HYUNDAI
Technical Service Bulletin

GROUP	NUMBER
ENGINE	**24-EM-002H**
DATE	MODEL(S)
MARCH 2024	**TUCSON (TL)**

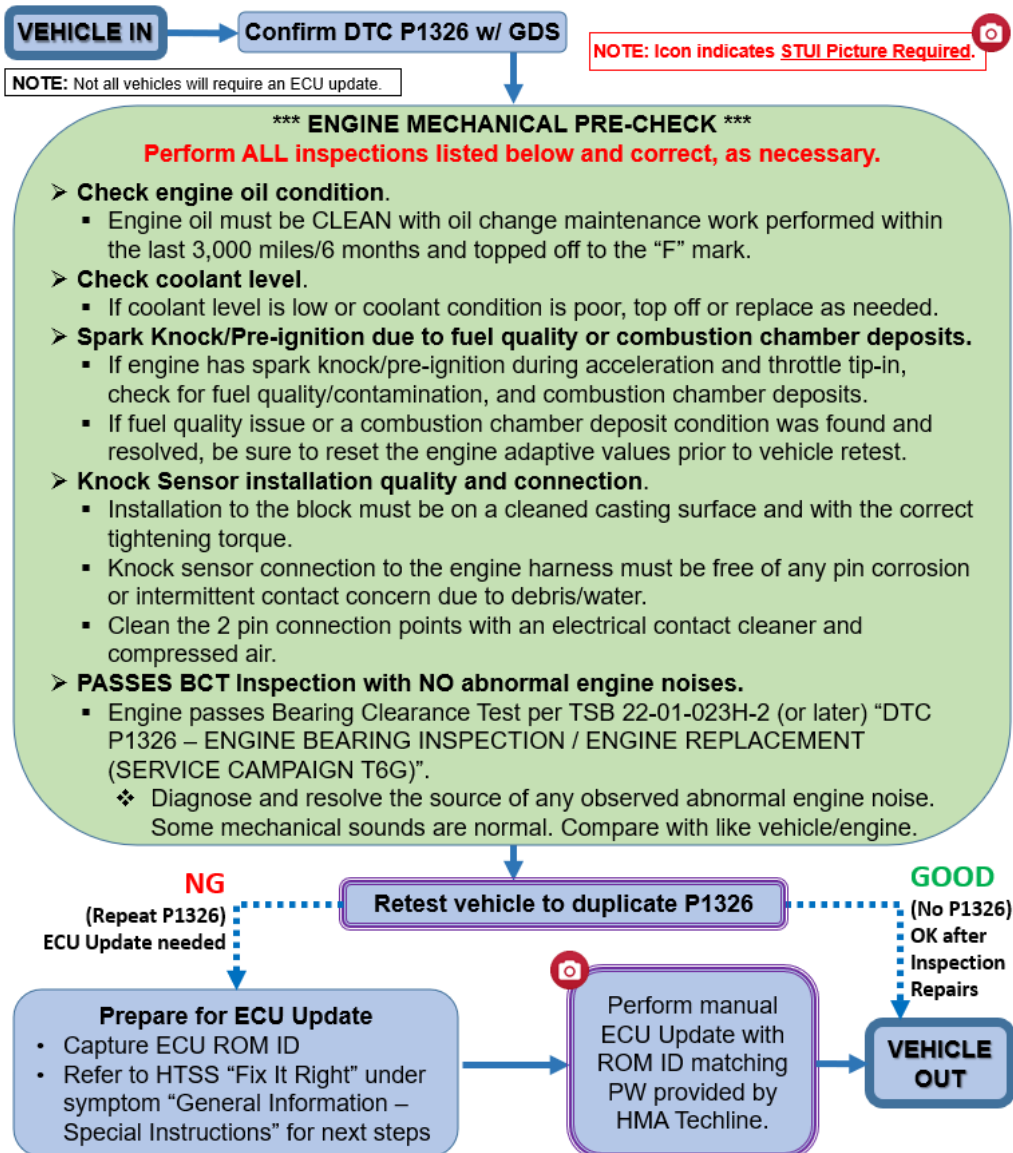**SUBJECT:** CONTINUED DTC P1326 AFTER KSDS ENGINE MONITORING LOGIC ECU UPDATE

Description: Certain 2016-2021MY Tucson (TL) 2.0L vehicles may experience continued DTC P1326 after the ECU update has been performed per TSB 22-01-028H-1 (or later) "ENGINE MONITORING LOGIC (SERVICE CAMPAIGN 966)".

Follow the service procedure outlined in this bulletin to repair this condition.

Applicable Vehicles:
- 2016 - 2021MY Tucson (TL) 2.0L vehicles with Service Campaign 966 already completed.

Service Process Flowchart:

VEHICLE IN → **Confirm DTC P1326 w/ GDS**

NOTE: Not all vehicles will require an ECU update.

NOTE: Icon indicates STUI Picture Required.

*** ENGINE MECHANICAL PRE-CHECK ***
Perform ALL inspections listed below and correct, as necessary.

➢ **Check engine oil condition.**
  ▪ Engine oil must be CLEAN with oil change maintenance work performed within the last 3,000 miles/6 months and topped off to the "F" mark.
➢ **Check coolant level.**
  ▪ If coolant level is low or coolant condition is poor, top off or replace as needed.
➢ **Spark Knock/Pre-ignition due to fuel quality or combustion chamber deposits.**
  ▪ If engine has spark knock/pre-ignition during acceleration and throttle tip-in, check for fuel quality/contamination, and combustion chamber deposits.
  ▪ If fuel quality issue or a combustion chamber deposit condition was found and resolved, be sure to reset the engine adaptive values prior to vehicle retest.
➢ **Knock Sensor installation quality and connection.**
  ▪ Installation to the block must be on a cleaned casting surface and with the correct tightening torque.
  ▪ Knock sensor connection to the engine harness must be free of any pin corrosion or intermittent contact concern due to debris/water.
  ▪ Clean the 2 pin connection points with an electrical contact cleaner and compressed air.
➢ **PASSES BCT Inspection with NO abnormal engine noises.**
  ▪ Engine passes Bearing Clearance Test per TSB 22-01-023H-2 (or later) "DTC P1326 – ENGINE BEARING INSPECTION / ENGINE REPLACEMENT (SERVICE CAMPAIGN T6G)".
    ❖ Diagnose and resolve the source of any observed abnormal engine noise. Some mechanical sounds are normal. Compare with like vehicle/engine.

NG (Repeat P1326) ECU Update needed

Retest vehicle to duplicate P1326

GOOD (No P1326) OK after Inspection Repairs

Prepare for ECU Update
- Capture ECU ROM ID
- Refer to HTSS "Fix It Right" under symptom "General Information – Special Instructions" for next steps

Perform manual ECU Update with ROM ID matching PW provided by HMA Techline.

VEHICLE OUT

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

Service Procedure:

STUI

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This TSB includes Repair validation photos. Refer to the latest Digital Documentation Policy for requirements.

1. Confirm with GDS scan tool that DTC P1326 exists and perform Engine Mechanical Pre-Check inspection steps listed below.
   ➢ This must be done to resolve any contributing factors that may result in DTC P1326.
   ➢ Perform ALL inspections listed and correct, as necessary.
   ➢ This TSB only applies if DTC P1326 condition exists.

*** ENGINE MECHANICAL PRE-CHECK ***

2. Check engine oil condition.
   ➢ Engine oil must be CLEAN with oil change maintenance work performed within the last 3,000 miles/6 months and topped off to the "F" mark.

3. Check coolant level.
   ➢ If coolant level is low or coolant condition is poor, top off or replace as needed.

4. Spark Knock/Pre-ignition due to fuel quality or combustion chamber deposits.
   ➢ If engine has spark knock/pre-ignition during acceleration and throttle tip-in, check for fuel quality/contamination, and combustion chamber deposits.
   ➢ If fuel quality issue or a combustion chamber deposit condition was found and resolved, be sure to reset the engine adaptive values prior to vehicle retest.

5. Knock Sensor installation quality and connection.
   ➢ Installation to the block must be on a cleaned casting surface and with the correct tightening torque.
   ➢ Knock sensor connection to the engine harness must be free of any pin corrosion or intermittent contact concern due to debris/water.
   ➢ Clean the 2 pin connection points with an electrical contact cleaner and compressed air.

6. PASSES BCT Inspection with NO abnormal engine noises.
   ➢ Engine passes Bearing Clearance Test per TSB 22-01-023H-2 (or later) "DTC P1326 – ENGINE BEARING INSPECTION / ENGINE REPLACEMENT (SERVICE CAMPAIGN T6G)".
   ➢ Diagnose and resolve the source of any observed abnormal engine noise. Some mechanical sounds are normal. Compare with like vehicle/engine.
   NOTE: Apply the appropriate Op Code according to the **Inspection Op Code Table** per TSB 22-01-024H-2 (or later) "OP CODE/PART NUMBER (REFERENCE GUIDE FOR SERVICE CAMPAIGN T6G)"

7. After steps 2-6 above for have been performed with all necessary adjustments and repairs made, retest the vehicle (with a brief test drive) to duplicate continued DTC P1326.
   ➢ **No DTC P1326 observed.** Service procedure is now complete, no other steps required.
   ➢ **Continued DTC P1326 observed.** Continue to next step for manual ECU update process.

8. Prepare for ECU update.
   - ➢ **Capture ECU ROM ID** of the vehicle (confirm with the ECU P/N label on module if needed).
   - ➢ **Refer to HTSS "Fix It Right"** under symptom "General Information – Special Instructions".

GDS Information:

Model	Event #	Description
Tucson 2.0L (TL)	**1052**	**IMPROVED KSDS LOGIC APPLICATION FOR SPECIFIC ISSUE (ADDENDUM)**

NOTE:
- **Do not perform ECU update without completing the ENGINE MECHANICAL PRE-CHECK**.
- This is a specific <u>manual-only ECU update</u> to be applied when deemed necessary with Techline review after all mechanical inspections and appropriate repairs have been completed.
- **Not all vehicles will require an ECU update for final repair**.

ROM ID Information Table:
- Verify the ECM ROM ID before updating the software. Refer to the table below.
- **IMMO** (O) = Start Stop Button **NON IMMO** (X) = Key Start

VEHICLE	MY	2WD/4WD	IMMO	ECU P/NO	ECU ROM ID OLD	ECU ROM ID NEW
Tucson 2.0L (TL)	16MY	2WD	X	39133-2ETA0	GGTL-FNUAPK02C00	GGTL-FNUAPK03C00
		4WD	X	39133-2ETA2	GGTL-FNUAPK03D00	GGTL-FNUAPK04D00
	17MY	2WD	O	39131-2ETA4 39131-2ETA6	GGTL-GNUAQK01C00	GGTL-GNUAQK02C00
			X	39133-2ETA4 39133-2ETA6	GGTL-GNUAPK01C00	GGTL-GNUAPK02C00
		4WD	O	39131-2ETA5 39131-2ETA7	GGTL-GNUAQK01D00	GGTL-GNUAQK02D00
			X	39133-2ETA5 39133-2ETA7	GGTL-GNUAPK01D00	GGTL-GNUAPK02D00
	18MY	2WD	O	39131-2ETA8	GGTL-HNUAQK01C00	GGTL-HNUAQK02C00
			X	39133-2ETA8	GGTL-HNUAPK01C00	GGTL-HNUAPK02C00
		4WD	O	39131-2ETA9	GGTL-HNUAQK01D00	GGTL-HNUAQK02D00
			X	39133-2ETA9	GGTL-HNUAPK01D00	GGTL-HNUAPK02D00
	19MY	2WD	O	39131-2ETF0	GGTL-INUAQK00C00	GGTL-INUAQK01C00
			X	39133-2ETF0	GGTL-INUAPK00C00	GGTL-INUAPK01C00
		4WD	O	39131-2ETF1	GGTL-INUAQK00D00	GGTL-INUAQK01D00
			X	39133-2ETF1	GGTL-INUAPK00D00	GGTL-INUAPK01D00
		2WD	O	39131-2ETF2	GGTL-INSAQK00C00	GGTL-INSAQK01C00
			X	39133-2ETF2	GGTL-INSAPK00C00	GGTL-INSAPK01C00
	20MY	2WD	O	39131-2E321	GTL-0NU0AQK00C00	GTL-0NU0AQK01C00
			X	39131-2E322	GTL-0NU0APK00C00	GTL-0NU0APK01C00
		4WD	O	39131-2E323	GTL-0NU0AQK00F00	GTL-0NU0AQK01F00
			X	39131-2E324	GTL-0NU0APK00F00	GTL-0NU0APK01F00
		2WD	O	39131-2E325	GTL-0NS0AQK00C00	GTL-0NS0AQK01C00
			X	39131-2E326	GTL-0NS0APK00C00	GTL-0NS0APK01C00
	21MY	4WD	O	39131-2E903	GTL-1NU0AQK01F00	GTL-1NU0AQK02F00
			X	39131-2E904	GTL-1NU0APK01F00	GTL-1NU0APK02F00
		2WD	O	39131-2E905	GTL-1NS0AQK01C00	GTL-1NS0AQK02C00
			X	39131-2E906	GTL-1NS0APK01C00	GTL-1NS0APK02C00

NOTICE

**GDS Vehicle Battery Low Voltage Warning:**
If voltage is below 12 volts as per the below GDS warning, then select **Back** and attach a battery charger to ensure an adequate battery state of charge for reliable update results. Turn ignition back on, and then retry the ECU update again.

Notice	↵
⚠️	Warning! lower Battery Voltage. BATTERY VOLTAGE: 11.7
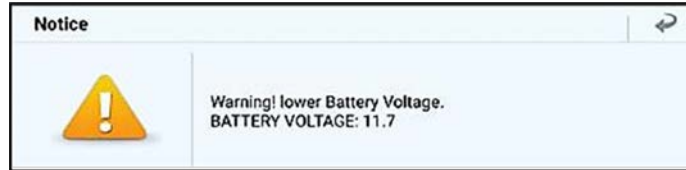
9. Techline will review and approve the ECU Update with a manual update PASSWORD.

   ➢ **Perform the ECU Update in Manual Mode** with the provided PASSWORD for the appropriate NEW ECU ECU ROM ID.

ℹ️ Information

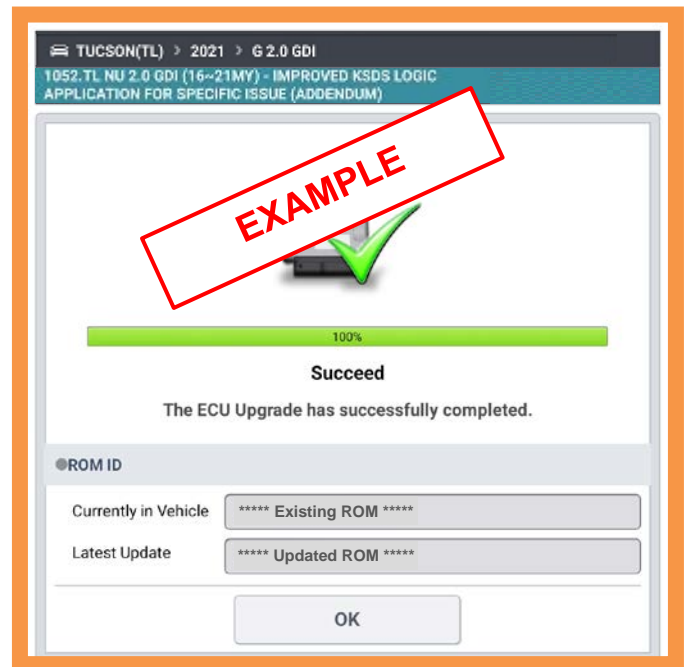Refer to TSB 15-GI-001 for additional tablet-based Mobile GDS ECU update information.
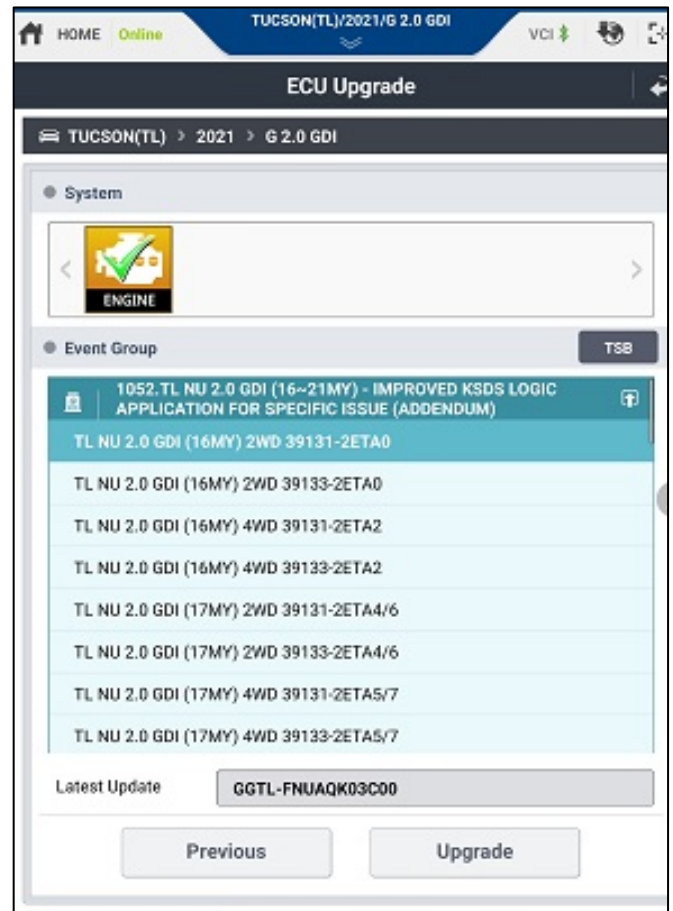
10.

STUI 📷

Take a screenshot of the ECU Update Complete screen using your particular tablet's screenshot save method and upload to STUI.

11. After the ECU Upgrade process shows 100% complete, cycle the ignition key to OFF for at least 30 seconds to reset the control unit.

12. Perform an All Systems Fault Code search and erase the history of the DTC that may have incidentally occurred from the ECU update

Warranty Information (w/ ECU Update):

Model	Op. Code	Operation	Op. Time	Casual Part	Nature Code	Cause Code
Tucson 2.0L (TL)	10D021RE	DTC Inspection + ECU Update	0.4 M/H	39133-2ETA6	I11	ZZ3

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

NOTE 2: If a part is found in need of replacement while performing this recall 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: Op times include VIN, Mileage, and photo capture of the "ECU update complete" screen as outlined in the Digital Documentation Policy.