



GROUP	MODEL
Product Improvement	2016MY Forte, Forte Koup (YD) w/2.0L GDI
NUMBER	DATE
PI2105	August 2021

## PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: **NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2105)**

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 2016MY Forte and Forte Koup (YD) vehicles equipped with Nu 2.0L GDI engines, produced from April 13, 2015 through July 18, 2016.

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.**

## NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2105)

### ECU Upgrade Procedure:

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

Upgrade Event Name
532. YD Nu 2.0GDI Knock Sensor Detection System (KSDS) ECU UPGRADE (14~16MY)


#### NOTICE

- Confirm a fully charged battery (12.3 volts or higher is necessary) is used or 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 not 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' 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 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.

## NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2105)

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### ROM ID INFORMATION TABLE:

#### Upgrade Event #532

Model	Engine	EM	TM	IMMO 	ECU P/No.	ROM ID	
						Previous	New
YD (16MY)	Nu 2.0L GDI	ULEV	MT	Yes	39135 2EYB7	GGYD GNUAFS00600	GGYD GNUAFK00600
				No	39137 2EYB7	GGYD GNUAES00600	GGYD GNUAEK00600
				Yes	39135 2EYD1	GGYD GNUAFS01600	GGYD GNUAFK01600
				No	39137 2EYD1	GGYD GNUAES01600	GGYD GNUAEK01600
			AT	Yes	39131 2EYB7	GGYD GNUAQSO0C00	GGYD GNUAQK00C00
				No	39133 2EYB7	GGYD GNUAPSO0C00	GGYD GNUAPK00C00
				Yes	39131 2EYD1	GGYD GNUAQSO1C00	GGYD GNUAQK01C00
				No	39133 2EYD1	GGYD GNUAPSO1C00	GGYD GNUAPK01C00
			MT	Yes	39135 2EYB8	GGYD GNUAFSC0600	GGYD GNUAFKC0600
				No	39137 2EYB8	GGYD GNUAESC0600	GGYD GNUAEKC0600
				Yes	39135 2EYE1	GGYD GNUAFSC1600	GGYD GNUAFKC1600
				No	39137 2EYE1	GGYD GNUAESC1600	GGYD GNUAEKC1600
			AT	Yes	39131 2EYB8	GGYD GNUAQSC0C00	GGYD GNUAQKC0C00
				No	39133 2EYB8	GGYD GNUAPSC0C00	GGYD GNUAPKC0C00
				Yes	39131 2EYE1	GGYD GNUAQSC1C00	GGYD GNUAQKC1C00
				No	39133 2EYE1	GGYD GNUAPSC1C00	GGYD GNUAPKC1C00
		SULEV	AT	Yes	39131 2EYC7	GGYD GNSAQSO0C00	GGYD GNSAQK00C00
				No	39133 2EYC7	GGYD GNSAPS00C00	GGYD GNSAPK00C00
				Yes	39131 2EYD2	GGYD GNSAQSO1C00	GGYD GNSAQK01C00
				No	39133 2EYD2	GGYD GNSAPSO1C00	GGYD GNSAPK01C00

*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.*

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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**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**

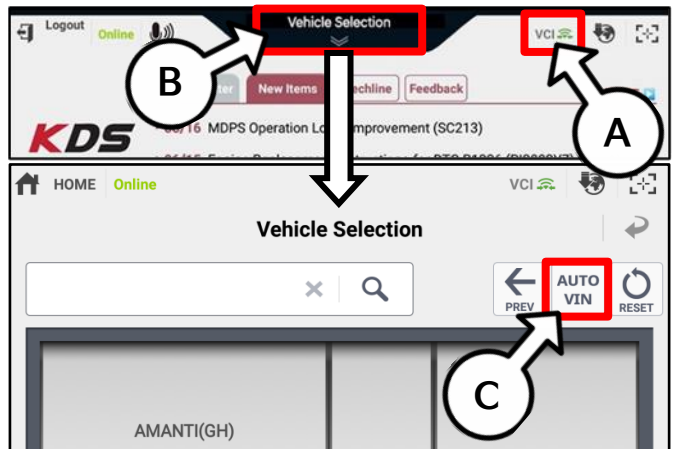
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



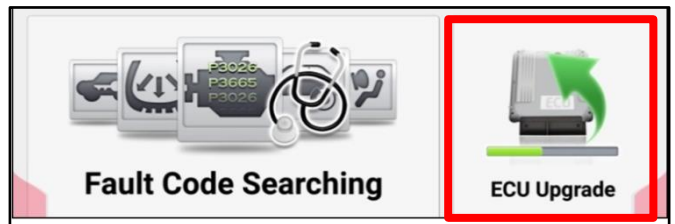
2. With the ignition ON, turn ON the KDS tablet. Select 'KDS' from the home screen.



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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- The KDS will check the server for recently uploaded Events and then automatically download Upgrade Event #532.

**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

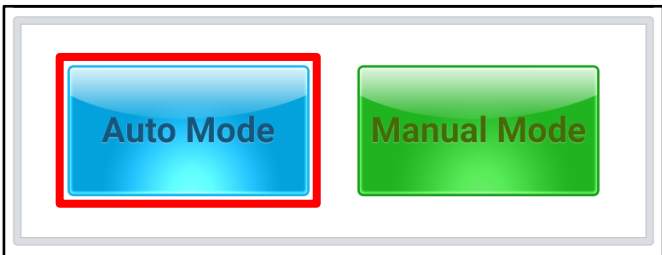
36%

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.

**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.



- Select the ENGINE system under the System selection menu. Touch ID Check (D) and confirm that the latest update is available. Select Upgrade Event #532, and select Upgrade to continue.

System selection menu with ENGINE and A/T options. ID Check button (D) is highlighted. Upgrade button is also highlighted.

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

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

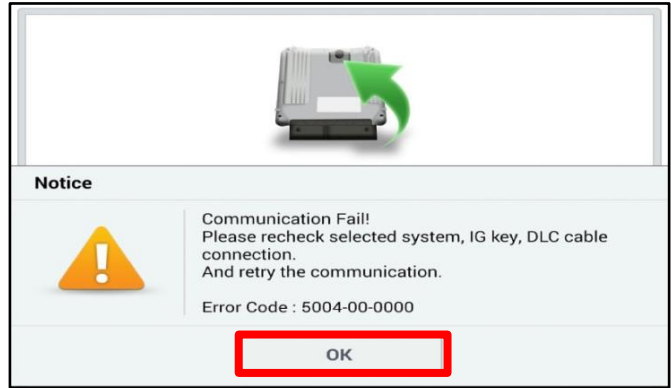
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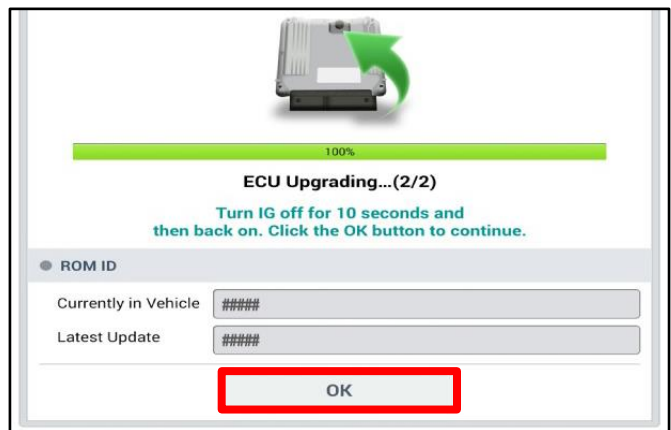
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Select 'OK' and restart the procedure from step 4.

### NOTICE

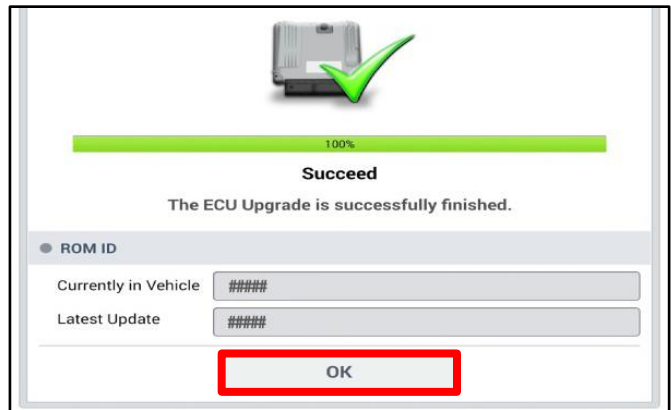
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



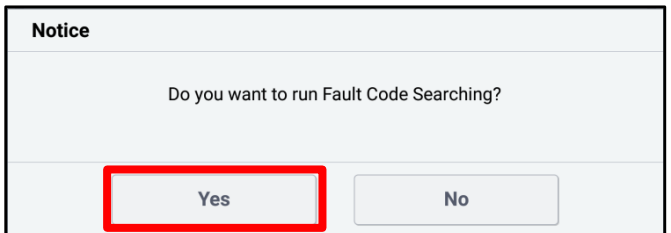
10. When instructed on the KDS, turn the ignition OFF for ten (10) seconds then back on. Select 'OK' to continue.



11. Once the upgrade is complete, select '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 normal operation of the vehicle.



SUBJECT:

## NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2105)

### 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(16MY) : 39135-2EYB7	3542
YD Nu 2.0GDI ULEV 4/5 Door MT -IMMO(16MY) : 39137-2EYB7	3543
YD Nu 2.0GDI ULEV 4/5 Door MT +IMMO/SMK(16MY) : 39135-2EYD1	3544
YD Nu 2.0GDI ULEV 4/5 Door MT -IMMO(16MY) : 39137-2EYD1	3545
YD Nu 2.0GDI ULEV 4/5 Door AT +IMMO/SMK(16MY) : 39131-2EYB7	3546
YD Nu 2.0GDI ULEV 4/5 Door AT -IMMO(16MY) : 39133-2EYB7	3547
YD Nu 2.0GDI ULEV 4/5 Door AT +IMMO/SMK(16MY) : 39131-2EYD1	3548
YD Nu 2.0GDI ULEV 4/5 Door AT -IMMO(16MY) : 39133-2EYD1	3549
YD Nu 2.0GDI ULEV 2 Door MT +IMMO/SMK(16MY) : 39135-2EYB8	3550
YD Nu 2.0GDI ULEV 2 Door MT -IMMO(16MY) : 39137-2EYB8	3551
YD Nu 2.0GDI ULEV 2 Door MT +IMMO/SMK(16MY) : 39135-2EYE1	3552
YD Nu 2.0GDI ULEV 2 Door MT -IMMO(16MY) : 39137-2EYE1	3553
YD Nu 2.0GDI ULEV 2 Door AT +IMMO/SMK(16MY) : 39131-2EYB8	3554
YD Nu 2.0GDI ULEV 2 Door AT -IMMO(16MY) : 39133-2EYB8	3555
YD Nu 2.0GDI ULEV 2 Door AT +IMMO/SMK(16MY) : 39131-2EYE1	3556
YD Nu 2.0GDI ULEV 2 Door AT -IMMO(16MY) : 39133-2EYE1	3557
YD Nu 2.0GDI SULEV 4/5 Door AT +IMMO/SMK(16MY) : 39131-2EYC7	3558
YD Nu 2.0GDI SULEV 4/5 Door AT -IMMO(16MY) : 39133-2EYC7	3559
YD Nu 2.0GDI SULEV 4/5 Door AT +IMMO/SMK(16MY) : 39131-2EYD2	3560
YD Nu 2.0GDI SULEV 4/5 Door AT -IMMO(16MY) : 39133-2EYD2	3561

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #532** 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. 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.



SUBJECT:

## NU 2.0L GDI - KNOCK SENSOR DETECTION SYSTEM (KSDS) ECU LOGIC IMPROVEMENT (PI2105)

### AFFECTED VEHICLE RANGE:

Model	Production Date Range
Forte, Forte Koup (YD)	April 13, 2015 to July 18, 2016

### REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

### WARRANTY INFORMATION:

**N Code: X99 C Code: X99**

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	39133 2EYD1	0	(PI2105) KSDS Logic Improvement (YD)	210097R0	0.3 M/H	N/A	0

### NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI2105 when accessing the WebDCS system.