



GROUP	MODEL
ENG	2023MY Sportage (NQ5, NQ5a) w/Theta III 2.5L GDI
NUMBER	DATE
259 (Rev 1, 11/6/2025)	October 2025

## TECHNICAL SERVICE BULLETIN

### ITM REPLACEMENT AND ECM

### LOGIC IMPROVEMENT (CA2509)

SUBJECT:

#### NOTICE

**This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.**

This bulletin provides information to replace the Integrated Thermal Management Module (ITM) and then upgrade the Engine Control Module 'ECM' system software on certain vehicles, in the event the Multifunction Indicator Lamp (MIL) is illuminated with DTC(s) P218100, P2181F0, and/or P2181F1 stored. This condition may occur due to degradation of the diaphragm inside the ITM. There are no drivability or other symptoms associated with this condition. Follow the procedure outlined in this publication to replace the ITM and upgrade the ECM software in 'Manual Mode' only. Refer to [SST081](#) for software upgrade instructions using Kia Diagnostic System (KDS) tablet and VCI-II and confirm the Upgrade Event Number/Name, ROM ID Information, and Manual Mode passwords on the applicable vehicle.

Model Year	Model	Engine	Production Date
2023	Sportage (NQ5, NQ5a)	Theta III 2.5L GDI	December 15, 2021 to July 20, 2023

#### DTC Descriptions:

P218100 - Cooling System Performance  
P2181F0 - Cooling System Performance

P2181F1 - Cooling System Performance

A [Vehicle Diagnosis Number \(VDN\)](#) must be created for DTC's prior to ordering parts and performing necessary procedure(s), as outlined in this TSB. If a VDN is not created, Parts Ordering and Warranty claim submission issues WILL occur. Any claims for replacement parts are subject to Warranty review and chargeback.

#### NOTICE

A Technical Service Bulletin is a field fix repair program without customer notification that may be performed during the warranty period.

**This bulletin should only be performed with valid customer of a Malfunction Indicator Lamp (MIL) 'ON' MUST be stated in the opening RO and Claim Notes with the related DTC's stored.**

Repair status for a VIN is provided on KDealer+ (Service → Warranty Coverage → Warranty Coverage Inquiry). **If ENG259/CA2509 is complete, any subsequent or follow up concerns need to be addressed under the terms of Kia's Basic Limited Warranty Coverage.**

A printed copy is for reference only; publication information can be updated at any time. Always refer to KGIS for the latest information. After logging in kdealer.com, the newest technical publications are listed in 'Service Releases' and has the latest service information that has been released.

**Repair Procedure:**

1. Replace the Integrated Thermal Management Module 'ITM' (A) by referring to "Engine Mechanical System → Cooling System → Integrated Thermal Management Module (ITM) → Repair procedures" in the applicable Shop Manual on KGIS.



Tightening torque for bolts:  
7.2 - 8.7 lb.ft (9.8 - 11.8 N.m)

**NOTICE**

**Do NOT** disassemble the [actuator](#) and [collector](#). The new ITM is supplied as an assembly unit.

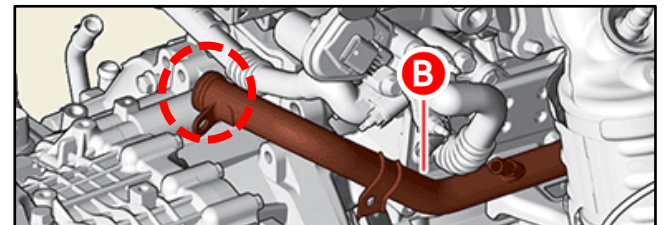
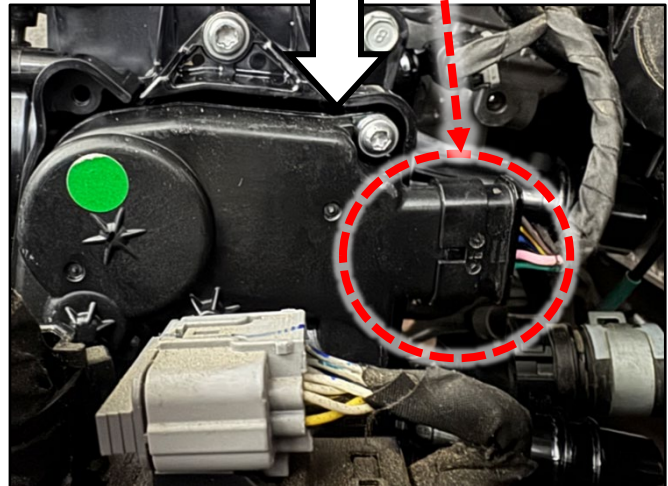
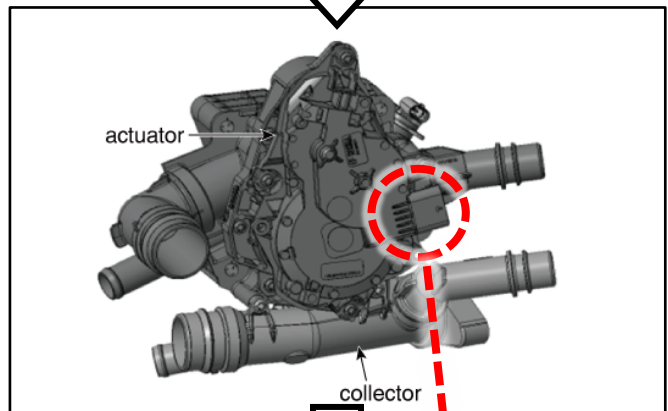
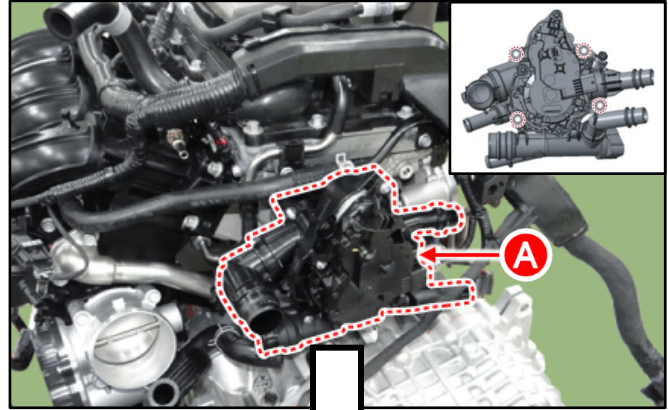
2. Reinstall all removed parts in reverse order of removal.

**Note:** The ITM connection orientation changes after replacing the new ITM part. The locking tab will face the engine.

**CAUTION**

Trying to make the connection on the new ITM in the same orientation as the original ITM may damage the connector pins/terminals.

3. Install a new inlet pipe (B) O-ring on the [red circled](#) area shown.
4. Proceed to upgrade the 'ECM' with Event 854 software in **Manual Mode** only, [after](#) ITM part replacement is completed by referring to the ROM ID tables on pages 3-5.
5. Verify normal vehicle operation.



SUBJECT:

## ITM REPLACEMENT AND ECM LOGIC IMPROVEMENT (CA2509)

Refer to [TSB SST081](#) for instructions to upgrade the 'ECM' systems:

### ❗ IMPORTANT

The ECU and TCM **MUST** be programmed in **Manual Mode ONLY** using the KDS 2.0 download as described in this bulletin.

To correct this condition, the specified system module should be reprogrammed using KDS as described in this bulletin in 'Auto Mode'.

Upgrade Event Name


854.NQ5(a) THETA 2.5GDI (ECM) Upgrade After ITM Parts Replacement

### Manual Mode Software Upgrade [After ITM Replacement Only](#)

### 📄 NOTICE

- Confirm a fully charged battery (12.3 volts or higher is necessary) is used or 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 not 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' 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 application.

### 📄 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.

## ROM ID Information Table: Sportage (NQ5) Korea

Upgrade Event #854 **Manual Mode ONLY****ⓘ 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.

Model	System	IMMO	AT	ECU P/No.	ROM ID	
					Previous	New
NQ5 VIN K (Korea)	ECM	Yes	FWD AWD	39100 2S210	NQEWD5GMAXXXL7A NQEWD5GMAXXXL7B NQEWD5GMAXXXM0A NQEWD5GMAXXXM1A NQEWD5GMAXXXM1B	NQEWD5GMAXXXM1C
				39100 2S215	NQEWD5GKAXXXL7A NQEWD5GKAXXXL7B NQEWD5GKAXXXM0A NQEWD5GKAXXXM1A NQEWD5GKAXXXM1B	NQEWD5GKAXXXM1C
			AWD XLine	39100 2S232	NQEWD5GMJXXXL7A NQEWD5GMJXXXL7B NQEWD5GMJXXXM0A NQEWD5GMJXXXM1A NQEWD5GMJXXXM1B	NQEWD5GMJXXXM1C
				39100 2S233	NQEWD5GKJXXXL7A NQEWD5GKJXXXL7B NQEWD5GKJXXXM0A NQEWD5GKJXXXM1A NQEWD5GKJXXXM1B	NQEWD5GKJXXXM1C
NQ5a VIN 5 (USA)	ECM	Yes	FWD AWD	39100 2S226	NQEWN5GMAXXXL7A NQEWN5GMAXXXL7B NQEWN5GMAXXXM0A NQEWN5GMAXXXM1A NQEWN5GMAXXXM1B	NQEWN5GMAXXXM1C
				39100 2S231	NQEWN5GKAXXXL7A NQEWN5GKAXXXL7B NQEWN5GKAXXXM0A NQEWN5GKAXXXM1A NQEWN5GKAXXXM1B	NQEWN5GKAXXXM1C
			AWD XLine	39100 2S234	NQEWN5GMJXXXL7A NQEWN5GMJXXXL7B NQEWN5GMJXXXM0A NQEWN5GMJXXXM1A NQEWN5GMJXXXM1B	NQEWN5GMJXXXM1C
				39100 2S235	NQEWN5GKJXXXL7A NQEWN5GKJXXXL7B NQEWN5GKJXXXM0A NQEWN5GKJXXXM1A NQEWN5GKJXXXM1B	NQEWN5GKJXXXM1C

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.

SUBJECT:

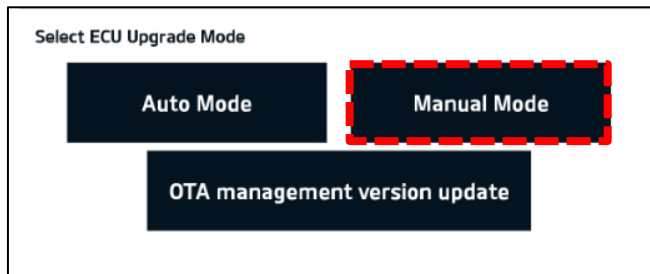
# ITM REPLACEMENT AND ECM LOGIC IMPROVEMENT (CA2509)

## Software Information:

### ❗ IMPORTANT

The ECU and TCM **MUST** be programmed in **Manual Mode ONLY** using the KDS 2.0 download as described in this bulletin.

The required software must be installed by selecting the **'Manual Mode'** ECU Upgrade option.



'Manual Mode' passwords.

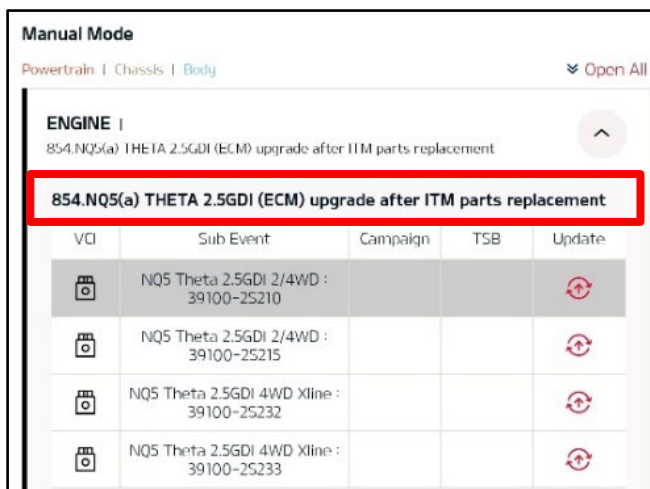
Event No.	Menu	Password
830	NQ5 Theta 2.5GDI 2/4WD: 39100-2S210	2210
	NQ5 Theta 2.5GDI 2/4WD: 39100-2S215	2215
	NQ5 Theta 2.5GDI 4WD Xline: 39100-2S232	2232
	NQ5 Theta 2.5GDI 4WD Xline: 39100-2S233	2233
	NQ5a Theta 2.5GDI 2/4WD: 39100-2S226	2226
	NQ5a Theta 2.5GDI 2/4WD: 39100-2S231	2231
	NQ5a Theta 2.5GDI 4WD Xline: 39100-2S234	2234
	NQ5a Theta 2.5GDI 4WD Xline: 39100-2S235	2235

### UPGRADE EVENT:

Select the applicable **'ECM'** system module and the Event Group.

- 854.NQ5(a) THETA 2.5GDI (ECM) Upgrade After ITM Parts Replacement

Verify the affected vehicle Calibration Identification of the applicable ECU ROM ID and reference the Information Table on page 4 as necessary.




SUBJECT:

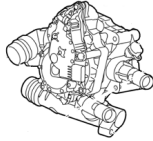

**ITM REPLACEMENT AND ECM LOGIC IMPROVEMENT (CA2509)****AFFECTED VEHICLE RANGE:**

Model	Production Date Range
Sportage (NQ5, NQ5a)	December 15, 2021 to July 20, 2023

**REQUIRED TOOL:**

Tool Name	Part Number	Figure	Comments
Kia Diagnostic System (KDS)	N/A		KDS + VCI

**REQUIRED PART:**

Part Name	Part Number	Figure	Qty.	Comments
ITM	25600 2S650QQK		1	N/A
Water Inlet Pipe O-ring	25462 2S000QQK		1	N/A
Coolant (Gal.)	UM020 CH263	N/A	2	Prediluted

**Note:** The replacement part numbers will require a VIN entry for parts ordering. DO NOT order these parts for stocking purposes, related to this TSB. Supply is very limited. Until supply stabilizes, please confirm part availability before scheduling customers. Please be sure to expedite warranty claim filing.

SUBJECT:

**ITM REPLACEMENT AND ECM LOGIC IMPROVEMENT (CA2509)****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	39100 2S210	0	(CA2509) ITM Replacement & ECM Logic Improvement (NQ5 Korea- VIN: K)	250139R0	1.7 M/H	25600 2S650QQK	1
						25462 2S000QQK	1
						UM020 CH263	2
	39100 2S226	0	(CA2509) ITM Replacement & ECM Logic Improvement (NQ5a USA VIN: 5)	250A40R0	1.7 M/H	25600 2S650QQK	1
						25462 2S000QQK	1
						UM020 CH263	2

**Note: When substitute transportation is provided, manually enter sublet code 'X2' for rental expense reimbursement or one roundtrip rideshare expense. Please make sure to submit any substitute transportation claim at the time of the warranty expense.**

**A Vehicle Diagnosis Number (VDN) must be created for DTC's prior to ordering parts and performing necessary procedure(s), as outlined in this TSB. If a VDN is not created, Parts Ordering and Warranty claim submission issues WILL occur. Any claims for replacement parts are subject to Warranty review and chargeback.**

