	GROUP	MODEL
	Emissions Service Campaign	**2019-2021 Multiple Models with IVT**
	NUMBER	DATE
	SC199	**December 2020**

VOLUNTARY EMMISSIONS SERVICE CAMPAIGN

SUBJECT:

IVT SOFTWARE LOGIC IMPROVEMENT AND/OR IVT REPLACEMENT (SC199)

(This bulletin was previously referred as 'SA424' or 'ELE 200'.)

This bulletin provides the procedure to update the Transmission Control Module (TCM) software logic and, if necessary, replace the Intelligent Variable Transmission (IVT) on certain 2019-2021MY vehicles listed in the chart below. The affected vehicles may exhibit the illumination of MIL with the DTC(s) listed below in addition to a lack of acceleration or delay in accelerating due to transmission slippage. To correct this concern, apply the improved software logic to the CVT system using the KDS ECU Upgrade function as described in this bulletin and, if necessary, replace the IVT assembly. 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 4. Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

DTC(s):
P0730 – Incorrect Gear Ratio
P0731 – Gear 1 Incorrect Ratio
P0741 – Torque Converter Clutch Circuit Performance or Stuck Off
P0867 – Transmission fluid pressure

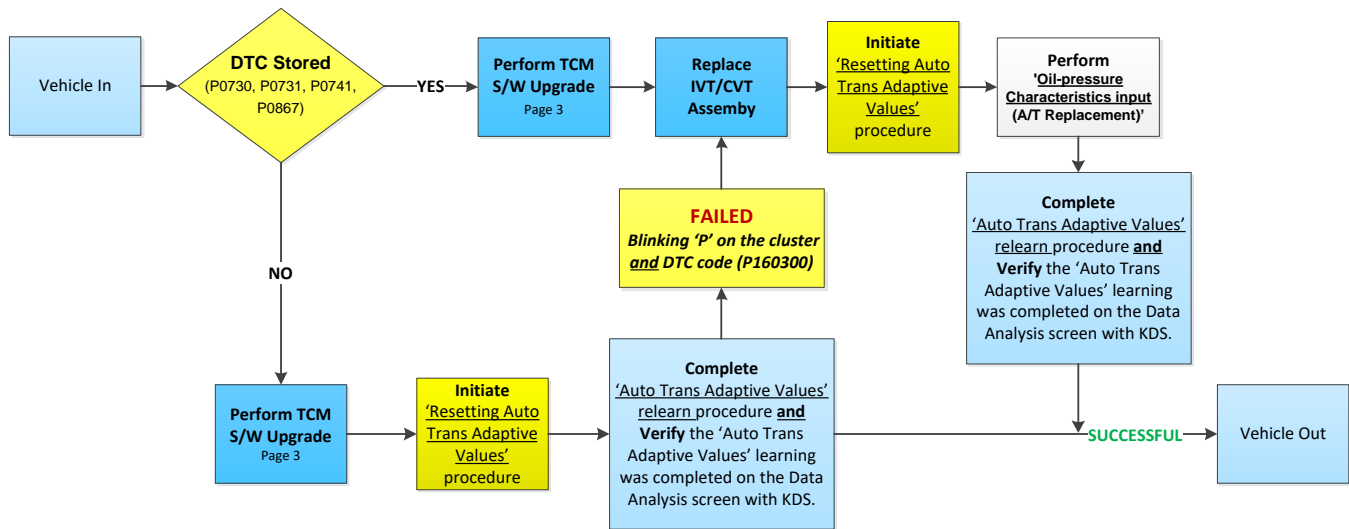| MY	Model	Production Date
2019-2020	Forte (BDm)	7/9/18 – 4/2/20
2020-2021	Soul (SK3)	11/24/18 – 4/17/20
2021	Seltos (SP2)	11/20/19 – 4/10/20

★ 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**

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Flowchart:

Vehicle In DTC(s):

- **P0730 – Incorrect Gear Ratio**
- **P0731 – Gear 1 Incorrect Ratio**
- **P0741 – Torque Converter Clutch Circuit Performance or Stuck Off**
- **P0867 – Transmission fluid pressure**

After completing 'Resetting Auto Trans Adaptive Values' on the KDS:

- **P160300 – P-Learning Fail (CVT System)**

ⓘ IMPORTANT

When replacing the IVT/CVT assembly, carefully follow the installation procedure outlined on KGIS to complete the Auto Trans Adaptive Values learning procedure. Performing the 'Oil-pressure Characteristics Input', refer to the IMPORTANT and NOTICE boxes on page 10. The adaptive values learning procedure may require that the engine be shut OFF/ON multiple times until the values are fully learned; start the vehicle, confirm the vehicle is idling in 'Park' without accelerator or brake input and verify the 'CVT Learning – P Range' Current Data reads 'ON'.

A [Vehicle Diagnosis Number (VDN)] must be created with at least one of the five (5) DTCs listed above, prior to IVT replacement. If a VDN is not created, Parts Ordering and Warranty claim submission issues WILL occur.

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ECU Upgrade Procedure:

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

Upgrade Event Name
494. BDM NU 2.0MPI ATK CVT/IVT DRIVING PERFORMANCE IMPROVEMENT
495. SK3 NU 2.0MPI ATK CVT/IVT DRIVING PERFORMANCE IMPROVEMENT
496. SP2 NU 2.0MPI ATK CVT/IVT DRIVING PERFORMANCE 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.

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> ★ **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.**

ROM ID INFORMATION TABLE:

Upgrade Event #494 (BDm), #495 (SK3) and #496 (SP2).

Model	EM	TM	IMMO 🔑	ECU P/No.	ROM ID Previous	ROM ID New
Forte (BDm)	Nu 2.0L MPI Atkinson	CVT/IVT	Yes	39171-2ECA0 39171-2ECB0 39171-2ECD0 39171-2ECD1 39171-2ECE0 39171-2ECE1 39173-2ECA0 39173-2ECB0 39173-2ECD0 39173-2ECD1 39173-2ECE0 39173-2ECE1	CBD0N20NS0 CBD0N20NS1 CBD0N20NS2 CBD0N20NS3 CBD0N20NS4 CBD0N20NS5 CBD0N20NS6 CBD0N20NS7	CBD0N20NS8
Soul (SK3)		CVT/IVT		39171-2ELC0 39173-2ELC0 39171-2ELC1 39173-2ELC1	CSK0N20NS0 CSK0N20NS1 CSK0N20NS2 CSK0N20NS3 CSK0N20NS4	CSK0N20NS5
Seltos (SP2)		CVT/IVT		39171-2EPT0 39173-2EPT0	CSP2N20NS0 CSP2N20NS1 CSP2N20NS2	CSP2N20NS3
				39171-2EPV0 39173-2EPV0	CSP4N20NS0 CSP4N20NS1 CSP4N20NS2	CSP4N20NS3

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.

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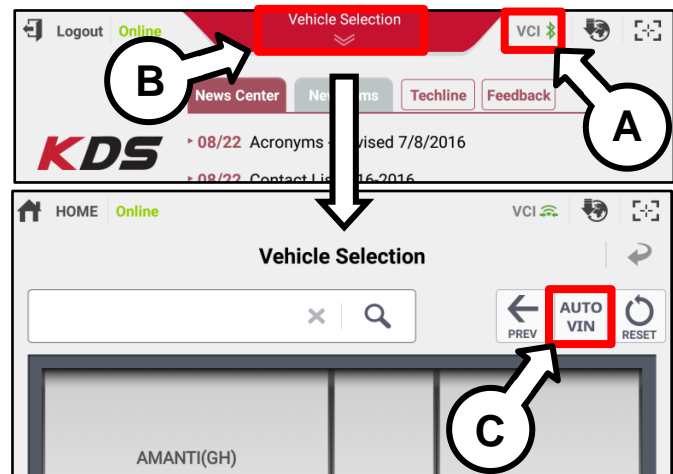> **The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**

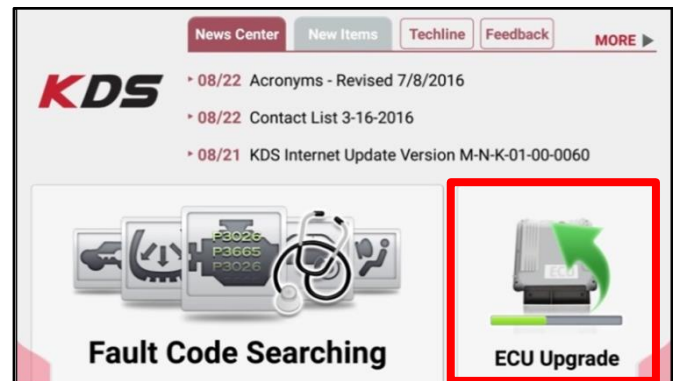2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

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

> ### ★ NOTICE
>
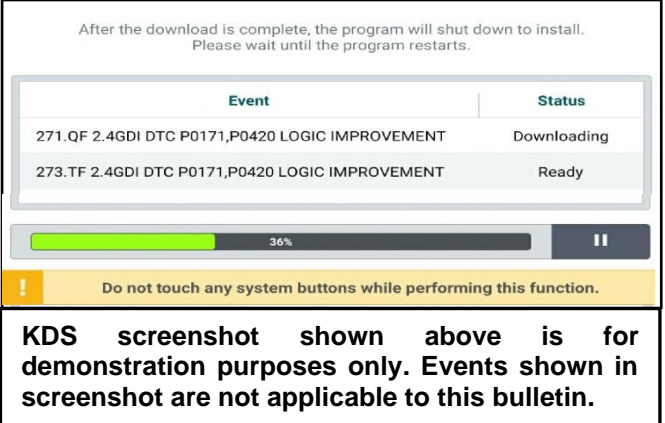> **Be sure to perform DTC scan prior to initializing software upgrade.**

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 #494 (BDm), #495 (SK3) or #496 (SP2).**

> ⭑ **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.
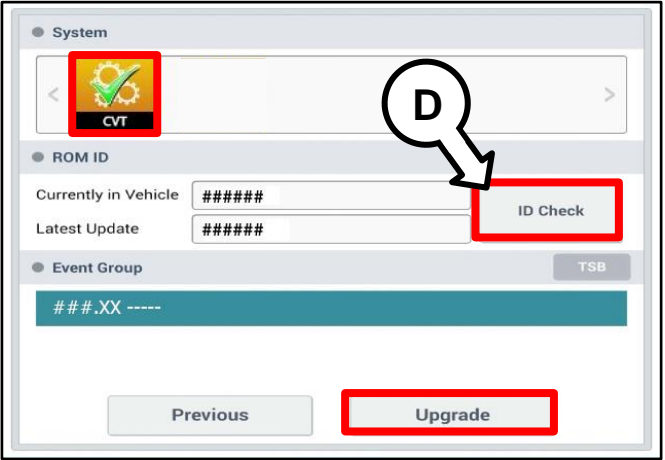
6. Select **Auto Mode**.

> ⚠ **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
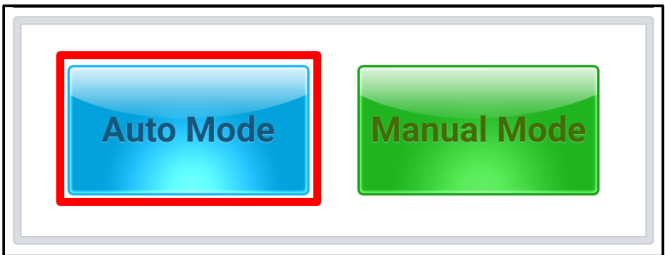
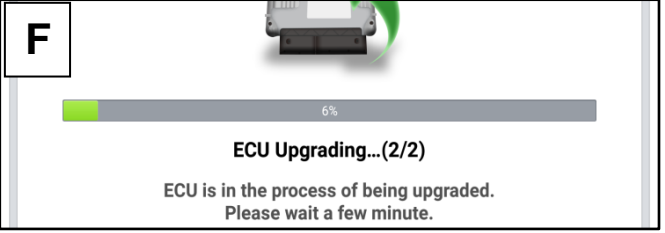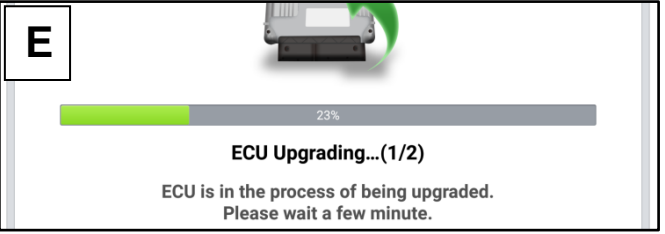7. Select the **CVT** system under the System selection menu.

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

Select **Upgrade Event #494 (BDm), #495 (SK3) or #496 (SP2)** and select **Upgrade** to continue.

● System

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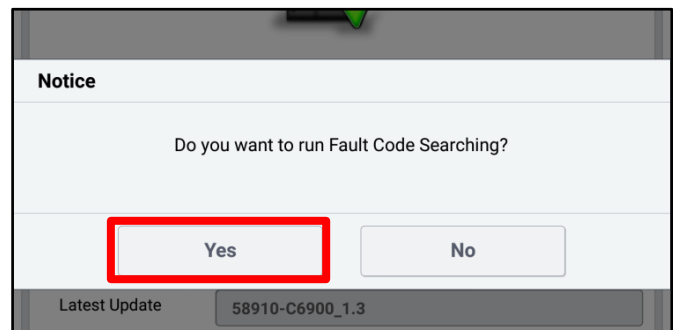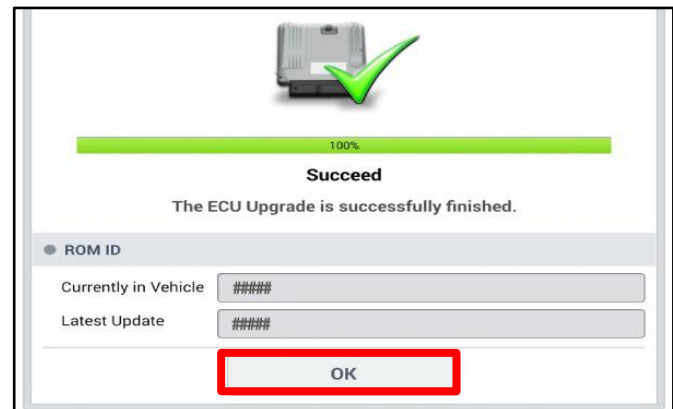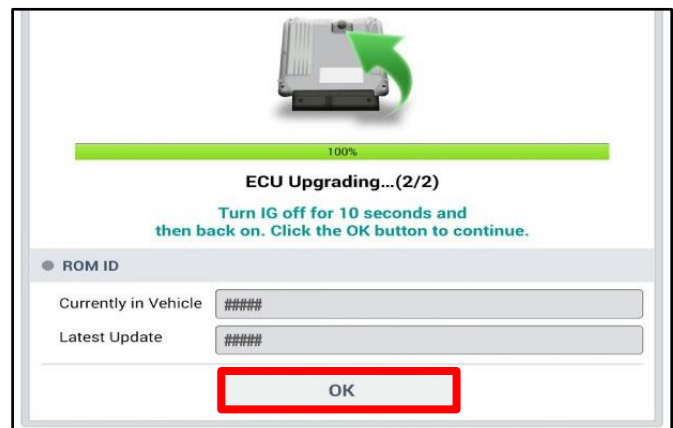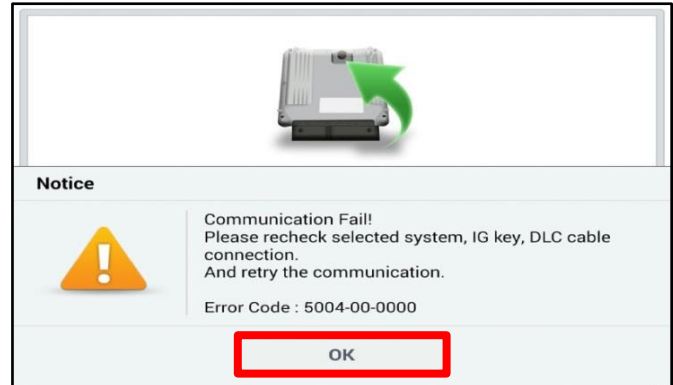
> ## ★ NOTICE
>
> **If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.**

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

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13. **Initiate** the **'Resetting Auto Trans Adaptive Values'** procedure with KDS.

14. **Complete** the **'Auto Trans Adaptive Values'** relearn procedure.

    Note: For additional information regarding TCM Adaptive Values Learning, refer to the "IVT → IVT Control Systems → Repair procedures" chapter in the applicable Shop Manual on KGIS.
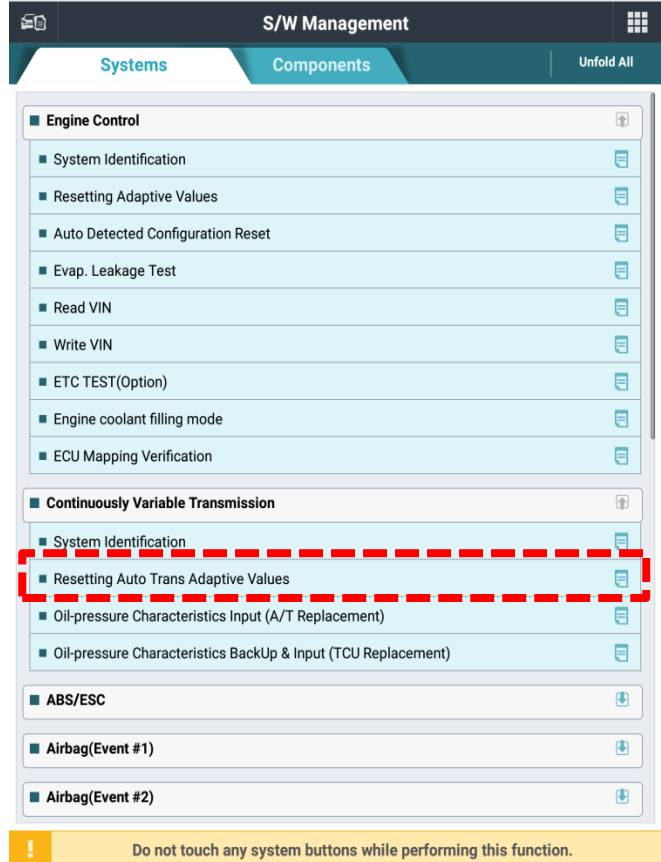
15. On the KDS home menu, enter the CVT module 'Data Analysis' screen and **verify** the 'Auto Trans Adaptive Values' learning was completed on the Data Analysis screen with KDS.

    Note: The adaptive values learning procedure may require that the engine be shut OFF/ON multiple times until the values are fully learned; start the vehicle, confirm the vehicle is idling in 'Park' without accelerator or brake input and verify the 'CVT Learning – P Range' Current Data reads 'ON'.

16. Start the engine to confirm proper operation of the vehicle.

17. If MIL with DTC P160300 is present **after** verifying and completing the 'Resetting Auto Trans Adaptive Values' procedure, then proceed to replace the IVT outlined on page 10.
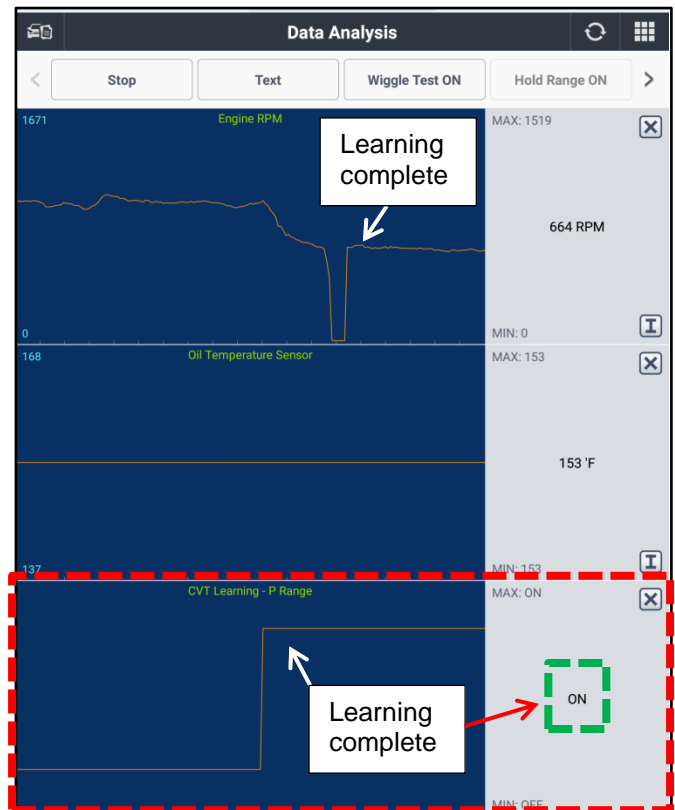
SUBJECT:

IVT SOFTWARE LOGIC IMPROVEMENT
AND/OR IVT REPLACEMENT (SC199)

Manual Upgrade Procedure:

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* 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 2.0MPI ATK CVT/IVT : 39171/3-2ECA0/B0/D0/D1/E0/E1	9171
SK3 NU 2.0MPI ATK CVT/IVT : 39171/3-2ELC0/C1	3201
SP2 NU 2.0MPI ATK CVT/IVT (2WD) : 39171/3-2EPT0	1320
SP2 NU 2.0MPI ATK CVT/IVT (4WD) : 39171/3-2EPV0	1321

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

2. Select the **CVT** system under the System selection menu. Select **Upgrade Event #494 (BDm), #495 (SK3) or #496 (SP2)** 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. 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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Replacement Procedure:

1. Replace the IVT assembly by referring to the "2.0 MPI NU (ATKINSON) → Intelligent Variable Transmission (IVT) System (Continuous Variable Transmission) → Intelligent Variable Transmission → Repair procedures" chapter in the applicable Shop Manual on KGIS.

ⓘ IMPORTANT

Transmission cooler requires flushing for Seltos (SP2) and Soul (SK3). Flushing for Forte (BDm) is not required as it features a cooler/heater system.

ⓘ IMPORTANT

1. **First <u>initiate</u> the 'Resetting Auto Trans Adaptive Values' procedure on the KDS.**

2. **Then, perform the 'Oil-pressure Characteristics input (A/T Replacement)' procedure on the KDS, select 'OK'.**

3. **<u>Complete</u> the 'Auto Trans Adaptive Values' relearn procedure.**

4. **<u>On the KDS home menu</u>, enter the CVT module 'Data Analysis' screen and confirm the Adaptive Values have learned*.**

★ NOTICE

<u>Note:</u> **The adaptive values learning procedure may require that <u>the engine be shut OFF/ON multiple times</u> until the values are fully learned; start the vehicle, confirm the vehicle is idling in 'Park' without accelerator or brake input and verify the 'CVT Learning – P Range' Current Data reads 'ON'.**

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ATTENTION: THE PROOF OF CORRECTION CARD AND CAMPAIGN COMPLETION STICKER ARE RESTRICTED ONLY TO DEALERS IN THE FOLLOWING STATES:

California, Connecticut, District of Columbia, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington. See Parts Information below to order the Proof of Correction Card and Campaign Completion Label from the PDC.

VEHICLE EMISSION RECALL - PROOF OF CORRECTION CARD

A Vehicle Emission Recall - Proof of Correction card must be filled out for all vehicles registered in California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, New York and Delaware. Residents of these states, who own an affected vehicle, will be required to possess a Vehicle Emission Recall - Proof of Correction card as evidence of voluntary service campaign completion, when they apply for vehicle registration renewal.

WHAT TO DO WITH THE CARD:

The Vehicle Emission Recall - Proof of Correction card <u>must be completed by the Dealership's Service Manager using a permanent ink pen</u>. A fine point pen is recommended. When filling in the information, copy the information directly from the vehicle, not the repair order. **ALL INFORMATION MUST BE PRINTED AND NEAT.**

NOTE: DO NOT COMPLETE THE CARD UNLESS THE SERVICE CAMPAIGN WORK IS COMPLETED.

The copy of the card shown below indicates the areas to be filled in. Each area must be filled in. The completed card should be given to the owner of the vehicle upon completion of the Campaign and placement of the **Campaign Completion Label** outlined below.

FILLING OUT AND APPLYING THE CAMPAIGN COMPLETION LABEL (CA and S.177 STATES ONLY):

The dealer must fill in the Dealer Code and Date information fields on the Campaign Completion Label. Once complete, affix the campaign completion label under the hood of the vehicle, as shown below.

CA and S.177 States Only: Apply <u>SC199</u> Campaign Completion Label onto the body in the area next to the shock tower, as shown. **NOTE: Be sure to clean the mounting surface to ensure proper label adhesion.**
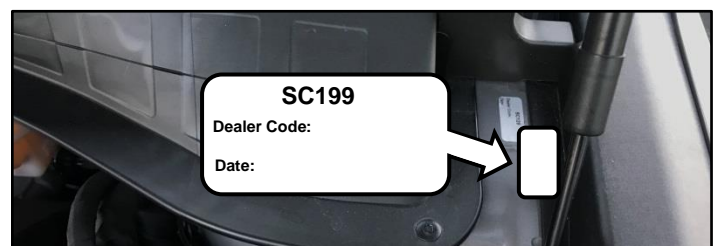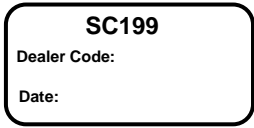
SUBJECT:	IVT SOFTWARE LOGIC IMPROVEMENT AND/OR IVT REPLACEMENT (SC199)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Forte (BDm)	July 9, 2018 to April 2, 2020
Soul (SK3)	November 24, 2018 to April 17, 2020
Seltos (SP2)	November 20, 2019 to April 10, 2020

REQUIRED PART:

Model	Part Name	P/N (Remanufactured.)	Figure	Qty.
Forte (BDm)	CVT/IVT Assembly	48000 2H300QQKR		1
Soul (SK3)		48000 2H351QQKR		
Seltos (SP2) FWD		48000 2H353QQKR		
Seltos (SP2) AWD		48000 2H751QQKR		
ALL (Except BDm)	Transmission Cooler Flush	UM013 CH060		1
ALL*	IVT Fluid SP-CVT1	UM018 CH130	N/A	Up to 7 Qts.
ALL	Campaign Completion Label	UT160 SC199*	**SC199** Dealer Code: Date:	1
ALL	Vehicle Emission Recall Proof of Correction Card	UT161 SC199**		1

*May **NOT** be claimed if a new CVT/IVT assembly was shipped with P/N ending in QQK.

A Vehicle Diagnosis Number (VDN) must be created with at least one of the five (5) DTCs listed on page 2, prior to IVT replacement. If a VDN is not created, Parts Ordering and Warranty claim submission issues WILL occur.

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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.
BDm	R	48000 2H300	0	SC199 DTC Check + TCM S/W Upgrade + TCM Learning (Success)	200M05R0	0.3 M/H	N/A	0
				DTC Check + IVT Replacement + TCM S/W Upgrade	200M05R1	3.3 M/H	48000 2H300QQKR	1
				DTC Check + TCM S/W Upgrade + TCM Learning (Fail) + IVT Replacement	200M05R2	3.4 M/H		
SK3		48000 2H351	0	SC199 DTC Check + TCM S/W Upgrade + TCM Learning (Success)	200034R0	0.3 M/H	N/A	0
				DTC Check + IVT Replacement + TCM S/W Upgrade	200034R1	3.1 M/H	48000 2H351QQKR UM013 CH060	1
				DTC Check + TCM S/W Upgrade + TCM Learning (Fail) + IVT Replacement	200034R2	3.2 M/H		
SP2 (FWD)		48000 2H353	0	SC199 DTC Check + TCM S/W Upgrade + TCM Learning (Success)	200034R3	0.3 M/H	N/A	
				DTC Check + IVT Replacement + TCM S/W Upgrade	200034R4	3.2 M/H	48000 2H353QQKR UM013 CH060	1
				DTC Check + TCM S/W Upgrade + TCM Learning (Fail) + IVT Replacement	200034R5	3.3 M/H		
SP2 (AWD)		48000 2H751	0	SC199 DTC Check + TCM S/W Upgrade + TCM Learning (Success)	200034R3	0.3 M/H	N/A	0
				DTC Check + IVT Replacement + TCM S/W Upgrade	200034R6	3.7 M/H	48000 2H751QQKR UM013 CH060	1
				DTC Check + TCM S/W Upgrade + TCM Learning (Fail) + IVT Replacement	200034R7	3.8 M/H		

A Vehicle Diagnosis Number (VDN) must be created with at least one of the five (5) DTCs listed on page 2, prior to IVT replacement. If a VDN is not created, Parts Ordering and Warranty claim submission issues WILL occur. Refer to Warranty Bulletin 2020-30 for claim submission procedures.

NOTE: You may receive a transmission with a part number ending in "QQK" when a part number ending in "QQKR" was ordered. Both part numbers are interchangeable and acceptable in the warranty system.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC199 when accessing the WebDCS system.

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