



## Technical Service Bulletin

GROUP

Campaign

NUMBER

20-01-028H

DATE

June, 2020

MODEL(S)

Elantra (AD/ADa)

SUBJECT:

ECU & TCU UPDATE AND IVT REPLACEMENT  
(SERVICE CAMPAIGN T5B)

### ★ 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 Hyundai Motor America's "Vehicle Information Screen (VIS)" via WEBDCS to identify open Campaigns.

**Description:** Certain vehicles may experience an illuminated warning light due to Diagnostic Trouble Codes (DTC). Perform the ECU and TCU update, and, if necessary, replace the IVT (Intelligent Variable Transmission) to resolve this condition.

- TCU DTC Codes: **P0730, P0731, P0741, P0867, P1603**
- ECU DTC Codes: **P0106, P0068, P0101**

**Applicable Vehicles:** Certain 20MY Elantra (AD/ADa)

### Parts Information:

MODEL	PART NAME	BEFORE	AFTER
Elantra (AD)	IVT	48000-2H304	48000-2H304RM
Elantra (ADa)		48000-2H301	48000-2H301RM

### GDS Information:

System Selection: **ENGINE CONTROL UNIT (ECU)**

Event #	Description
602	602.AD(A) PE 2.0MPI - P0068 DTC IMPROVEMENT

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

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 ECU Update screen if one is available.)

## SUBJECT: ECU & TCU UPDATE AND IVT REPLACEMENT (SERVICE CAMPAIGN T5B)

### Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Elantra (AD/ADa)	00D031R1	Check TCU DTC - Update ECU/TCU - Transmission Relearn - DTC Check	0.5 M/H	48000-2H301RM	I3A	ZZ3
	00D031R2	Check TCU DTC – IVT Replacement – Update ECU/TCU – Transmission Relearn	3.5 M/H	48000-2H301RM	I3A	ZZ3
	00D031R3	Check TCU DTC – Update ECU/TCU – Transmission Relearn – IVT Replacement – Transmission Relearn	4.1 M/H	48000-2H301RM	I3A	ZZ3

**Note 1:** Submit Claim on Campaign Claim Entry Screen.

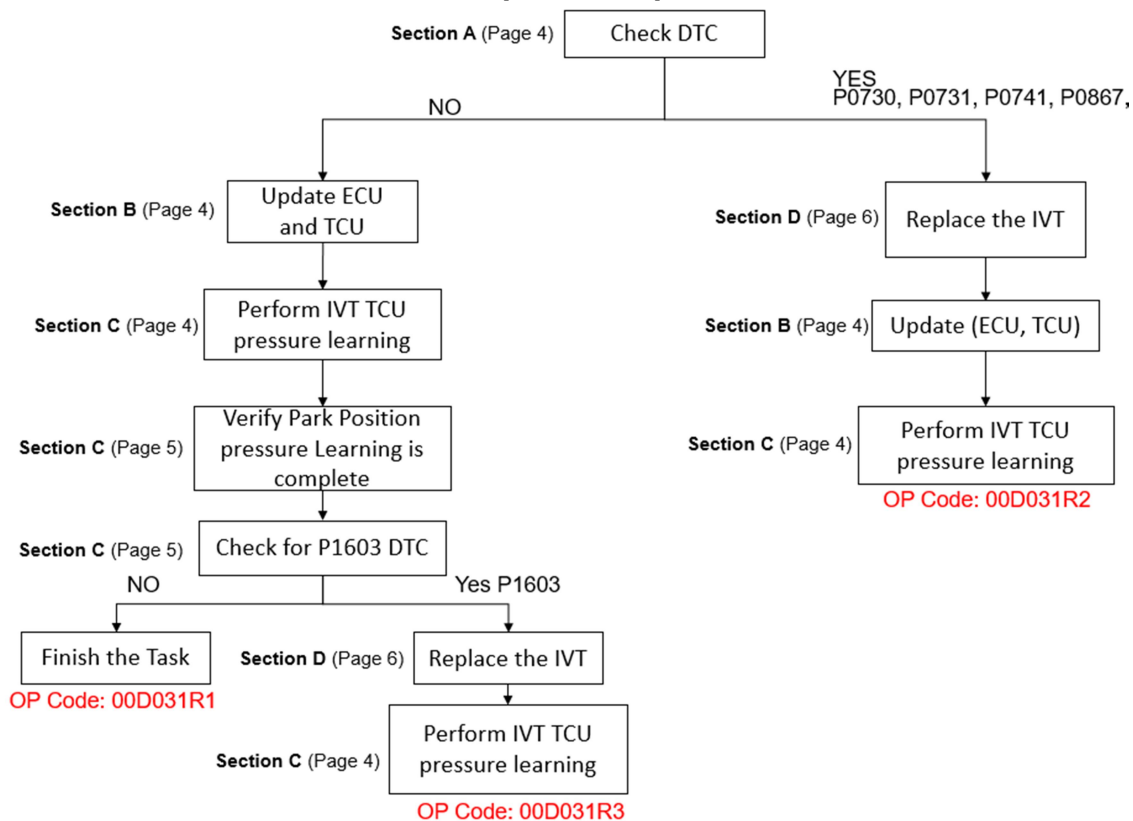
**Note 2:** If a part is found in need of replacement while performing Service Campaign T5B and the affected part is still under warranty, submit a separate claim using the same Repair Order. If the affected part is out of warranty, submit a Prior Approval Request for goodwill consideration prior to performing the work.

### NOTICE

Read and familiarize with **Section C** before starting ECU & 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.

### ECU, TCU Update Flow (AD/ADa with IVT)

1. Refer to the flowchart below to update the procedure.



## **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 ECU and 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 ECU Update in Auto Mode.**

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

## **! WARNING**

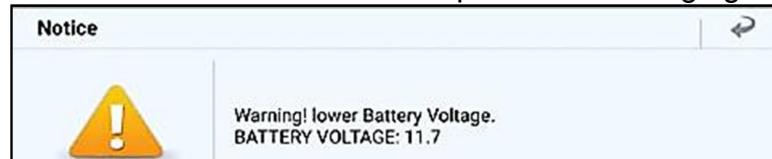
### **GDS-M Vehicle Battery Low Voltage Warning:**

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:

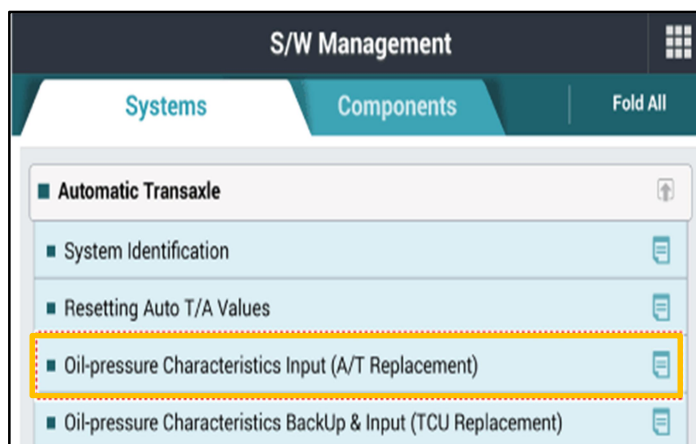
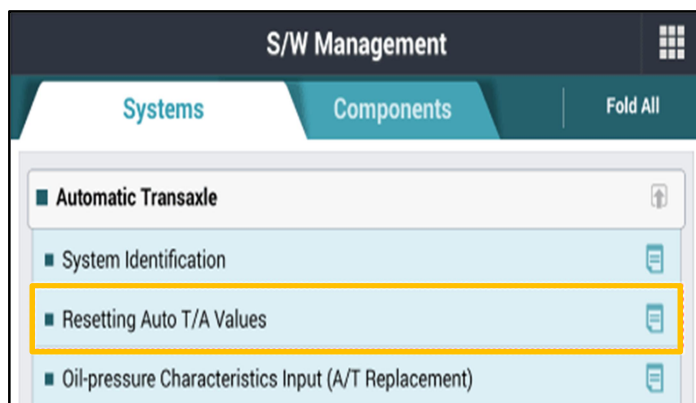
**P0730, P0731, P0741, P0867,**

**B. Update ECU and TCU**

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

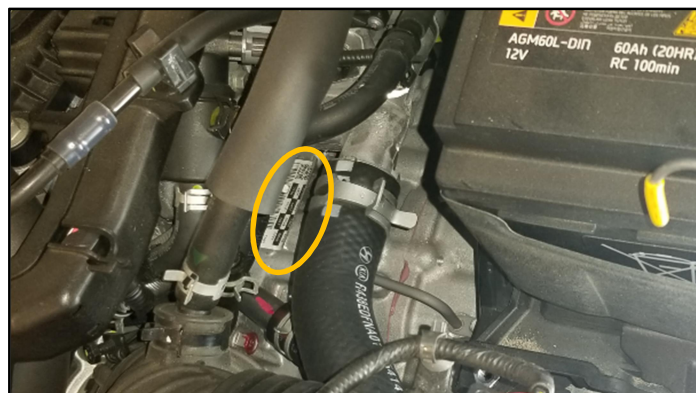
**C. IVT, TCU Pressure Learning**

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)

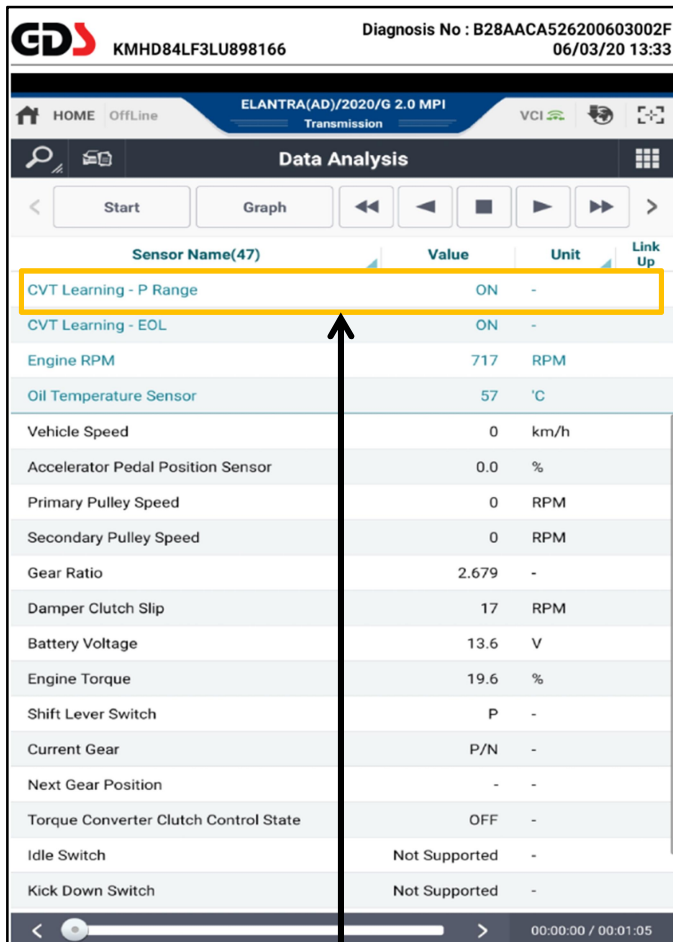
Start the engine after checking the IVTF temperature with the Ignition ON.

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.

## ECU & 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.

### ECU

VEHICLE	ENGINE	MY	EM	TM	IMMO	PCU P/No.	ROM ID	
							OLD	NEW
AD(A) PE	2.0 ATK	20MY	ULEV	IVT	O	39171-2EFH5 39171-2EFK5	ADAUP2AS6B1A ADAUP2AS6B1B	ADAUP2AS6B5A
					X	39173-2EFH5 39173-2EFK5	ADAUP2US6B1A ADAUP2US6B1B	ADAUP2US6B5A
			SULEV	IVT	O	39171-2EFG5 39171-2EFJ5	ADASP2AS6B1A ADASP2AS6B1B	ADASP2AS6B5A
					X	39173-2EFG5 39173-2EFJ5	ADASP2US6B1A ADASP2US6B1B	ADASP2US6B5A

### TCU

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

**Manual Mode Password:****#602 ECU**

Menu	Password
AD(A) PE 2.0MPI CVT -IMMO 39173-2EFH5/K5	7325
AD(A) PE 2.0MPI CVT +IMMO 39171-2EFH5/K5	7125
AD(A) PE 2.0MPI CVT -IMMO 39173-2EFG5/J5	7326
AD(A) PE 2.0MPI CVT +IMMO 39171-2EFG5/J5	7127

**+IMMO = Start Stop Button****-IMMO = Key Start Button****#601 TCU**

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