TECHNICAL SERVICE BULLETIN

SUBJECT: **NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT**

This bulletin provides the procedure to improve the logic of the Engine Control Module (ECM) software <u>and</u> clean the Electronic Throttle Control (ETC) on some 2019-2020MY Forte (BDm) vehicles equipped with NU 2.0L MPI Atkinson engine, which may exhibit a MIL with DTC P0101, and/or P0106 and/or P0068. To correct this concern, apply the improved logic to the ENGINE system using the KDS ECU Upgrade function <u>if any combination of the DTC(s)</u> are set and clean the ETC 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 pages 3-4 of this bulletin.

DTC Descriptions:
P010100: Mass or Volume Air Flow "A" Circuit Range/Performance
P010600: Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance
P006800: Throttle Position Correlation

Kia Diagnostic System (KDS)

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

Circulate To: ☒ **General Manager**   ☒ **Service Manager**   ☒ **Parts Manager**

☒ **Service Advisors**   ☒ **Technicians**   ☒ **Body Shop Manager**   ☐ **Fleet Repair**

SUBJECT:	NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 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
499. BDm NU 2.0MPI ATKINSON ECM MIL ON DTC (P0101, P0106, P0068) LOGIC IMPROVEMENT

★ 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.**

★ 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. 🔁

★ NOTICE

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.

SUBJECT:

NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT

ROM ID INFORMATION TABLE:
Upgrade Event #499 (BDm)

Model	EM	TM	IMMO 🔑	ECU P/No.	ROM ID Previous	ROM ID New
19MY (BDm)	2.0L	CVT	No	39173-2ECD0	BD9SP2US696A BD9SP2US696B BD9SP2US696C BD9SP2US696D BD9SP2US6B1A BD9SP2US6B1B	BD9SP2US6B5A
		CVT	Yes	39171-2ECD0	BD9SP2AS696A BD9SP2AS696B BD9SP2AS696C BD9SP2AS696D BD9SP2AS6B1A BD9SP2AS6B1B	BD9SP2AS6B5A
		CVT	No	39173-2ECE0	BD9UP2US696A BD9UP2US696B BD9UP2US696C BD9UP2US6B1A BD9UP2US6B1B	BD9UP2US6B5A
		CVT	Yes	39171-2ECE0	BD9UP2AS696A BD9UP2AS696B BD9UP2AS696C BD9UP2AS6B1A BD9UP2AS6B1B	BD9UP2AS6B5A
		MT	No	39177-2ECE0	BD9UP2VS696A BD9UP2VS696B BD9UP2VS696C BD9UP2VS6B1A	BD9UP2VS6B5A
		MT	Yes	39175-2ECE0	BD9UP2CS696A BD9UP2CS696B BD9UP2CS696C BD9UP2CS6B1A	BD9UP2CS6B5A
		CVT	Yes	39171-2ECF0 39171-2ECF1	BD94M2A1694A BD94M2AS696C BD94M2AS697A BD94M2AS697B	BD94M2AS6B5A
		MT	Yes	39175-2ECF0	BD94M2C1694A BD94M2CS696C BD94M2CS696D	BD94M2CS6B5A

| SUBJECT: | NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT |

Model	EM	TM	IMMO	🔒	ECU P/No.	ROM ID	
						Previous	New
20MY (BDm)	2.0L	CVT	No		39173-2ECD1	BDASP2US6B1C BDASP2US6B1D BDASP2US6B1E	BDASP2US6B5A
			Yes		39171-2ECD1	BDASP2AS6B1C BDASP2AS6B1D BDASP2AS6B1E	BDASP2AS6B5A
			No		39173-2ECE1	BDAUP2US6B1C BDAUP2US6B1D BDAUP2US6B1E	BDAUP2US6B5A
			Yes		39171-2ECE1	BDAUP2AS6B1C BDAUP2AS6B1D BDAUP2AS6B1E	BDAUP2AS6B5A
		MT	No		39177-2ECE1	BDAUP2VS6B1B BDAUP2VS6B1C BDAUP2VS6B1D	BDAUP2VS6B5A
			Yes		39175-2ECE1	BDAUP2CS6B1B BDAUP2CS6B1C BDAUP2CS6B1D	BDAUP2CS6B5A

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.

TSB: FUE047 Forte (BDm) August 2020

NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT

★ 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.
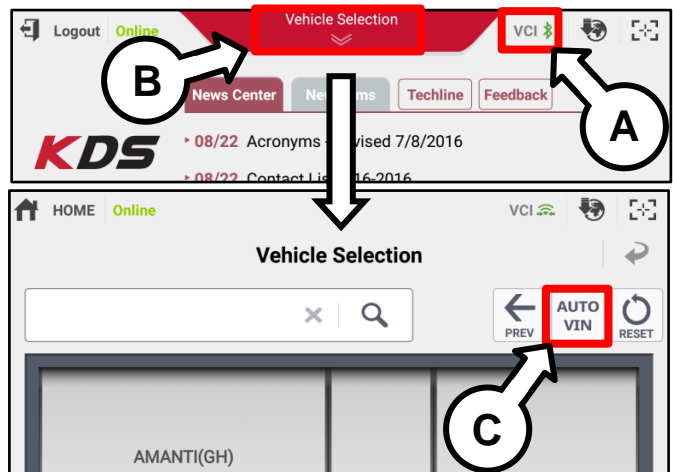
   ### ★ NOTICE

   The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.
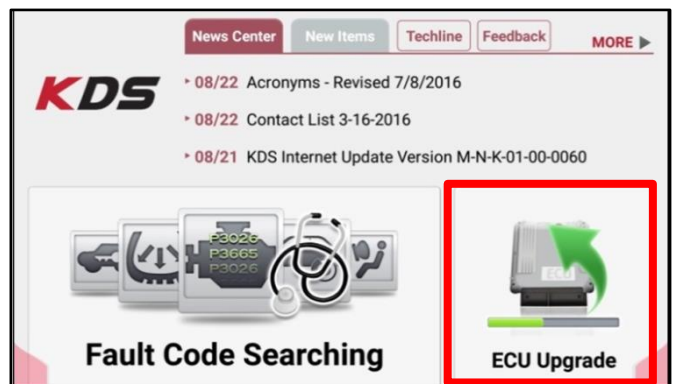
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

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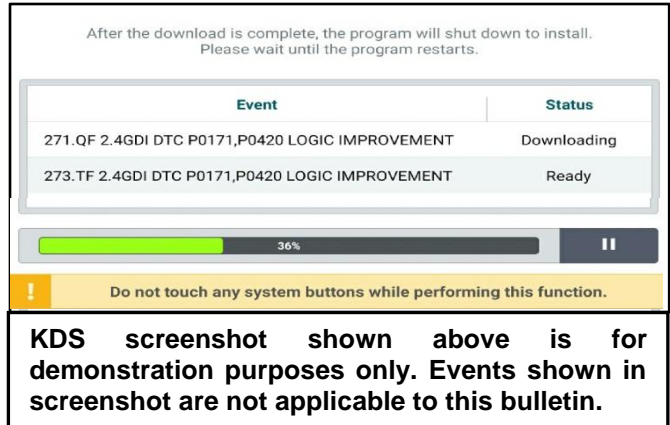
4. Select **ECU Upgrade**.

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

TSB: FUE047 Forte (BDm) August 2020

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #499 (BDm).**

> ★ **NOTICE**
>
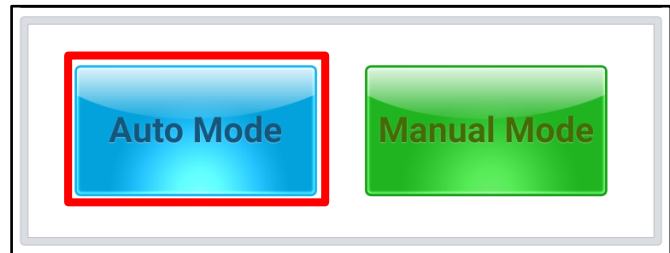> **The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.**

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.**
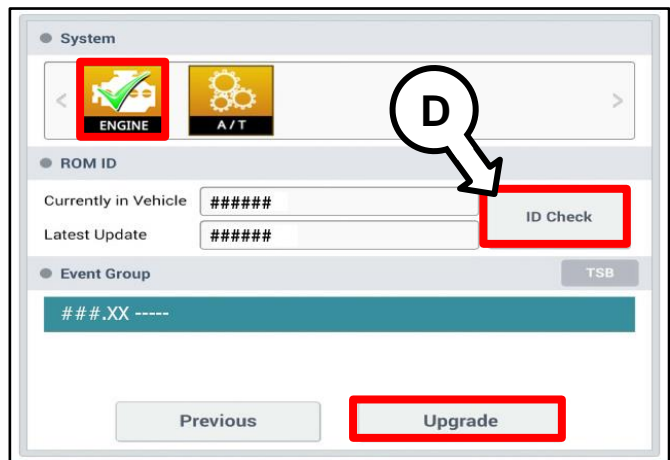
Auto Mode   Manual Mode

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 #499** and select **Upgrade** to continue.

   NOTE: Ensure to match the ECU P/N of the vehicle to the applicable Event Group from the drop down list on the KDS.

● System

ENGINE   A/T

D

● ROM ID

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

● Event Group   TSB
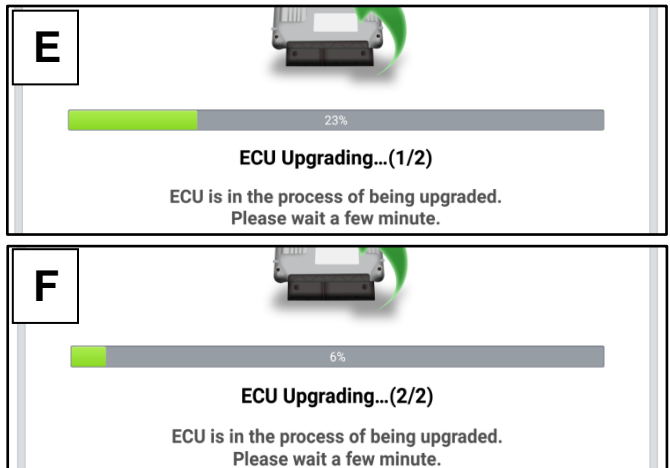
###.XX -----

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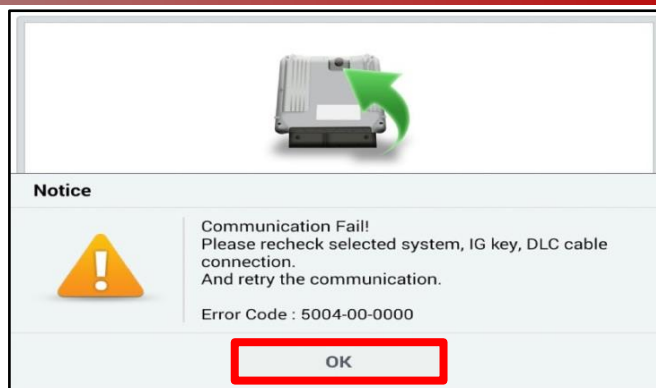> **Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.**

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)

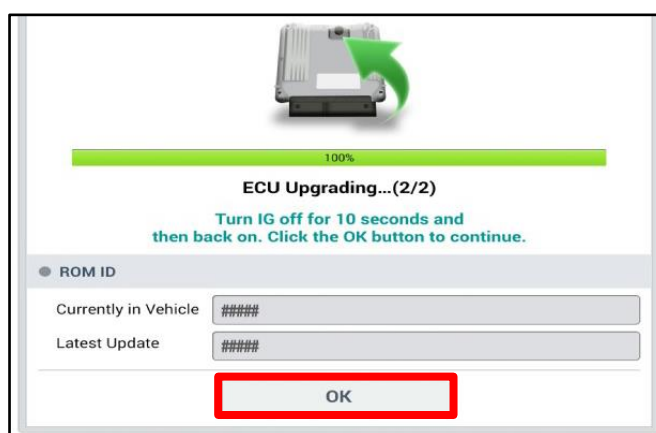ECU is in the process of being upgraded. Please wait a few minute.

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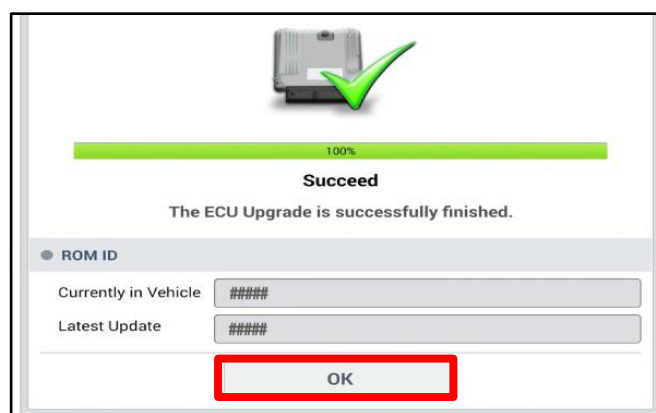
> ★ **NOTICE**
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**
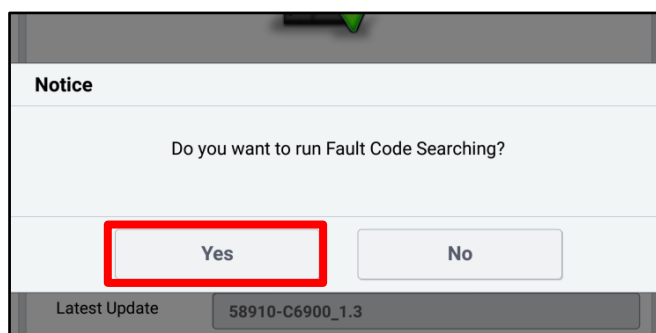

Notice

⚠ 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.

SUBJECT:	NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT

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
BDm Nu 2.0 ATK SULEV CVT -IMMO : 39173-2ECD0	9173
BDm Nu 2.0 ATK ULEV CVT -IMMO : 39173-2ECE0	9174
BDm Nu 2.0 ATK ULEV MT -IMMO : 39177-2ECE0	9177
BDm Nu 2.0 ATK SULEV CVT +IMMO/SMK : 39171-2ECD0	9171
BDm Nu 2.0 ATK ULEV CVT +IMMO/SMK : 39171-2ECE0	9172
BDm Nu 2.0 ATK ULEV MT +IMMO/SMK : 39175-2ECE0	9175
BDm Nu 2.0 ATK EURO4 CVT +IMMO/SMK : 39171-2ECF0/F1	9176
BDm Nu 2.0 ATK EURO4 MT +IMMO/SMK : 39175-2ECF0	9178
BDm Nu 2.0 ATK SULEV CVT -IMMO : 39173-2ECD1	7321
BDm Nu 2.0 ATK ULEV CVT -IMMO : 39173-2ECE1	7322
BDm Nu 2.0 ATK ULEV MT -IMMO : 39177-2ECE1	7721
BDm Nu 2.0 ATK SULEV CVT +IMMO/SMK : 39171-2ECD1	7121
BDm Nu 2.0 ATK ULEV CVT +IMMO/SMK : 39171-2ECE1	7122
BDm Nu 2.0 ATK ULEV MT +IMMO/SMK : 39175-2ECE1	7521

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

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #499** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 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. 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.

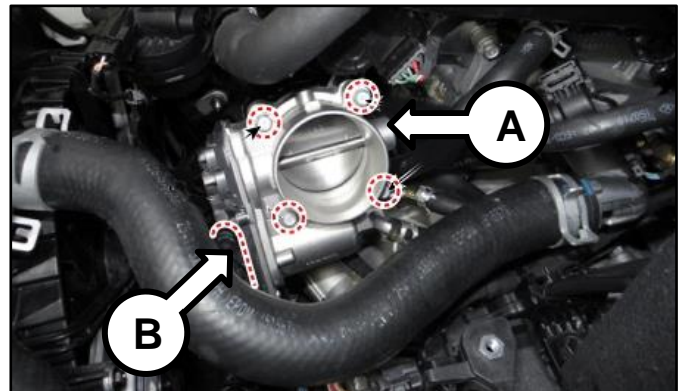Printed TSB copy is for reference only; information may be updated at any time. Always refer to KGIS for the latest information.

TSB: FUE047 Forte (BDm) August 2020

SUBJECT:	NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT

ETC Cleaning Procedure:

1. Remove the ETC (A) assembly by referring to the "Engine Control/Fuel System → Engine Control System → ETC (Electronic Throttle Control) System → Repair procedures" chapter in the applicable Shop Manual on KGIS.

★ NOTICE

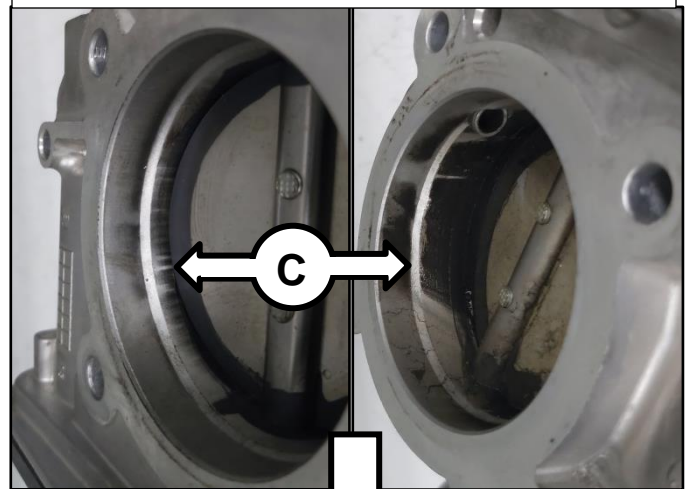**Using a clamp tool, clamp the ETC coolant hose (B) to reduce coolant loss.**

2. Using UM040 CH010 (or equivalent) cleaner, spray onto a lint free towel, then wipe the inside wall (C) of the ETC inlet to remove any carbon deposits.
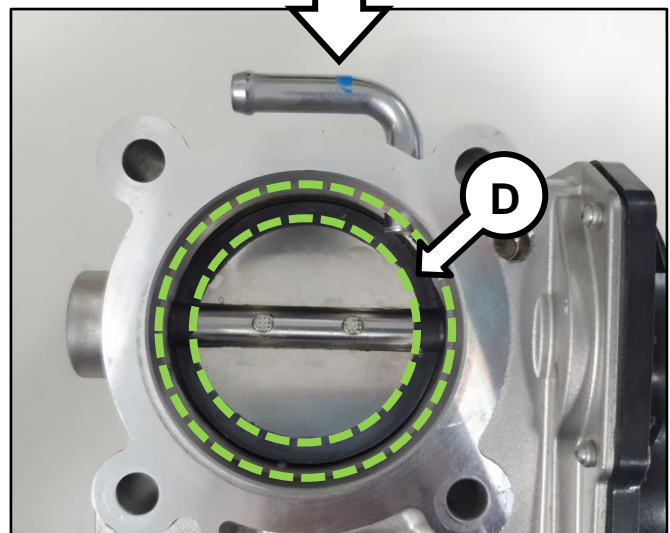
ⓘ IMPORTANT

The ETC throttle plate features a special coating (D) around the outside diameter of the plate. DO NOT use a wire brush and attempt to remove the coating.

⚠ CAUTION

DO NOT wipe off the throttle plate coating (D), doing so (as shown below) may cause an idle performance issue.

NOTE: Do not discard the throttle body gasket/o-ring. Replacement not required.

3. Reinstall the ETC in the reverse order of removal per the Shop Manual instructions on KGIS. Note: Top off coolant as needed.

4. Verify normal vehicle operation.

SUBJECT:	NU 2.0L MPI MIL ON DTC P010100 AND/OR P010600 AND/OR P006800 LOGIC IMPROVEMENT

AFFECTED VEHICLE RANGE:

Model	Production MY Range
Forte (BDm)	2019-2020

REQUIRED PART:

Part Name	Part Number	Figure	Qty.
Anti-freeze/Coolant	NPNOTHER	N/A	1 Maximum $5 allowed for coolant top-off.

WARRANTY INFORMATION:
N Code: I3A   C Code: ZZ3

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
W	39171 2ECD0	0	NU 2.0L MPI ECM Logic Improvement and ETC Cleaning	39110FO0	0.7* M/H	N/A	0
						NPNOTHER	1

Use the 'X1' sublet code for a total of $0.78 to claim for throttle body cleaner.
*LABOR TIME INCLUDES THROTTLE BODY CLEANING AND PCM REPROGRAMMING.