	GROUP	MODEL
	ELE	**2015-17MY Soul EV (PS EV)**
	NUMBER	DATE
	137	**October 2017**

TECHNICAL SERVICE BULLETIN

SUBJECT: SERVICE ACTION: OBC UPDATE, INSPECTION AND/OR REPLACEMENT (SA306)

This bulletin provides the procedure to update, inspect, and if necessary, replace the On-Board Charger (OBC) on some 2015-17MY Soul EV (PS EV) vehicles, produced from July 15, 2014 through January 15, 2017, which may exhibit a Malfunction Indicator Lamp (MIL) ON with DTCs P1CF1 through P1CF6. This may be due to a battery charge delay with the OBC. To correct this concern, follow the procedure outlined in this bulletin. Before conducting this procedure, verify that the vehicle is included in the list of affected VINs.

DTCs:

P1CF1 – HV DC Interlock Off Fault
P1CF2 – HV DC Out of Range
P1CF3 – PD Line Open Fault
P1CF4 – OBC Over Temperature
P1CF5 – 1st Link Unstable
P1CF6 – AC Voltage Not Detected (EVSE or OBC Check)



✶ NOTICE

A Service Action is a repair program without customer notification that is performed during the warranty period. Any dealer requesting to perform this repair outside the warranty period will require DPSM approval.

Repair status for a VIN is provided on WebDCS (Service → Warranty Coverage → Warranty Coverage Inquiry → Campaign Information). Not completed Recall / Service Action reports are available on WebDCS (Consumer Affairs → Not Completed Recall → Recall VIN → Select Report), which includes a list of affected vehicles.

This issue number is SA306.

File Under: <Electrical>

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

SUBJECT: SERVICE ACTION: OBC UPDATE, INSPECTION AND/OR REPLACEMENT (SA306)

ECU Upgrade Procedure:

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

Upgrade Event Name
344. PS EV OBC LOGIC IMPROVEMENT

✶ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **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, 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.

NOTE: There are two (2), and possibly three (3), steps to this Service Action.

1. **OBC ECU Update**
2. **OBC Test – Three (3) charge cyles of three (3) minute intervals and checking for DTCs.**
3. **Replace the OBC only if DTCs are present after step 2.**

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ROM ID INFORMATION TABLE:

Upgrade Event #344

Model	ECU P/No.	ROM ID	
		Previous	New
Soul EV (PS EV)	36400 0E040	PRI8HB4214 PRI9HC4411 PRI9ID4428 PRIAID4508 PRJAKD4618 PRJALD4626 PRJBLE4B21 PRJCMF5213 PRKDNG5C11 PRKDMI6622	SRKDNJ7411

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECU ROM ID and reference the Information Table as necessary.

✶ NOTICE

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

OBC ECU Upgrade

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.

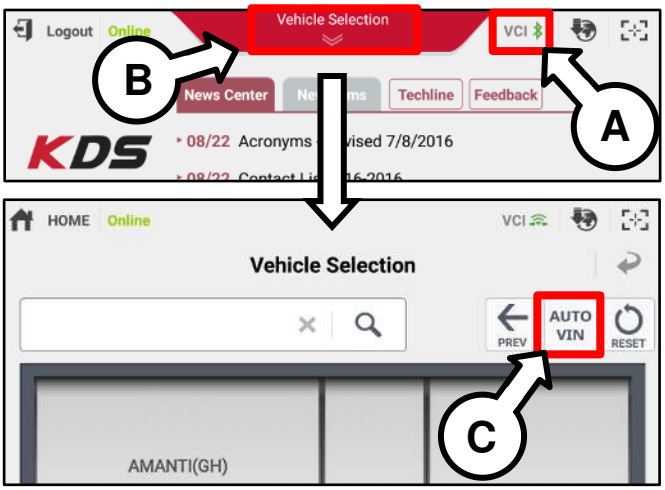
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



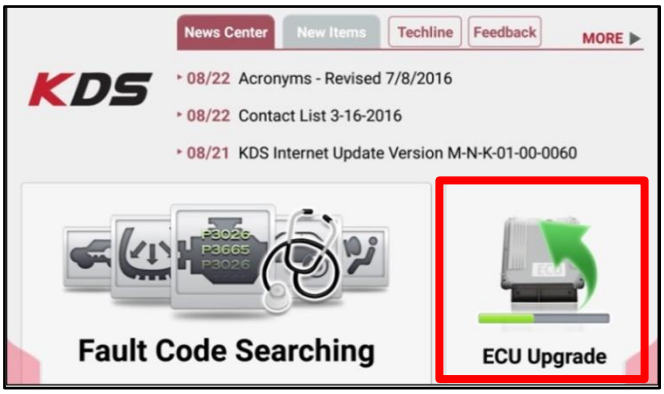
✶ NOTICE

Verify that the vehicle is "ON" and not in "READY" mode before proceeding with the update.

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



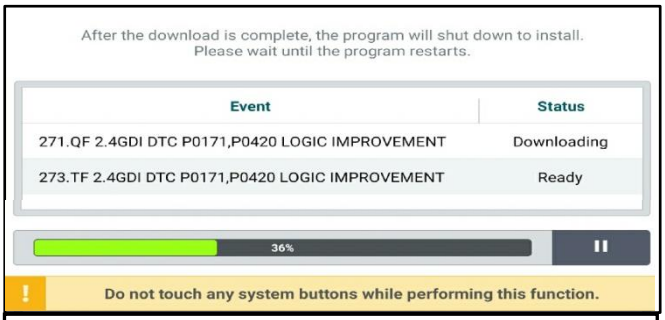
4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded events and then automatically download **Upgrade Event #344.**

✶ NOTICE

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



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 KDS in either Auto or Manual mode.



7. Select **OBC** system under the System selection menu.

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

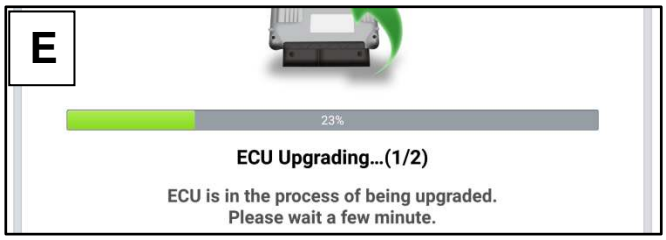
   Select **Upgrade Event #344** and select **Upgrade** to continue.

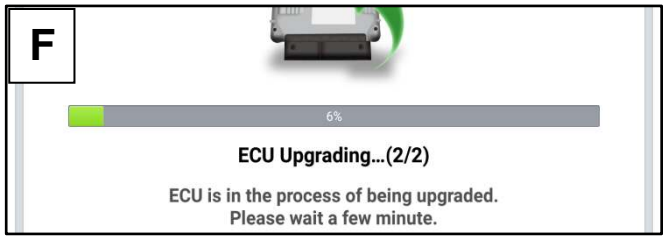


8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

⚠ CAUTION

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

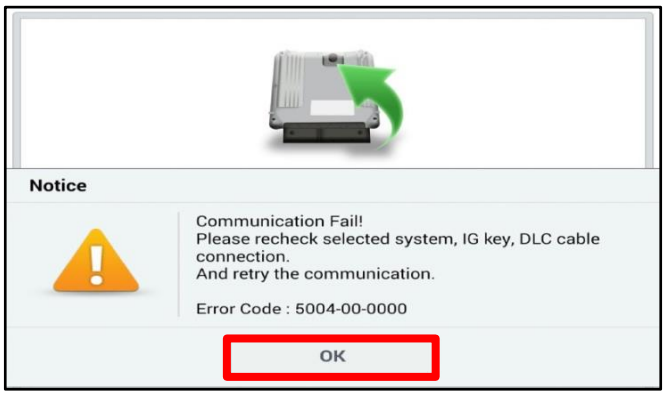




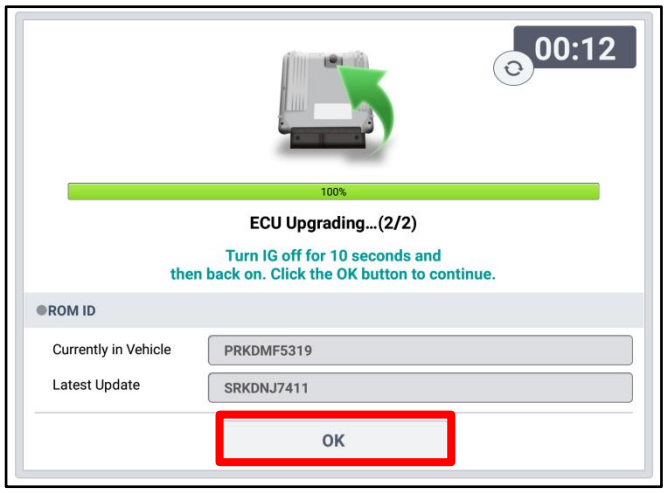
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

★ NOTICE

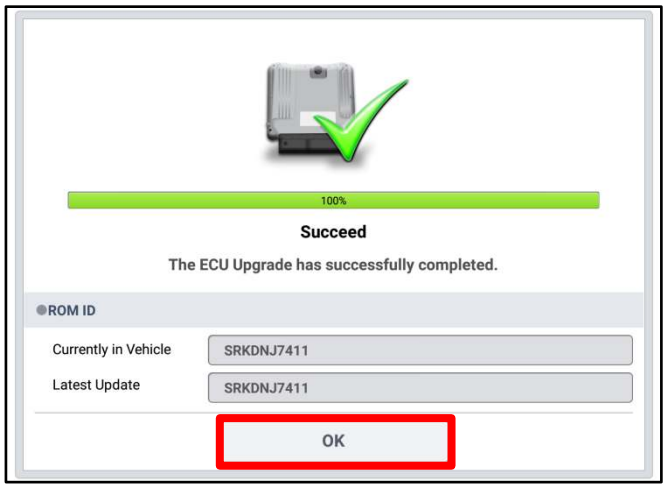
If an error notice continues to appear or if the upgrade cannot be performed, contact Techline or GIT America Help Desk.



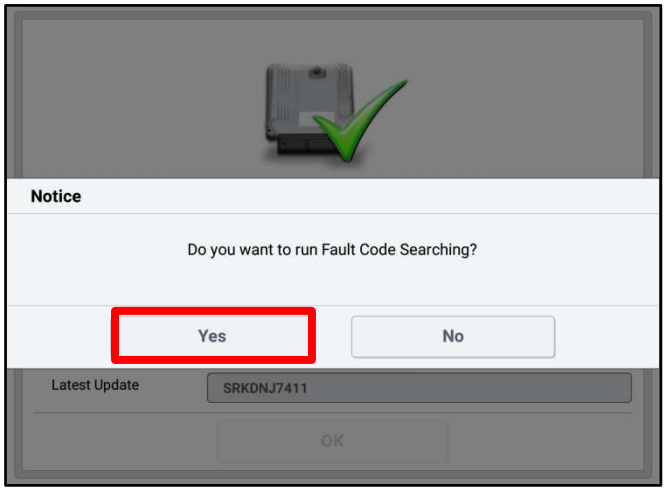
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



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.



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
PS EV OBC : 36400-0E040	0040

1. Within the ECU Upgrade screen displayed, select **Manual Mode** and then select **Upgrade Event #344**.

2. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3, and select **OK**.

3. Enter the appropriate password from the Manual Mode password table above and select **OK**.

4. The upgrade will begin and the progress of the upgrade will appear on the bar graph.

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

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

7. 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.

OBC Performance Test:

1. Perform three (3) charge cycles of three (3) minutes each by using either a 220v (Level 2) or 110v (Level 1) charger.

✶ NOTICE

Make sure the charge timer is not active by pressing the "Deactivate Reserved Charge" button on the lower left of the dash.



2. Check for DTCs with KDS after the 3rd charging cycle.

3. If any current DTC (P1FC1 ~ P1FC6) is displayed and a warning light is ON or there is a P1FC5 DTC stored in history, replace the OBC following the OBC Replacement Procedure below.

4. If no DTCs are present and the OBC is working properly, the repair is complete and the vehicle can be released.

OBC Replacement Procedure:

DANGER

When performing this procedure, follow all EV battery safety procedures found in the Service Materials → Service Info → EV Battery System → General Safety Information and Caution" chapter in the Shop Manual, and wear all required Personal Protection Equipment (PPE).

1. Replace the OBC by referring to the "Soul EV → EV Battery System → High Voltage Charging System → On Board Charger (OBC) → Repair procedures" chapter in the applicable Shop Manual on KGIS.

2. Check for proper charging after OBC replacement.

SUBJECT: SERVICE ACTION: OBC UPDATE, INSPECTION AND/OR REPLACEMENT (SA306)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Soul EV (PS EV)	July 15, 2014 through January 15, 2017

REQUIRED PART:

Part Name	Part Number	Figure
On Board Charger	36400 0E040QQK	

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.
V	36400 0E040	0	(SA306) OBC Logic Improvement & Inspection	170069R2	0.6 M/H	N/A	0
		0	(SA306) OBC Logic Improvement, Inspection, & Replacement	170069R3	1.7 M/H	36400 0E040QQK	1

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA306 when accessing the WebDCS system.