PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT (PI2002B)

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 2014-2016MY Soul (PS) vehicles produced from July 21, 2013 through August 11, 2016 equipped with Nu 2.0L GDI engines.

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.

Kia Diagnostic System (KDS)

★ 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.

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**

☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

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ECU Upgrade Procedure:

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

Upgrade Event Name
508. PS Nu 2.0GDI Knock Sensor Detection System(KSDS) ECU UPGRADE

<u>Note</u>: **Software upgrade is applicable to California vehicles only at this time.**

★ 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.**

★ 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. 🔁

★ 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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★ **NOTICE**

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ROM ID INFORMATION TABLE:

Upgrade Event #508

Model	EM	ISG	IMMO 🔑	ECU P/No.	ROM ID Previous	ROM ID New
(PS) 14-15MY	Nu 2.0L GDI ULEV	No	Yes	39131-2EHA0 39131-2EHA3 39131-2EHA5	GGPS-DNUAQS00C00 GGPS-DNUAQS01C00 GGPS-DNUAQS02C00 GGPS-FNUAQS00C00 GGPS-FNUAQS01C00	GGPS-FNUAQK11C00
		No	No	39133-2EHA0 39133-2EHA3 39133-2EHA5	GGPS-DNUAPS00C00 GGPS-DNUAPS01C00 GGPS-DNUAPS02C00 GGPS-FNUAPS00C00 GGPS-FNUAPS01C00	GGPS-FNUAPK11C00
		Yes	Yes	39131-2EHA1 39131-2EHA4 39131-2EHA6	GIPS-DNUAQS00C00 GIPS-DNUAQS01C00 GIPS-DNUAQS02C00 GIPS-FNUAQS00C00 GIPS-FNUAQS01C00	GIPS-FNUAQK11C00
		Yes	No	39133-2EHA1 39133-2EHA4 39133-2EHA6	GIPS-DNUAPS00C00 GIPS-DNUAPS01C00 GIPS-DNUAPS02C00 GIPS-FNUAPS00C00 GIPS-FNUAPS01C00	GIPS-FNUAPK11C00
(PS) 16MY	Nu 2.0L GDI ULEV	No	Yes	39131-2EHA7	GGPS-GNUAQS00C00 GGPS-GNUAQS01C00	GGPS-GNUAQK11C00
		No	No	39133-2EHA7	GGPS-GNUAPS00C00 GGPS-GNUAPS01C00	GGPS-GNUAPK11C00
		Yes	Yes	39131-2EHA8	GIPS-GNUAQS00C00 GIPS-GNUAQS01C00	GIPS-GNUAQK11C00
		Yes	No	39133-2EHA8	GIPS-GNUAPS00C00 GIPS-GNUAPS01C00	GIPS-GNUAPK11C00

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.

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* NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged and perform the software upgrade in Manual Mode only.

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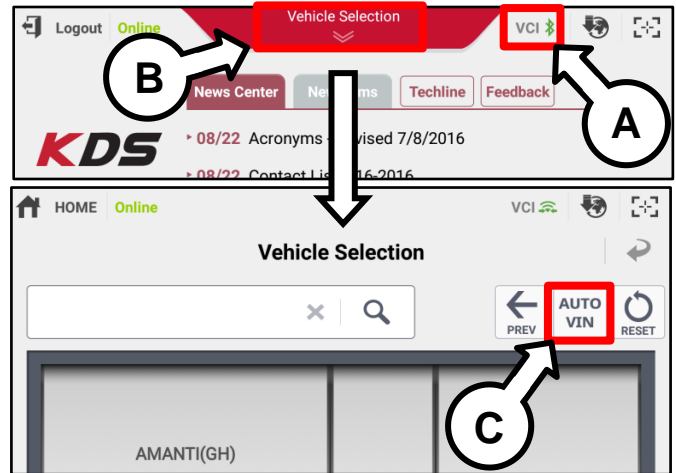
   * NOTICE

   The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.
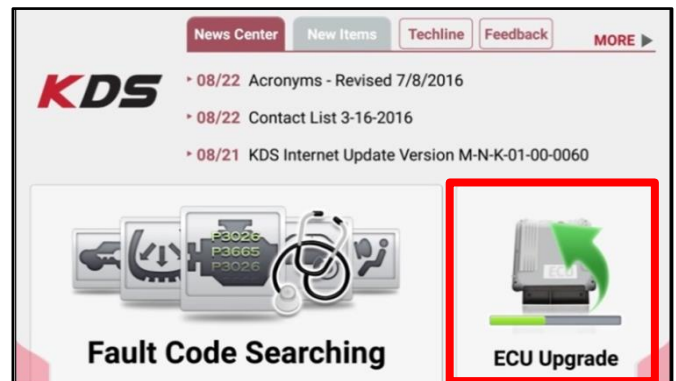
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

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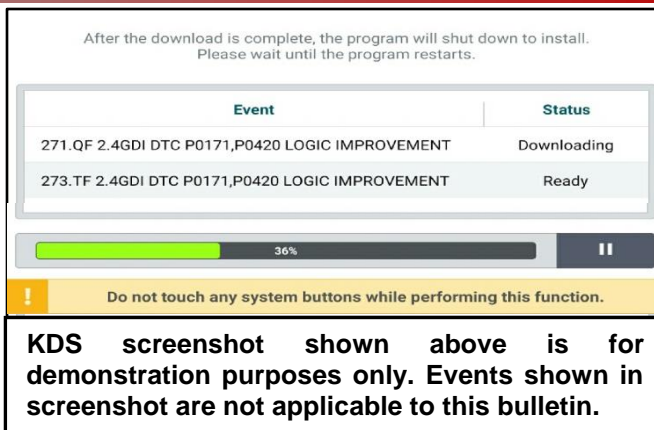
4. Select **ECU Upgrade**.

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5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #508.**

> ⭑ **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.

6. Select **Manual Mode**.

> ⚠ **CAUTION**
>
> **Always follow the instructions given on the KDS for Manual mode. Refer to page 7 for passwords.**

Auto Mode Manual Mode
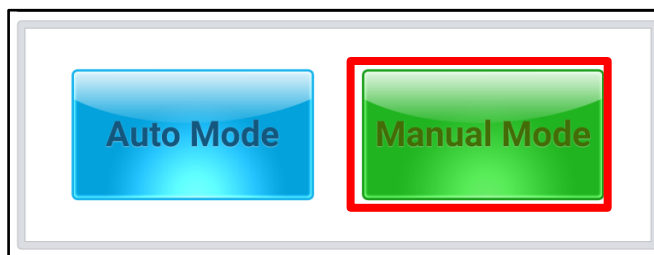
7. Select the **ENGINE** system under the System selection menu.

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

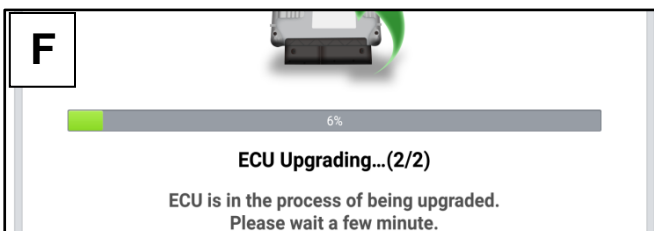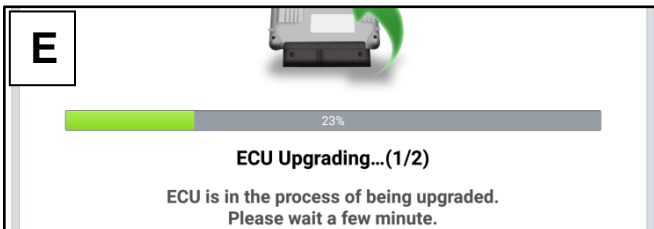Select **Upgrade Event #508** and select **Upgrade** to continue.

System

ENGINE   A/T   **D**

ROM ID

Currently in Vehicle ######   ID Check
Latest Update ######

Event Group   TSB

###.XX -----

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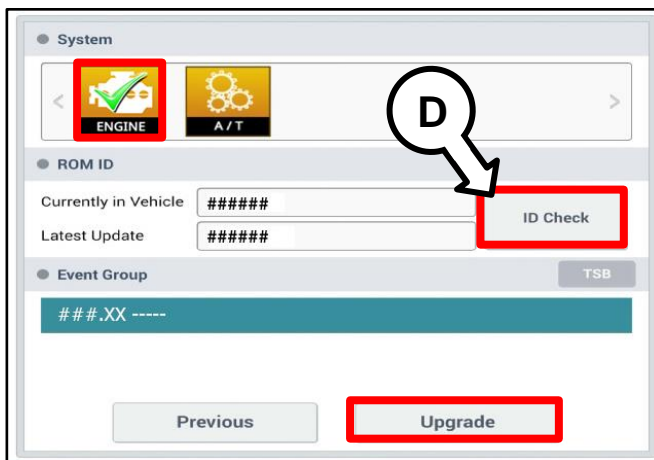
8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

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

E

23%

ECU Upgrading...(1/2)
ECU is in the process of being upgraded. Please wait a few minute.

F

6%

ECU Upgrading...(2/2)
ECU is in the process of being upgraded. Please wait a few minute.

Printed TSB copy is for reference only; information may be updated at any time. Always refer to KGIS for the latest information.
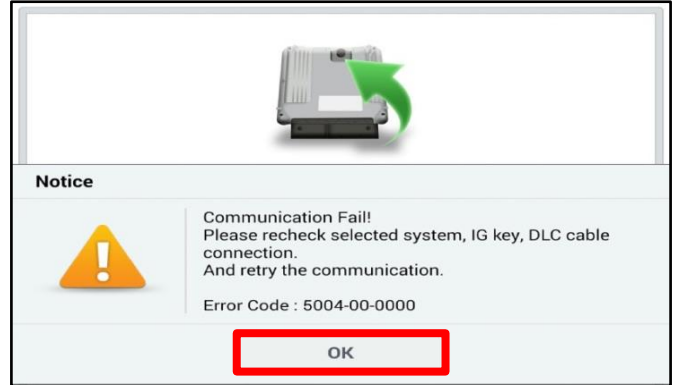
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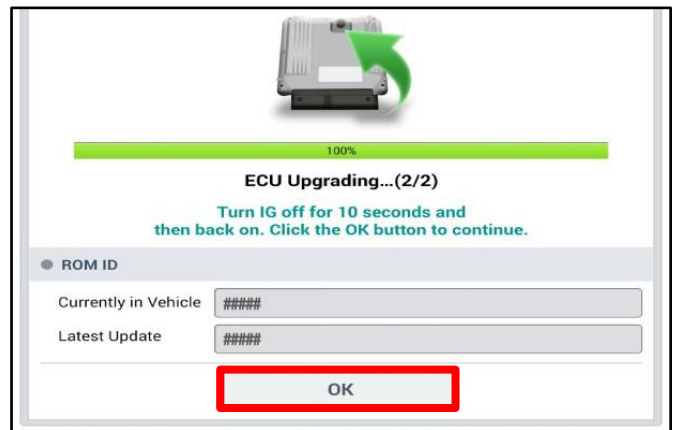**SUBJECT:** NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT (PI2002B)

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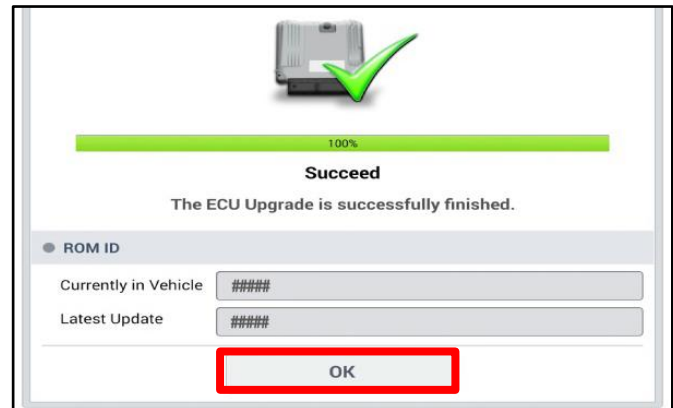
> **★ NOTICE**
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**
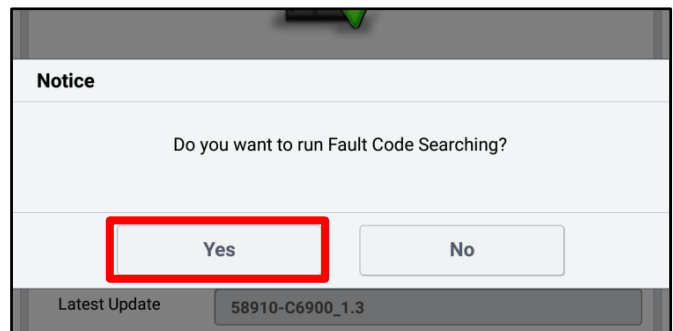

Notice

⚠ Communication Fail!
Please recheck selected system, IG key, DLC cable connection.
And retry the communication.

Error Code : 5004-00-0000

OK

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

100%

ECU Upgrading...(2/2)

Turn IG off for 10 seconds and then back on. Click the OK button to continue.

● ROM ID

Currently in Vehicle   ####

Latest Update   ####

OK

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

100%

Succeed

The ECU Upgrade is successfully finished.

● ROM ID

Currently in Vehicle   ####

Latest Update   ####

OK

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.

Notice

Do you want to run Fault Code Searching?

Yes   No

Latest Update   58910-C6900_1.3

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

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Manual Mode Passwords:

★ NOTICE

The Manual Mode upgrade should ONLY be performed to upgrade the ECU software.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Menu	Password
PS Nu 2.0GDI ULEV AT -ISG +IMMO/SMK(14~15MY) : 39131-2EHA0/A3/A5	1315
PS Nu 2.0GDI ULEV AT -ISG -IMMO(14~15MY) : 39133-2EHA0/A3/A5	1335
PS Nu 2.0GDI ULEV AT +ISG +IMMO/SMK(14~15MY) : 39131-2EHA1/A4/A6	1316
PS Nu 2.0GDI ULEV AT +ISG -IMMO(14~15MY) : 39133-2EHA1/A4/A6	1336
PS Nu 2.0GDI ULEV AT -ISG +IMMO/SMK(16MY) : 39131-2EHA7	1317
PS Nu 2.0GDI ULEV AT -ISG -IMMO(16MY) : 39133-2EHA7	1337
PS Nu 2.0GDI ULEV AT +ISG +IMMO/SMK(16MY) : 39131-2EHA8	1318
PS Nu 2.0GDI ULEV AT +ISG -IMMO(16MY) : 39133-2EHA8	1338

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

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #508** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3, 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.

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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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Soul (PS)	July 21, 2013 to August 11, 2016

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	39131 2EHA0	0	(PI2002B) 2.0L GDI KSDS Logic Improvement (PS)	200090R0	0.3 M/H	N/A	0

> ★ **NOTICE**
>
> **VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI2002B when accessing the WebDCS system.**