

 HYUNDAI
Technical Service Bulletin

GROUP
**ENGINE
MECHANICAL**

NUMBER
25-EM-005H

DATE
JUNE 2025

MODEL(S)
SANTA CRUZ (NXT)

SUBJECT: INTEGRATED THERMAL MANAGEMENT (ITM)
REPLACEMENT & ECU SOFTWARE UPDATE – DTC P218100

This TSB supersedes 23-EM-006H to add the water inlet O-ring and pink coolant to the “Parts Information” section (page 2), add the “SST Information” section (page 2), update ROM ID Information and Manual Mode Passwords (pages 4 & 11), and add a separate “ECU Update Procedure” section (pages 7-11).

Description: Certain 2022-2023MY Santa Cruz (NXT) vehicles may exhibit a warning lamp illumination for a diagnostic trouble code P218100 that is related to the Integrated Thermal Management Module (ITM). Follow the service procedure outlined in this bulletin to replace the ITM with a revised part and update the Engine/Electronic Control Unit (ECU).

NOTICE

- Completion of both ITM replacement using the part listed below and the ECU updates to revise the control logic is required to repair “DTC P218100 - Cooling System Performance”.
- A Prior Approval (PA) is **NOT** required for this repair, regardless if the affected part is outside of the New Vehicle Limited Warranty (5 years/60,000 miles).



Applicable Vehicles:

- ALL 2022–2023MY Santa Cruz (NXT)

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Model	Part Name	Part Number		Quantity
Santa Cruz (NXT)	Integrated Thermal Management (ITM) Module	25600-2S600 (OLD)	25600-2S600QQH (NEW)	1
	Water Inlet O-Ring	25462-2S000		1
	Pink Coolant	00232-19098		2

NOTE: For proper engine operation, ITM replacement must be completed before the ECU update.

SST Information:

Tool Name	Tool Number	Figure	Ordering Information
VCI 3	G0VHNNN06		Website: https://hyundaiesentialtools.com/ Email: Hyundaitools@snapon.com
VCI 2	G1XDDMN001		Phone: 1-855-763-9199 Hours: 7 AM – 7 PM CST

GDS Information:

System	Event Number*	Description
Engine	1008	ECU UPGRADE - NX4OB 2.5 TGDI P2181 IMPROVEMENT
	1029	ECU UPGRADE - NX4OB 2.5 GDI P2181/P0456 IMPROVEMENT

(*or use a later available event listed in the GDS **Engine** update screen if one is available.)

NOTE: For proper engine operation, ITM replacement must be completed before the ECU update.

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Model	Op. Code	Operation	Op. Time	Causal Part	Nature Code	Cause Code
Santa Cruz (NXT)	30DA13R0	DTC Inspection & ITM Replacement, and ECU Software Update	2.1 M/H	25600-2S000	I52	ZZ3

NOTE 1: Submit claim on Claim Entry Screen as “Campaign” type.

NOTE 2: This TSB includes repair justification in the form of an automatically uploaded DTC via GDS e-Report at the time of diagnosis. To ensure adherence to the Digital Documentation Policy prior to claim submission, DTC history can be reviewed via the e-Report function within the GDS. Taking a picture of the existing/replacement ITM next to each other and screen capture of the 'ECU update complete' screen is also required.

NOTE 3: The incident parts are subject to callback through the normal Warranty Technical Center (WTC) parts return process. **Claim is subject to debit if the part is not returned.**

NOTE 4: If a part is found in need of replacement while performing this TSB and the affected part is still under warranty, submit a separate claim using the same repair order. If the affected part is out of warranty, submit a Prior Approval request for goodwill consideration prior to performing the work.

NOTE 5: A Prior Approval (PA) is **NOT** required for this repair.

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ROM ID Information:

Model	Event Number	TM 2 or 4WD	ECU Part Number.	ROM ID	
				Current	Latest
Santa Cruz (NXT) 2.5 GDI	1029	8AT2	39110-2S171	NTDWN5GMFXXXXXK5B NTDWN5GMFXXXXXK5C NTDWN5GMFXXXXXK5D	NTDWN5GMFXXXXXK5F
		8AT2	39110-2S177	NTDWN5GKFXXXXXK5B NTDWN5GKFXXXXXK5C NTDWN5GKFXXXXXK5D	NTDWN5GKFXXXXXK5F
		8AT2	39110-2S172	NTDWN5GSFXXXXXK5B NTDWN5GSFXXXXXK5C NTDWN5GSFXXXXXK5D	NTDWN5GSFXXXXXK5F
		8AT4	39110-2S173	NTDWN5GMGXXXXXK5B NTDWN5GMGXXXXXK5C NTDWN5GMGXXXXXK5D	NTDWN5GMGXXXXXK5F
		8AT4	39110-2S178	NTDWN5GKGXXXXXK5B NTDWN5GKGXXXXXK5C NTDWN5GKGXXXXXK5D	NTDWN5GKGXXXXXK5F
		8AT4	39110-2S174	NTDWN5GSGXXXXXK5B NTDWN5GSGXXXXXK5C NTDWN5GSGXXXXXK5D	NTDWN5GSGXXXXXK5F
		8AT2	39110-2S322	NTEWN5GMFXXXXM0B	NTEWN5GMFXXXXM0D
		8AT2	39110-2S323	NTEWN5GKFXXXXM0B	NTEWN5GKFXXXXM0D
		8AT4	39110-2S325	NTEWN5GMGXXXXM0B	NTEWN5GMGXXXXM0D
		8AT4	39110-2S326	NTEWN5GKGXXXXM0B	NTEWN5GKGXXXXM0D
Santa Cruz (NXT) 2.5 T-GDI	1008	8DCT4	39100-2SNX2	NXDWD5TKGXXXXXK6A NXDWD5TKGXXXXXK6B	NXDWD5TKGXXXXXK6C
			39100-2SNX3	NXDWD5TSGXXXXXK6A NXDWD5TSGXXXXXK6B	NXDWD5TSGXXXXXK6C
			39100-2SNX7	NXDWD5TMGXXXXXK6A NXDWD5TMGXXXXXK6B	NXDWD5TMGXXXXXK6C
			39110-2SNX2	NXEWD5TKGXXXXM0A	NXEWD5TKGXXXXM0B
			39110-2SNX3	NXEWD5TSGXXXXM0A	NXEWD5TSGXXXXM0B
			39110-2SNX7	NXEWD5TMGXXXXM0A	NXEWD5TMGXXXXM0B

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Service Procedure:

DIGITAL DOCUMENTATION



This TSB includes repair justification in the form of an automatically uploaded DTC via GDS e-Report at the time of diagnosis. In addition, taking a picture of the existing/replacement ITM next to each other and capture of the ECU update compete screen is also required.

NOTICE

Applying the recommended torque to all fasteners is essential to reduce potential issues from occurring after the service procedure.

***i* Information**

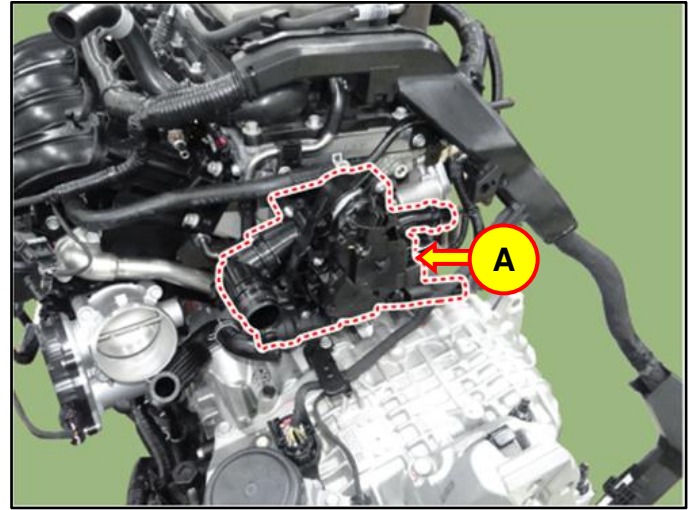
This TSB **ONLY** applies if GDS determines the vehicle is affected by DTC P2181.

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ITM Replacement

1. Utilize the GDS to detect DTC P218100:
Cooling System Performance:
 - If DTC P218100 is present, then replace the ITM (A) by referring to the shop manual.
 - **Engine Mechanical System > Cooling System > Integrated Thermal Management > Repair procedures**
 - If DTC P218100 is **NOT** present, then the service procedure is now complete.



2.

**DIGITAL
DOCUMENTATION**



Using STUI, take a photo of the new (QQH) part next to the removed, old part.

Upload the photo to STUI.



NEW (QQH)

OLD (OE)

3. Reinstall parts in the reverse order of removal.

ECU Update Procedure

DIGITAL DOCUMENTATION

This TSB includes screen capture of the **ECU Software Update** screen at 100% success.

NOTICE

You must initially perform the GDS ECU update in Auto Mode.

- If the ECU update starts but then fails in Auto Mode, perform the update in Manual Mode to recover.

NOTICE

Ensure the vehicle's battery charge is **above 11.0 Volts** and the tablet's battery charge is **above 30%** before performing a software update to avoid update failure.

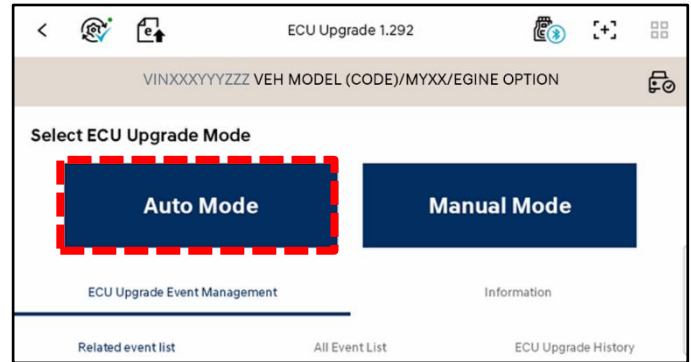
**Information**

- Turn **OFF** all lamps (do **NOT** leave head lamp switch in auto mode) and all accessories.
- Perform update with the ignition switch in the **ON** position.
- Do **NOT** disconnect any cables connected to the vehicle or scan tool during the update.
- Do **NOT** start the engine during the update.
- Do **NOT** turn **OFF** the ignition switch during the update.

1. Perform the ECU update in **Auto Mode**.

i Information

Refer to **TSB # 25-GI-011H**, “ECU Update Procedure for Tablet-Based GDS-Smart”, for additional information.



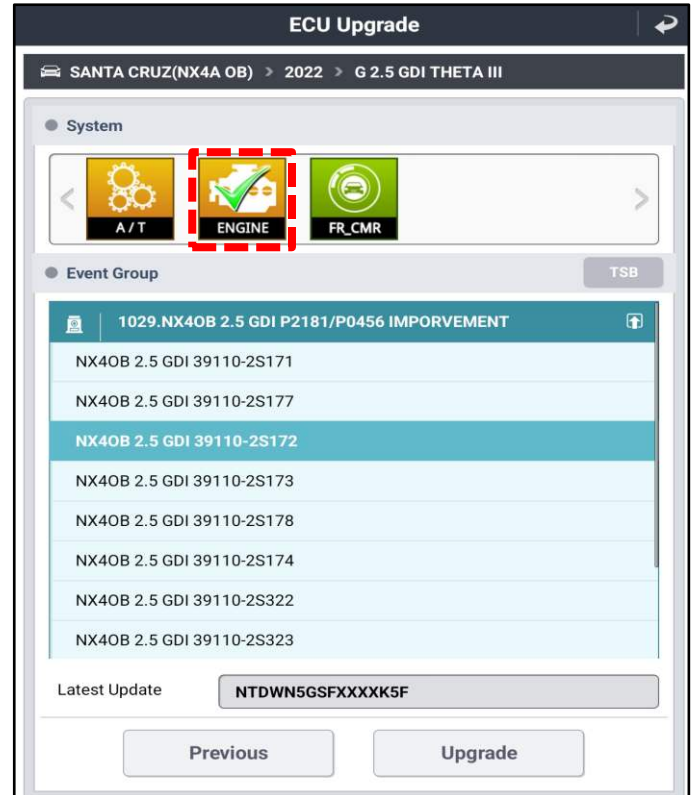
2. Select the **Engine** system to scan the vehicle's current ROM ID.

NOTICE

Check the current ROM ID version and compare it to the ROM ID Information table before attempting to perform the software update.

NOTICE

If the update fails, remove the power connector from the in-cabin fuse box for at least **5 seconds**. Alternatively, disconnect the negative (–) **12V** battery terminal, wait at least **5 seconds**. Reassemble and retry the update.



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3. After the ECU update process shows 100% complete, follow the prompts on the screen to cycle the ignition **OFF** for at least **10 seconds** to reset the control unit (certain models may take up to **30 seconds**).

**Information**

Use the **Refresh** button to reset the timer.

ECU Upgrade 1.292

VINXXXXXXXX VEH MODEL (CODE)/MYXX/ENGINE OPTION

0001. VEHICLE MODEL AND EVENT TITLE DETAILS

ENGINE START STOP

00:00

Turn IG off for 10 seconds and then back on. Click the OK button to continue.

ROM ID

Currently in Vehicle	TADV N5GSH3XXL5B
Latest Update	TADV N5GSH3XXL8A

OK

- 4.

**DIGITAL
DOCUMENTATION**

Take a screenshot of the ECU update complete screen(s) using your tablet and upload to STUI.

SANTA CRUZ(NX4A OB)/2022/G 2.5 T-GDI THETA III

1008.NX4OB 2.5 TGD1 P2181 IMPORVEMENT

100%

Success

The ECU Update has successfully completed.

ROM ID

Current ROM ID	NXDWDSTKGXXXXK6C
Latest ROM ID	NXDWDSTKGXXXXK6C

OK

5. Perform an **All Systems Fault Code** search and erase DTC history that had incidentally occurred from the ECU update.

Information

Do you want to run Fault Code Searching?

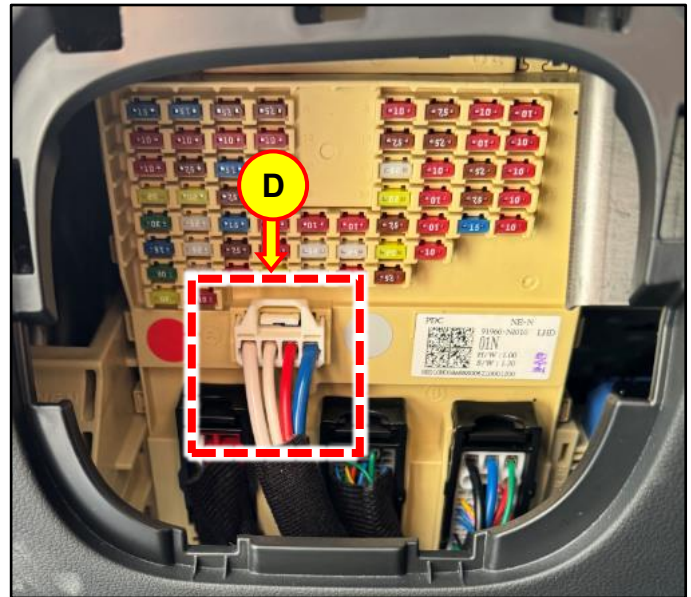
Cancel OK

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6. Disconnect the power connector (D) of the indoor fuse box, wait at least **5 seconds**, then reconnect it.

***i* Information**

Alternatively, disconnect the negative (-) **12V** battery terminal, wait at least **5 seconds**, then reconnect it.



7. Perform the ITM Coolant Filling Method to fully bleed the cooling system using GDS to enter the **Integrated Thermal Module Coolant Filling Mode**.

Refer to the shop manual:

- **Engine Mechanical System > Cooling System > Coolant > Repair procedures**

** WARNING**

NEVER remove the radiator cap when the engine is hot. Serious scalding could be caused by hot fluid under high pressure escaping from the radiator.

NOTICE

Failure to follow the ITM bleeding procedure under **S/W Management** in GDS may result in air pockets and overheating of the engine.

Integrated Thermal Module Coolant Filling Mode

Purpose	This mode assists coolant refilling by opening the coolant flow line for the engine equipped with an ITM.
Enable Condition	1. IG ON, ENG RUN 2. Transmission position P / Parking brake ON 3. Vehicle speed 0km/h (0 mile/h) 4. Coolant temperature is 90°C or under
Concerned Component	ITM
Concerned DTC	-
Fail Safe	-
Etc	-

8. The service procedure is now complete.

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If the ECU update fails in Auto Mode, perform the update in Manual Mode using the password(s) below.

Manual Mode Passwords:

Event	ECM Menu	Password
1008 (N 2.5T)	NX4OB 2.5 TGDI 39100-2SNX2	2200
	NX4OB 2.5 TGDI 39100-2SNX3	2300
	NX4OB 2.5 TGDI 39100-2SNX7	2201
	NX4OB 2.5 TGDI 39110-2SNX2	2700
	NX4OB 2.5 TGDI 39110-2SNX3	2310
	NX4OB 2.5 TGDI 39110-2SNX7	2710
1029 (NXT 2.5L)	NX4OB 2.5 GDI 39110-2S171	2171
	NX4OB 2.5 GDI 39110-2S177	2177
	NX4OB 2.5 GDI 39110-2S172	2172
	NX4OB 2.5 GDI 39110-2S173	2173
	NX4OB 2.5 GDI 39110-2S178	2178
	NX4OB 2.5 GDI 39110-2S174	2174
	NX4OB 2.5 GDI 39110-2S322	2322
	NX4OB 2.5 GDI 39110-2S323	2323
	NX4OB 2.5 GDI 39110-2S325	2325
	NX4OB 2.5 GDI 39110-2S326	2326