



Technical Service Bulletin

GROUP CAMPAIGN	NUMBER 23-01-035H
DATE APRIL, 2023	MODEL(S) SANTA FE HYBRID (TMa HEV)

SUBJECT: ECU UPGRADE – G2T-GDI DTC MISDIAGNOSIS & OIL DILUTION
IMPROVEMENT (SERVICE CAMPAIGN T9X)

★ IMPORTANT

Dealers must perform this service campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the “Vehicle Information” screen via WEBDCS to identify open campaigns.

DESCRIPTION: This bulletin provides information related to the Engine Control Module (ECM) software update for HMMA (5NM) produced 2023MY Santa Fe Hybrid (TM HEV) vehicles to improve the following DTC and symptoms:

1. **P1441** (EVAP System Flow During Non-Purge Condition)
 - a. Misdiagnosis due to insufficient margin of pressure deviation when driving at constant speed with low engine load
 - i. Logic improvement to eliminate misdiagnosis
2. **P1A77** (Check Generator Belt)
 - a. Misdiagnosis due to poor synchronization release when the engine is stopped
 - i. Logic improvement to release synchronization even if CAM signal is active when engine is stopped
3. **P00B7** (Engine Coolant Flow Low/Performance)
 - a. ITM control error due to temporary ball valve stuck
 - i. Improvement to ITM cleaning logic (1 time → 5 times)
4. **P2118** (Throttle Actuator Control Motor Current Range/Performance) / **P0401** (EGR Flow Insufficient Detected)
5. **P0236** (Turbocharger System Boost Sensor A Circuit Range/Performance) / **P0299** (Turbocharger underboost)
 - a. Failure due to EGR condensate freezing
 - i. Change the EGR Flow diagnosis condition (-40°C → -7°C)
6. Oil Dilution: Some vehicles may experience increased oil consumption and white smoke due to the diluting of engine oil with fuel because of the frequent transition between EV ↔ Engine mode during the winter season
 - a. Modify fuel injection strategy below 10°C and add oil heating function based on the driving pattern.
7. **P2B60** (Engine Coolant Flow Control Valve Position Sensor Circuit Range/Performance)
 - a. Ball valve stuck escape mode logic improvement
 - i. Change the Mas. Angle in the reverse direction when operating the escape mode (5 → 35 degrees)

APPLICABLE VEHICLES: Certain 2023MY “5NM” Santa Fe Hybrid (TMA HEV) equipped with 1.6L engines and produced from 10/10/2022 – 01/12/2023.

GDS INFORMATION: System Selection: **Engine:**

Event #	Description
#909	TM (P)HEV GAMMA2 T-GDI DTC MISDIAGNOSIS & OIL DILUTION IMPROVEMENT (ECU)

PARTS INFORMATION:

Part Name	Part Number	Quantity	Remarks
Engine Control Unit	39131-2MTL0	1	Only order if ECU is unrecoverable using Manual Mode after a failed Auto Mode update.

WARRANTY INFORMATION:

Model	Op Code	Operation	Op Time	Causal Part	Nature Code	Cause Code
“5NM” Santa Fe Hybrid (TMA HEV)	30D180R0	ECU UPGRADE	0.3 M/H	39131-2MTL0	I3T	ZZ3
	30D180R1	ECU REPLACEMENT	0.3M /H			

NOTE 1: Submit claim on Campaign Claim Entry Screen.

NOTE 2: If a part that is not covered by this campaign is found in need of replacement while performing this service campaign 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 3: ECU Replacement is only necessary if ECU crashes during the update. Make sure to follow all precautions outlined below to prevent ECU damage.

NOTICE

To verify the vehicle is affected, be sure to check the version of the vehicle’s ECU ROM ID with reference to the ECU ROM ID TABLE below before attempting to upgrade the control unit software.

You must attach a 12V battery charger to the vehicle before performing GDS ECU Update. This is to prevent a battery saver condition from occurring since Santa Fe Hybrid uses a smaller battery.

You must initially perform GDS ECU Update in Auto Mode.

- If the ECU Update starts but then fails in Auto Mode, disconnect the battery cables and touch the cables together for one minute. Reconnect the battery cables, attach a battery charger and perform the update in Manual Mode to recover.
- Refer to the General Instructions found in TSB 15-GI-001 (GDS Mobile).

SERVICE PROCEDURE:

1. CAUTIONS DURING CONTROL UNIT UPGRADE
 - a. Turn off all lamps(Do not leave head lamp switch in auto mode.) and all accessories(including heater, A/C, blower, radio, seat warmer, defroster, etc.), do not allow the battery to be discharged during upgrade.
 - b. Perform upgrade with the ignition switch in the ON position.
 - c. Be careful not to disconnect any cables connected to the vehicle or scan tool during upgrade.
 - d. Do not start the engine during upgrade.
 - e. Do not turn off the ignition switch during upgrade.
2. After the ECU Update is completed, check for Diagnostic Trouble Codes and erase any DTC.

ECU ROM ID TABLE:

Model	Part Number	ROM ID	
		Old	New
Santa Fe Hybrid (TMa HEV)	39131-2MTL0	JTMA3NS06F087F00	JTMA3NS06F288F00
		JTMA3NS06F188F00	

MANUAL UPDATE: If the ECU Update starts but then fails in Auto Mode, perform the update in Manual Mode to recover.

Model	Event	Menu	Password
Santa Fe Hybrid (TMa HEV)	#909	TMA PE HEV 1.6T-GDI 6AT 4WD 23MY 391312MTL0	9131