GROUP	MODEL
Product Improvement	**2017-2018MY Forte (YD/YDm) w/2.0L GDI**
NUMBER	DATE
PI2106	**October 2021**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT:

NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

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 certain 2017-2018MY Forte (YD/YDm) vehicles equipped with Nu 2.0L GDI engines, produced from May 19, 2016 through May 7, 2018.

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.

SUBJECT:

NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

ECU Upgrade Procedure:

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

Upgrade Event Name
569. YD/YDM NU 2.0GDI Knock Sensor Detection System (KSDS) ECU UPGRADE (17~18MY)

📄 NOTICE

- Confirm a <u>fully charged battery</u> (12.3 volts or higher is necessary) is used <u>or</u> utilize a fully charged jump starter box connected to the battery.
- **Ensure the KDS GDS is sufficiently charged at 60% or higher prior to reflash.**
- All ECU upgrades must be performed with the ignition set to the 'ON' position unless otherwise stated.
- **Damaged VCI II units should <u>not</u> be used and promptly replaced.**
- 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' <u>or</u> 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 application.

ⓘ IMPORTANT

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.

📄 NOTICE

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the applicable 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.

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

TSB: PI2106 Forte (YD/YDm) October 2021

SUBJECT:

NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

ROM ID INFORMATION TABLE:

Upgrade Event #569

Model	EM	Doors	TM	IMMO 🔑	ECU P/No.	ROM ID Previous	ROM ID New
YD (17MY) Nu 2.0L GDI	ULEV	4/5 Door	MT	Yes	39131 2EYG7	GGYD HNUAFS50610 GGYD HNUAFS51610	GGYD HNUAFK51610
				No	39135 2EYG7	GGYD HNUAES50610 GGYD HNUAES51610	GGYD HNUAEK51610
			AT	Yes	39131 2EYG2	GGYD HNUAQS50C10 GGYD HNUAQS51C10	GGYD HNUAQK51C10
				No	39135 2EYG2	GGYD HNUAPS50C10 GGYD HNUAPS51C10	GGYD HNUAPK51C10
		2 Door	MT	Yes	39131 2EYE5	GGYD HNUAFSC0600	GGYD HNUAFKC0600
				No	39135 2EYE5	GGYD HNUAESC0600	GGYD HNUAEKC0600
			AT	Yes	39131 2EYE0	GGYD HNUAQSC0C00	GGYD HNUAQKC0C00
				No	39135 2EYE0	GGYD HNUAPSC0C00	GGYD HNUAPKC0C00
YD (18MY) Nu 2.0L GDI		4/5 Door	MT	Yes	39131 2EYG8	GGYD JNUAFS50610 GGYD JNUAFS51610	GGYD JNUAFK51610
				No	39135 2EYG8	GGYD JNUAES50610 GGYD JNUAES51610	GGYD JNUAEK51610
			AT	Yes	39131 2EYG3	GGYD JNUAQS50C10 GGYD JNUAQS51C10	GGYD JNUAQK51C10
				No	39135 2EYG3	GGYD JNUAPS50C10 GGYD JNUAPS51C10	GGYD JNUAPK51C10
		2 Door	MT	Yes	39131 2EYE7	GGYD JNUAFSC0600 GGYD JNUAFSC1600	GGYD JNUAFKC1600
				No	39135 2EYE7	GGYD JNUAESC0600 GGYD JNUAESC1600	GGYD JNUAEKC1600
			AT	Yes	39131 2EYE2	GGYD JNUAQSC0C00 GGYD JNUAQSC1C00	GGYD JNUAQKC1C00
				No	39135 2EYE2	GGYD JNUAPSC0C00 GGYD JNUAPSC1C00	GGYD JNUAPKC1C00

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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TSB: PI2106 Forte (YD/YDm) October 2021

SUBJECT:	NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

ROM ID INFORMATION TABLE:

Upgrade Event #569 (Continued)

Model	EM	Doors	TM	IMMO 🔑	ECU P/No.	ROM ID Previous	ROM ID New
YDm (17MY) Nu 2.0L GDI	ULEV	4 Door	MT	Yes	39131 2EYG5	GGYD HNUAFS00600 GGYD HNUAFS01600 GGYD HNUAFS02600	GGYD HNUAFK02600
				No	39135 2EYG5	GGYD HNUAES00600 GGYD HNUAES01600 GGYD HNUAES02600	GGYD HNUAEK02600
			AT	Yes	39131 2EYG0	GGYD HNUAQS00C00 GGYD HNUAQS01C00 GGYD HNUAQS02C00	GGYD HNUAQK02C00
				No	39135 2EYG0	GGYD HNUAPS00C00 GGYD HNUAPS01C00 GGYD HNUAPS02C00	GGYD HNUAPK02C00
	SULEV		AT	Yes	39131 2EYH0	GGYD HNSAQS00C00 GGYD HNSAQS01C00 GGYD HNSAQS02C00	GGYD HNSAQK02C00
				No	39135 2EYH0	GGYD HNSAPS00C00 GGYD HNSAPS01C00 GGYD HNSAPS02C00	GGYD HNSAPK02C00
YDm (18MY) Nu 2.0L GDI	ULEV		MT	Yes	39132 2EYG5	GGYD JNUAFS00600 GGYD JNUAFS01600	GGYD JNUAFK01600
				No	39136 2EYG5	GGYD JNUAES00600 GGYD JNUAES01600	GGYD JNUAEK01600
			AT	Yes	39132 2EYG0	GGYD JNUAQS00C00 GGYD JNUAQS01C00	GGYD JNUAQK01C00
				No	39136 2EYG0	GGYD JNUAPS00C00 GGYD JNUAPS01C00	GGYD JNUAPK01C00
	SULEV		AT	Yes	39132 2EYH0	GGYD JNSAQS00C00 GGYD JNSAQS01C00	GGYD JNSAQK01C00
				No	39136 2EYH0	GGYD JNSAPS00C00 GGYD JNSAPS01C00	GGYD JNSAPK01C00

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: NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

> 📄 **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.
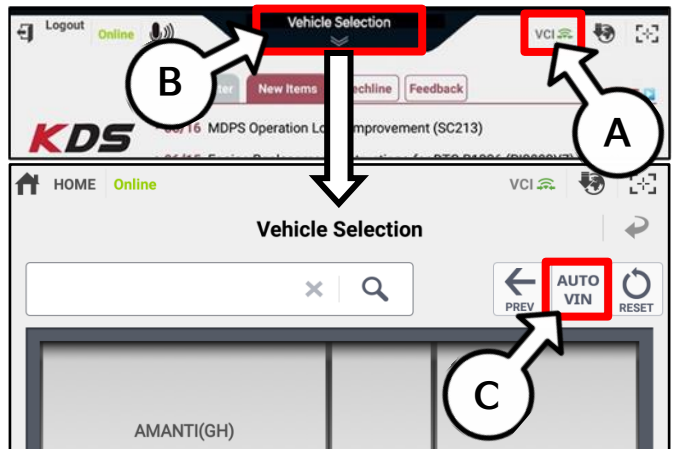
4. Select **'ECU Upgrade'**.

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SUBJECT: NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #569**.

> 📖 **NOTICE**
>
> **The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.**
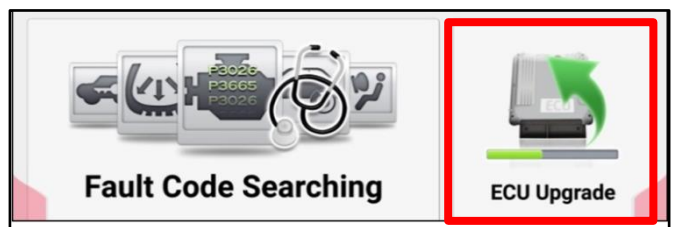
After the download is complete, the program will shut down to install. Please wait until the program restarts.

| 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 **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.**

Auto Mode **Manual Mode**
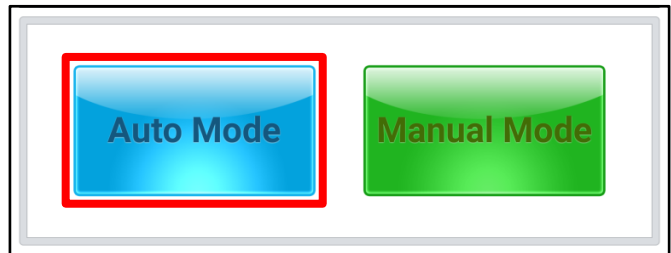
7. Select the **ENGINE** system under the System selection menu.
Touch ID Check (D) and confirm that the latest update is available.
Select **Upgrade Event #569**, and select **Upgrade** to continue.

● System

ENGINE A/T

D

● ROM ID

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

● 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-ll. 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)
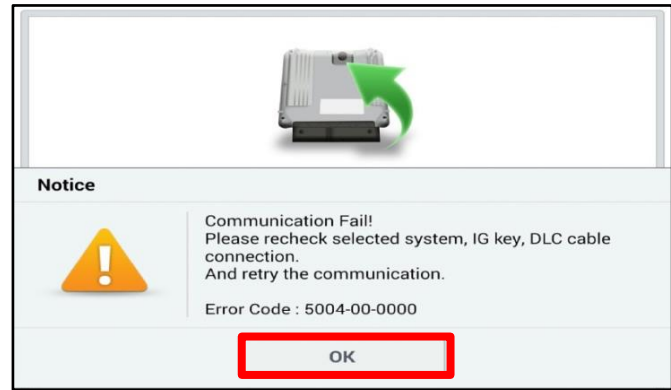
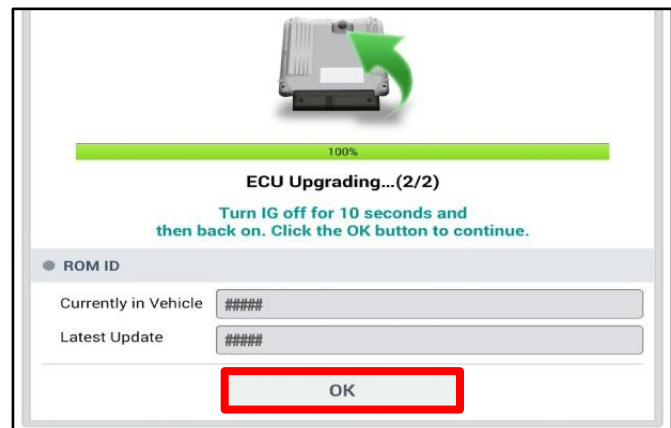ECU is in the process of being upgraded. Please wait a few minute.

9. <u>If a "Communication Fail" screen appears</u>, verify that the VCI-II and KDS are communicating properly. Select **'OK'** and restart the procedure from step 4.
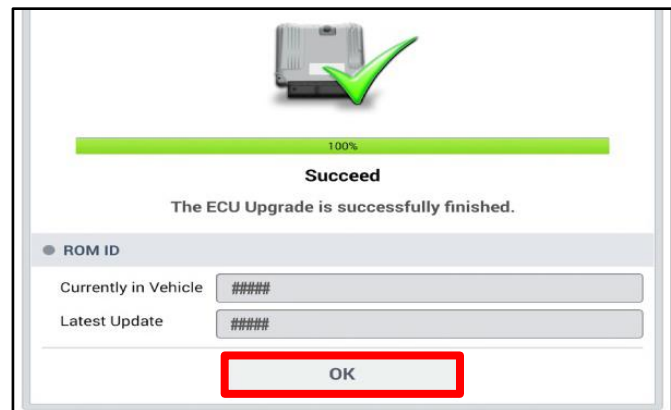
> 📄 **NOTICE**
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**
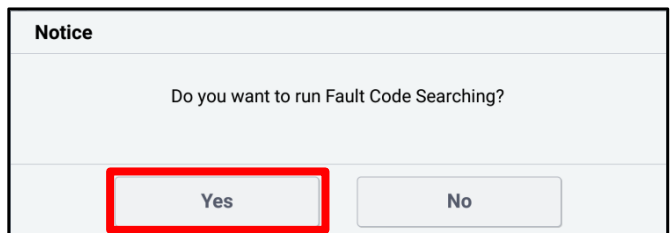

Notice
Communication Fail!
Please recheck selected system, IG key, DLC cable connection.
And retry the communication.
Error Code : 5004-00-0000
OK

10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Select **'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, select **'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

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

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NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

SUBJECT:

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

Menu	Password
YD NU 2.0GDI ULEV 4/5 Door MT +IMMO/SMK (17MY) : 39131-2EYG7	3520
YD NU 2.0GDI ULEV 4/5 Door -IMMO (17MY) : 39135-2EYG7	3521
YD NU 2.0GDI ULEV 4/5 Door AT +IMMO/SMK (17MY) : 39131-2EYG2	3522
YD NU 2.0GDI ULEV 4/5 Door -IMMO (17MY) : 39135-2EYG2	3523
YD NU 2.0GDI ULEV 2 Door MT +IMMO/SMK (17MY) : 39131-2EYE5	3524
YD NU 2.0GDI ULEV 2 Door -IMMO (17MY) : 39135-2EYE5	3525
YD NU 2.0GDI ULEV 2 Door AT +IMMO/SMK (17MY) : 39131-2EYE0	3526
YD NU 2.0GDI ULEV 2 Door -IMMO (17MY) : 39135-2EYE0	3527
YD NU 2.0GDI ULEV 4/5 Door MT +IMMO/SMK (18MY) : 39131-2EYG8	3528
YD NU 2.0GDI ULEV 4/5 Door -IMMO (18MY) : 39135-2EYG8	3529
YD NU 2.0GDI ULEV 4/5 Door AT +IMMO/SMK (18MY) : 39131-2EYG3	3530
YD NU 2.0GDI ULEV 4/5 Door -IMMO (18MY) : 39135-2EYG3	3531
YD NU 2.0GDI ULEV 2 Door MT +IMMO/SMK (18MY) : 39131-2EYE7	3532
YD NU 2.0GDI ULEV 2 Door -IMMO (18MY) : 39135-2EYE7	3533
YD NU 2.0GDI ULEV 2 Door AT +IMMO/SMK (18MY) : 39131-2EYE2	3534
YD NU 2.0GDI ULEV 2 Door -IMMO (18MY) : 39135-2EYE2	3535
YD NU 2.0GDI ULEV 4 Door MT +IMMO/SMK (17MY) : 39131-2EYG5	3536
YD NU 2.0GDI ULEV 4 Door -IMMO (17MY) : 39135-2EYG5	3537
YD NU 2.0GDI ULEV 4 Door AT +IMMO/SMK (17MY) : 39131-2EYG0	3538
YD NU 2.0GDI ULEV 4 Door -IMMO (17MY) : 39135-2EYG0	3539
YD NU 2.0GDI SULEV 4 Door AT +IMMO/SMK (17MY) : 39131-2EYH0	3540
YD NU 2.0GDI SULEV 4 Door -IMMO (17MY) : 39135-2EYH0	3541
YD NU 2.0GDI ULEV 4 Door MT +IMMO/SMK (18MY) : 39132-2EYG5	3542
YD NU 2.0GDI ULEV 4 Door -IMMO (18MY) : 39136-2EYG5	3543
YD NU 2.0GDI ULEV 4 Door AT +IMMO/SMK (18MY) : 39132-2EYG0	3544
YD NU 2.0GDI ULEV 4 Door -IMMO (18MY) : 39136-2EYG0	3545
YD NU 2.0GDI SULEV 4 Door AT +IMMO/SMK (18MY) : 39132-2EYH0	3546
YD NU 2.0GDI SULEV 4 Door -IMMO (18MY) : 39136-2EYH0	3547

SUBJECT:

NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

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

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #569** 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. Select **OK**.

7. Once the upgrade is complete, select **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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TSB: PI2106 Forte (YD/YDm) October 2021

SUBJECT:	NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2106)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Forte (YD/YDm)	May 19, 2016 to May 7, 2018

REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

WARRANTY INFORMATION:

N Code: X99   C Code: X99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N
YD	R	39131 2EYG2	0	(PI2106) KSDS Logic Improvement (YD/YDm)	210097R1	0.3 M/H	N/A
YDm					210M15R0		

> 📄 **NOTICE**
>
> **VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI2106 when accessing the WebDCS system.**