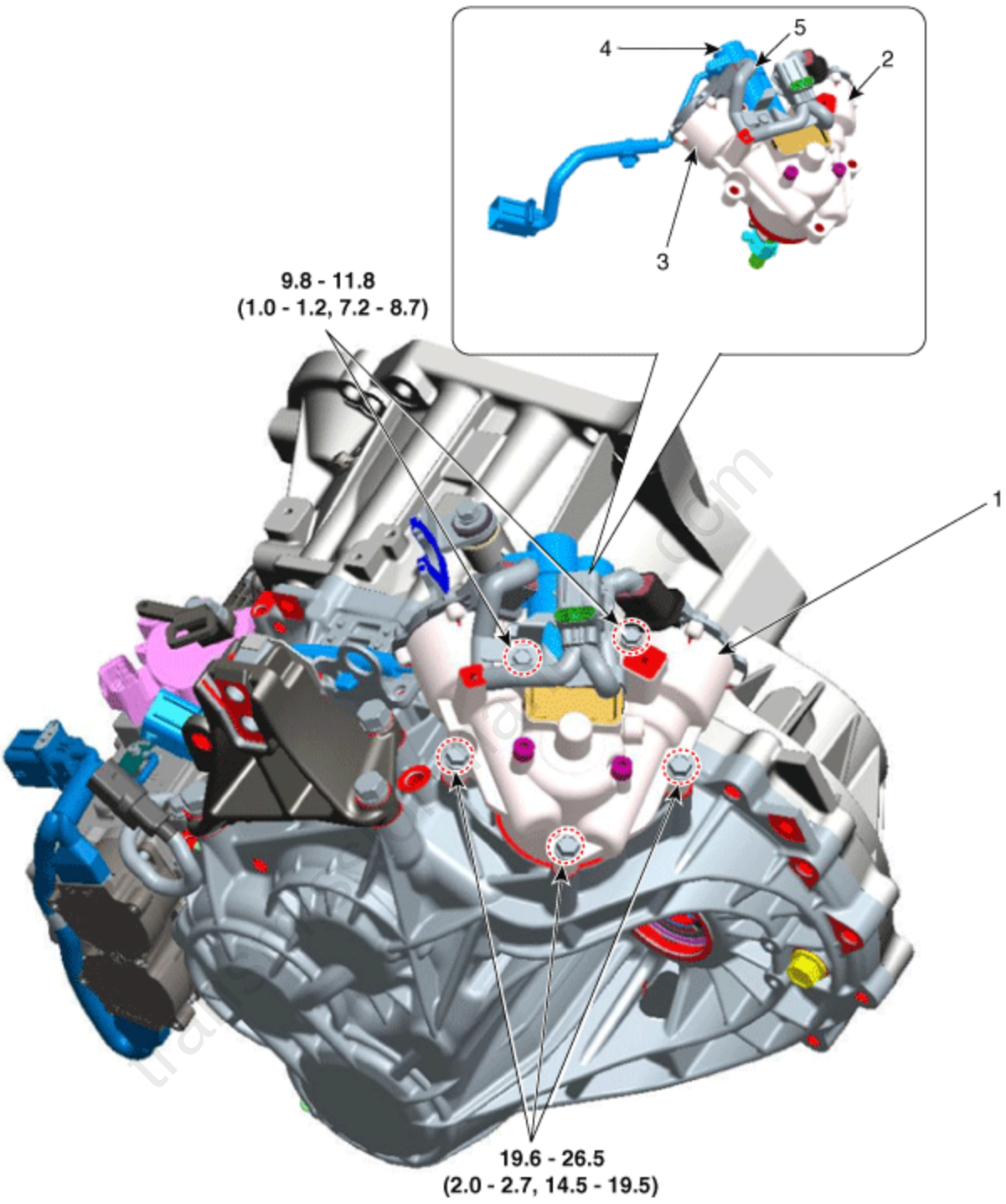
Dual Clutch Transmission Control System / Gear Actuator Assembly

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Components and components location

Component Location



Torque: N·m (kgf·m, lb·ft)

1. Gear actuator assembly
2. Shift motor (Even)
3. Shift motor (Odd)
4. Select solenoid (Even)
5. Select solenoid (Odd)

Specifications

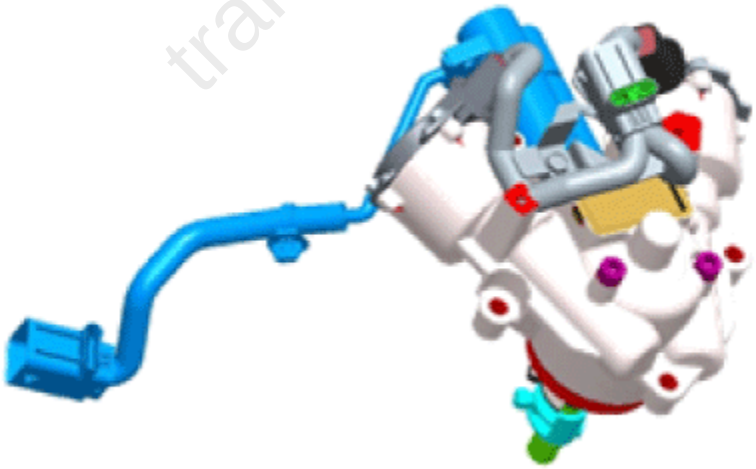
Specification

Item		Specification
Resistance (line to line)	Shift motor 1/2	135.4 mΩ ± 10 %
	Select solenoid 1/2	0.7 mΩ ± 10 %
Max. current	Shift motor 1/2	45 A
	Select solenoid 1/2	20 A
Select solenoid sensor output	Push	4.0 ± 0.15 V
	Pull	1.0 ± 0.15 V
Operating condition		-40 to 257°F (-40 to 125°C)
Rated voltage		13 V
Sensor supply voltage		8.75 V ± 10 %

Description and operation

Description

- The gear actuator comprises the shift motor and select solenoid.
- Gear actuator shift motor and select solenoid use signals from TCM to control the gear.

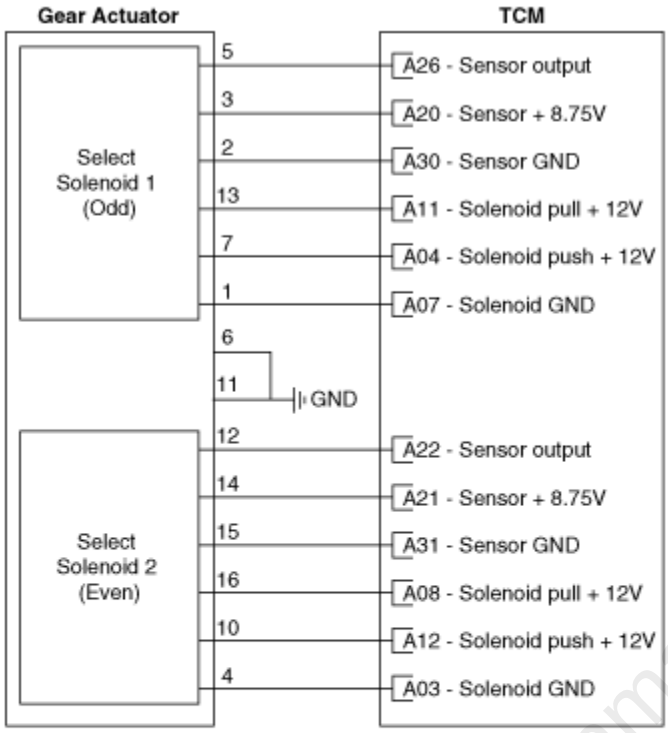


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Schematic diagrams

Circuit Diagram

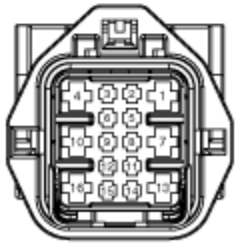
[Circuit Diagram]



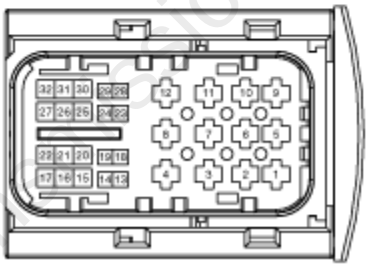
[Connection Information]

Terminal	Connected to	Function
1	TCM(A07)	GND (Select 1)
2	TCM(A30)	Position GND (Select 1)
3	TCM(A20)	Position supply (Select 1)
4	TCM(A03)	GND (Select 2)
5	TCM(A26)	Position signal (Select 1)
6	-	GND
7	TCM(A04)	Push (Select 1)
8	-	-
9	-	-
10	TCM(A12)	Push (Select 2)
11	-	GND
12	TCM(A22)	Position signal (Select 2)
13	TCM(A11)	Pull (Select 1)
14	TCM(A21)	Position supply (Select 2)
15	TCM(A31)	Position GND (Select 2)
16	TCM(A08)	Pull (Select 2)

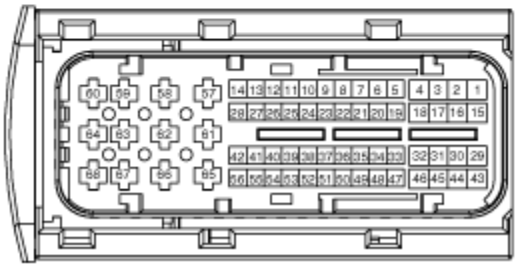
[Harness Connector]



Shift Actuator Connector



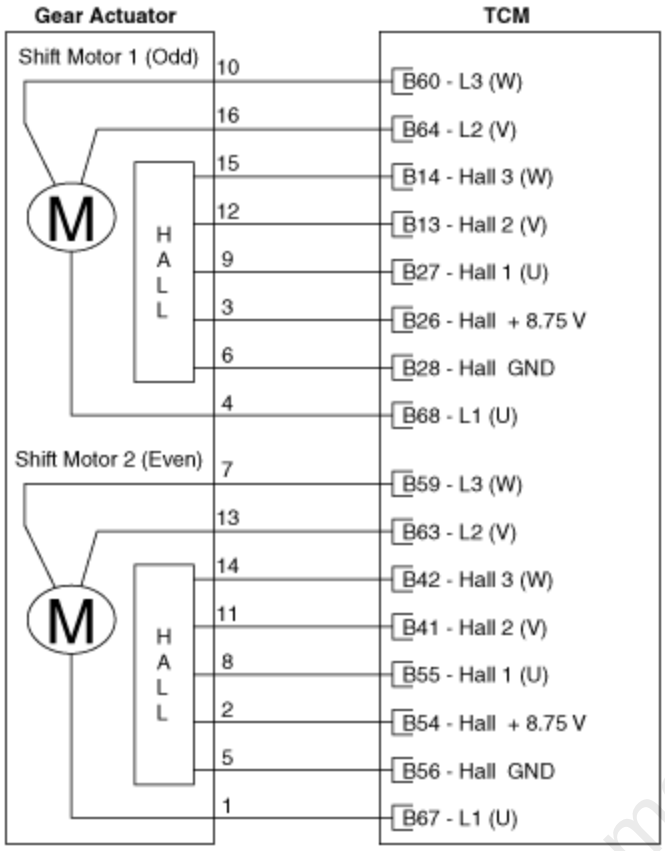
Connector [A]
TCM



Connector [B]
TCM

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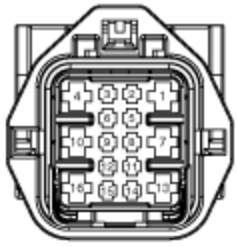
[Circuit Diagram]



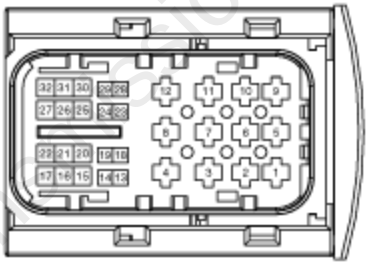
[Connection Information]

Terminal	Connected to	Function
1	TCM(B67)	Phase "U" (Shift 2)
2	TCM(B54)	Hall supply (Shift 2)
3	TCM(B26)	Hall supply (Shift 1)
4	TCM(B68)	Phase "U" (Shift 1)
5	TCM(B56)	Hall GND (Shift 2)
6	TCM(B28)	Hall GND (Shift 1)
7	TCM(B59)	Phase "W" (Shift 2)
8	TCM(B55)	Hall 1 (Shift 2)
9	TCM(B27)	Hall 1 (Shift 1)
10	TCM(B60)	Phase "W" (Shift 1)
11	TCM(B41)	Hall 2 (Shift 2)
12	TCM(B13)	Hall 2 (Shift 1)
13	TCM(B63)	Phase "V" (Shift 2)
14	TCM(B42)	Hall 3 (Shift 2)
15	TCM(B14)	Hall 3 (Shift 1)
16	TCM(B64)	Phase "V" (Shift 1)

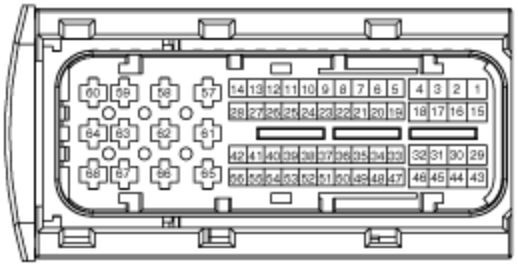
[Harness Connector]



Shift Actuator Connector



Connector [A]
TCM



Connector [B]
TCM

Repair procedures

Removal

1. Move the shift lever to "N" range.

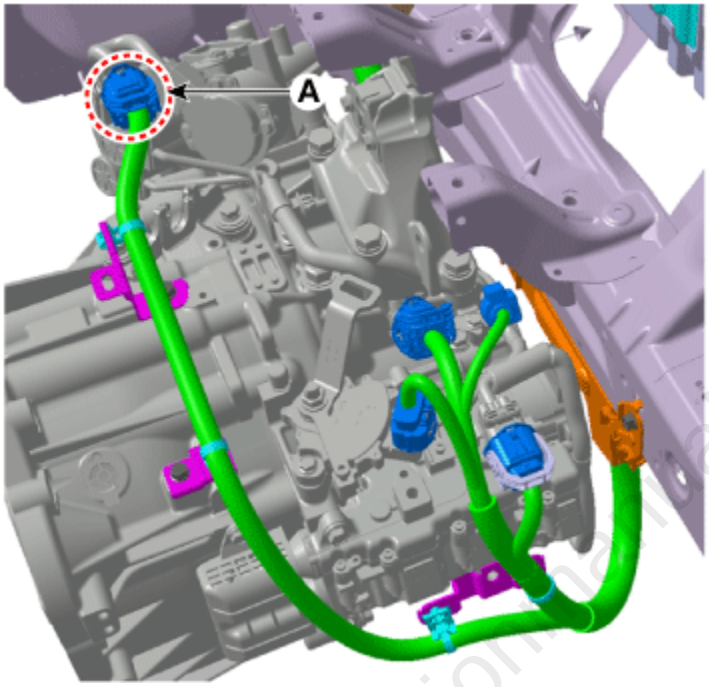
2. Remove the air cleaner assembly and air duct.

   (Refer to Engine Mechnical System - "Air Cleaner")

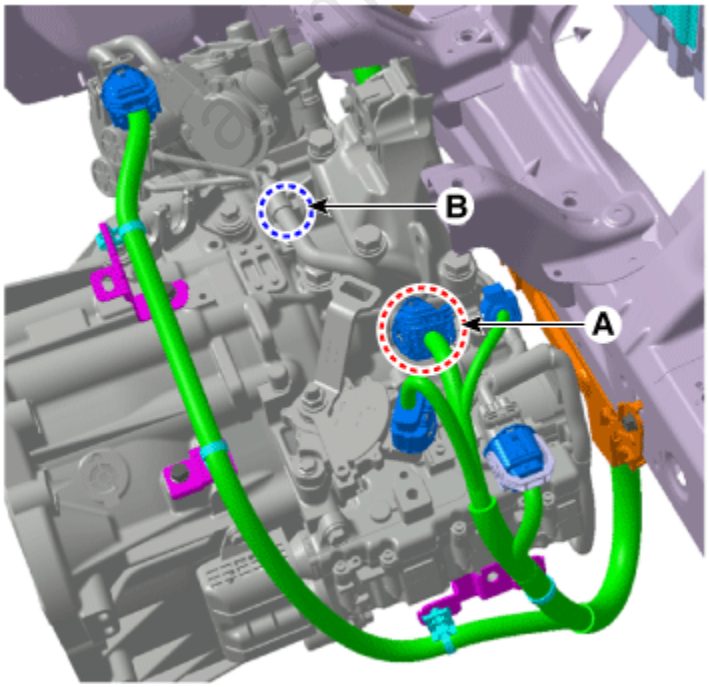
3. Remove the battery and battery tray.

   (Refer to Engine Electrical System - "Battery")

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



5. Remove the wiring mounting clip (B) after disconnecting the gear actuator solenoid connector (A).

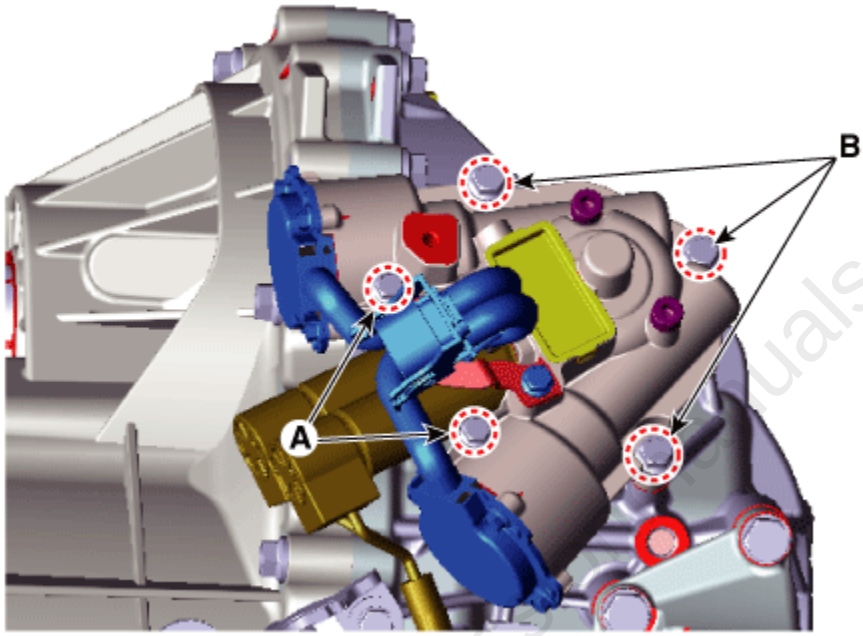


6.
Remove the gear actuator assembly after loosening bolts (A, B).

Tightening torque :

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

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



Installation

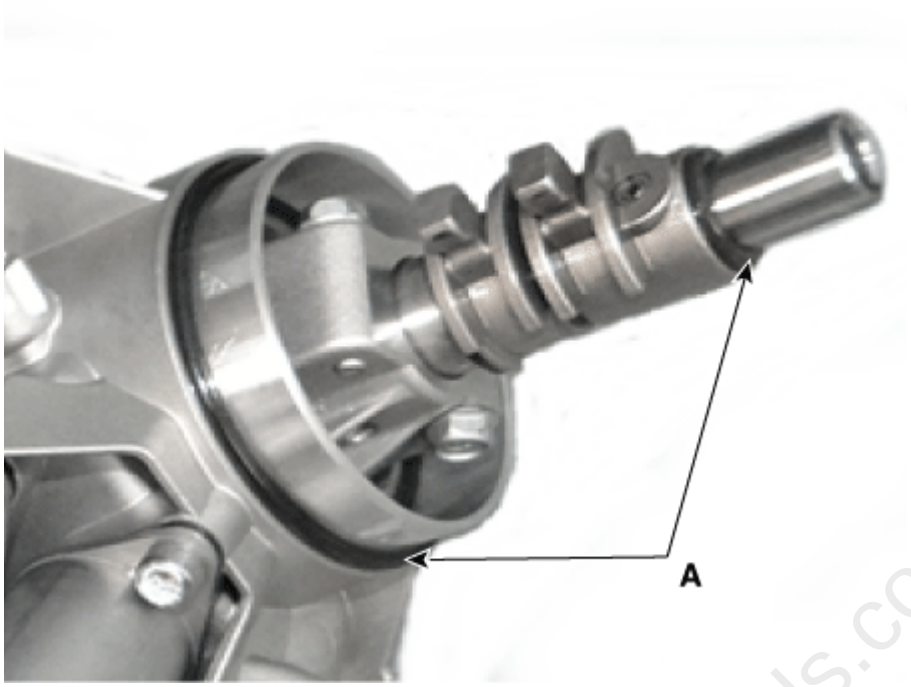
1.
Install in the reverse order of removal.

NOTICE

- Check the following before installing the gear actuator assembly.

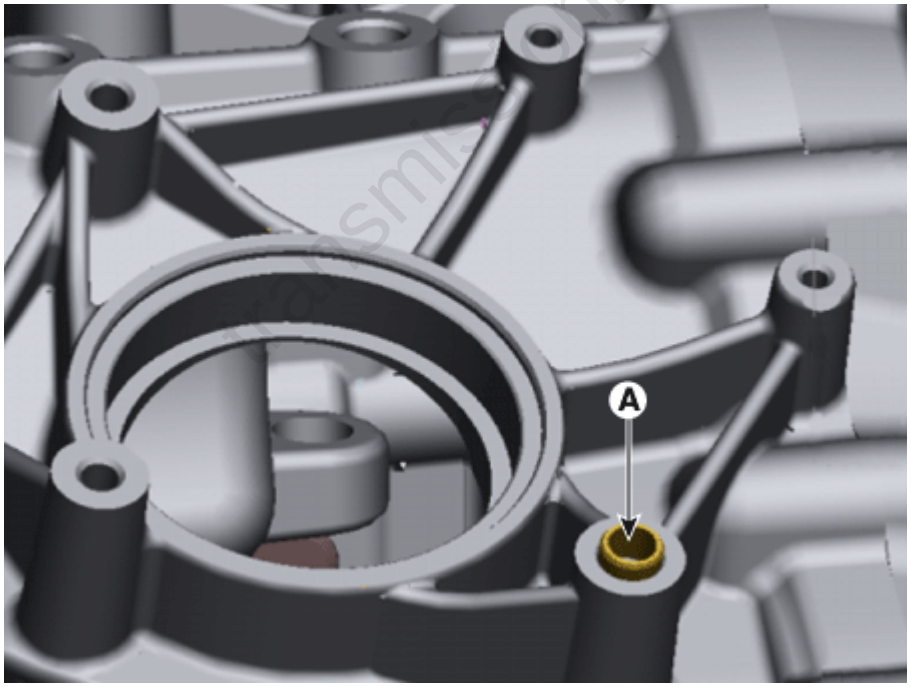
1)
Check that the gear actuator is placed in the "neutral" state.

2)
Check the assembled state of the O-rings (A).

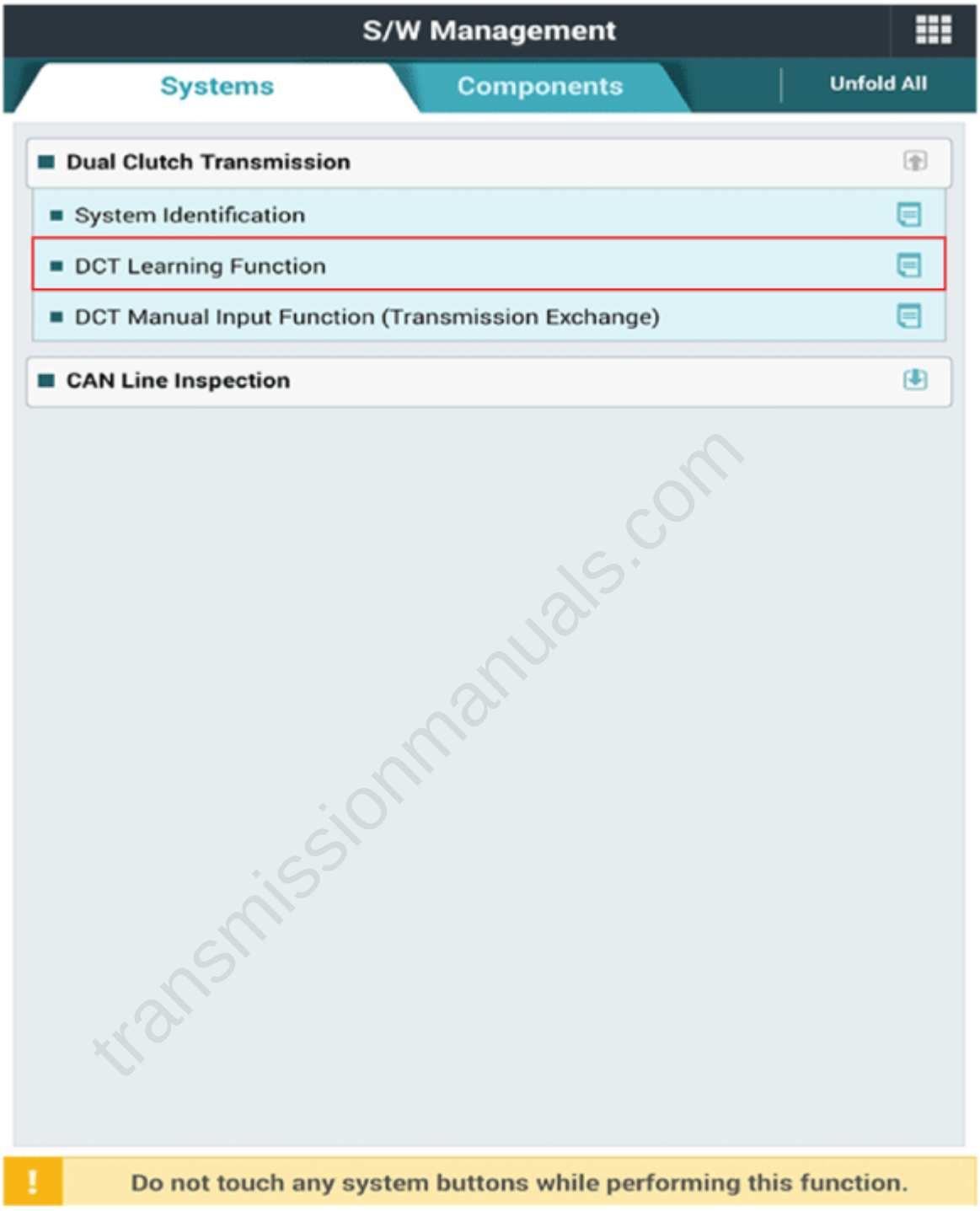


3)
Apply gear oil to the surface of O-rings.

4)
Check the assembled state of the dowel pins (A).



- Perform the clutch touch point learning procedure using the KDS after replacing the gear actuator assembly.



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Clutch Actuator Assembly

Components and components location Component Location 1. Clutch actuator assembly 2. Fork cover Specifications Specification ...

Input Speed Sensor 1

Components and components location Component Location 1. Input shaft speed sensor 1 (Odd) 2. Input shaft speed sensor 2 (Even) Specification ...

Other information:

Kia Forte 2019-2023 (BD) Service Manual: Hood Latch

Components and components location Component Location 1. Hood latch assembly Repair procedures Replacement [Hood lower latch assembly] 1. Remove the front bumper assembly. (Refer to Front Bumper - "Front Bumper Asse ...

Kia Forte 2019-2023 (BD) Service Manual: High Mounted Stop Lamp

Repair procedures Removal [4DR] 1. Disconnect the negative (-) battery terminal. 2. Remove the rear package tray trim. (Refer to Body - "Rear Package Tray Trim") 3. Remove the high mounted stop lam ...

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