TECHNICAL SERVICE BULLETIN

SUBJECT:

SERVICE ACTION: 2.5L GDI WITH MIL ON DTC P2074XX ECM LOGIC IMPROVEMENT (SA489)

This bulletin provides the procedure to update the software logic of the Engine Control Module (ECM) system on some 2021-2022MY Sorento (MQ4a) vehicles with Theta 2.5L GDI engines, produced from September 30, 2020 through October 25, 2021, which may exhibit an MIL ON with DTC P2074XX due to throttle position to Mass Air Flow Sensor (MAF) correlation value reading error under high load. Follow the procedure outlined in this publication to apply the improved logic to the 'ECM' system using the KDS ECU Upgrade function as described in this bulletin. For confirmation that the latest reflash has been applied to a vehicle you are working on, verify the ROM ID using the table on page 3 of this bulletin.

DTC Description:
P2074OO/FO/F1: Manifold Absolute Pressure/Mass Air Flow/ Throttle Position Correlation at Higher Load

Kia Diagnostic System (KDS)

📄 **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 SA489.

SUBJECT:

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ECM LOGIC IMPROVEMENT (SA489)

ECU Upgrade Procedure:

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

Upgrade Event Name
580. MQ4a THETA 2.5GDI ENGINE MIL ON DTC (P2074) JUDGMENT LOGIC IMPROVEMENT

📄 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.

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ROM ID INFORMATION TABLE:

Upgrade Event #580

Model	EM	TM	IMMO	2WD/ AWD	ECU P/No.	ROM ID Previous	ROM ID New
MQ4a 21-22MY	2.5L GDI (ULEV70)	8AT (SBC)	Yes	2WD/ AWD	39120 2SMN0 39120 2SMN1	MACWN5GMAXXXXH0B MACWN5GMFXXXXG2C MACWN5GMFXXXXG3A MACWN5GMFXXXXH0A MACWN5GMGXXXXG2C MACWN5GMGXXXXG3A MACWN5GMGXXXXH0A	MACWN5GMAXXXXH0C
			No		39120 2SMM0 39120 2SMM1	MACWN5GSAXXXXH0B MACWN5GSFXXXXG2C MACWN5GSFXXXXG3A MACWN5GSFXXXXH0A MACWN5GSGXXXXG2C MACWN5GSGXXXXG3A MACWN5GSGXXXXH0A	MACWN5GSAXXXXH0C
			Yes	2WD	39120 2SMN2	MADWN5GMFXXXXK5A	MADWN5GMFXXXXK5B
				AWD	39120 2SMN3	MADWN5GMGXXXXK5A	MADWN5GMGXXXXK5B
			No	2WD	39120 2SMM2	MADWN5GSFXXXXK5A	MADWN5GSFXXXXK5B
				AWD	39120 2SMM3	MADWN5GSGXXXXK5A	MADWN5GSGXXXXK5B

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.

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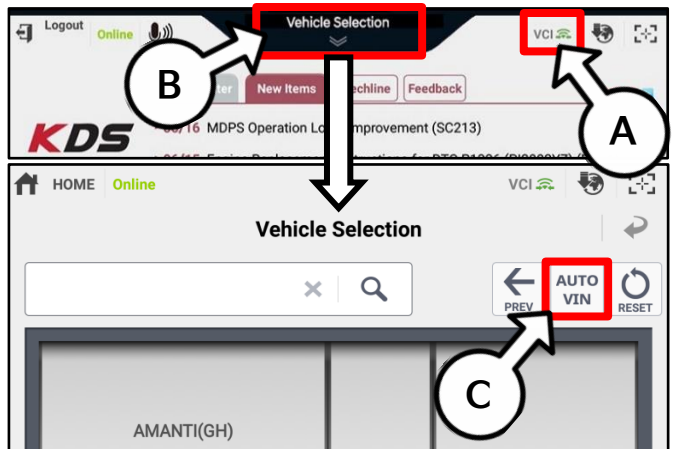
    📄 **NOTICE**

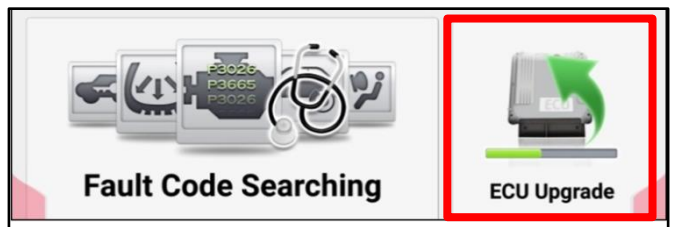   **The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**

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 #580**.

> 📄 **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.

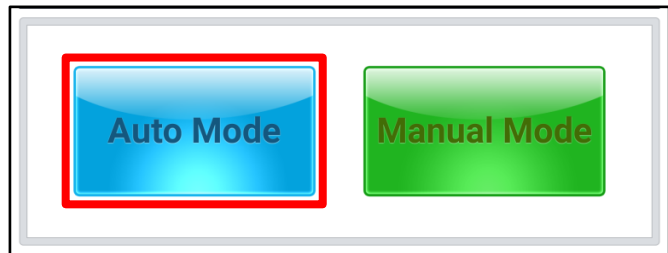| Event	Status
271.QF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Downloading
273.TF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Ready

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 #580**, 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)

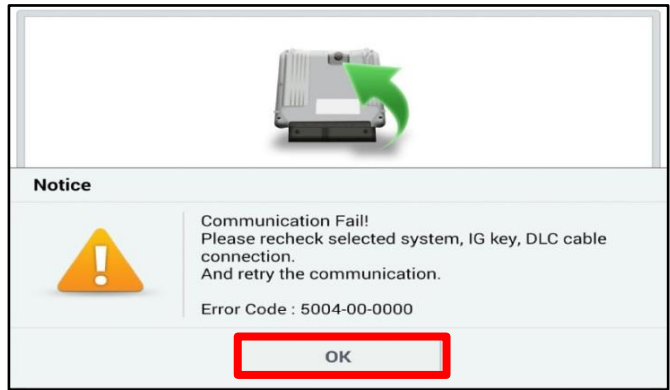ECU is in the process of being upgraded. Please wait a few minute.

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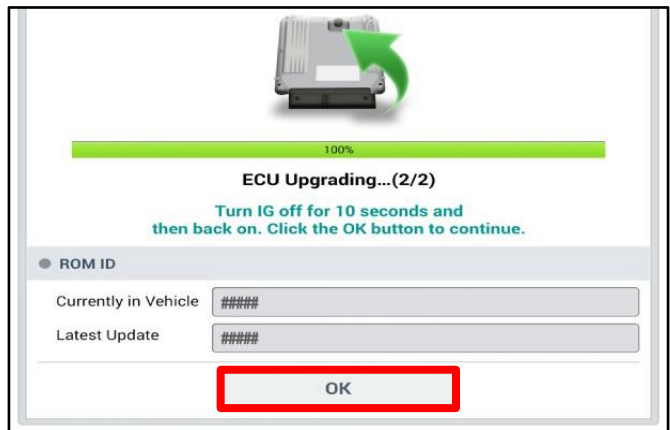|	SERVICE ACTION: 2.5L GDI WITH MIL ON DTC P2074XX
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9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Select **'OK'** and restart the procedure from step 4.
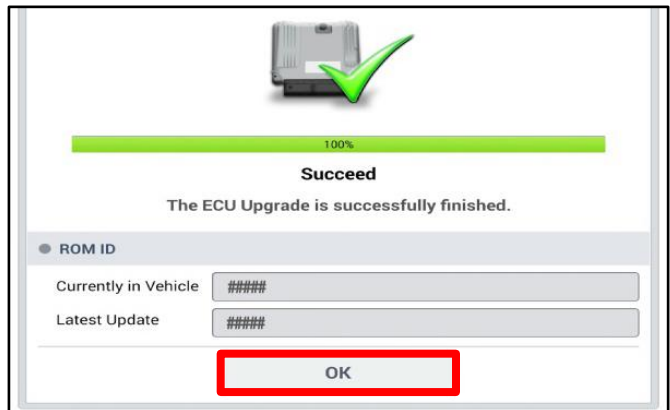
> 📄 **NOTICE**
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**
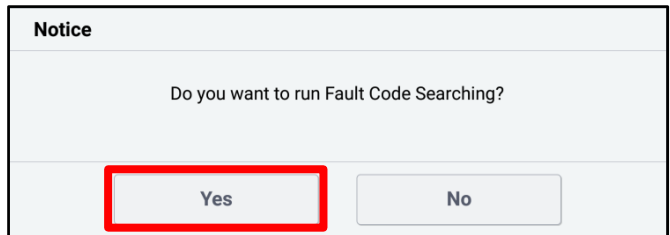

Notice

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.

KIA

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
MQ4 Theta 2.5GDI ULEV70 8AT +IMMO/SMK : 39120-2SMN0/1	0201
MQ4 Theta 2.5GDI ULEV70 8AT -IMMO : 39120-2SMM0/1	0202
MQ4 Theta 2.5GDI ULEV70 8AT +IMMO/SMK 2WD : 39120-2SMN2	1020
MQ4 Theta 2.5GDI ULEV70 8AT +IMMO/SMK 4WD : 39120-2SMN3	2023
MQ4 Theta 2.5GDI ULEV70 8AT -IMMO 2WD : 39120-2SMM2	2022
MQ4 Theta 2.5GDI ULEV70 8AT -IMMO 4WD : 39120-2SMM3	3912

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

2. Select the **Engine** system under the System selection menu. Select **Upgrade Event #580** 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.

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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (MQ4a)	September 30, 2020 to October 25, 2021

REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

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	39120 2SMN2	0	(SA489) ECM Upgrade	210A25R0	0.3 M/H	N/A	0

> 📄 **NOTICE**
>
> **VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA489 when accessing the WebDCS system.**

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