PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: 1.6L GDI KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT (PI2002A)

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 vehicles listed below:

Year	Model	Engine	Production Date
2012-2013	Soul (AM)	Gamma 1.6L GDI	July 8, 2011 to October 2, 2013
2014-2016	Soul (PS)		July 26, 2013 to August 11, 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.

★ 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

SUBJECT:	1.6L GDI KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT

ECU Upgrade Procedure:

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

Upgrade Event Name
467. PS GAMMA 1.6GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (14~16MY)
468. AM GAMMA 1.6GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (12~13MY)

★ 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.**

1.6L GDI KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT

★ 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 #467 (PS), #468 (AM)

Model	EM	TM	ISG	IMMO	ECU P/No.	ROM ID Previous	ROM ID New
(AM) 12-13	ULEV	MT	No	No	39110-2BCG0 39110-2BCJ0	GGAM-BNU6ES00600 GGAM-BNU6ES01600 GGAM-BNU6ES02600 GGAM-BNU6ES03600 GGAM-BNU6ES04600 GGAM-BNU6ES05600 GGAM-BNU6ES06600 GGAM-BNU6ES07600 GGAM-BNU6ES08600 GGAM-DNU6ES00600 GGAM-DNU6ES01600 GGAM-DNU6ES02600 GGAM-DNU6ES03600 GGAM-DNU6ES04600 GGAM-DNU6ES05600 GGAM-DNU6EF05600 GGAM-DNU6EF06600 GGAM-DNU6EF07600 GGAM-DNU6EF08600	GGAM-DNU6EK08600
				Yes	39110-2BCH0 39110-2BCK0	GGAM-BNU6FS00600 GGAM-BNU6FS01600 GGAM-BNU6FS02600 GGAM-BNU6FS03600 GGAM-BNU6FS04600 GGAM-BNU6FS05600 GGAM-BNU6FS06600 GGAM-BNU6FS07600 GGAM-BNU6FS08600 GGAM-DNU6FS00600 GGAM-DNU6FS01600 GGAM-DNU6FS02600 GGAM-DNU6FS03600 GGAM-DNU6FS04600 GGAM-DNU6FS05600 GGAM-DNU6FF05600 GGAM-DNU6FF06600 GGAM-DNU6FF07600 GGAM-DNU6FF08600	GGAM-DNU6FK08600

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TSB: PI2002A Soul (AM, PS) February 2020

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Model	EM	TM	ISG	IMMO	ECU P/No.	ROM ID	
						Previous	New
(AM) 12-13	ULEV	AT	No	No	39110-2BCG5 39110-2BCG2 39110-2BCC1	GGAM-BNU6PS00C00 GGAM-BNU6PS01C00 GGAM-BNU6PS02C00 GGAM-BNU6PS03C00 GGAM-BNU6PS04C00 GGAM-BNU6PS05C00 GGAM-BNU6PS06C00 GGAM-BNU6PS07C00 GGAM-BNU6PS08C00 GGAM-DNU6PS00C00 GGAM-DNU6PS01C00 GGAM-DNU6PS02C00 GGAM-DNU6PS03C00 GGAM-DNU6PS04C00 GGAM-DNU6PS05C00 GGAM-DNU6PS06C00 GGAM-DNU6PS07C00 GGAM-DNU6PF07C00 GGAM-DNU6PF08C00 GGAM-DNU6PF09C00 GGAM-DNU6PF0AC00	GGAM-DNU6PK0AC00
				Yes	39110-2BCH5 39110-2BCH2 39110-2BCD1	GGAM-BNU6QS00C00 GGAM-BNU6QS01C00 GGAM-BNU6QS02C00 GGAM-BNU6QS03C00 GGAM-BNU6QS04C00 GGAM-BNU6QS05C00 GGAM-BNU6QS06C00 GGAM-BNU6QS07C00 GGAM-BNU6QS08C00 GGAM-DNU6QS00C00 GGAM-DNU6QS01C00 GGAM-DNU6QS02C00 GGAM-DNU6QS03C00 GGAM-DNU6QS04C00 GGAM-DNU6QS05C00 GGAM-DNU6QS06C00 GGAM-DNU6QS07C00 GGAM-DNU6QF07C00 GGAM-DNU6QF08C00 GGAM-DNU6QF09C00 GGAM-DNU6QF0AC00	GGAM-DNU6QK0AC00

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Model	EM	TM	ISG	IMMO	ECU P/No.	ROM ID Previous	ROM ID New
(AM) 12-13	ULEV	AT	Yes	No	39110-2BCE1 39110-2BCG3 39110-2BCG8	GIAM-BNU6PS00C00 GIAM-BNU6PS01C00 GIAM-BNU6PS02C00 GIAM-BNU6PS03C00 GIAM-BNU6PS04C00 GIAM-BNU6PS06C00 GIAM-BNU6PS07C00 GIAM-BNU6PS08C00 GIAM-DNU6PS00C00 GIAM-DNU6PS01C00 GIAM-DNU6PS02C00 GIAM-DNU6PS03C00 GIAM-DNU6PF03C00 GIAM-DNU6PF04C00 GIAM-DNU6PF05C00	GIAM-DNU6PK05C00
				Yes	39110-2BCF1 39110-2BCH3 39110-2BCH8	GIAM-BNU6QS00C00 GIAM-BNU6QS01C00 GIAM-BNU6QS02C00 GIAM-BNU6QS03C00 GIAM-BNU6QS04C00 GIAM-BNU6QS06C00 GIAM-BNU6QS07C00 GIAM-BNU6QS08C00 GIAM-DNU6QS00C00 GIAM-DNU6QS01C00 GIAM-DNU6QS02C00 GIAM-DNU6QS03C00 GIAM-DNU6QF03C00 GIAM-DNU6QF04C00 GIAM-DNU6QF05C00	GIAM-DNU6QK05C00

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1.6L GDI KNOCK SENSOR DETECTION SYSTEM (KSDS) LOGIC IMPROVEMENT

Model	EM	TM	ISG	IMMO	ECU P/No.	ROM ID Previous	ROM ID New
(PS) 14MY	ULEV	MT	No	Yes	39110-2BSG0	GGPS-DNU6FS00600 GGPS-DNU6FS01600 GGPS-DNU6FF01600 GGPS-DNU6FF02600 GGPS-DNU6FF03600 GGPS-DNU6FF04600	GGPS-DNU6FK04600
				No	39110-2BSH0	GGPS-DNU6ES00600 GGPS-DNU6ES01600 GGPS-DNU6EF01600 GGPS-DNU6EF02600 GGPS-DNU6EF03600 GGPS-DNU6EF04600	GGPS-DNU6EK04600
(PS) 14MY	ULEV	AT	No	Yes	39110-2BSG5	GGPS-DNU6QS00C00 GGPS-DNU6QS01C00 GGPS-DNU6QF01C00 GGPS-DNU6QF02C00 GGPS-DNU6QF03C00 GGPS-DNU6QF04C00	GGPS-DNU6QK04C00
				No	39110-2BSH5	GGPS-DNU6PS00C00 GGPS-DNU6PS01C00 GGPS-DNU6PF01C00 GGPS-DNU6PF02C00 GGPS-DNU6PF03C00 GGPS-DNU6PF04C00	GGPS-DNU6PK04C00

SUBJECT:

Model	EM	TM	ISG	IMMO	ECU P/No.	ROM ID Previous	ROM ID New
(PS) 15-16MY	ULEV	MT	No	Yes	39110-2BSG1 39110-2BSF3	GGPS-FNU6FS00600 GGPS-FNU6FS01600 GGPS-FNU6FS02600 GGPS-FNU6FF02600 GGPS-FNU6FF03600 GGPS-FNU6FF04600 GGPS-GNU6FS00600 GGPS-GNU6FS01600 GGPS-GNU6FF01600 GGPS-GNU6FF02600	GGPS-GNU6FK02600
				No	39110-2BSH1 39110-2BSG3	GGPS-FNU6ES00600 GGPS-FNU6ES01600 GGPS-FNU6ES02600 GGPS-FNU6EF02600 GGPS-FNU6EF03600 GGPS-FNU6EF04600 GGPS-GNU6ES00600 GGPS-GNU6ES01600 GGPS-GNU6EF01600 GGPS-GNU6EF02600	GGPS-GNU6EK02600
(PS) 15-16MY	ULEV	AT	No	Yes	39110-2BSG6 39110-2BSG7 39110-2BSD8	GGPS-FNU6QS00C00 GGPS-FNU6QS01C00 GGPS-FNU6QS02C00 GGPS-FNU6QF02C00 GGPS-FNU6QF03C00 GGPS-FNU6QF04C00 GGPS-GNU6QS00C00 GGPS-GNU6QS01C00 GGPS-GNU6QF01C00 GGPS-GNU6QF02C00	GGPS-GNU6QK02C00
				No	39110-2BSH6 39110-2BSH7 39110-2BSE8	GGPS-FNU6PS00C00 GGPS-FNU6PS01C00 GGPS-FNU6PS02C00 GGPS-FNU6PF02C00 GGPS-FNU6PF03C00 GGPS-FNU6PF04C00 GGPS-GNU6PS00C00 GGPS-GNU6PS01C00 GGPS-GNU6PF01C00 GGPS-GNU6PF02C00	GGPS-GNU6PK02C00

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.

★ NOTICE

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

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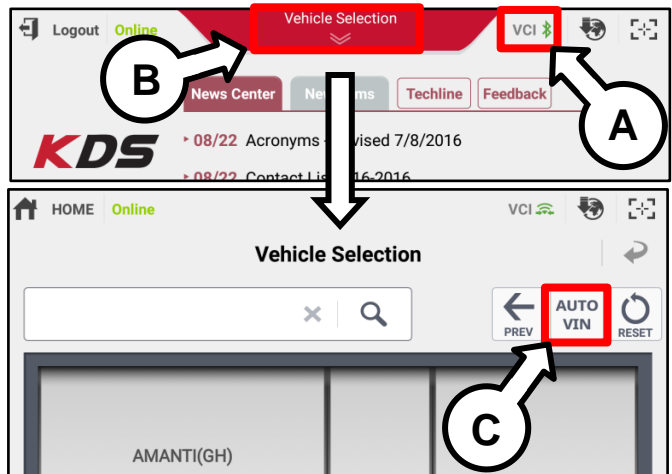
   ### ★ NOTICE

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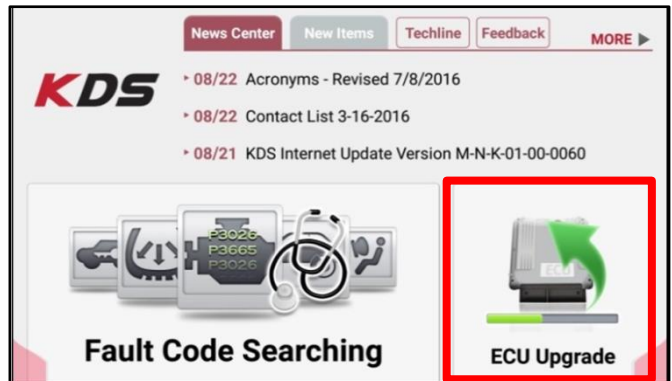

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

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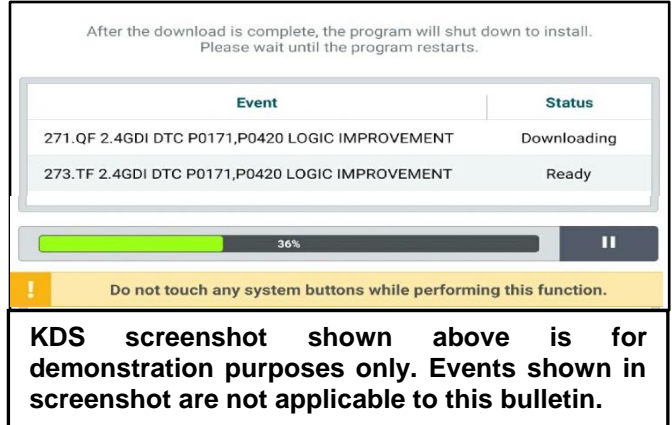

4. Select **ECU Upgrade**.

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5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #467 (PS) or #468 (AM).**
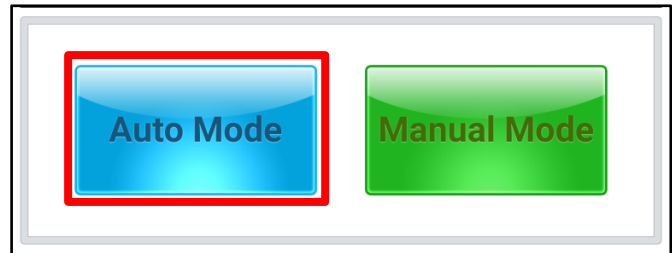
> ★ **NOTICE**
>
> **The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.**

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.
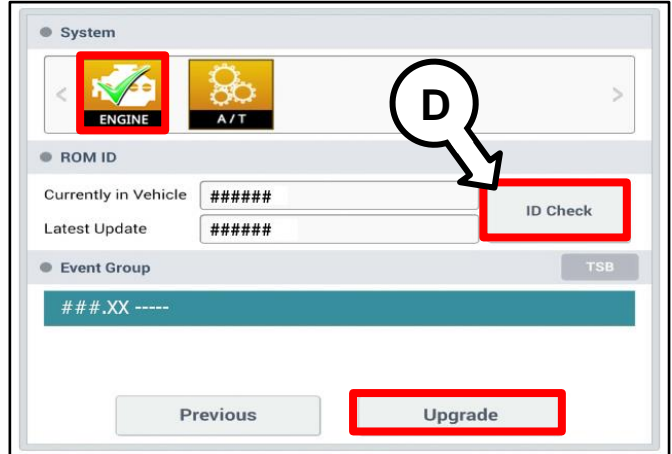
6. Select **Auto Mode**.

> ⚠ **CAUTION**
>
> **Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. 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.

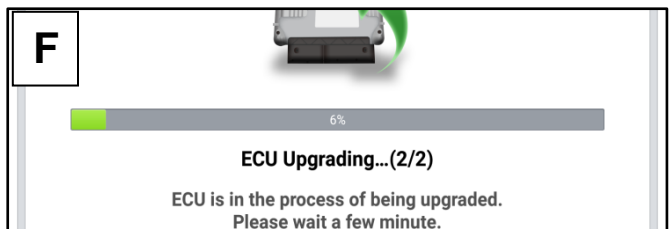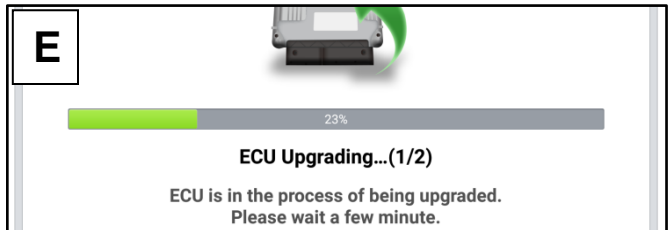Touch **ID Check** (D) and confirm that the latest update is available.

Select **Upgrade Event #467 (PS) or #468 (AM)** 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-II. Upgrade part (2/2) (F) will upgrade the ECU.

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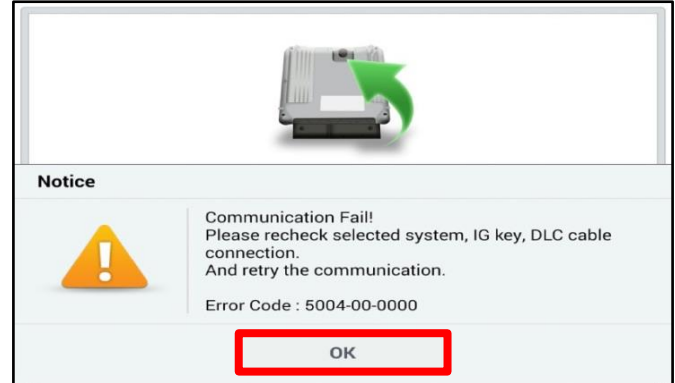> **Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.**

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.

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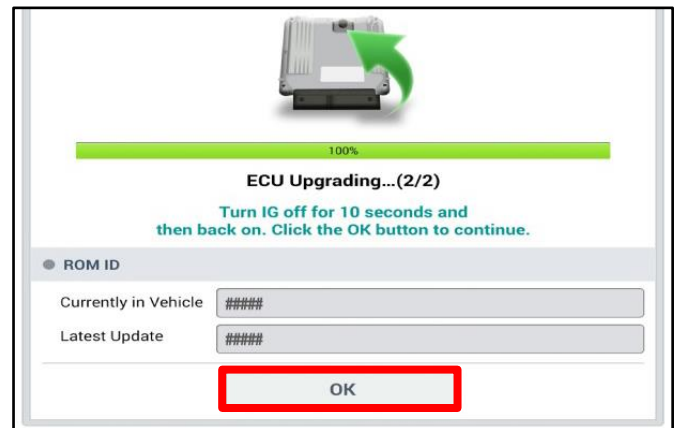TSB: PI2002A Soul (AM, PS) February 2020

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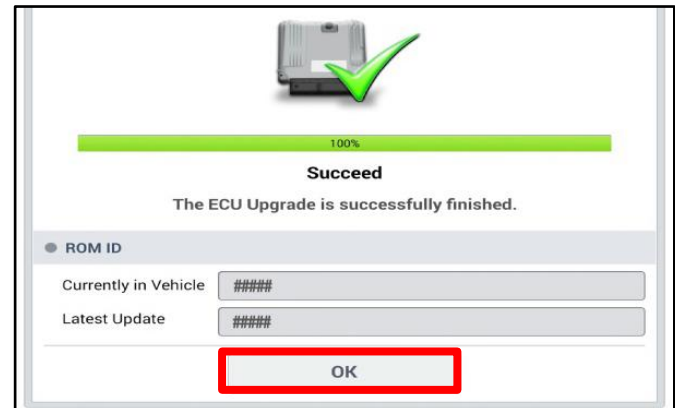
> **★ NOTICE**
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**
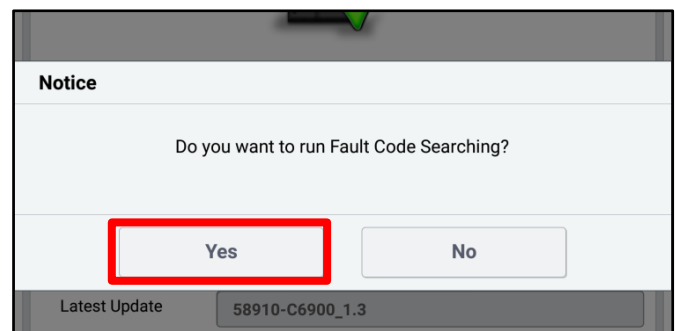
Notice

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 Upgrade Procedure:

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★ NOTICE
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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
PS GAMMA 1.6GDI ULEV MT -ISG -IMMO(14MY) : 39110-2BSH0	1020
PS GAMMA 1.6GDI ULEV MT -ISG +IMMO/SMK(14MY) : 39110-2BSG0	1021
PS GAMMA 1.6GDI ULEV AT -ISG -IMMO(14MY) : 39110-2BSH5	1025
PS GAMMA 1.6GDI ULEV AT -ISG +IMMO/SMK(14MY) : 39110-2BSG5	1026
PS GAMMA 1.6GDI ULEV MT -ISG -IMMO(15~16MY) : 39110-2BSH1/G3	1023
PS GAMMA 1.6GDI ULEV MT -ISG +IMMO/SMK(15~16MY) : 39110-2BSG1/F3	1024
PS GAMMA 1.6GDI ULEV AT -ISG -IMMO(15~16MY) : 39110-2BSH6/H7/E8	1028
PS GAMMA 1.6GDI ULEV AT -ISG +IMMO/SMK(15~16MY) : 39110-2BSG6/G7/D8	1029
AM GAMMA 1.6GDI MT -ISG -IMMO(12~13MY) : 39110-2BCG0/J0	1020
AM GAMMA 1.6GDI MT -ISG +IMMO/SMK(12~13MY) : 39110-2BCH0/K0	1021
AM GAMMA 1.6GDI AT -ISG -IMMO(12~13MY) : 39110-2BCG5/G2/C1	1025
AM GAMMA 1.6GDI AT -ISG +IMMO/SMK(12~13MY) : 39110-2BCH5/H2/D1	1026
AM GAMMA 1.6GDI AT +ISG -IMMO(12~13MY) : 39110-2BCE1/G3/G8	1028
AM GAMMA 1.6GDI AT +ISG +IMMO/SMK(12~13MY) : 39110-2BCF1/H3/H8	1029

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

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #467 (PS) or #468 (AM)** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on pages 3-7, 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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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Soul (AM)	July 8, 2011 to October 2, 2013
Soul (PS)	July 26, 2013 to August 11, 2016

WARRANTY INFORMATION:
N Code: N99   C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
AM	R	39110 2BCG0	0	(PI2002A) 1.6L GDI KSDS ECM Logic Improvement	200002R0	0.3 M/H	N/A	0
PS		39110 2BSH6			200003R0			