



HYUNDAI
Technical Service Bulletin

GROUP AUTOMATIC TRANSMISSION	NUMBER 23-AT-011H
DATE AUGUST 2023	MODEL(S) SANTA FE (TMa) SONATA (DN8a) SANTA CRUZ (NXT)

SUBJECT: 8-SPEED WET DCT REPLACEMENT INSTRUCTIONS FOR 2.5T
VEHICLES

Description: This bulletin outlines changes to the service procedure regarding the replacement of 8-speed wet dual clutch transmissions (8WDCT) and associated transmission control unit (TCU). These changes only apply to vehicles equipped with Theta 2.5T engines. Certain transmissions (indicated by a new part number) have received an improved clutch spring. The correct TCU software update must be matched with the correct corresponding 8WDCT hardware, otherwise drivability concerns may occur.

Applicable Vehicles:

- 2021MY ~ Santa Fe (TMa) 2.5T (VINs starting with "5NM")
- 2021MY ~ Sonata (DN8a) 2.5T N-Line Trim (VINs starting with "5NP")
- 2022MY ~ Santa Cruz (NXT) 2.5T

Parts Information:**Before-Improvement 8WDCT**

MODEL	ENGINE	TYPE		T/M ASSY NO.	REMAN. PART	REMARK	LATEST TCU CAL ID (EVENT #)
Santa Fe (TMa)	Theta 2.5T	SBW	2WD	430F0-2N085	N/A	with TCU	VTMPT25XXX900NSA (#895)
				43000-2N034	43000-2N034RM	without TCU	
			4WD	430F0-2N086	N/A	with TCU	
				43000-2N035	43000-2N035RM	without TCU	
Sonata (DN8a) with N Line Trim	Theta 2.5T	SBW	2WD	430F0-2N034	N/A	with TCU	VDN8T25XXX900NSC (#896)
				43000-2N050	43000-2N050RM	without TCU	
Santa Cruz (NXT)	Theta 2.5T	SBC	4WD	430F0-2N081	N/A	with TCU	WNX4T25X4X900NS9 (#897)
				43000-2N028	43000-2N028RM	without TCU	

After-Improvement 8WDCT

MODEL	ENGINE	TYPE		T/M ASSY NO.	REMAN. PART	REMARK	LATEST TCU CAL ID (EVENT #)
Santa Fe (TMa)	Theta 2.5T	SBW	2WD	43000-2N036	43000-2N036RM	without TCU	VTMPT25XXW900NS1 (#920)
			4WD	43000-2N037	43000-2N037RM	without TCU	
Sonata (DN8a) with N Line Trim	Theta 2.5T	SBW	2WD	43000-2N052	43000-2N052RM	without TCU	VDN8T25XXW900NS1 (#921)
Santa Cruz (NXT)	Theta 2.5T	SBC	4WD	43000-2N029	N/A	without TCU	WNX4T25X4W900NS1 (#922)

Note: SBC = Shift By Cable, SBW = Shift By Wire

Warranty Information: Normal Warranty applies.

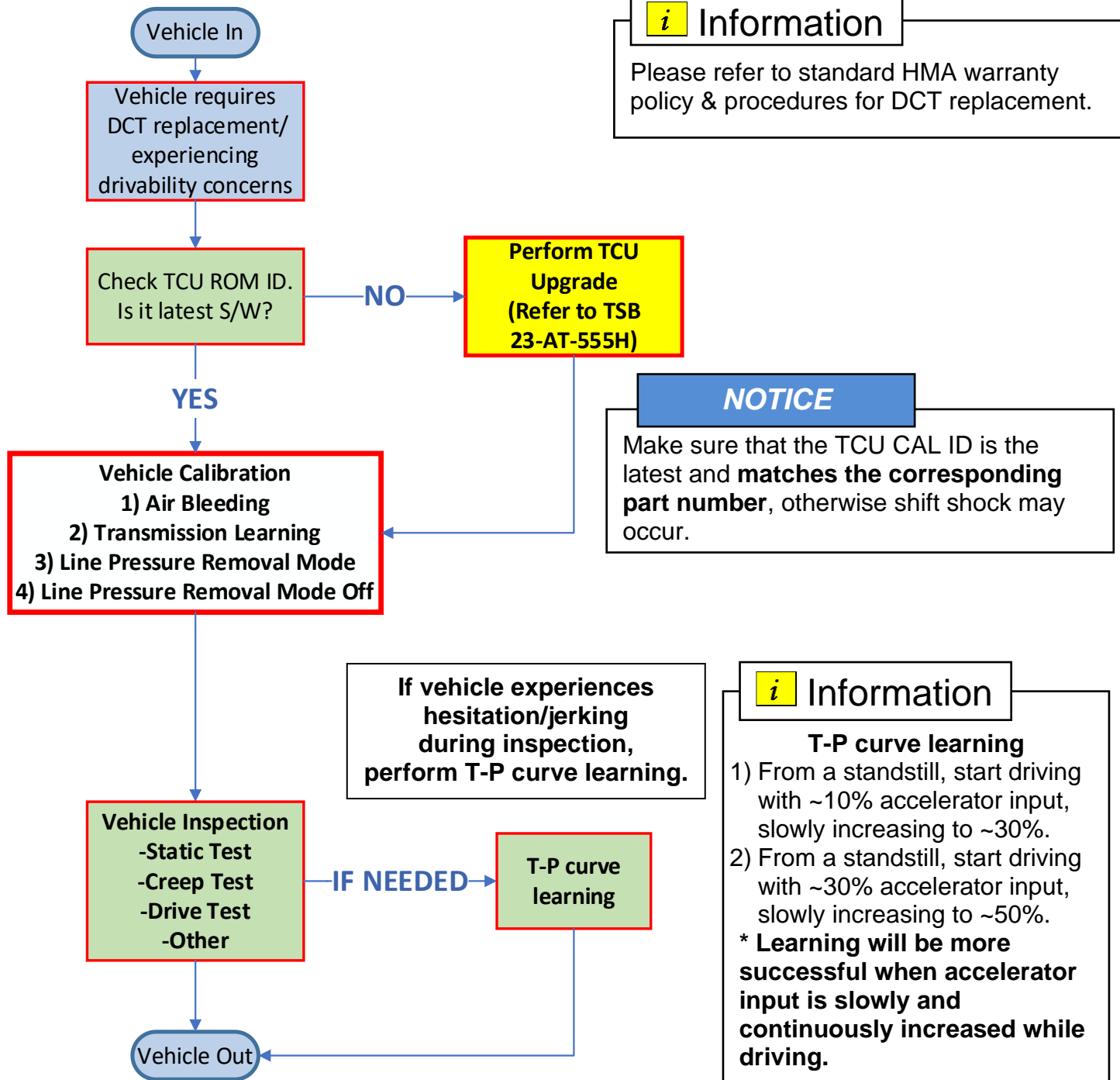
Service Procedure:

STUI



Refer to the latest Warranty Digital Documentation Policy for requirements.

1. Refer to the flowchart below for overall procedure.



i Information

Please refer to standard HMA warranty policy & procedures for DCT replacement.

NOTICE

Make sure that the TCU CAL ID is the latest and **matches the corresponding part number**, otherwise shift shock may occur.

i Information

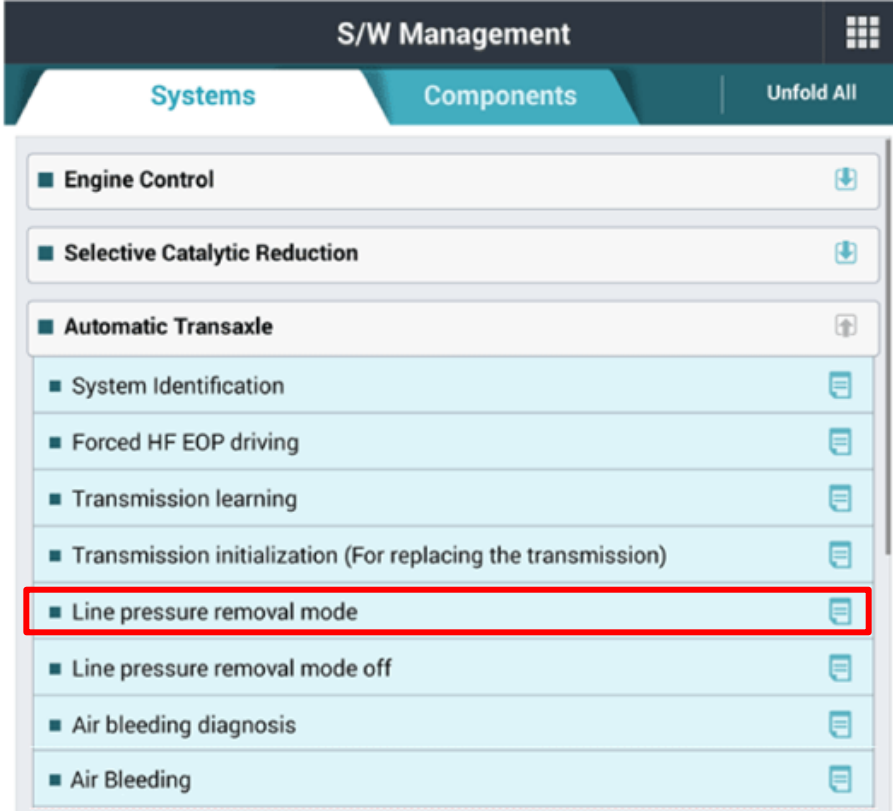
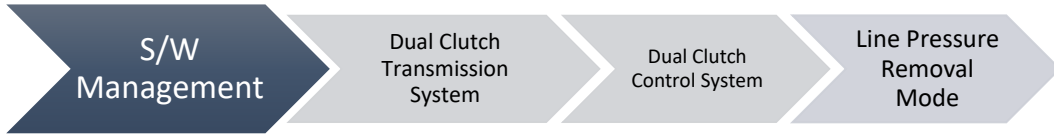
T-P curve learning

- 1) From a standstill, start driving with ~10% accelerator input, slowly increasing to ~30%.
- 2) From a standstill, start driving with ~30% accelerator input, slowly increasing to ~50%.

* **Learning will be more successful when accelerator input is slowly and continuously increased while driving.**

DCT/TCU Replacement Procedure:

1. Prior to replacing a DCT/TCU, it is necessary to to perform the “Line Pressure Removal” mode in GDS.



NOTICE

If the “Line pressure removal mode” is not performed, drivability concerns and warning lights/DTCs can occur (P193B79, P0868, rattling/shift shock, unable to drive forward/reverse).

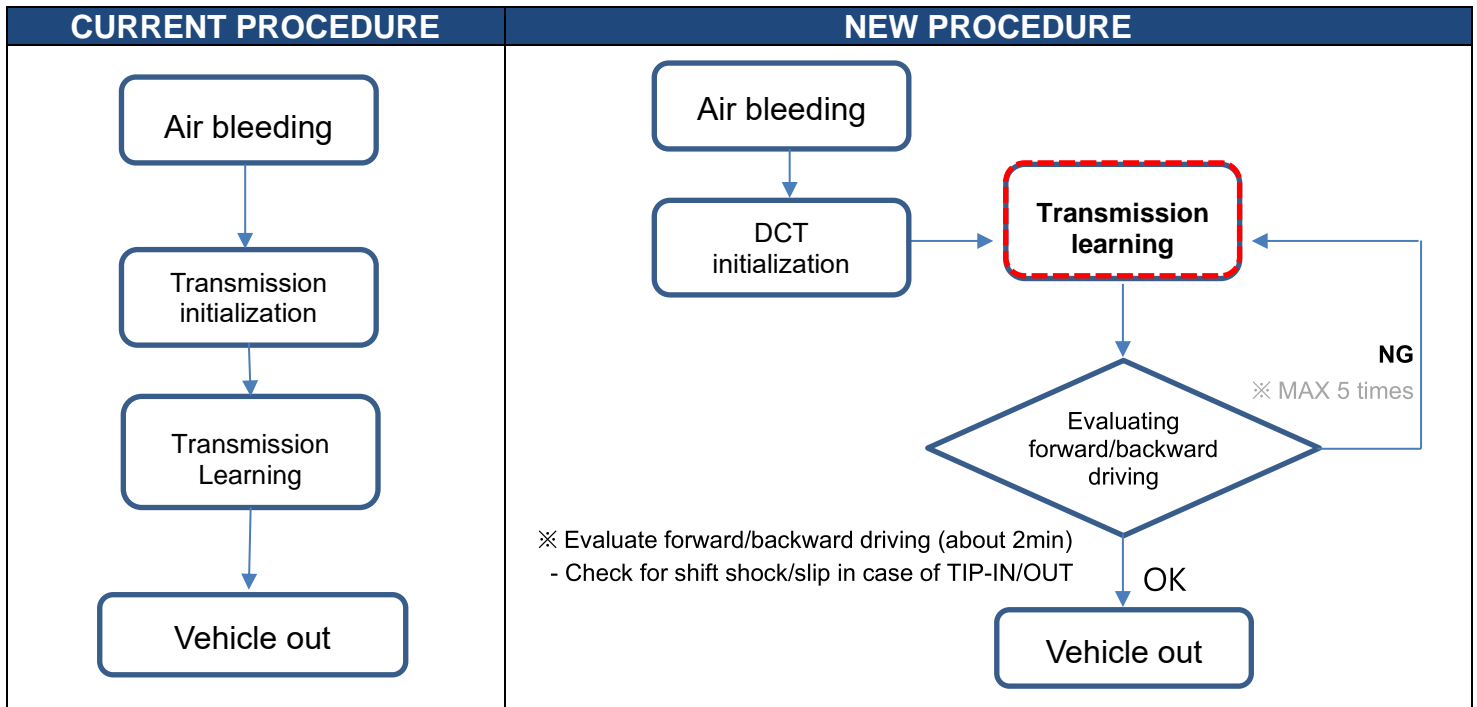
2. Continue removal of the DCT/TCU according to the vehicle shop manual.

i Information

See instructions on page 5-6 regarding TCU removal/installation.

3. After replacing the DCT/TCU, perform the air bleeding/DCT initialization/DCT Learning according to the flow chart on page 5. See the table below regarding if DCT learning is required.

DCT TYPE	TCU INCLUDED?	DCT LEARNING REQUIRED?
DCT (NEW)	YES	NO, not required
	NO	YES, required
DCT (Remanufactured)	YES	
	NO	



i Information

When receiving a new or remanufactured DCT assembly, it may not include a TCU (refer to the table on page 2). In this case, it may be required to transfer the TCU from the old DCT unit to the new part. Follow the instructions below regarding the transfer of the TCU.

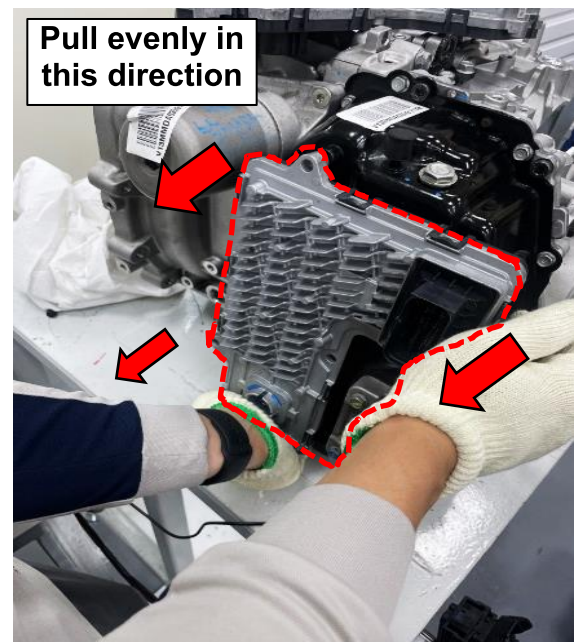
TCU Removal/Installation Procedure:

1. Remove the DCT TCU according to the vehicle shop manual.



NOTICE

Make sure the TCU 24-pin terminal is aligned properly during removal/installation, otherwise the pins may get damaged.



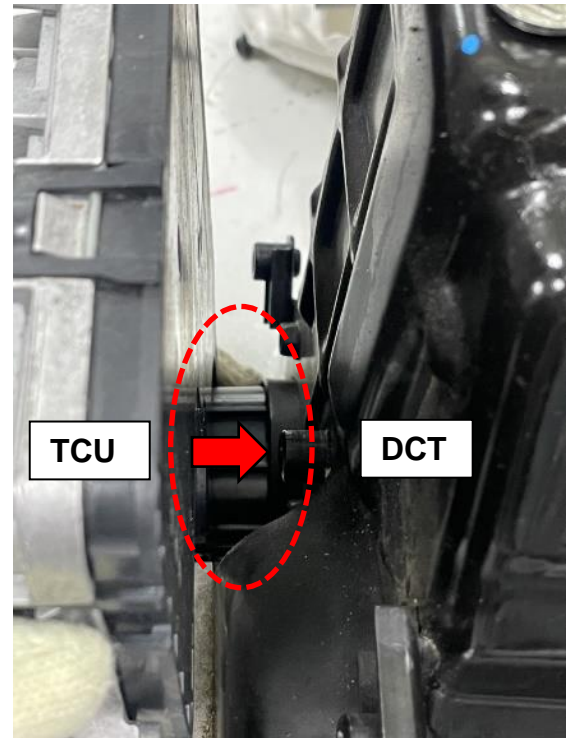
2. When reinstalling the TCU, make sure to align the connector on the TCU to the E-module on the DCT.



Male terminal of TCU



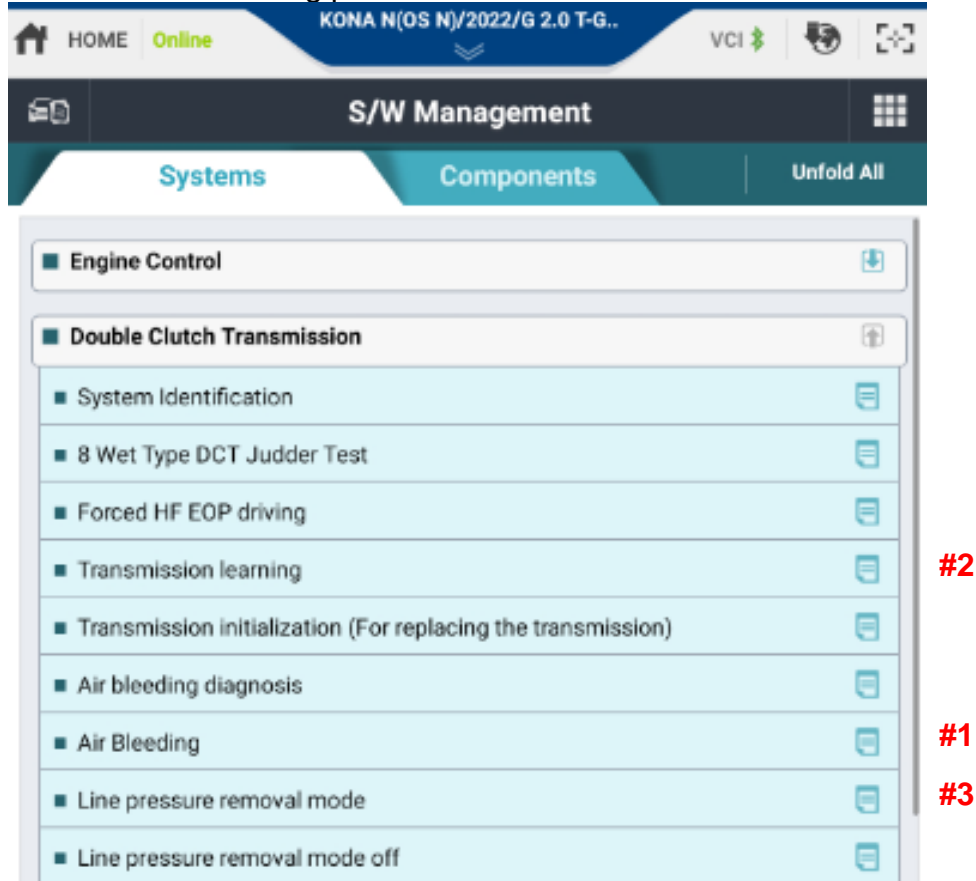
Female terminal of E-module (on DCT)



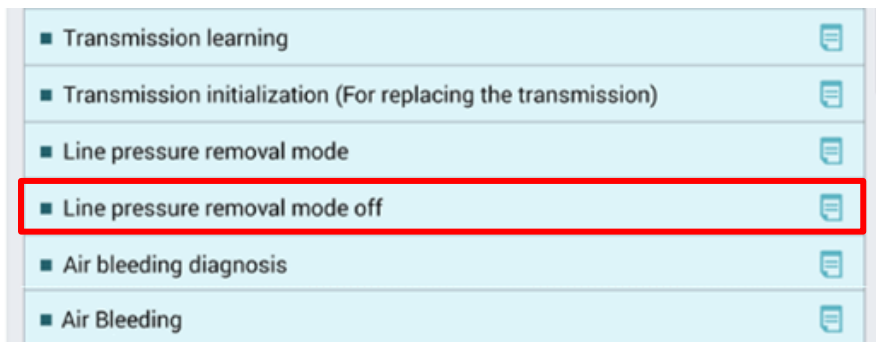
3. Finish reinstalling the TCU according to the vehicle shop manual.

Vehicle Calibration

1. After performing the TCU Upgrade, select **S/W Management** and **Double Clutch Transmission** within the GDS. Perform the following procedures in the order shown.



2. After performing “Line pressure removal mode,” leave IG on and wait for 1 minute.
3. Turn the **engine on** and let the engine idle for **1 minute**.
4. Turn the engine **off**. After 3 seconds, turn the **engine on again**.
5. With the engine running, scan the vehicle for DTCs.
 - 5a. If DTC P086800 **is detected** – check and replace the control fluid according to the shop manual.
 - 5b. If DTC P086800 **is not detected** – proceed to the next step.
6. Perform the “Line pressure removal mode off” within the GDS.



NOTICE

If the “Line pressure removal mode off” is not performed, drivability concerns can occur (shift shock).

A. Vehicle Static Test

1. Turn the vehicle engine on.
2. While depressing the brake pedal, shift the vehicle into gear(N↔D/N↔R/P↔D/P↔R/D↔R).
3. Vehicle should not experience any abnormal shift shock while stationary.

B. Vehicle Creep Test

1. Turn the vehicle engine on.
2. Shift the vehicle from Park to Drive – do not press the accelerator pedal, allow vehicle to creep forward (for 30 seconds).
3. Shift the vehicle from Park to Reverse – do not press the accelerator pedal, allow vehicle to creep backwards (for 30 seconds).
4. Vehicle should start moving within 1-2 seconds, without hesitation or juddering.

C. Vehicle Driving Test

1. Turn the vehicle engine on.
2. Perform a short test drive with the vehicle, applying 20-30% accelerator input (APS).
3. Vehicle should launch without hesitation and upshifts should have no issue.

D. Other Inspection

1. If any issues were found during Sections A-C above, check for DTCs/perform diagnosis.
2. Replace the transmission assembly if issues are still present after detailed diagnosis.
Repeat Sections A-C.