

 HYUNDAI Technical Service Bulletin	GROUP ENGINE ELECTRICAL SYSTEMS	NUMBER 23-EE-002H
	DATE FEBRUARY, 2023	MODEL(S) TUCSON HYBRID (NX4 HEV) & TUCSON PLUG-IN (NX4 PHEV)
SUBJECT: ECU/HCU UPGRADE – G2T-GDI DTC MISDIAGNOSIS & OIL DILUTION IMPROVEMENT		

DESCRIPTION: This bulletin provides information related to the Engine Control Module (ECM) / Hybrid Control Unit (HCU) software update for Tucson Hybrid (NX4 HEV) / Plug-in Hybrid (NX4 PHEV) 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. **P2B60** (Engine Coolant Flow Control Valve Position Sensor Circuit Range/Performance)
 - a. Insufficient control at the end point when ITM cleaning logic completes operation
 - i. Improve the ITM cleaning logic for better control
7. 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.

APPLICABLE VEHICLES: All MY22-23 Tucson Hybrid (NX4 HEV) and Tucson Plug-in (NX4 PHEV) equipped with 1.6L Gamma II turbocharged engines

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

Event #	Description
#911	ECU UPGRADE – NX4 (P)HEV G2T-GDI DTC MISDIAGNOSIS & OIL DILUTION IMPROVEMENT
#939	HCU UPGRADE – NX4 HEV G2T-GDI DTC MISDIAGNOSIS & OIL DILUTION IMPROVEMENT
#940	HCU UPGRADE – NX4 PHEV G2T-GDI DTC MISDIAGNOSIS & OIL DILUTION IMPROVEMENT

WARRANTY INFORMATION:

Model	Op Code	Operation	Op Time	Causal Part	Nature Code	Cause Code
TUCSON HYBRID (NX4 HEV) & TUCSON PLUG-IN (NX4 PHEV)	39131F17	ECU + HCU UPGRADE	0.8 M/H	39131-2MND0	I3T	ZZ3

NOTE 1: Normal Warranty Applies**SERVICE PROCEDURE:****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/HCU Update. This is to prevent a battery saver condition from occurring since Tucson Plug-in/Tucson Hybrid use a smaller battery.

You must initially perform GDS ECU/HCU 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 the battery charger and perform the update in Manual Mode to recover.
- Refer to the General Instructions found in TSB 15-GI-001 (GDS Mobile).

1. After the ECU Update is completed, check for Diagnostic Trouble Codes and erase any DTC.

ECU ROM ID TABLE:

Event	Model	Part Number	ROM ID	
			Old	New
TUCSON HYBRID (NX4 HEV) & TUCSON PLUG-IN (NX4 PHEV)	#911 (ECU)	391312MNC0	JNX41NS06F00LC50 JNX41NS06F196C00 JNX41NS06F29BC00	JNX41NS06F39BC00
		391312MND0	JNX41NS06F00LF50 JNX41NS06F196F00 JNX41NS06F29BF00	JNX41NS06F39BF00
		391332MNC0	JNX41NS06E00LC50 JNX41NS06E196C00 JNX41NS06E29BC00	JNX41NS06E39BC00
		391332MND0	JNX41NS06E00LF50 JNX41NS06E196F00 JNX41NS06E29BF00	JNX41NS06E39BF00
		391312MNC1	JNX43NS06F09BC00	JNX43NS06F19BC00
		391332MNC1	JNX43NS06E09BC00	JNX43NS06E19BC00
		391312MNH0	QNX41NS06F091F00 QNX41NS06F193F00 QNX41NS06F296F00 QNX41NS06F396F00 QNX41NS06F49BF00	QNX41NS06F59BF00
		391332MNH0	QNX41NS06E091F00 QNX41NS06E193F00 QNX41NS06E296F00 QNX41NS06E396F00 QNX41NS06E49BF00	QNX41NS06E59BF00
		391312MNH1	QNX43NS06F09BF00	QNX43NS06F19BF00
		391332MNH1	QNX43NS06E09BF00	QNX43NS06E19BF00
TUCSON HYBRID (NX4 HEV)	#939 (HCU)	36600-3DBJ0	GNXC1N6HNS1LC740 _NXH1107A	GNXC1N6HNS2LC740 _NXH2930A
			GNXC1N6HNS2LC740 _NXH1C17B	GNXC1N6HNSALC740 _NXH3126A
		36600-3DBJ1	GNXC1N6HNS1LC940 _NXH1107B	GNXC1N6HNS2LC940 _NXH2930A
			GNXC1N6HNS2LC940 _NXH1C17C	GNXC1N6HNSALC940 _NXH3117A
		36600-3DDJ0	GNXC3N6HNS2LC740 _NXH2524A	GNXC3N6HNS3LC740 _NXH2A19A
		36600-3DDJ1	GNXC3N6HNS2LC940 _NXH2524A	GNXC3N6HNS3LC940 _NXH2A19A
TUCSON PLUG-IN (NX4 PHEV)	#940 (HCU)	36600-3DAJ5	GNXC2N6PNS1-C940 _NXP1507A	GNXC2N6PNS2-C940 _NXP2930A
			GNXC1N6PNS2-C940 _NXP1C17D	GNXC1N6PNSA-C940 _NXP3127A
		36600-3DDJ5	GNXC3N6PNS2-C940 _NXP2524A	GNXC3N6PNS3-C940 _NXP2A19B

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
TUCSON HYBRID (NX4 HEV) & TUCSON PLUG-IN (NX4 PHEV)	#911 (ECU)	HEV 6AT 2WD 22MY 391312MNC0	4120
		HEV 6AT 4WD 22MY 391312MND0	4121
		HEV 6AT 2WD 22MY 391332MNC0	4122
		HEV 6AT 4WD 22MY 391332MND0	4123
		HEV 6AT 2WD/4WD 23MY 391312MNC1	1319
		HEV 6AT 2WD/4WD 23MY 391332MNC1	2331
		PHEV 6AT 4WD 22MY 391312MNH0	4124
		PHEV 6AT 4WD 22MY 391332MNH0	4125
		PHEV 6AT 4WD 23MY 391312MNH1	3193
		PHEV 6AT 4WD 23MY 391332MNH1	1233
TUCSON HYBRID (NX4 HEV)	#939 (HCU)	HEV 1.6T-GDI 6AT 4WD 17inch 36600-3DBJ0 NXH1107A -> NXH2930A	1438
		HEV 1.6T-GDI 6AT 4WD 17inch 36600-3DBJ0 NXH1C17B -> NXH3126A	7139
		HEV 1.6T-GDI 6AT 4WD 19inch 36600-3DBJ1 NXH1107B -> NXH2930A	8153
		HEV 1.6T-GDI 6AT 4WD 19inch 36600-3DBJ1 NXH1C17C -> NXH3117A	1833
		HEV 1.6T-GDI 6AT 4WD 17inch 36600-3DDJ0 NXH2524A -> NXH2A19A	6517
		HEV 1.6T-GDI 6AT 4WD 19inch 36600-3DDJ1 NXH2524A -> NXH2A19A	8641
TUCSON PLUG-IN (NX4 PHEV)	#940 (HCU)	PHEV 1.6T-GDI 6AT 4WD 19inch 36600-3DAJ5 NXP1507A -> NXP2930A	6158
		PHEV 1.6T-GDI 6AT 4WD 19inch 36600-3DAJ5 NXP1C17D -> NXP3127A	8419
		PHEV 1.6T-GDI 6AT 4WD 19inch 36600-3DDJ5 NXP2524A -> NXP2A19B	9997