



Technical Service Bulletin

GROUP

CAMPAIGN

NUMBER

22-01-030H

DATE

MARCH 2022

MODEL(S)

ELANTRA (AD/ADa)

SUBJECT:

**TCU UPDATE AND IVT REPLACEMENT
(SERVICE CAMPAIGN 963)**

This TSB supersedes 21-01-039H updating the ROM ID, Parts information, and OP Codes.

★ IMPORTANT

*** Dealer Stock and Retail Vehicles ***

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.

When a vehicle arrives at the Service Department, access the "Vehicle Information" screen via WEBDCS to identify open Campaigns.

Description: Certain 20MY Elantra (AD/ADa) vehicles may experience an illuminated check engine warning light due to Diagnostic Trouble Codes (DTC) listed below. Perform the Transmission Control Unit (TCU) update, and, if necessary, replace the IVT (Intelligent Variable Transmission) to resolve this condition. This update also includes the software for optimizing CLR_DIST (distance traveled since DTCs cleared) display.

- TCU DTC Codes: **P0730, P0731, P0741, P0867, P1603**

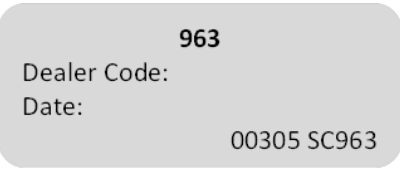
Applicable Vehicles: Certain 20MY Elantra (AD/ADa) AD VINs begin with "**KMH**"
ADa VINs begin with "**5NP**"

Parts Information:

MODEL	PART NAME	BEFORE	AFTER	NOTES
Elantra (AD)	IVT	48000-2H304	48000-2H304RM	
Elantra (ADa)		48000-2H301	48000-2H301RM	
Elantra (AD) Elantra (ADa)	Castle Nut	49551-3X000		2 EA
	Retainer Ring	49557-F2100		2 EA
	Lower Arm Lock Nut	54559-1F000		2 EA

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

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PART NAME	PART NUMBER	QTY.	FIGURE	REMARKS
Campaign Sticker	00305-SC963	1		Apply to all vehicles regardless of state.
Vehicle Emission Recall - Proof of Correction Card	NP050-09006	1		Order only for States: CA, CT, DE, MA, MD, ME, NJ, NY, OR, PA, RI, VT, WA

NOTICE

Performing Section C – IVT, TCU Pressure Learning (Manual transmission relearn) **and verification** is a critical step. After updating the IVT TCU software, it is important to complete the pressure learning and verification (park position learning value) procedure in order ensure the IVT has not been damaged.

GDS Information:

System Selection: **TRANSMISSION CONTROL UNIT (TCU)**

Event #	Description
601	601.AD(A) PE 2.0MPI - TCU ROM UPDATE

(*or use a later available event as listed in the GDS TCU Update screen if one is available.)

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Elantra (AD/ADa)	01D031R4	Check TCU DTC - Update TCU - Transmission Relearn - DTC Check	0.4 M/H	48000-2H301RM	I3A	ZZ3
	01D031R5	Check TCU DTC – IVT Replacement – Update TCU – Transmission Relearn	3.4 M/H	48000-2H301RM	I3A	ZZ3
	01D031R6	Check TCU DTC – Update TCU – Transmission Relearn – IVT Replacement – Transmission Relearn	3.5 M/H	48000-2H301RM	I3A	ZZ3

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 Service Campaign 963 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: If TCU is found to already be updated, please submit labor op code 01D031R4.

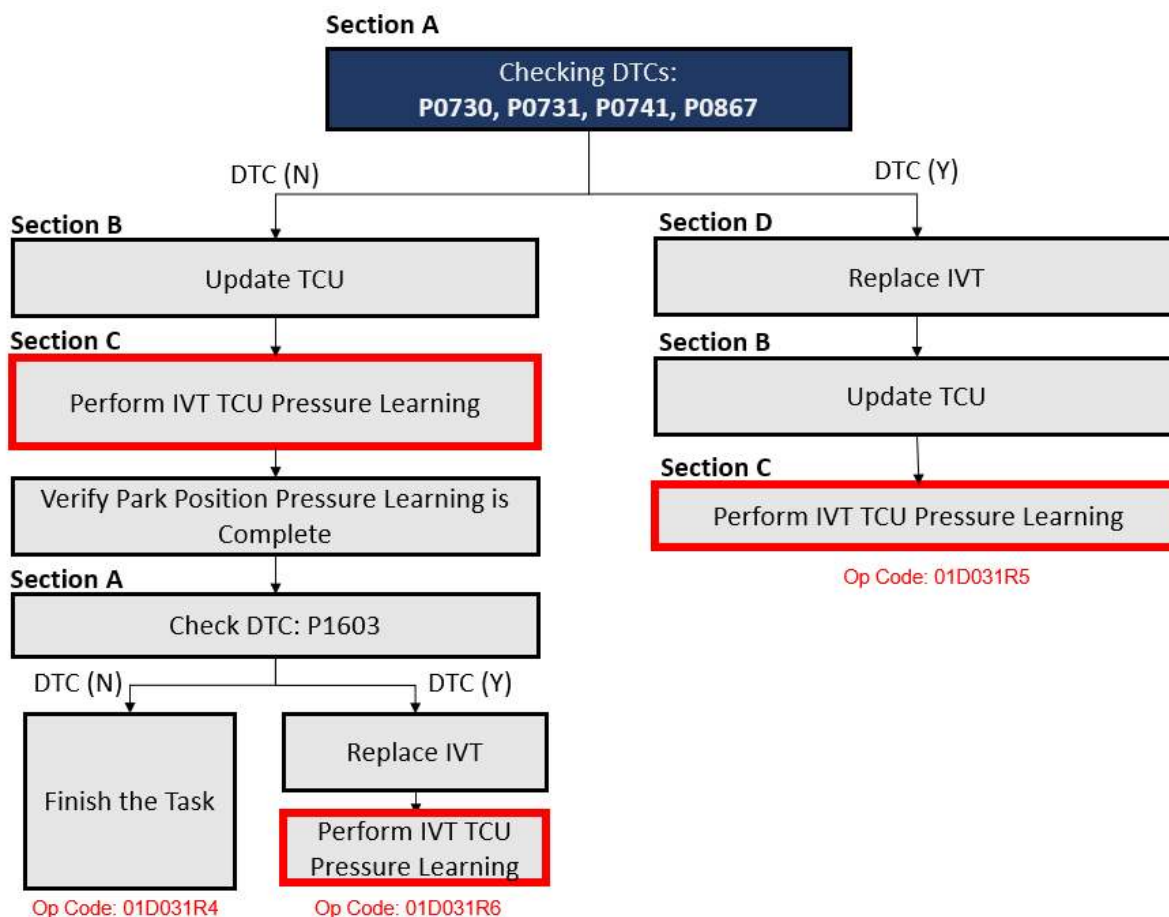
NOTICE

Read and familiarize with **Section C – IVT, TCU Pressure Learning** before starting TCU update process. Take a picture of the IVT Pressure Compensation Code sticker located on top of the transmission bell housing for reference when performing TCU learning.

NOTICE

A Prior Approval (PA) request is required for transmission replacement.

TCU Update Flow (AD/ADa with IVT):



NOTICE

***Section C is required to complete the service procedure. The transmission may fail from not performing IVT, TCU Pressure Learning, and is subject to warranty debit.**

NOTICE

For vehicles registered in certain states, a **VEHICLE EMISSION RECALL - PROOF OF CORRECTION CARD** must be filled out by the service manager, and given to the vehicle owner upon completion of the campaign. A **Campaign Sticker** must also be filled out and placed on the hood of the vehicle. Refer to pages 8-9 for more details.

For all vehicles, a **Campaign Sticker** must be filled out and placed on the hood of the vehicle.

NOTICE

1. Use the GDS-M to check the TCU DTC.
2. If one of the DTC(s) P0730, P0731, P0741, P0867 applies (History, Current, or Pending), replace the IVT.
3. Replace the IVT according to the applicable vehicle shop manual.
4. After IVT replacement, perform TCU update first, then perform the IVT resetting auto T/A values, oil-pressure characteristics input, TCU adaptive values learning procedure.

CAUTION

1. Verify the vehicle battery has reasonable charge.
2. Turn off all lamps (Do not leave head lamp switch in auto mode.), and all accessories.
3. Perform update with the ignition switch in the **ON** position.
4. Do not disconnect any cables connected to the vehicle or scan tool during update.
5. Do not start the engine during update.
6. Do not turn off the ignition switch during update.

NOTICE

You must initially perform GDS TCU Update in Auto Mode.

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

WARNING

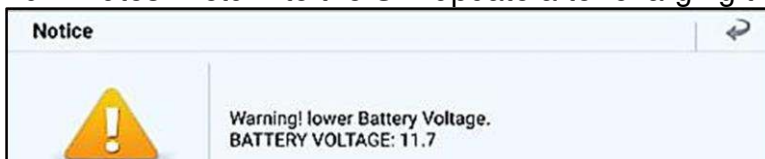
GDS-M Vehicle Battery Low Voltage Warning:

When the vehicle battery is lower than 12 volts, the GDS-M will trigger a Low Battery Voltage Warning. If this Warning occurs,

A. Connect the battery to a fully charged battery jump pack or GR8 charger using “Power Supply Mode” to continue the software update.

OR

B. Select “BACK” to exit the SW update. Then, start the engine and idle with the headlights on for 20 minutes. Return to the SW update after charging the battery.



Service Procedure:

A. Check DTC

1. Scan the vehicle for any of the following DTC Codes:

P0730, P0731, P0741, P0867

B. Update TCU

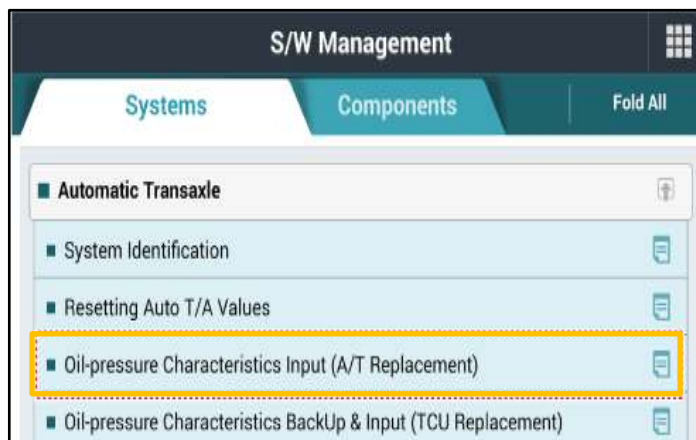
1. Perform GDS Mobile software update per TSB 15-GI-001.

NOTICE

Section C is required to complete the service procedure. The transmission may fail from not performing IVT, TCU Pressure Learning, and is subject to warranty debit.

C. IVT, TCU Pressure Learning

1. Perform IVT Resetting Auto T/A Values and Oil-pressure Characteristics Input procedures using the GDS-M.



NOTICE

IVT oil pressure characteristics label is located on the IVT bell housing.

2. Perform the TCU adaptive values learning procedure.

NOTICE

Learning condition Intelligent Variable Transmission Fluid (IVTF) temperature: 86 - 194°F (30 - 90°C)

Start the engine after checking the IVTF temperature with the Ignition ON.

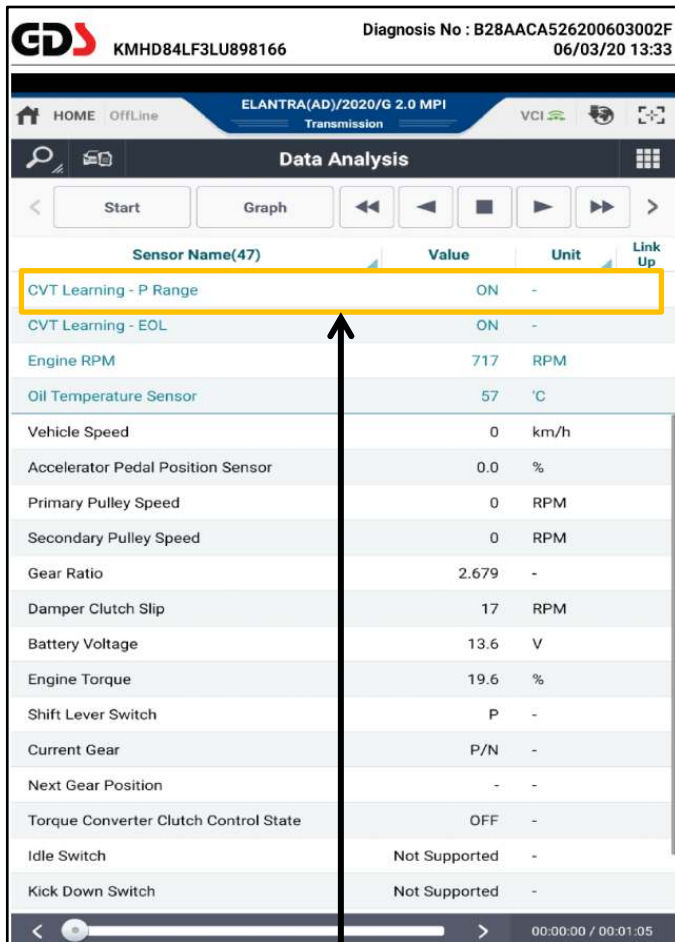
Engine RPM will rise to approximately 1000 rpm after starting the engine.

After 30-120 seconds, the learning is completed when the engine RPM reaches the normal IDLE level.

Use the GDS-M to verify the IVT P-Range learning is complete, and check TCU for DTC P1603 (EOL P-Range Pressure Learning Failed).

(1) If IVT- P Range learning is not complete, and P1603 is present, replace the IVT (Refer to **Section D.**)

(2) If IVT-P Range is not complete, and P1603 is not present, the learning condition has not been met. Re-perform **Section C** - IVT, TCU Learning.



Sensor Name(47)	Value	Unit	Link Up
CVT Learning - P Range	ON	-	
CVT Learning - EOL	ON	-	
Engine RPM	717	RPM	
Oil Temperature Sensor	57	°C	
Vehicle Speed	0	km/h	
Accelerator Pedal Position Sensor	0.0	%	
Primary Pulley Speed	0	RPM	
Secondary Pulley Speed	0	RPM	
Gear Ratio	2.679	-	
Damper Clutch Slip	17	RPM	
Battery Voltage	13.6	V	
Engine Torque	19.6	%	
Shift Lever Switch	P	-	
Current Gear	P/N	-	
Next Gear Position	-	-	
Torque Converter Clutch Control State	OFF	-	
Idle Switch	Not Supported	-	
Kick Down Switch	Not Supported	-	

NOTICE

Learning completion can be confirmed by using GDS-M to verify the IVT ("CVT") P-Range learning value is "ON". ("OFF" learning has not been completed)

CAUTION

Do not apply accelerator pedal and brakes, or operate shift levers during P range, learning. (If operated during learning, re-engage after shutting off)

D. IVT Replacement

1. If transmission replacement is needed, follow the applicable shop manual section:



2. If IVT replacement is performed, refer to **Section C** for IVT, TCU Learning.

TCU Update ROM information Tables

Use the applicable ROM information tables to determine if the vehicle is affected before attempting to update the control unit software.

TCU

VEHICLE	ENGINE	PCU P/No.	ROM ID	
			OLD	NEW
AD PE	2.0 ATK	39171-2EFG5	CAD0N20NL0 CAD0N20NL1 CAD0N20NL2 CAD0N20NL3 CAD0N20NL4 CAD0N20N40	CAD0N20N41
		39173-2EFG5		
		39171-2EFH5		
		39173-2EFH5		
ADA PE		39171-2EFJ5		
		39173-2EFJ5		
		39171-2EFK5		
		39173-2EFK5		

Manual Mode Password:**#601 TCU**

Menu	Password
AD(A) PE 2.0MPI 39171/3-2EFG5/H5, 39171/3-2EFJ5/K5	3255

For vehicles registered in California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington:

VEHICLE EMISSION RECALL - PROOF OF CORRECTION CARD

A Vehicle Emission Recall - Proof of Correction card must be filled out for all vehicles registered in California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington. Residents of these states, who own an affected vehicle, will be required to possess a Vehicle Emission Recall - Proof of Correction card as evidence of voluntary service campaign completion, when they apply for vehicle registration renewal.

WHAT TO DO WITH THE CARD:

The Vehicle Emission Recall - Proof of Correction card must be completed by the Dealership's Service Manager using a permanent ink pen. A fine point pen is recommended. When filling in the information, copy the information directly from the vehicle, not from the repair order. ALL INFORMATION MUST BE PRINTED AND NEAT.

The copy of the card shown below indicates the areas to be filled in. Each area must be filled in.

The completely filled out Vehicle Emission Recall - Proof of Correction card should be given to the owner of the vehicle upon completion of the Campaign.

The diagram shows a pink "Vehicle Emission Recall - Proof of Correction" card with the following fields and instructions:

1. Enter Vehicle's License Number (License No.)
2. Enter "Hyundai" (Make)
3. Enter Model Year (Model Year)
4. Enter "ELANTRA" (Body Type)
5. Enter the vehicle's VIN Number (Vehicle Identification Number)
6. Enter "963" (Recall Number)
7. Enter Dealership Name (Dealer's Name)
8. Enter Dealership's Address. NOTE: Enter the physical address, not the mailing address (not a P.O. Box) (Address, City, State and Zip)
9. Enter Date of Repair (Date)
10. Service Manager Sign Here (Dealership's Authorized Signature)

The card also includes a statement: "The above described vehicle has been repaired, modified and/or equipped with new emission control devices to meet applicable California Emission Control Laws." and a footer: "Return this certificate to DMV only when required - otherwise retain for your records." and "NP050-09006 8/14".

For All Vehicles:

Fill in the information on the 00305-SC963 Campaign Sticker and apply onto the hood in the area below the Emission Label as shown.

Be sure to clean the mounting surface to ensure proper label adhesion.

The campaign procedure is complete.

