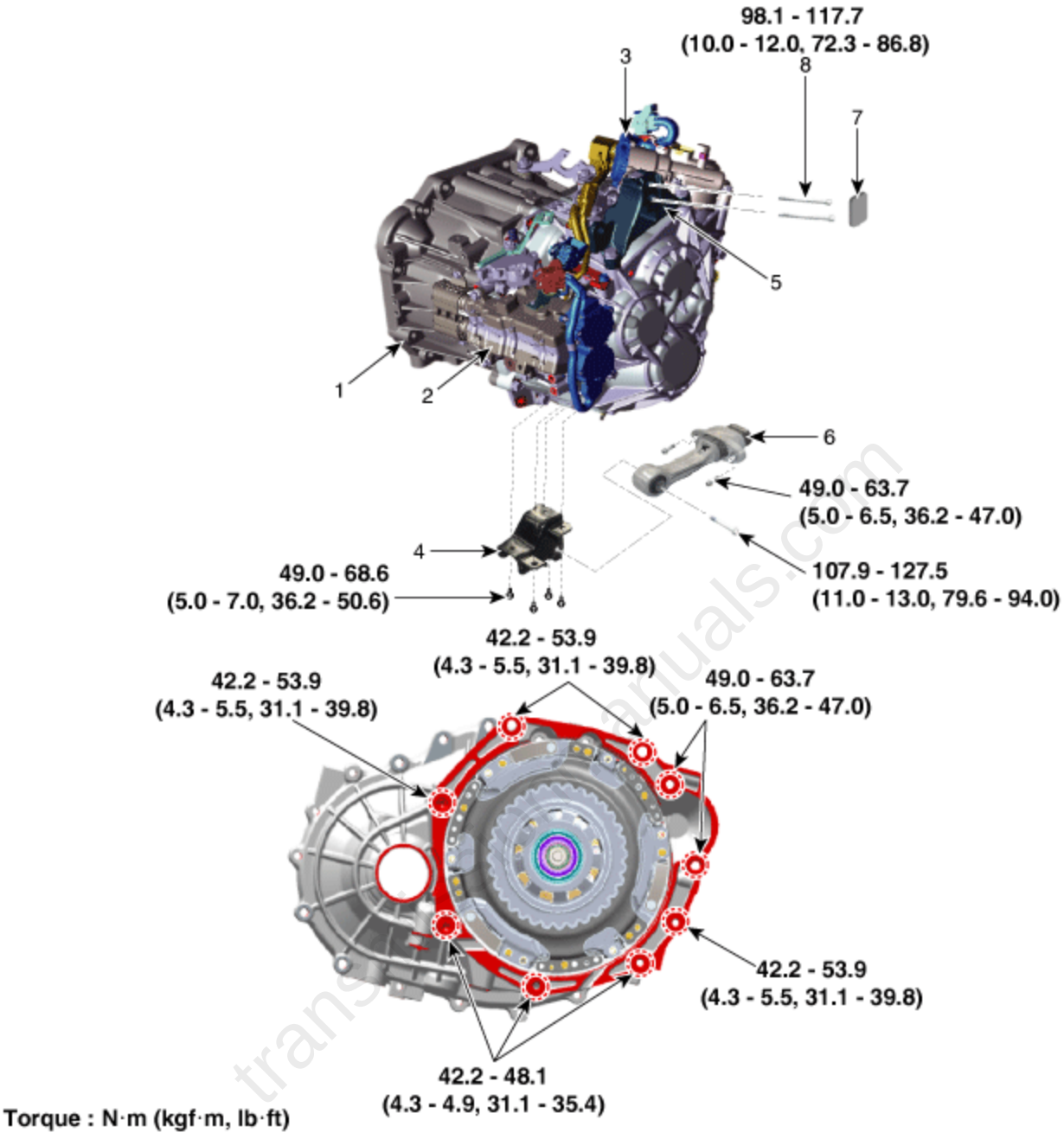
DCT(Dual Clutch Transmission) System / DCT(Dual Clutch Transmission)

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Components and components location

Components



1. DCT (Dual Clutch Transmission) assembly
2. Clutch actuator assembly
3. Gear actuator assembly
4. Roll rod support bracket
5. DCT support bracket
6. Roll rod bracket
7. Dust cover
8. Support bracket mounting bolt

Video Clip



External Damper Checking Method & Assemble avoidance of wear point03:43

Removal

1. Remove the air cleaner assembly and air duct.

   (Refer to Engine Mechanical System - "Air cleaner")

2. Remove the battery and battery tray.

   (Refer to Engine Electrical System - "Battery")

3. Disconnect the connectors (A, B ,C ,D) in the illustration below.

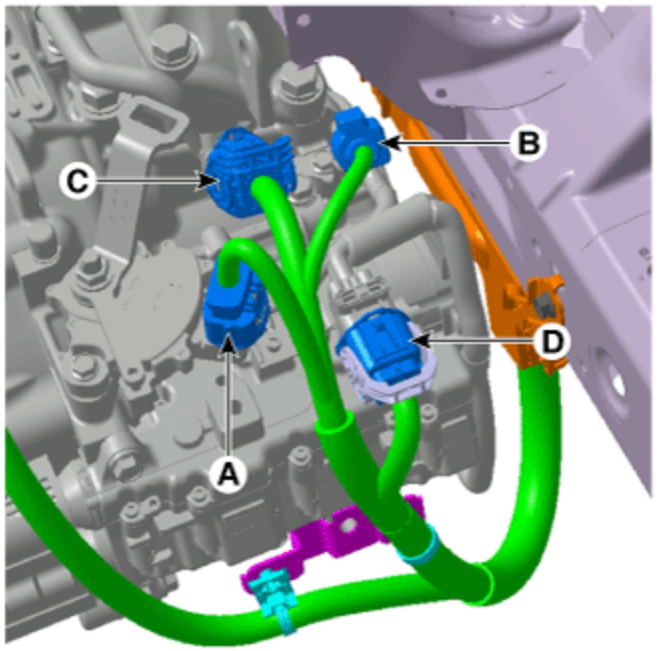
   A. Inhibitor switch connector

   B. Input shaft speed sensor connector

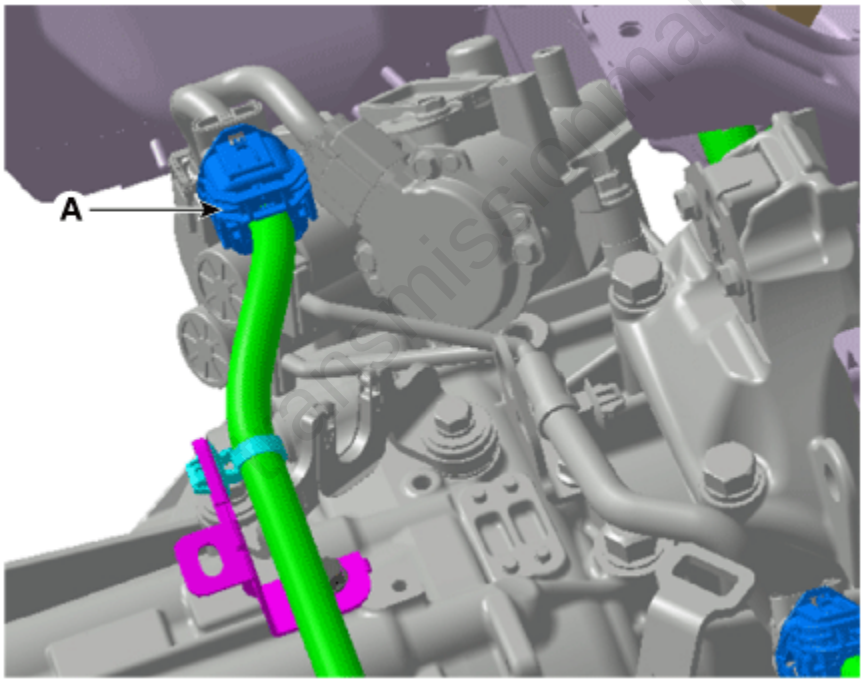
   C. Gear actuator solenoid connector

   D. Clutch actuator connector

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4. Disconnect the gear actuator motor connector (A).

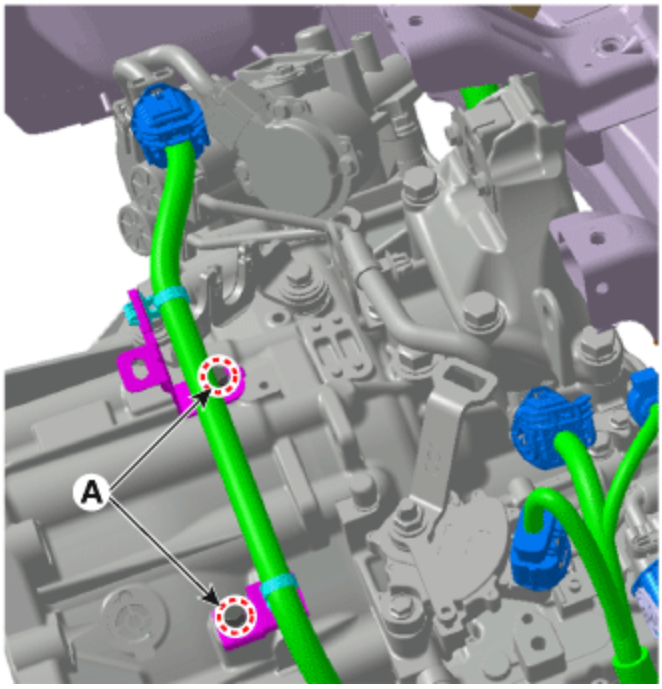


5. Remove the wiring bracket mounting bolts (A).

Tightening torque :

9.8 - 11.8 N·m (1.0 - 1.2 kgf·m, 7.2 - 8.7 lb·ft)

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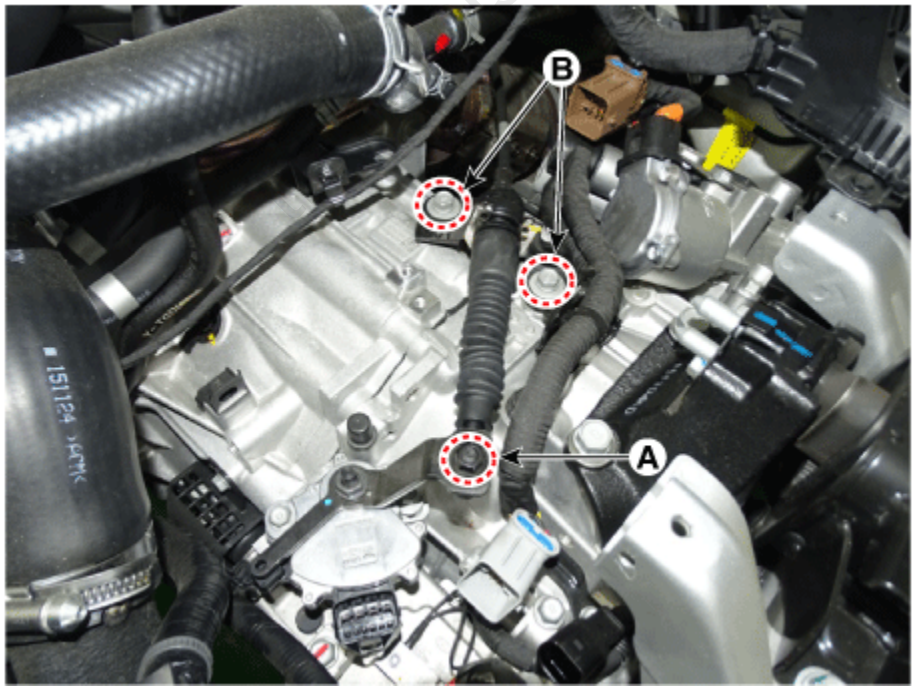


6. Remove the shift cable after loosening the bolts (A) and nut (B).

Tightening torque :

(A) 9.8 - 14.7 N·m (1.0 - 1.5 kgf·m, 7.2 - 10.8 lb·ft)

(B) 19.6 - 26.5 N·m (2.0 - 2.7 kgf·m, 14.5 - 19.5 lb·ft)

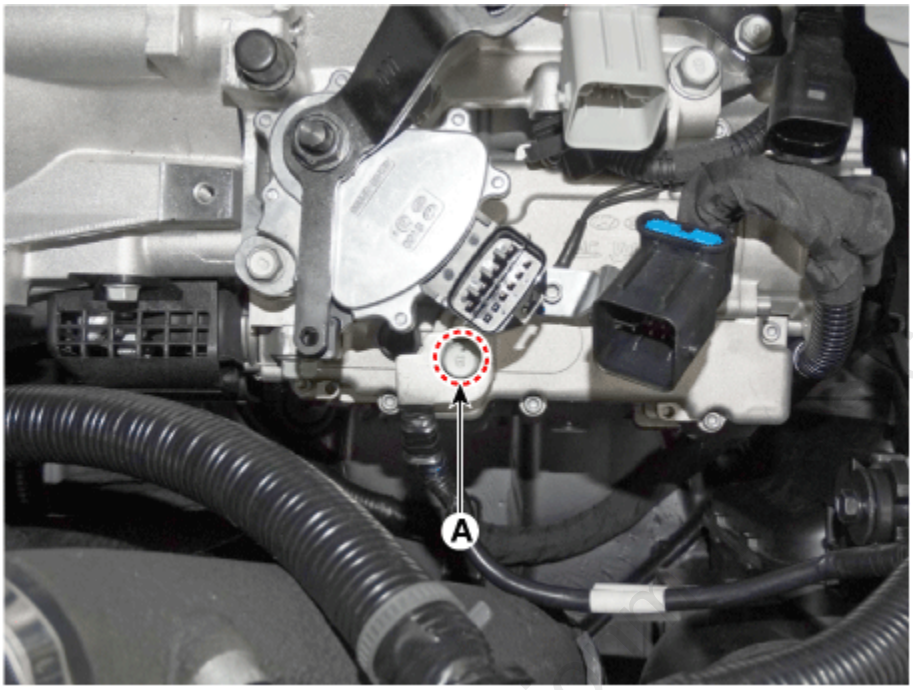


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7. Loosen the ground bolt (A).

Tightening torque :

9.8 - 11.8 N·m (1.0 - 1.2 kgf·m, 7.2 - 8.7 lb·ft)

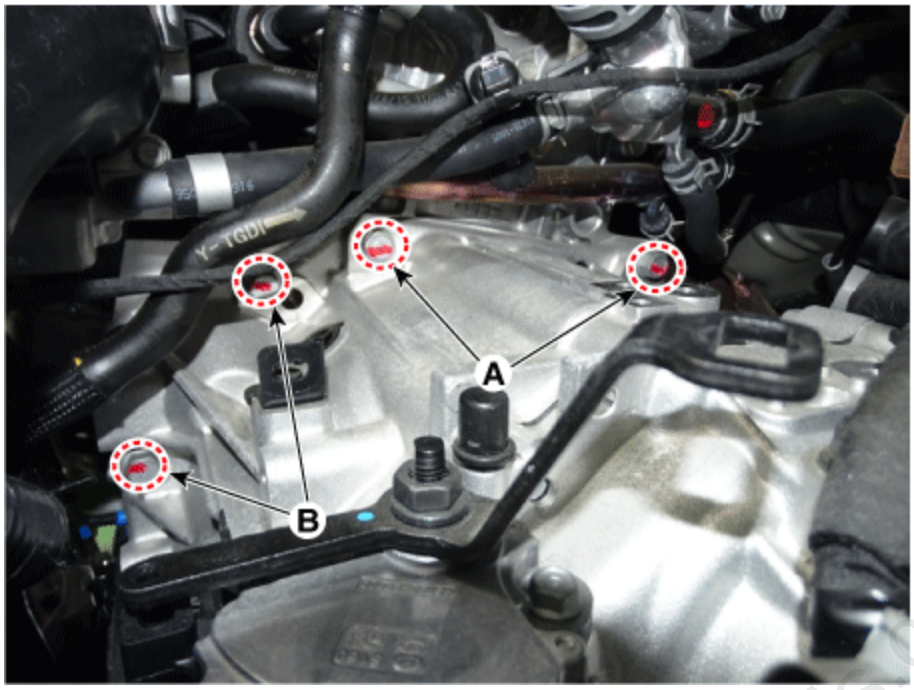


8. Loosen the transmission upper mounting bolts (A) and starter mounting bolts (B).

Tightening torque :

(A) : 42.2 - 53.9 N·m (4.3 - 5.5 kgf·m, 31.1 - 39.8 lb·ft)

(B) : 49.0 - 63.7 N·m (5.0 - 6.5 kgf·m, 36.2 - 47.0 lb·ft)



9. Remove the cowl top cover.

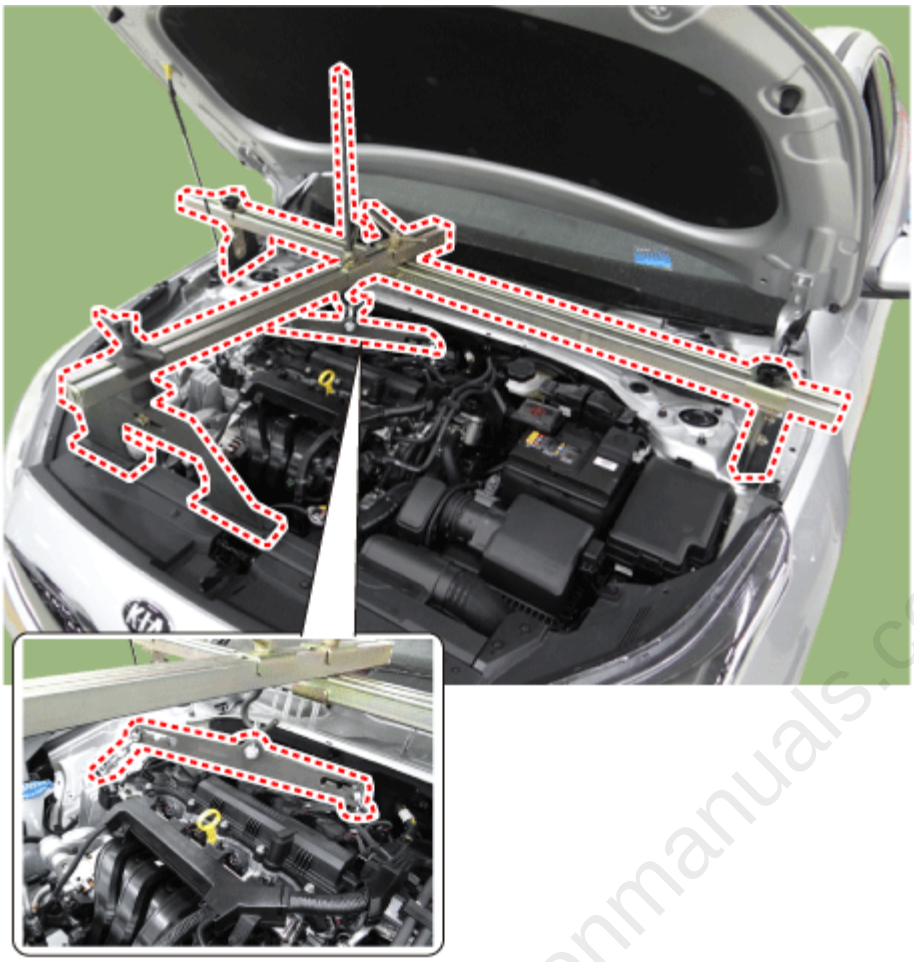
   (Refer to Body - "Cowl Top Cover")

10. Assemble the engine support fixture on the engine room.

    (Refer to Special Service Tools - "Engine support fixture assembly drawing")

11. Using the engine support fixture, hold the engine and transaxle assembly safely.

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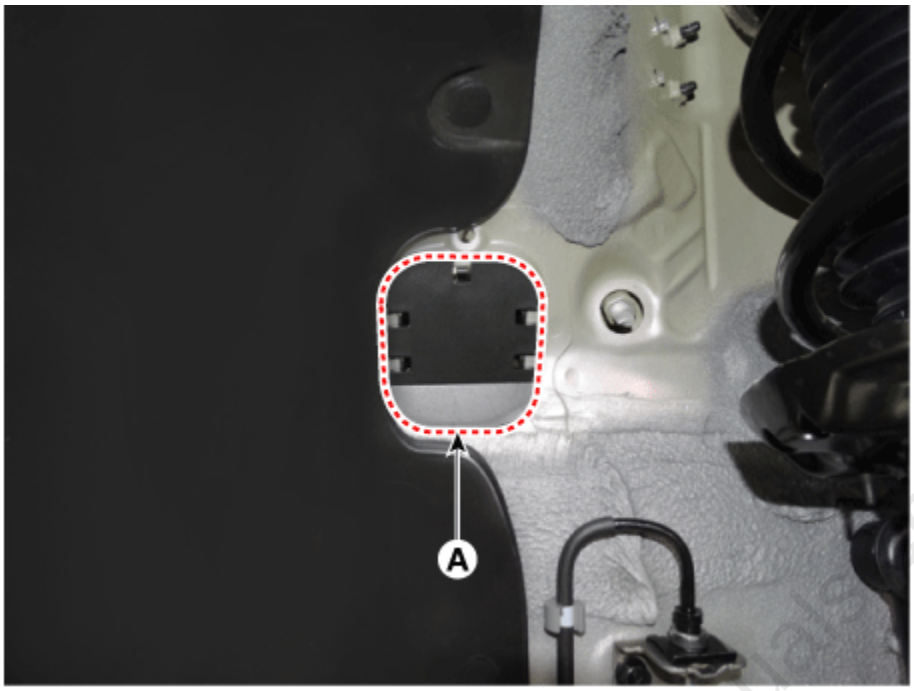


12. Support the transaxle safely on a jack.



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13.
Remove the dust cover (A).



14.
Loosen the transmission mounting bracket bolts (A).

Tightening torque :

98.1 - 117.7 N·m (10.0 - 12.0 kgf·m, 72.3 - 86.8 lb·ft)

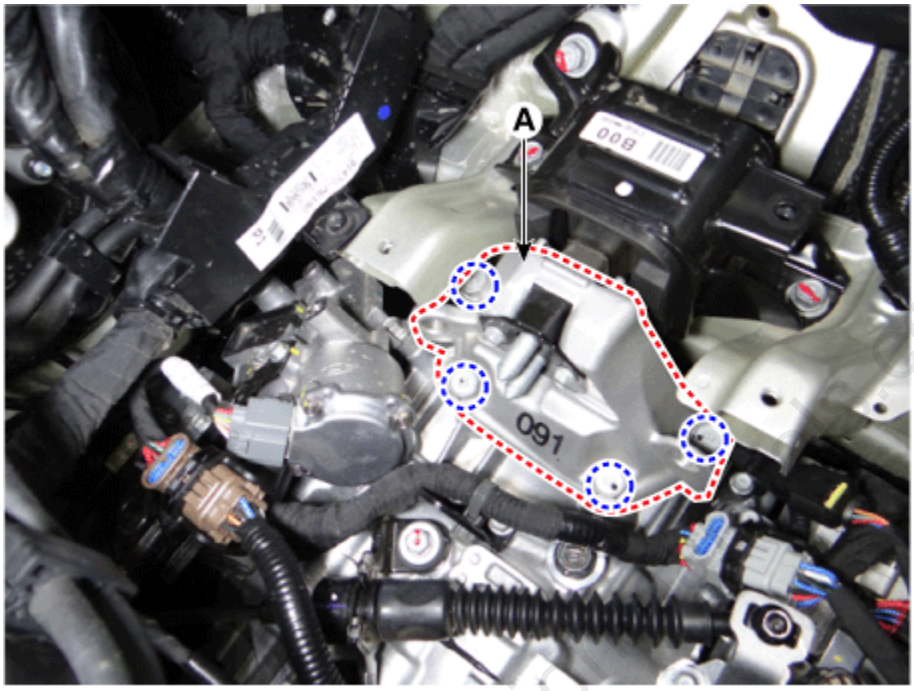


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15. Remove the transmission support bracket (A).

Tightening torque :

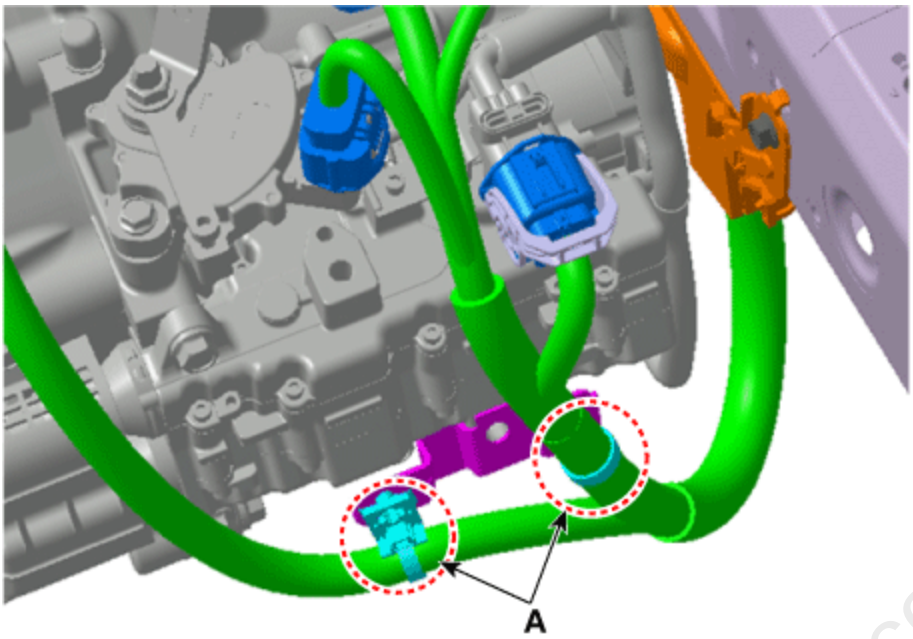
58.8 - 78.5 N·m (6.0 - 8.0 kgf·m, 43.4 - 57.9 lb·ft)



16. Remove the under cover.

(Refer to Engine Mechanical System - "Engine Room Under Cover")

17. Remove the clips (A) from wiring bracket.



18. Remove the sub frame.

    (Refer to Suspension System - "Sub Frame")

19. Remove the drive shaft assembly.

    (Refer to Driveshaft and Axle - "Front Driveshaft")

20. Remove the vacuum pump.

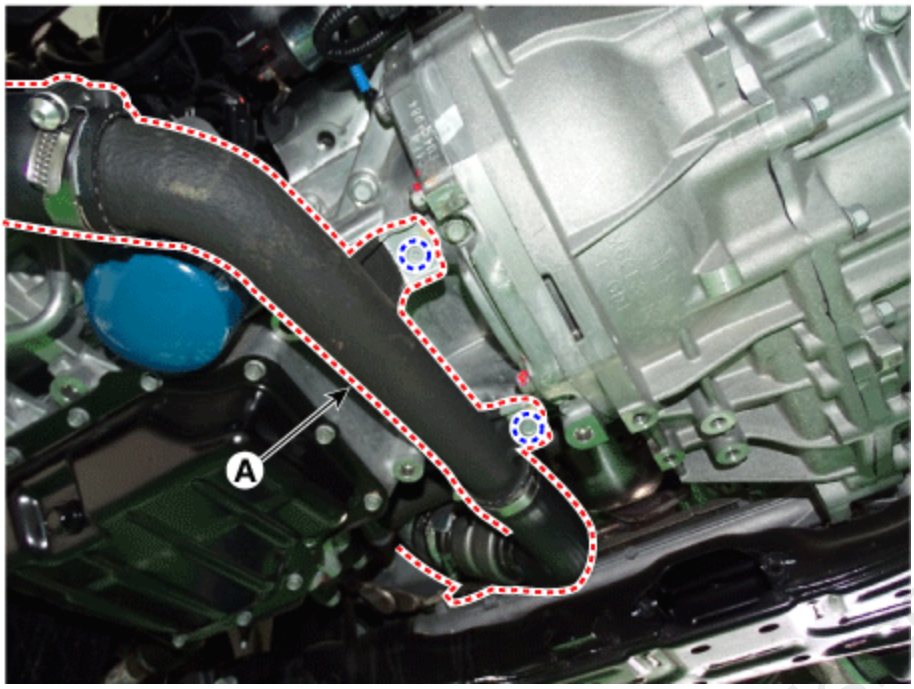
    (Refer to Brake System - "Vacuum Pump")

21. Remove the intercooler inlet hose & pipe (A).

    Tightening torque :

    18.6 - 23.5 N·m (1.9 - 2.4 kgf·m, 13.7 - 17.4 lb·ft)

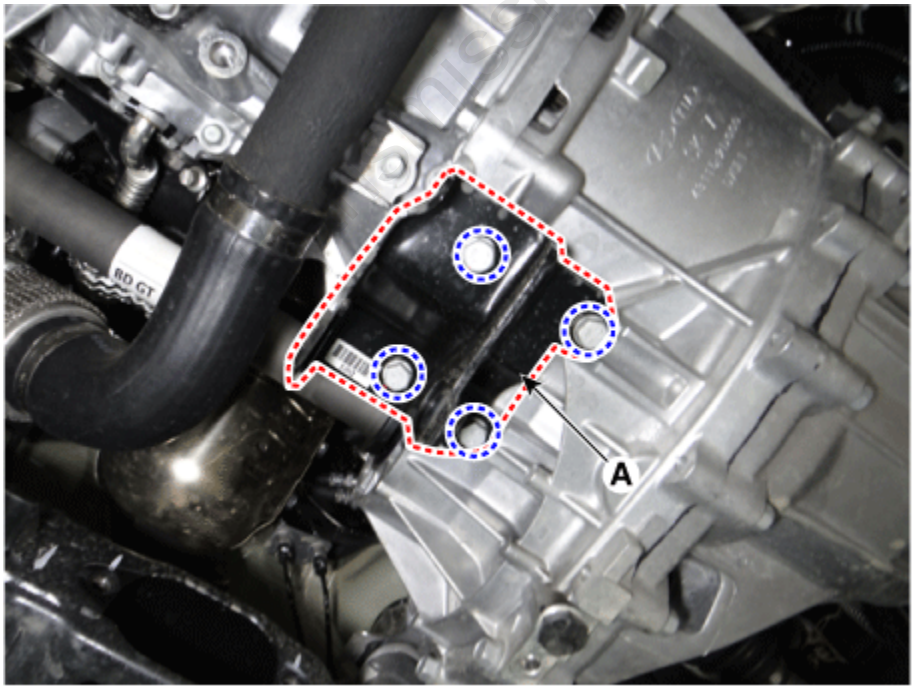
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22. Remove the roll rod support bracket (A).

Tightening torque :

49.0 - 68.6 N·m (5.0 - 7.0 kgf·m, 36.2 - 50.6 lb·ft)



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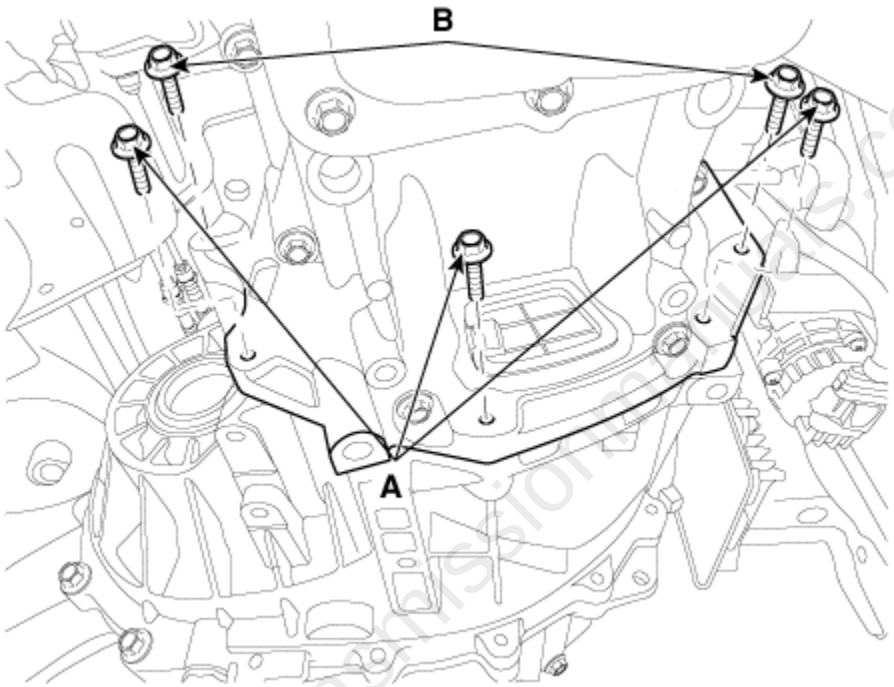
23. Support the transmission safely by using the jack.

24. Loosen the transmission lower mounting bolts (A, B).

Tightening torque :

(A) : 42.2 - 48.1 N·m (4.3 - 4.9 kgf·m, 31.1 - 35.4 lb·ft)

(B) : 42.2 - 53.9 N·m (4.3 - 5.5 kgf·m, 31.1 - 39.8 lb·ft)



25. After separating the transmission from the engine, remove the transmission by lowering the jack slowly.

> **NOTICE**
>
> Be careful not to damage other nearby systems or parts when removing the transmission assembly.

26. Remove the dual clutch assembly from the transmission.

(Refer to Dual Clutch System - "Dual Clutch Assembly")

Installation

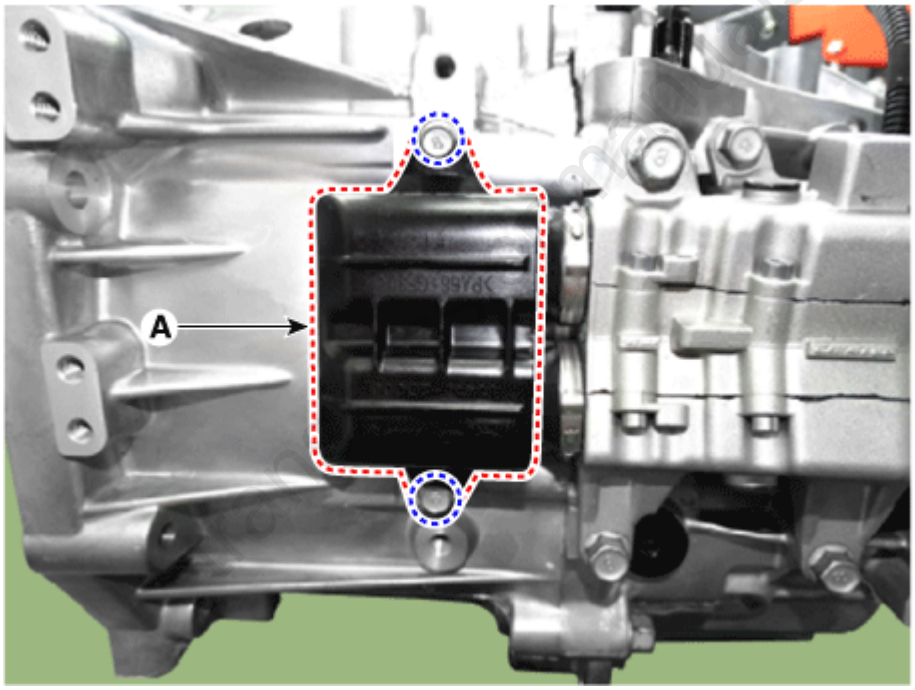
1.
Install in the reverse order of removal.

NOTICE

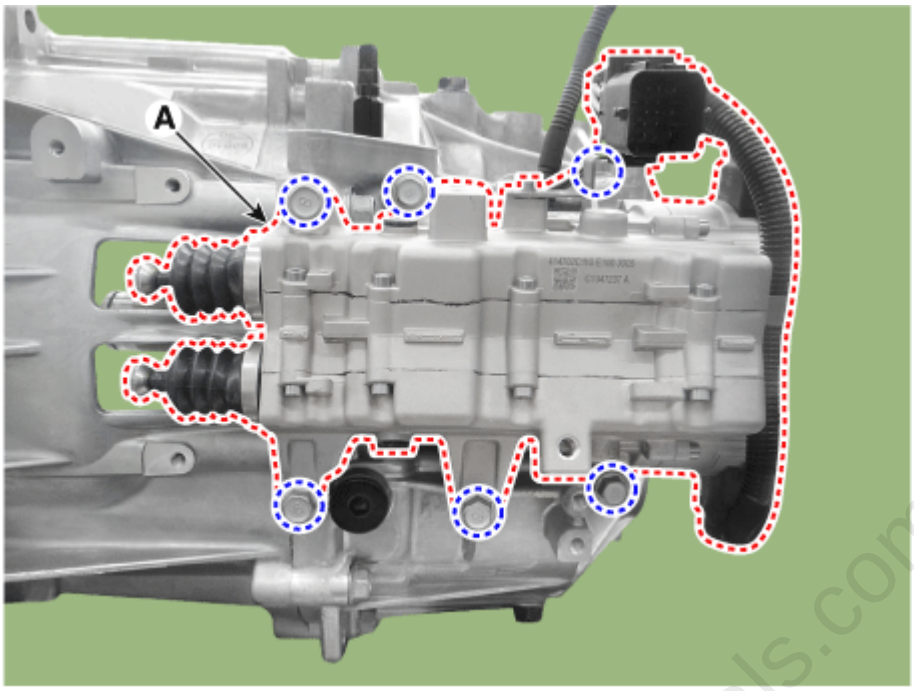
- If dual clutch assembly or clutch actuator assembly needs replacement, perform the work procedures for clutch wear reset by referring to the table below.

Replacement part	Remedy
Dual clutch assembly	Initialize
Clutch actuator assembly	Rewind
Dual clutch assembly + Clutch actuator assembly	Not required

1)
Remove the fork cover (A).



2)
Remove the clutch actuator assembly (A).



3)
Perform the clutch wear compensation reset.

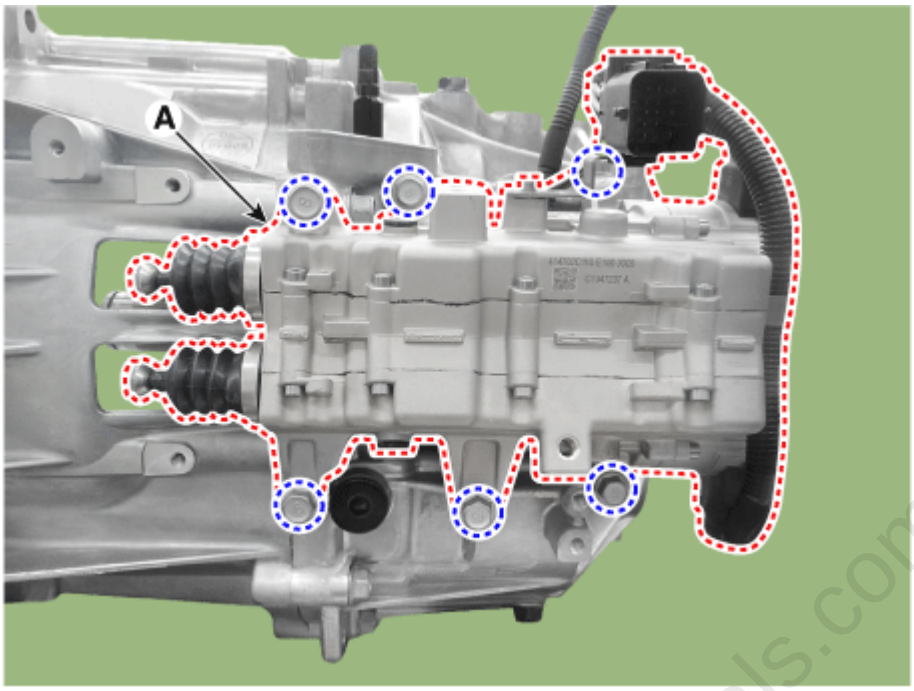
(Refer to Dual Clutch Transmission Control System - "Clutch Actuator Assembly")

4)
Install the the clutch actuator assembly (A).

Tightening torque :

19.6 - 26.5 N·m (2.0 - 2.7 kgf·m, 14.5 - 19.5 lb·ft)

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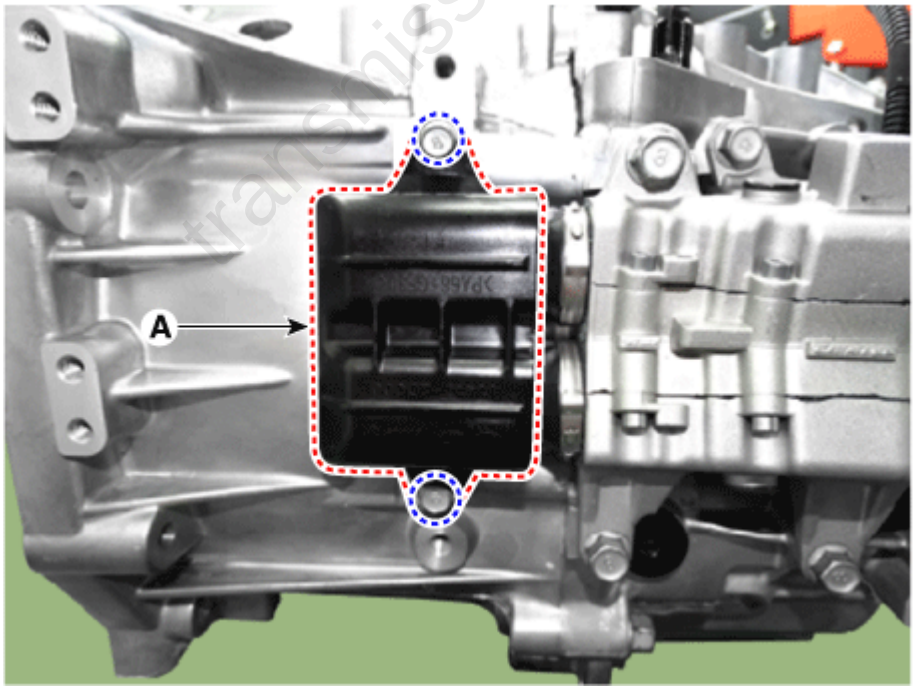


5)

Install the fork cover (A).

Tightening torque :

3.9 - 5.9 N·m (0.4 - 0.6 kgf·m, 2.9 - 4.3 lb·ft)

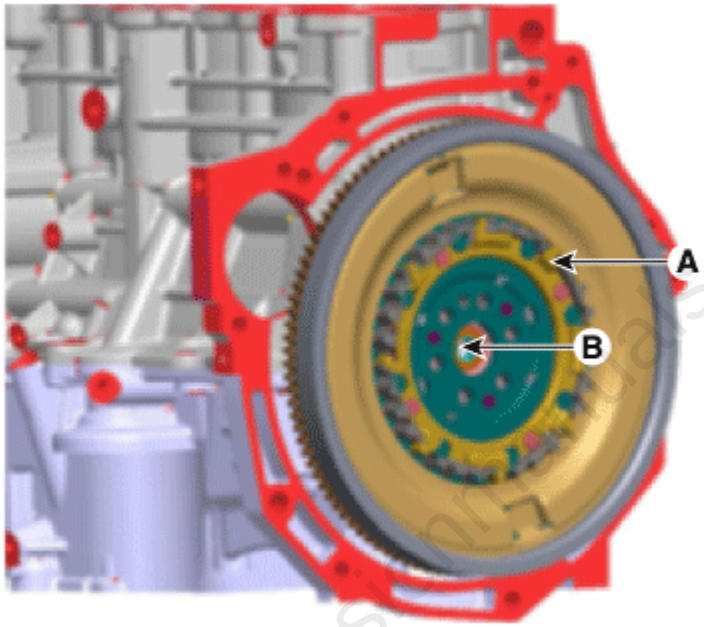


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Matters that require attention when installing the dual clutch transmission (DCT) to engine

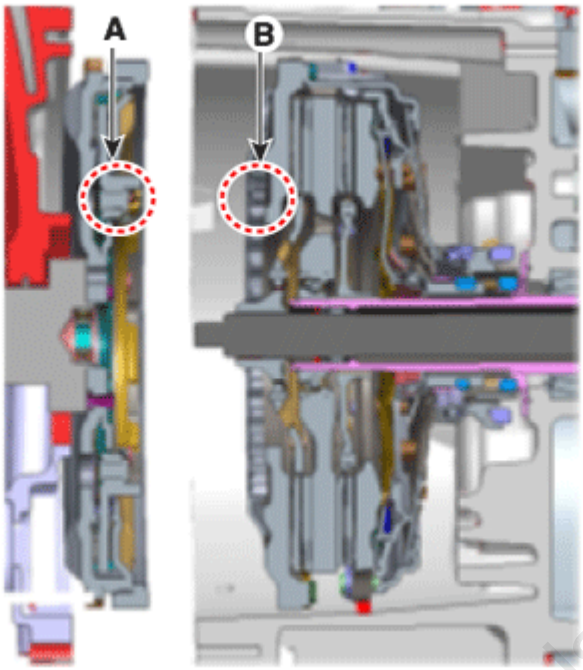
(Refer to the video clip)

1) Check the pilot bearing (B) and external damper (A) on the side of engine for any dents, damages and deformations before installing the DCT.



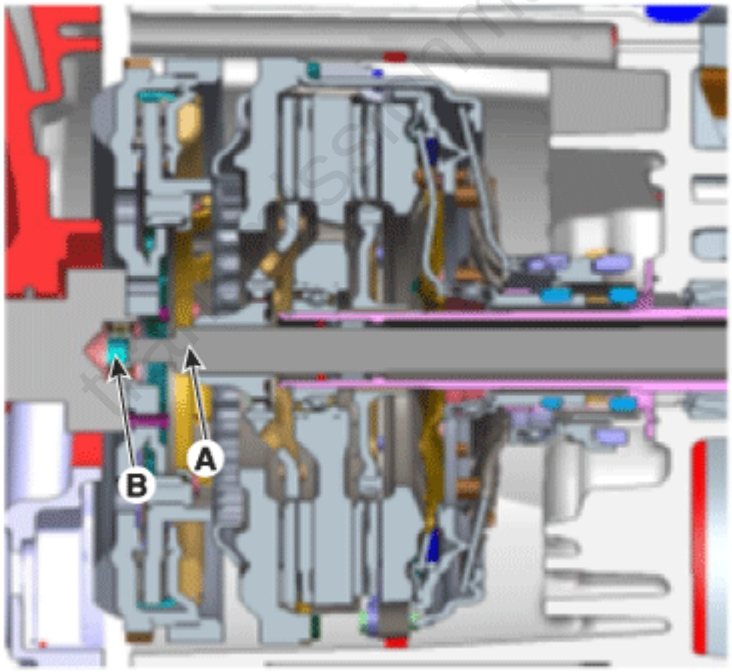
2) Align the external damper spline (A) with the dual clutch spline (B).

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3)

Insert the input shaft (A) into the engine pilot bearing (B) and then assemble the DCT to the knock bushing on the engine side.



4)

After mounting the DCT to the engine by pushing the DCT, tighten the mounting bolts making sure that there is no gap (less than 2 mm) between the clutch housing and the engine block.

(If the bolt is tightened while there is a gap, then the spline of external damper or clutch will be damaged or broken.)

2.

Observe each separate procedure below for reinstallation or replacement with a new dual clutch transmission.

When reinstalling

1)
If the differential oil seal is damaged and oil is leaking, replace the oil seal with a new one. When installing a new oil seal, use the special tool (09430-C1190, 09231-H1100).

2)
After installing the DCT, check the oil level after refilling the DCT with oil.

3)
Clear the diagnostic trouble codes (DTC) using the KDS. Disconnecting the battery negative terminal will not clear the DTCs. Clear the DTCs using the KDS at all times.

When replacing with a new dual clutch transmission

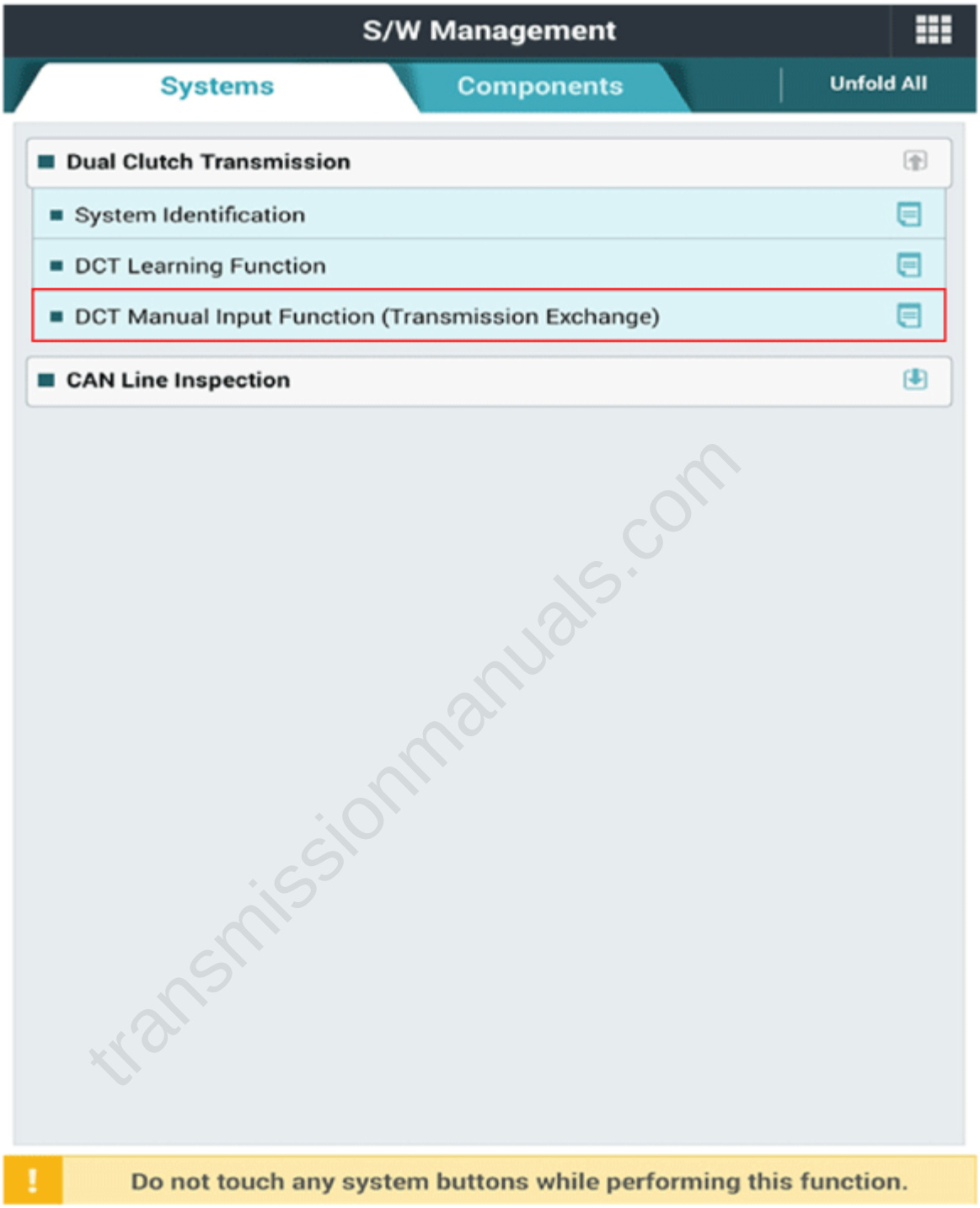
1)
After replacing the new DCT, it need not oil refill & level check procedure because oil is already filled with specified quantity inside new DCT.

2)
Clear the diagnostic trouble codes (DTC) using the KDS. Disconnecting the battery negative terminal will not clear the DTCs. Clear the DTCs using the KDS at all times.

3)
Perform clutch characteristics input procedure using the KDS. (One of two procedures must be performed.)

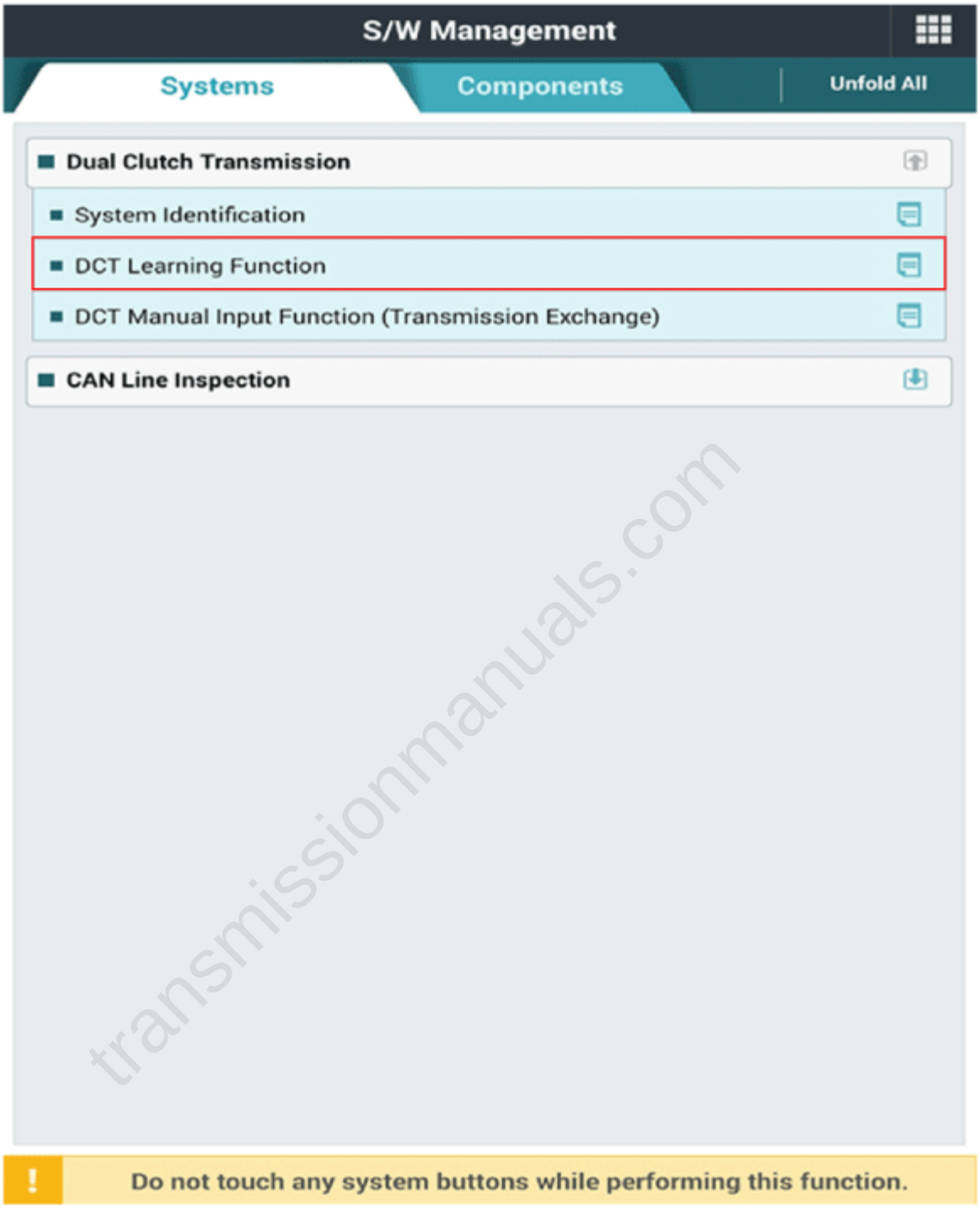
•
Clutch characteristics input (Manual Teaching)

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- Clutch touch point learning



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DCT(Dual Clutch Transmission) System

...

Transmission Gear Oil

Repair procedures Inspection Oil level check 1. Remove the under cover. (Refer to Engine Mechanical System - "Engine Room Under Cover") 2. ...

Other information:

Kia Forte 2019-2023 (BD) Service Manual: Compressor

Description and operation Description The compressor is the power unit of the A/C system. It is located on the side of engine block and driven by a V-belt of the engine. The compressor changes low pressure and low temperature refrigerant gas into high pressure and high temperatu ...

Kia Forte 2019-2023 (BD) Service Manual: Warning And Caution Labels

General information Warning And Caution Labels 1. Fan caution 2. Radiator cap caution 3. Battery caution Battery Caution Label Warning / Caution Label (Cont'd) A. Keep lighted cigarettes and all other flames or sparks awa ...

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