERG1H JPAJNC4ERG1I	JPAJNC4ERG1J
				39171-2GJK5	JPAJNC4EME3A JPAJNC4EME3B JPAJNC4EME3C JPAJNC4EME6D JPAJNC4EME6E JPAJNC4EME6F JPAJNC4EMG1G JPAJNC4EMG1H JPAJNC4EMG1I	JPAJNC4EMG1J
	No		39171-2GJL0	JPAJNS4ERE3A JPAJNS4ERE3B JPAJNS4ERE3C JPAJNS4ERE6D JPAJNS4ERE6E JPAJNS4ERG1F JPAJNS4ERG1G JPAJNS4ERG1H	JPAJNS4ERG1I	
			39171-2GJL5	JPAJNS4EME3A JPAJNS4EME3B JPAJNS4EME3C JPAJNS4EME6D JPAJNS4EME6E JPAJNS4EMG1F JPAJNS4EMG1G JPAJNS4EMG1H	JPAJNS4EMG1I	
19MY (JFA)	2.0L T-GDI (ULEV)	6AT	Yes	39161-2GJS0	JPAJNC0ERE3A JPAJNC0ERE3B JPAJNC0ERE3C JPAJNC0ERE6D JPAJNC0ERG1E JPAJNC0ERG1F	JPAJNC0ERG1G
			No	39161-2GJS5	JPAJNC0EME3A JPAJNC0EME3B JPAJNC0EME3C JPAJNC0EME6D JPAJNC0EMG1E JPAJNC0EMG1F	JPAJNC0EMG1G

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KNOCK SENSOR DETECTION SYSTEM (KSIDS) ECU LOGIC IMPROVEMENT (PI1805)

Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	New
19MY (QL)	2.4L GDI (ULEV)	6AT	Yes	39100-2GHR7	QLDJNC4ERE2A QLDJNC4ERG1B QLDJNC4ERG1C QLDJNC4ERG1D	(FWD) QLDJNC4ERG1E
			No	39100-2GHS2	QLDJNC4EME2A QLDJNC4EMG1B QLDJNC4EMG1C QLDJNC4EMG1D	(FWD) QLDJNC4EMG1E
			Yes	39100-2GHS7	QLDJNC4ERE2K QLDJNC4ERG1L QLDJNC4ERG1M QLDJNC4ERG1N	(AWD) QLDJNC4ERG1O
			No	39100-2GHT2	QLDJNC4EME2K QLDJNC4EMG1L QLDJNC4EMG1M QLDJNC4EMG1N	(AWD) QLDJNC4EMG1O
	2.4L GDI (SULEV)		Yes	39100-2GHT7	QLDJNS4ERE2A QLDJNS4ERG1B QLDJNS4ERG1C QLDJNS4ERG1D	(FWD) QLDJNS4ERG1E
			No	39100-2GHV2	QLDJNS4EME2A QLDJNS4EMG1B QLDJNS4EMG1C QLDJNS4EMG1D	(FWD) QLDJNS4EMG1E
			Yes	39100-2GHV7	QLDJNS4ERE2K QLDJNS4ERG1L QLDJNS4ERG1M QLDJNS4ERG1N	(AWD) QLDJNS4ERG1O
			No	39100-2GHW2	QLDJNS4EME2K QLDJNS4EMG1L QLDJNS4EMG1M QLDJNS4EMG1N	(AWD) QLDJNS4EMG1O
19MY (QL)	2.0L T-GDI (ULEV)	6AT	Yes	39100-2GHJ2	QLDJNC0ERE2A QLDJNC0ERG1B QLDJNC0ERG1C	(FWD) QLDJNC0ERG1D
			No	39100-2GHJ7	QLDJNC0EME2A QLDJNC0EMG1B QLDJNC0EMG1C	(FWD) QLDJNC0EMG1D
			Yes	39100-2GHK2	QLDJNC0ERE2K QLDJNC0ERG1L QLDJNC0ERG1M	(AWD) QLDJNC0ERG1N
			No	39100-2GHK7	QLDJNC0EME2K QLDJNC0EMG1L QLDJNC0EMG1M	(AWD) QLDJNC0EMG1N



*** 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**

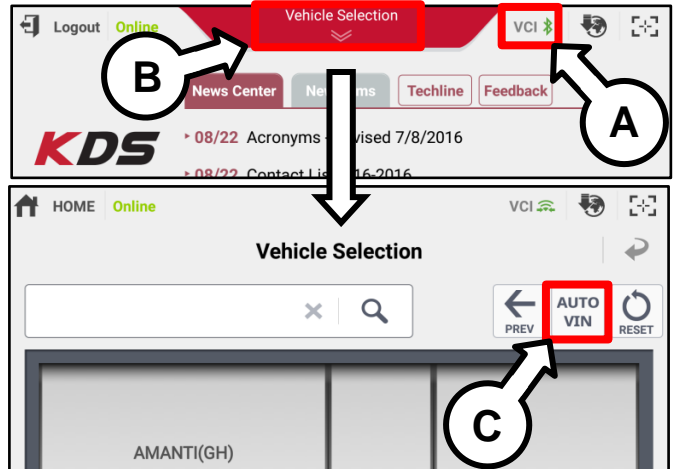
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



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



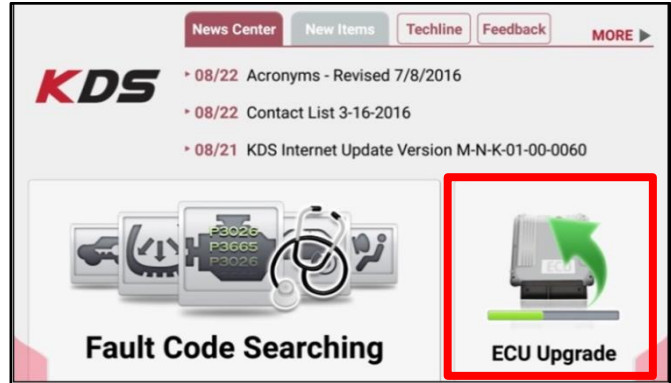
3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



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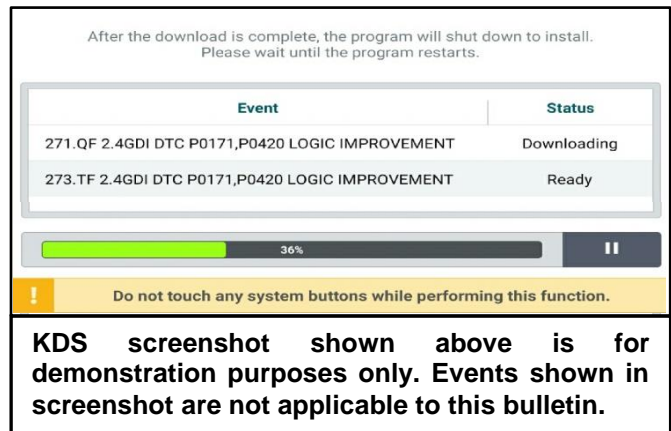
4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #479 (UMa) or, #458 / #481 (JFa) or #459 / #482 (QL)**.

* NOTICE

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

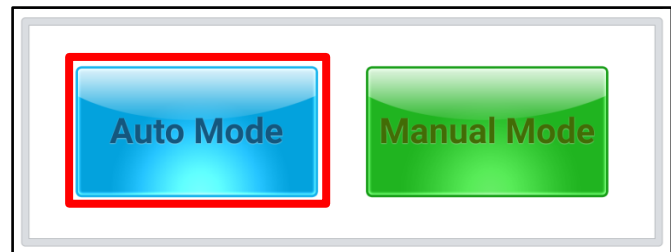


6. Select **Auto Mode**.



CAUTION

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.



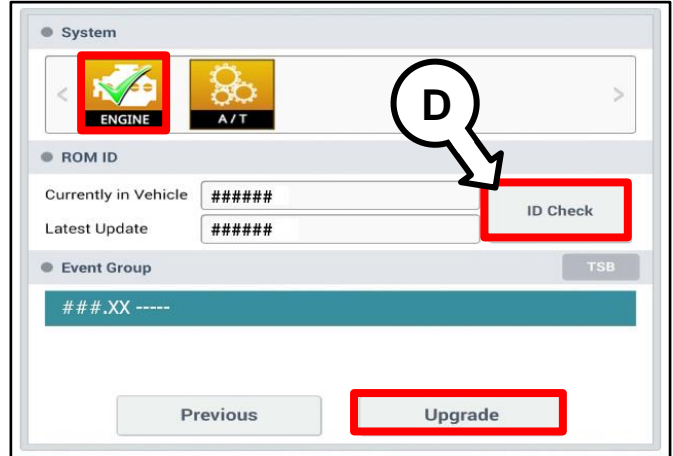
SUBJECT:

KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI1805)

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

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

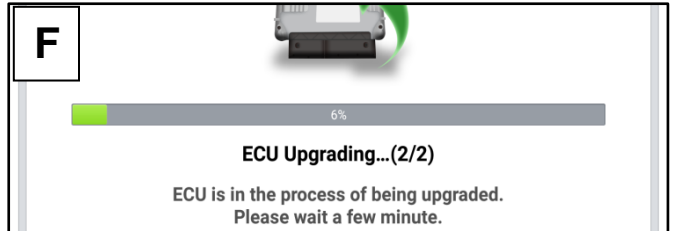
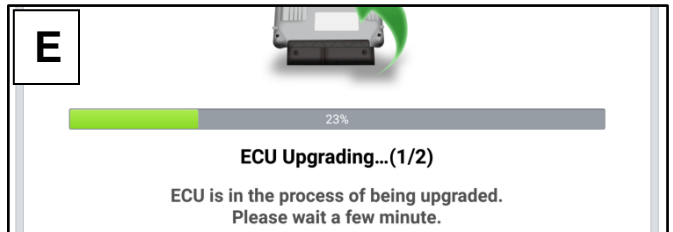
Select **Upgrade Event #479 (UMa)** or, **#458 / #481 (JFa)** or **#459 / #482 (QL)** and select **Upgrade** to continue.



- 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.

CAUTION

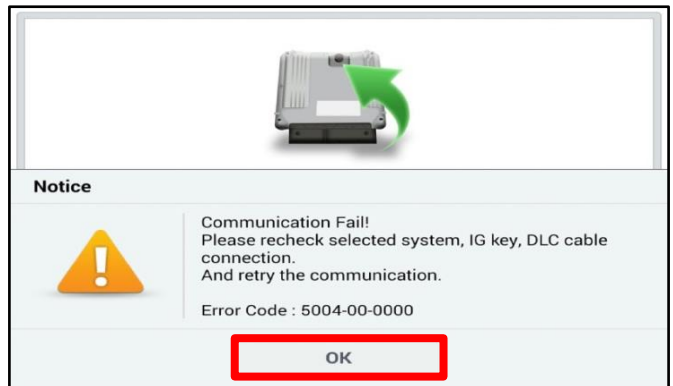
Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.



- 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**

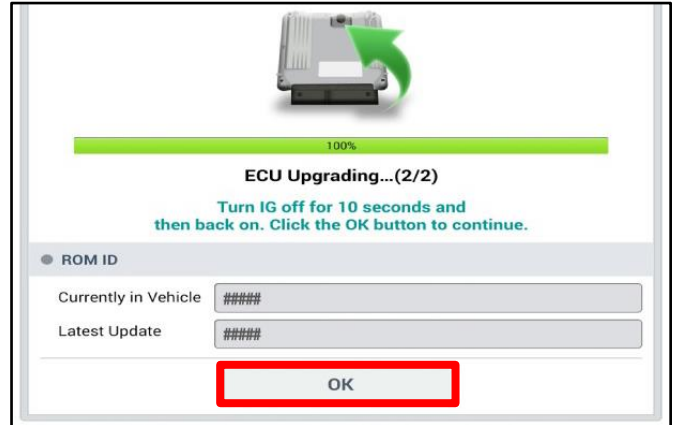
If an error notice continues to appear or if the upgrade cannot be performed, **DO NOT** disconnect the KDS/VCI-II. Contact **GIT America Help Desk** at **(888) 542-4371** or **Techline**.



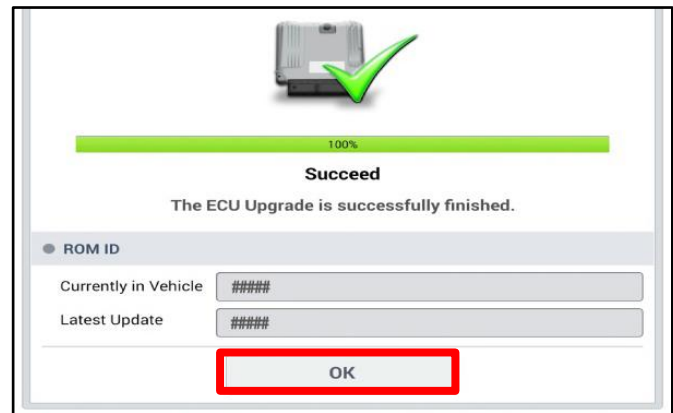
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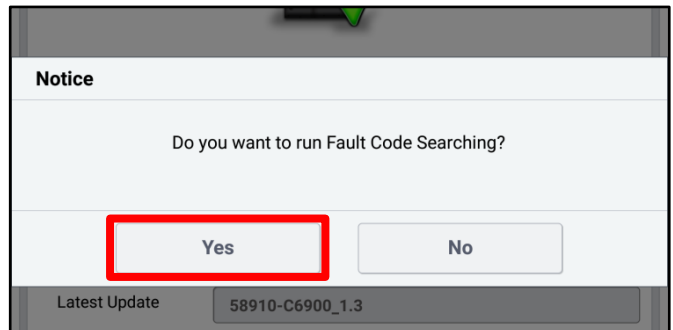
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



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 Auto/Manual Mode ROM IDs. **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 #479 (UMa) or, #458/#481 (JFa) or #459/#482 (QL)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on pages 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.

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Manual Mode ECU Upgrade Passwords

Menu	Password
UMA 2.4 GDI -IMMO 19MY(ULEV/2WD) : 39171-2GMA0 [2WD_UPAJNC4EME1A/E1B/E1C/E1D]	5601
UMA 2.4 GDI -IMMO 19MY(ULEV/4WD) : 39171-2GMA1 [4WD_UPAJNC4EME1A/E1B/E1C/E1D]	5602
UMA 2.4 GDI +IMMO/SMK 19MY(ULEV/2WD) : 39171-2GMN0 [2WD_UPAJNC4ERE1A/E1B/E1C/E1D]	5603
UMA 2.4 GDI +IMMO/SMK 19MY(ULEV/4WD) : 39171-2GMN1 [4WD_UPAJNC4ERE1A/E1B/E1C/E1D]	5604
JF/JFA PE 2.4 GDI -IMMO 19MY(ULEV) : 39171-2GJK5	5801
JF/JFA PE 2.4 GDI +IMMO/SMK 19MY(ULEV) : 39171-2GJK0	5802
JF/JFA PE 2.4 GDI -IMMO 19MY(SULEV) : 39171-2GJL5	5803
JF/JFA PE 2.4 GDI +IMMO/SMK 19MY(SULEV) : 39171-2GJL0	5804
JF/JFA PE 2.0 TGDI -IMMO 19MY(ULEV) : 39161-2GJS5	5809
JF/JFA PE 2.0 TGDI +IMMO/SMK 19MY(ULEV) : 39161-2GJS0	5810
QL 2.4 GDI -IMMO 19MY(ULEV/2WD) : 39100-2GHS2	5901
QL 2.4 GDI +IMMO/SMK 19MY(ULEV/2WD) : 39100-2GHR7	5902
QL 2.4 GDI -IMMO 19MY(ULEV/4WD) : 39100-2GHT2	5903
QL 2.4 GDI +IMMO/SMK 19MY(ULEV/4WD) : 39100-2GHS7	5904
QL 2.4 GDI -IMMO 19MY(SULEV/2WD) : 39100-2GHV2	5905
QL 2.4 GDI +IMMO/SMK 19MY(SULEV/2WD) : 39100-2GHT7	5906
QL 2.4 GDI -IMMO 19MY(SULEV/4WD) : 39100-2GHW2	5907
QL 2.4 GDI +IMMO/SMK 19MY(SULEV/4WD) : 39100-2GHV7	5908
QL 2.0 TGDI -IMMO 19MY(ULEV/2WD) : 39100-2GHJ7	5913
QL 2.0 TGDI +IMMO/SMK 19MY(ULEV/2WD) : 39100-2GHJ2	5914
QL 2.0 TGDI -IMMO 19MY(ULEV/4WD) : 39100-2GHK7	5915
QL 2.0 TGDI +IMMO/SMK 19MY(ULEV/4WD) : 39100-2GHK2	5916



SUBJECT:

KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI1805)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (UMa)	May 21, 2018 through February 28, 2019
Optima (JFa)	January 22, 2018 through March 6, 2019
Sportage (QL)	April 4, 2018 through January 14, 2019

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	39173 2GMA0	0	(PI1805) KSDS Logic Improvement (UMa)	190A29R0	0.3 M/H	N/A	0
	39161 2GJS0		(PI1805) KSDS Logic Improvement (JFa)	190A30R0			
	39100 2GHJ0		(PI1805) KSDS Logic Improvement (QL)	190123R0			

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1805 when accessing the WebDCS system.