HYUNDAI Technical Service Bulletin	GROUP **AUTOMATIC TRANSMISSION**	NUMBER **21-AT-013H**
	DATE **August, 2020**	MODEL(S) **ELANTRA SPORT (AD) 1.6T** **VELOSTER (FS) 1.6T** **ELANTRA (ADa) 1.4T**

SUBJECT: DUAL CLUTCH TRANSMISSION CLUTCH REPLACEMENT AND TCU SOFTWARE UPDATE

This TSB supersedes 20-AT-021H to update model information, removing Tucson and Sonata.

Description: Certain vehicles (listed below) equipped with 7-speed Dual Clutch Transmission (DCT) may exhibit abnormal vibration at low speeds. This bulletin outlines the procedures for diagnosing and replacing the Double Clutch, including a Transmission Control Unit (TCU) software update.

Applicable Vehicles: 2017-2018 Elantra Sport (AD) 1.6L Turbo
2016-2017 Veloster (FS) 1.6L Turbo
2017-2018 Elantra (ADa) 1.4L Turbo

Parts Information:

MODEL	DTC PART	PNC	PART NUMBER
Elantra (ADa) 1.4L Turbo	Double Clutch	41200C	41200-2C220
	Snap Ring	44167G	41068-2D000
Elantra Sport (AD) 1.6L Turbo Veloster (FS) 1.6L Turbo	Double Clutch	41200C	41200-2D220
	Snap Ring	44167G	41068-2D000

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Elantra Sport (AD) 1.6T Veloster (FS) 1.6T	41200F08	GDS Judder Inspection Only	0.3 M/H	41200-2D101	V81	ZZ3
Elantra (ADa) 1.4T				41200-2C101		
Elantra Sport (AD) 1.6T	41200F10	Clutch Judder Inspection, Replacement of Double Clutch, and TCU Upgrade	3.9 M/H	41200-2D101	V81	ZZ3
Veloster (FS) 1.6T	41200F12		4.4 M/H	41200-2D101	V81	ZZ3
Elantra (ADa) 1.4T	41200F14		3.9 M/H	41200-2C101	V81	ZZ3

Note: Normal Warranty Applies

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

Special Service Tool

SPECIAL SERVICE TOOL	PART NUMBER	DESCRIPTION	PHOTO
Double Clutch Remover	09430-C1180	Used to remove the double clutch from the transmission	
Double Clutch Installer	09430-2A240	Used to install the double clutch into the transmission	
Actuator Fixing Jig & Motor Shaft Reset Tool	09430-C1302	Used to measure and reset the double clutch actuator	
Clutch Abrasion Compensation	09430-C1300	Clutch actuator adjustment tool	

(If additional SST is needed, replacement parts can be ordered from Bosch at (866) 539-4248.)

GDS Information: System Selection: TCU

Event #	Model	Description
464	AD	1.6T 7DCT CONTROL LOGIC IMPROVEMENT(F850 clutch material only)
465	ADa	1.4T 7DCT CONTROL LOGIC IMPROVEMENT(F850 clutch material only)
466	FS	1.6T 7DCT CONTROL LOGIC IMPROVEMENT(F850 clutch material only)

TCU Manual Mode Password Information Table:

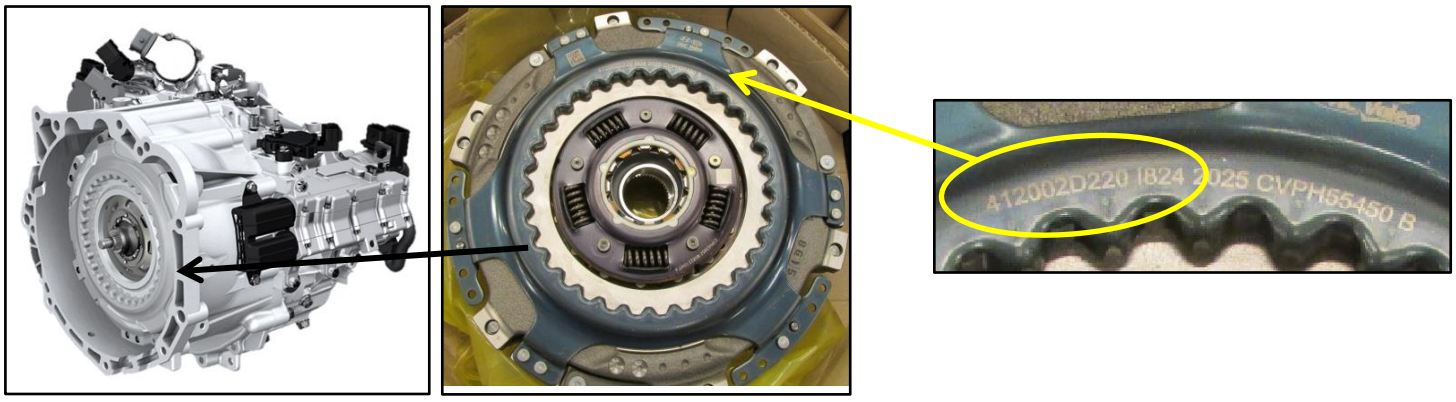
Menu	Vehicle Type	Password
AD 1.6T-GDI (7-DCT) TCU 95440-2DCE0	ALL 1.6T	4120
ADa 1.4T-GDI (7-DCT) TCU 95440-2CCA0	ALL 1.4T	4121
FS 1.6T-GDI (7-DCT) TCU 95440-2D400	ALL 1.6T	2400

ROM ID Information Table:

MODEL	SYSTEM	PART NUMBER		ROM ID	
		OLD	NEW	OLD	NEW
Elantra Sport (AD)	TCM	95440-2DCE0	95440-2DCE1	DADOT16NS0 DADOT16NS1 DADOT16NS2	DADOT16NS4
Elantra (ADa)	TCM	95440-2CCA0	95440-2CCA1	DADOT14NS0 DADOT14NS1 DADOT14NS2	DADOT14NS5
Veloster (FS)	TCM	95440-2D400	95440-2D401	DFSOT16NS0 DFSOT16NS1 DFSOT16NS2 DFSOT16NS3 DFSOT16NS4 DFSOT16NS5 DFSOT16NS6 DFSOT16NS7 DFSOT16NS8 DFSOT16NS9 DFSOT16NSA DFSOT16NSB	DFS0T16NSC

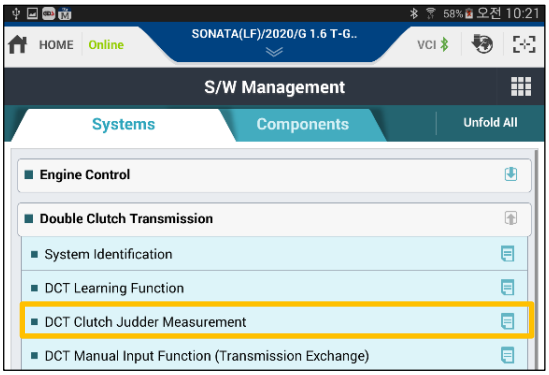
Updated F850 clutch material identification:

MODEL	PREVIOUS CLUTCH PART NUMBER (F833DS)	NEW CLUTCH PART NUMBER (F850)
2017~2018 Elantra Sport (AD) 1.6T 2016-2017 Veloster (FS) 1.6T	41200-2D101	41200-2D220
2016-2018 Elantra (ADa) 1.4T	41200-2C101	41200-2C220

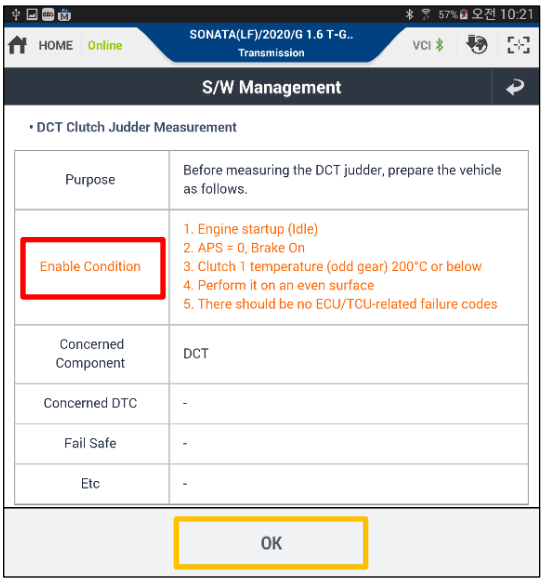


A. GDS Clutch Judder Inspection

1. Using the GDS-M, enter the vehicle information, select **S/W Management**, and then select **DCT Clutch Judder Measurement**.



2. Follow the information specified in **Enable Condition**, and select **OK**.

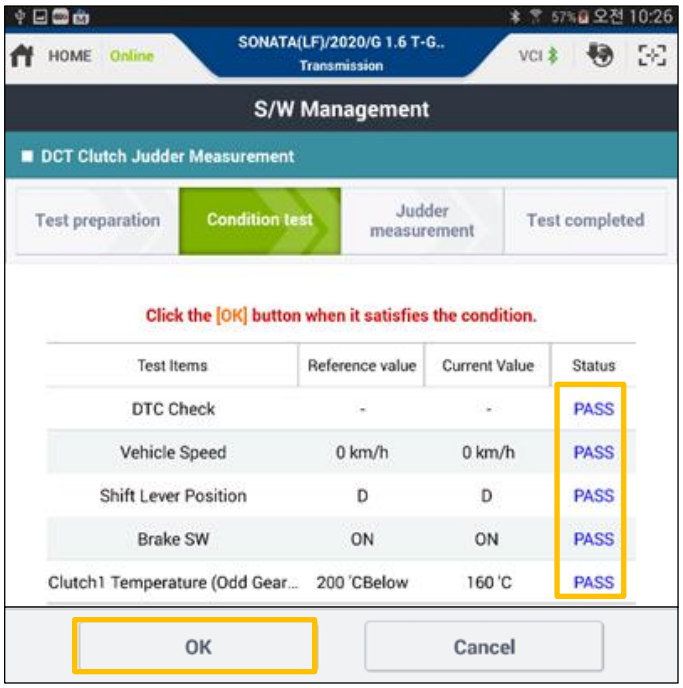


3. Follow the instructions on the **Test Preparation** screen to prepare the vehicle for **DCT Judder Measurement**.

   Remove the passenger side floor mat, and place the GDS-M flat and straight on the passenger floor.

   Select **OK**.

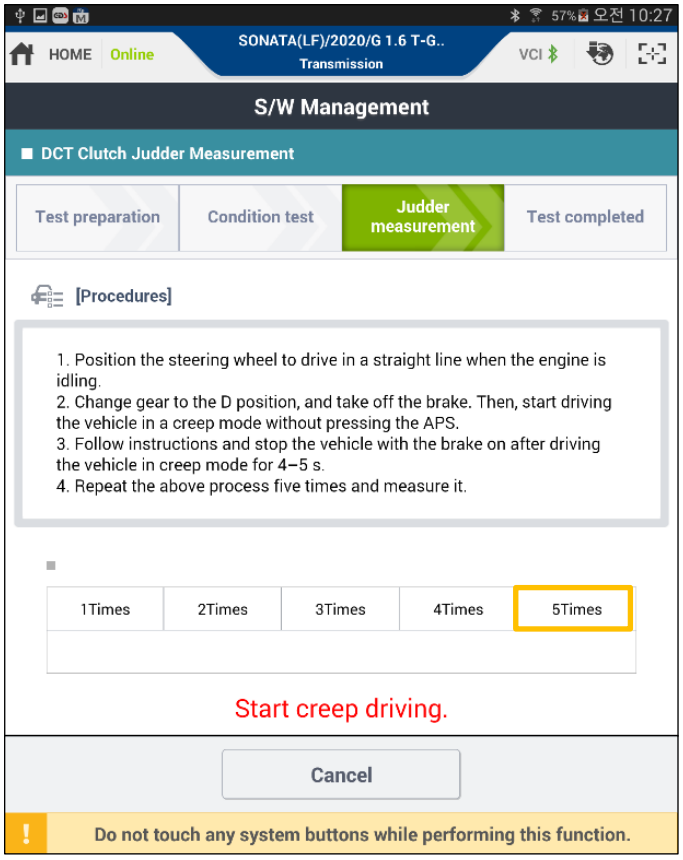
4. Verify that all vehicle conditions are **PASS**, and select **OK**.



5. Follow the instructions from the Judder Measurement screen to perform the judder clutch inspection.

   The inspection is complete when the **5Times** reading appears.

> **NOTICE**
>
> Do not brake or operate the accelerator during the inspection.



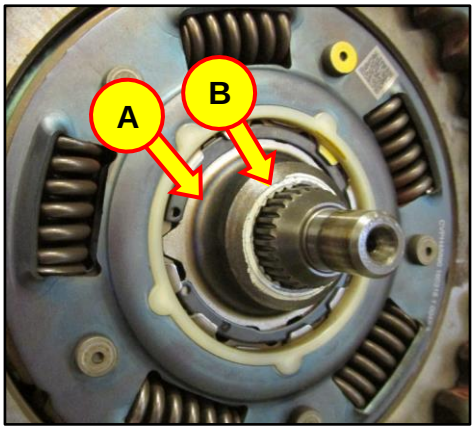
6. After the measurement is complete, apply the brakes for 4-5 seconds.

7. If the result is **"PASS, No Judder Detected"**, the service procedure is complete.

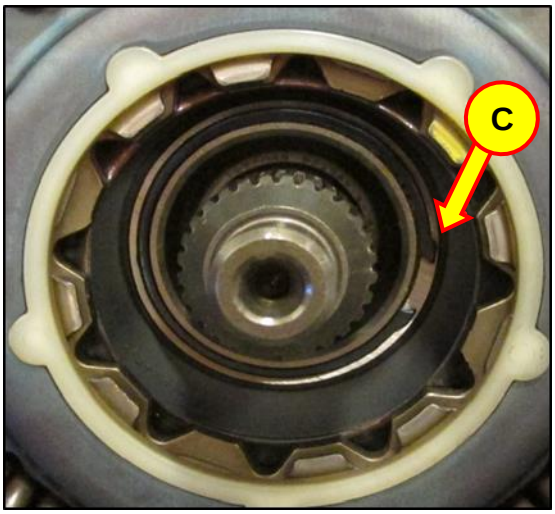
8. If the result is, **"Judder Detected, Replace Double Clutch,"** replace the double clutch assembly by referring to section **B. Clutch Replacement Procedure** (Page 7), and perform the TCU upgrade, if applicable **C. TCU Upgrade** (Page 10).

B. Clutch Replacement Procedure

1. Remove the Dual-Clutch Transmission following the shop manual procedure.
2. Remove the retaining ring (A) (41126-2D100) and the splined hub (B).



3. Remove the snap ring (C) (41068-2D000).



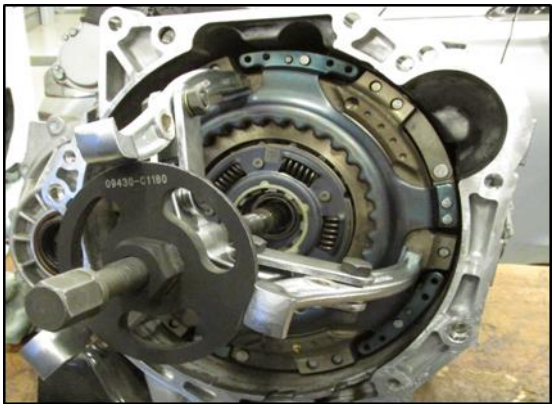
CAUTION

The snap ring can become deformed in the removal process. Do not reuse the existing snap rings when reinstalling the Double Clutch into the transmission.

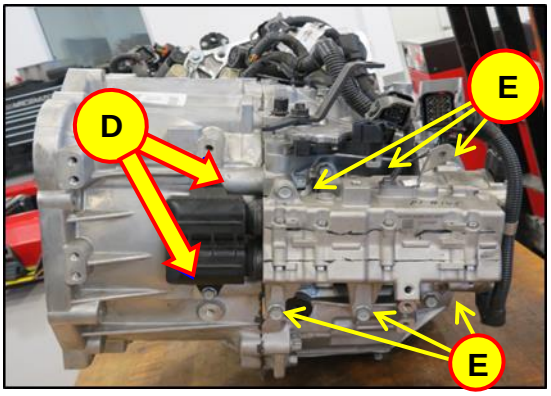
NOTICE

This operation requires special service tools. Please see the tools listed above.

4. Using the special service tool (SST 09430-C1180), remove the double clutch from the transmission assembly.

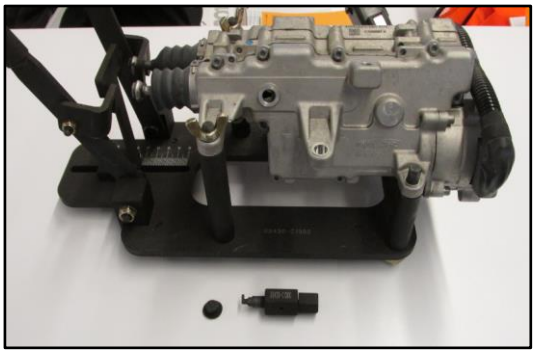


5. Remove the 2 bolts (D) securing the fork cover. Remove the 6 bolts (E) retaining the clutch actuator assembly to the transmission.



6. Remove the clutch actuator and place it on the actuator fixing jig (SST 09430-C1302).

7. Follow the service shop manual procedure to initialize the rod length for both odd and even clutch actuator rods.

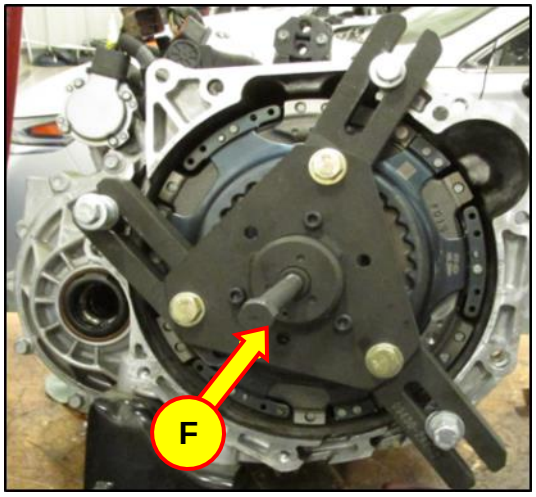


CAUTION

When installing a new Double-Clutch, the clutch actuator rod length has to be reset back to the factory zero. If the rod length is not adjusted correctly, the GDS DCT relearn procedure will not complete.

8. Reinstall the clutch actuator in the order that it was removed.
Torque: Fork Cover - 2.9-4.3 lb-ft (3.9-5.9 N.m)
Torque: Clutch Actuator - 14.5-19.5 lb-ft (19.6-26.5 N.m)

9. Install the new Double-Clutch using the special service tool (SST 09430-2A240) to fully seat the Double-Clutch.

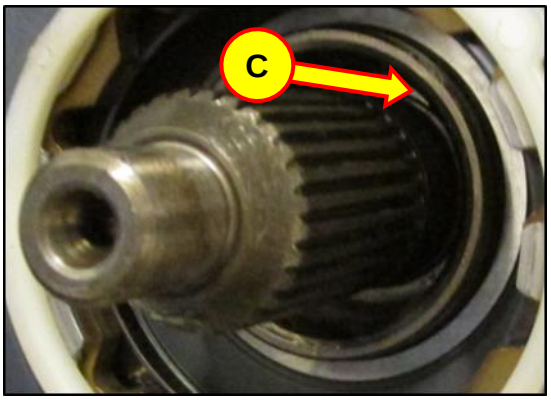


NOTICE

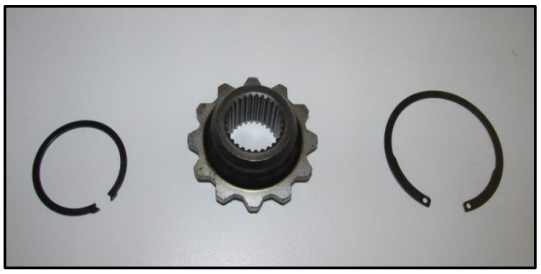
(SST 09430-2A240) may appear different than the reference photo.

10. Turn bolt (F) clockwise. When the force needed to turn the bolt increases, the Double-Clutch is fully seated.

11. Verify the Double-Clutch is fully seated on the input shafts. The snap ring groove (C) will be fully exposed.



12. Install new snap ring (C), splined hub (B) and retaining ring (A).



CAUTION

When installing the new snap ring, make sure it is fully seated and can be easily rotated left and right.

13. Reinstall the Dual Clutch Transmission into the vehicle by following the service shop manual procedure.

    The TCU Software update can now be performed.

NOTICE

- When replacing the Double Clutch, refer to the table on page 4 of this TSB to identify if the originally clutch material was the older F833DS or newer F850 clutch material.
- Only if the Dual Clutch Transmission was originally equipped with the old F833DS clutch and the replacement Double Clutch is the new F850 material should the software update be performed.

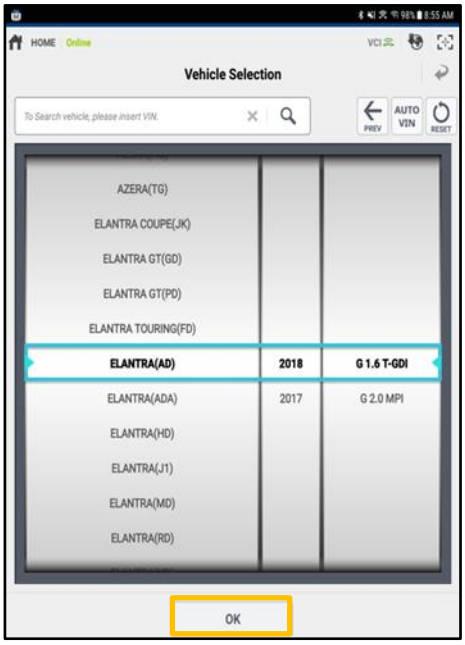
C. TCU Upgrade

NOTICE

The TCU software can only be performed in manual mode.

1. Verify that the vehicle battery has enough battery to perform the software upgrade.
2. Turn off all accessories and lamps.
3. Perform the upgrade with the ignition switch in the ON position.
4. Do not disconnect any cables connected to the vehicle or scan tool during upgrade.
5. Do not start the engine during the upgrade.
6. Do not turn off the ignition switch during upgrade.
7. Connect the VCI-II into the vehicle's DLC connector.

8. Enter the vehicle information and select **ECU Upgrade**.



9. Select Manual Mode, then select Upgrade Event.

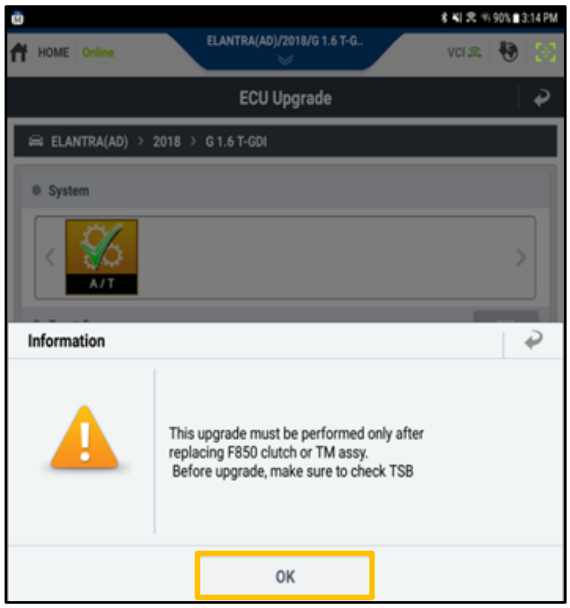
2-1) AD : "464.AD 1.6T-GDI(7DCT) - TCU UPGRADE(AFTER REPLACING F850 CLUTCH OR TM ASSY)"

2-2) ADa : "465.ADA 1.4T-GDI(7DCT) - TCU UPGRADE(AFTER REPLACING F850 CLUTCH OR TM ASSY)"

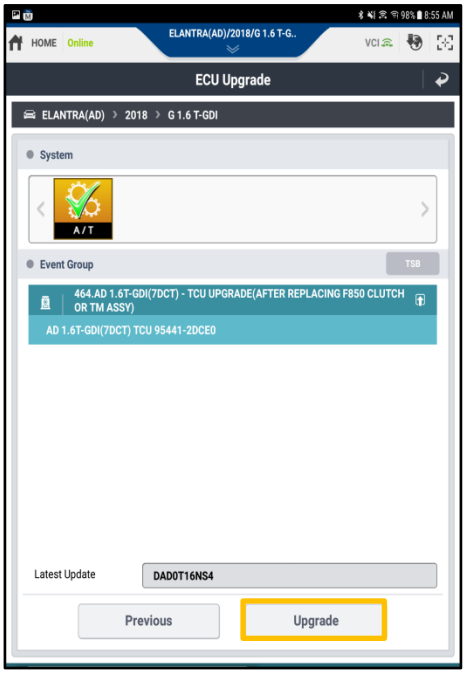
2-3) FS : "466.FS 1.6T-GDI(7DCT) - TCU UPGRADE(AFTER REPLACING F850 CLUTCH OR TM ASSY)"

10. An Information warning will appear.

Press **OK**.



11. Select the appropriate control unit part number with reference to the ROM ID Information Table, and select **Upgrade**.



12. Insert the applicable password from the table on page 3 above, and select **OK**.

13.

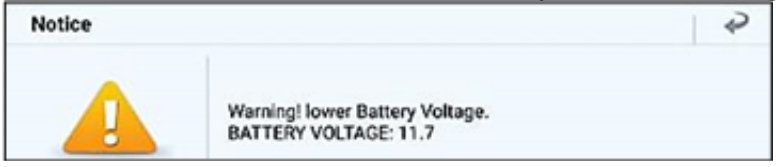
⚠WARNING

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.



14. The upgrade has two stages. Do not make any selections until the upgrade is complete.

15. Once the upgrade is complete, turn the ignition key **OFF** for 30 seconds.

    Turn the ignition key **ON,** and press **OK** to continue.

16. An upgrade complete screen will appear. Press **OK**.

17. Check for Diagnostic Trouble Codes in ALL menus and erase any DTC.

18. If applicable, erase the DTC in the BlueLink system according to TSB **12-BE-005-2**.

19. Use the GDS to perform the DCT learning function.

20. Confirm normal vehicle operation.