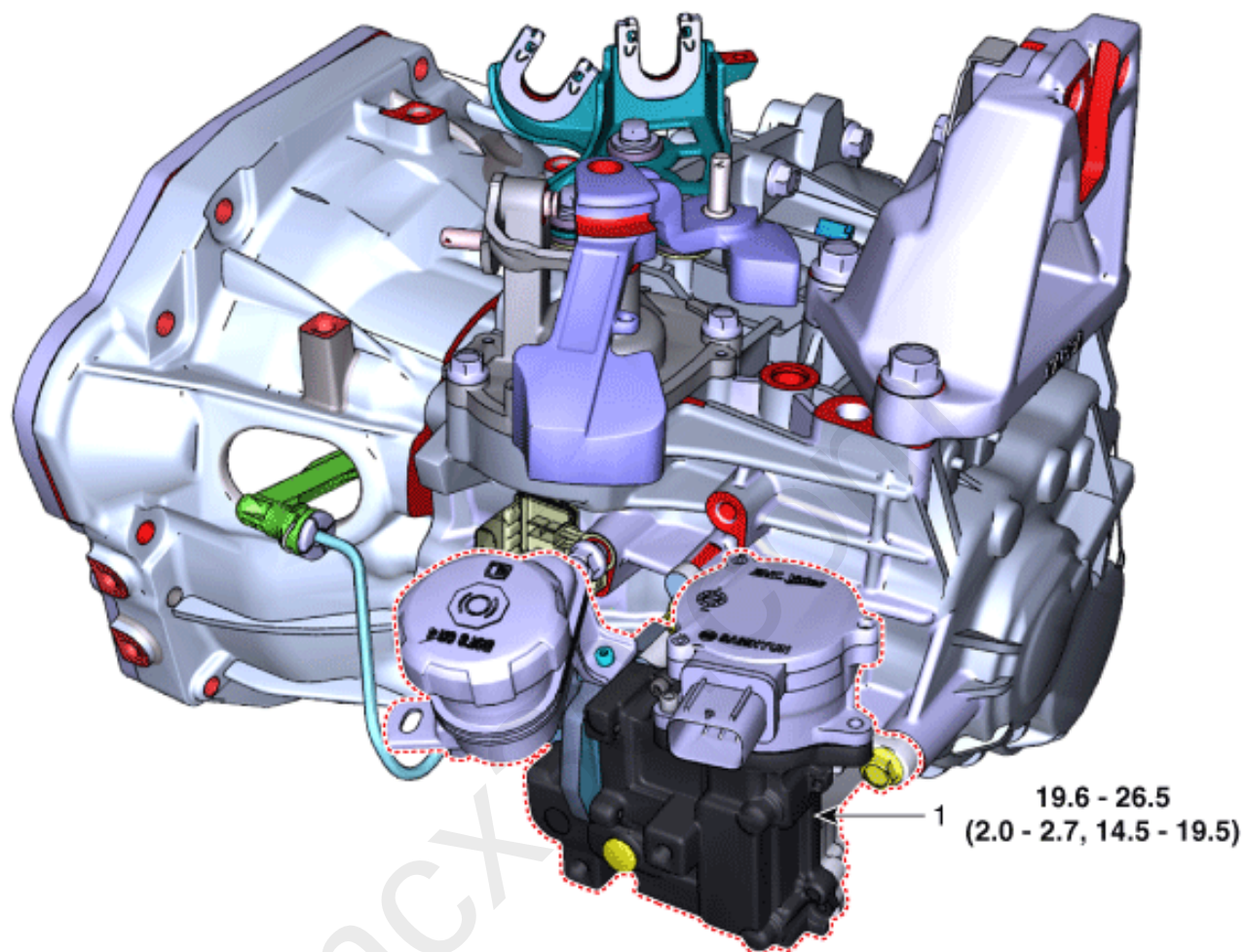


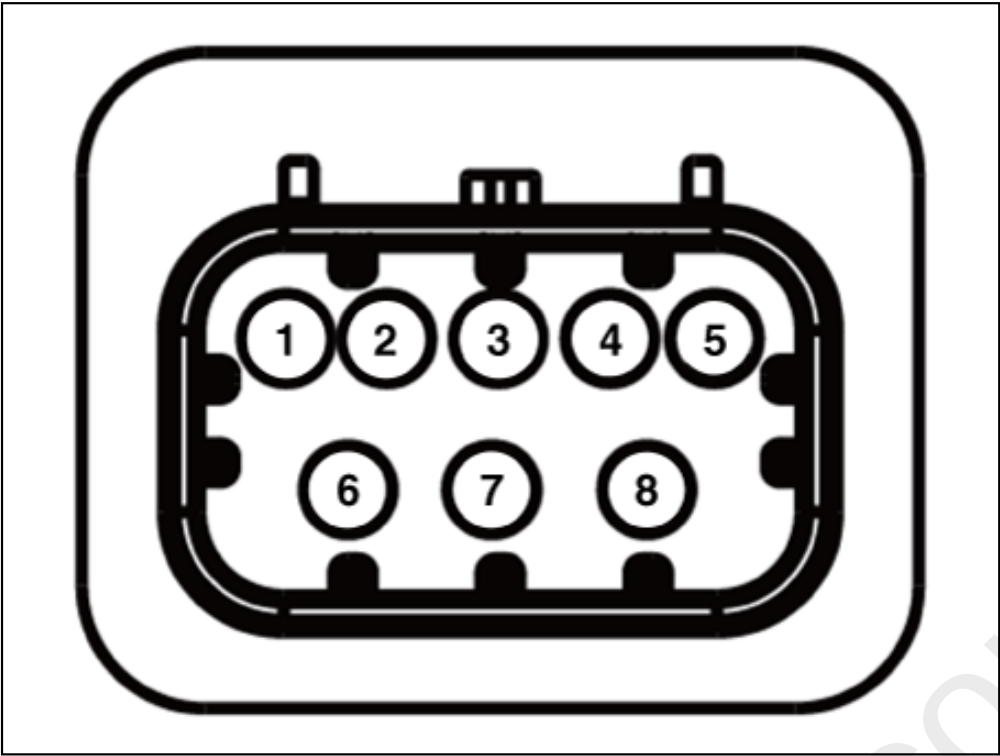
Components and Components
Location



Tightening torques : N.m (kgf.m, lb-ft)

1. IMT system actuator

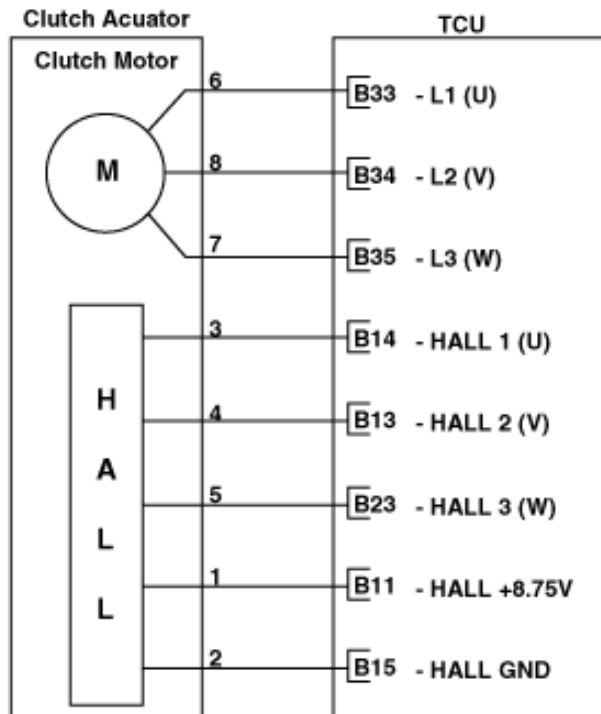
Connector and Terminal
Information



Pin	Function
1	Sensor power supply
2	Sensor ground
3	Motor commutation 1 (U)
4	Motor commutation 2 (V)
5	Motor commutation 3 (W)
6	Motor phase 1 (U)
7	Motor phase 2 (W)
8	Motor phase 3 (V)

Circuit
Diagram

[Circuit Diagram]



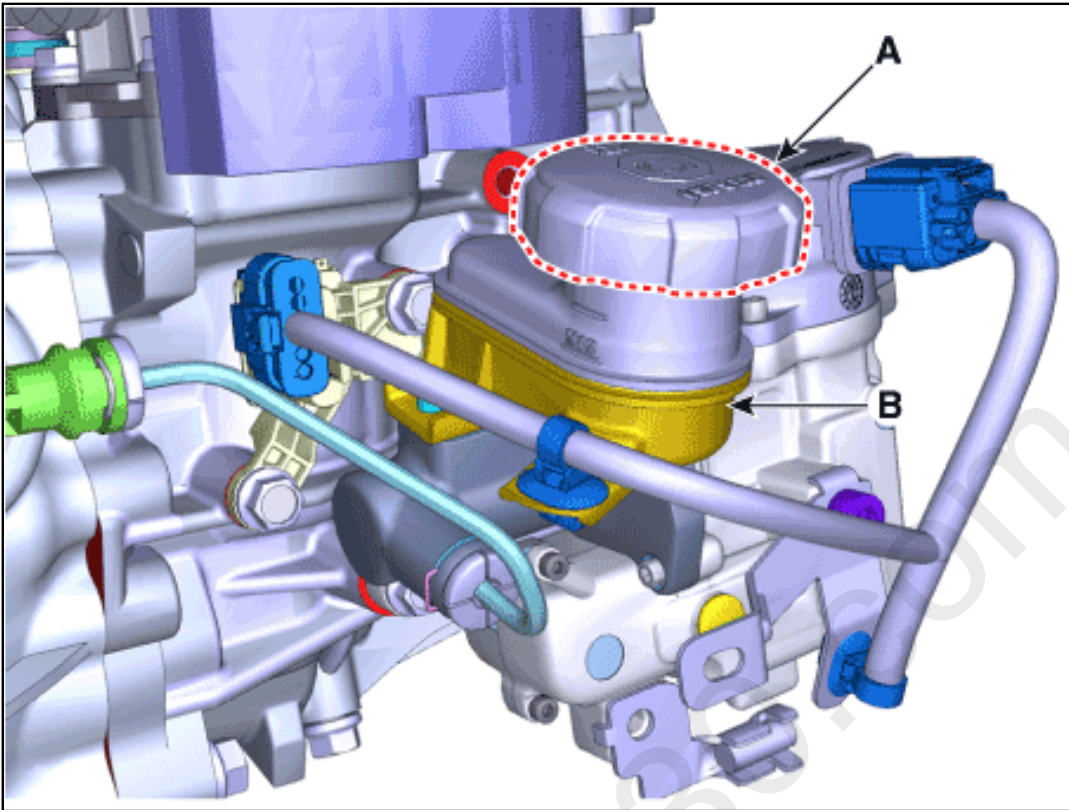
[Connection Information]

Terminal	Connected to	Function
1	TCU(B11)	Hall Sensor Power Supply
2	TCU(B15)	Hall Sensor Ground
3	TCU(B14)	Hall 1 (U)
4	TCU(B13)	Hall 2 (V)
5	TCU(B23)	Hall 3 (W)
6	TCU(B33)	Phase "U"
7	TCU(B34)	Phase "W"
8	TCU(B35)	Phase "V"

Replacement

iMT system actuator fluid - when fluid suction tool is available

1. Remove the air cleaner assembly and the air duct.
(Refer to Engine Mechanical System - "Air Cleaner")
2. Remove the reservoir cap (A) and drain the imt system actuator fluid (B).



3. Fill a new IMT system actuator fluid up to the MAX mark.

Recommended :

- DOT-LV4 (Recommended), DOT-4 or DOT-3
- Recommended fluid : SAE J1704 DOT-4 LV, ISO4925 CLASS-6
- Useable fluid : FMVSS116 DOT-4, FMVSS116 DOT-3

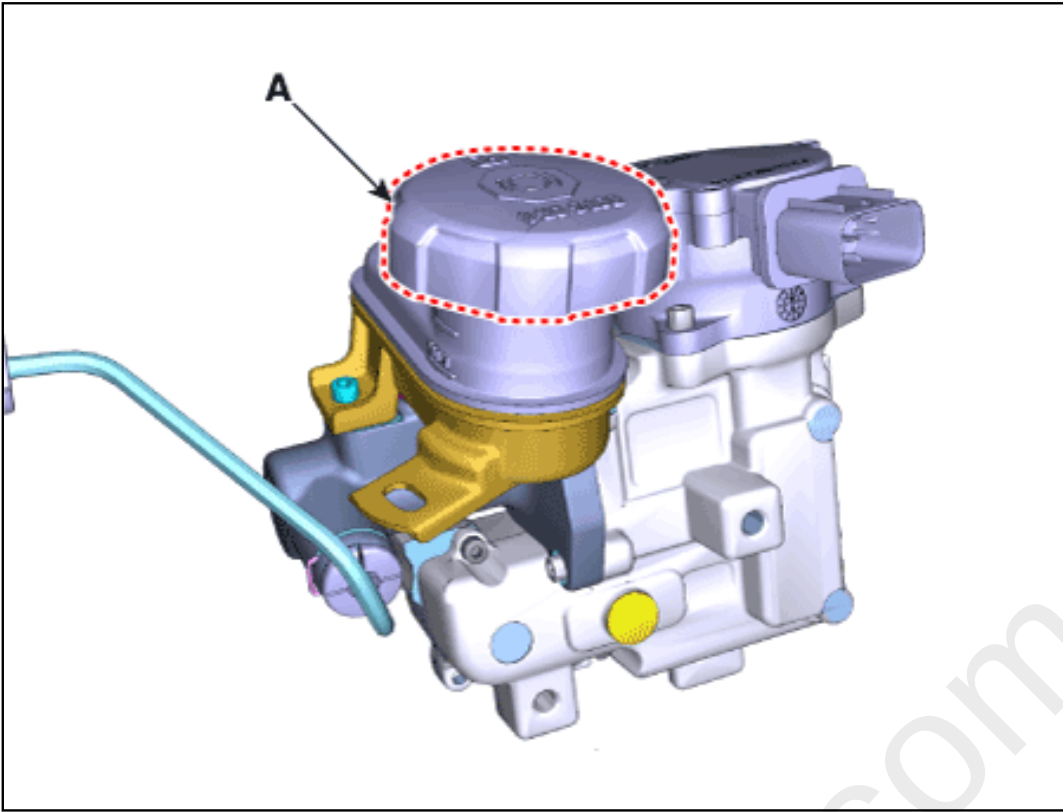
4. Perform the IMT filling check by using the diagnostic tool.

Refer to IMT(intelligent Manual Transaxle) Control System - "IMT System Learning Procedures")

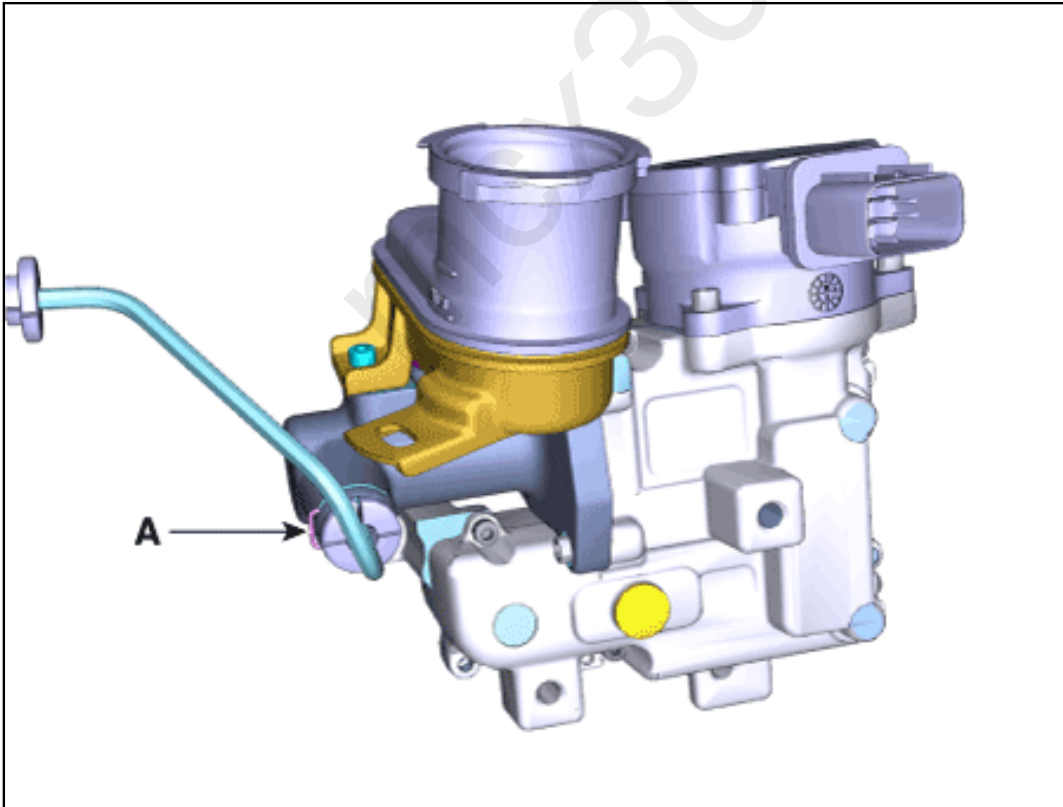
iMT system actuator fluid - when fluid suction tool is unavailable

5. Remove the air cleaner assembly and the air duct.
6. Remove the IMT system actuator assembly with combined the clutch tube.
(Refer to Intelligent Manual Transaxle (IMT) Control System – "IMT System Actuator")

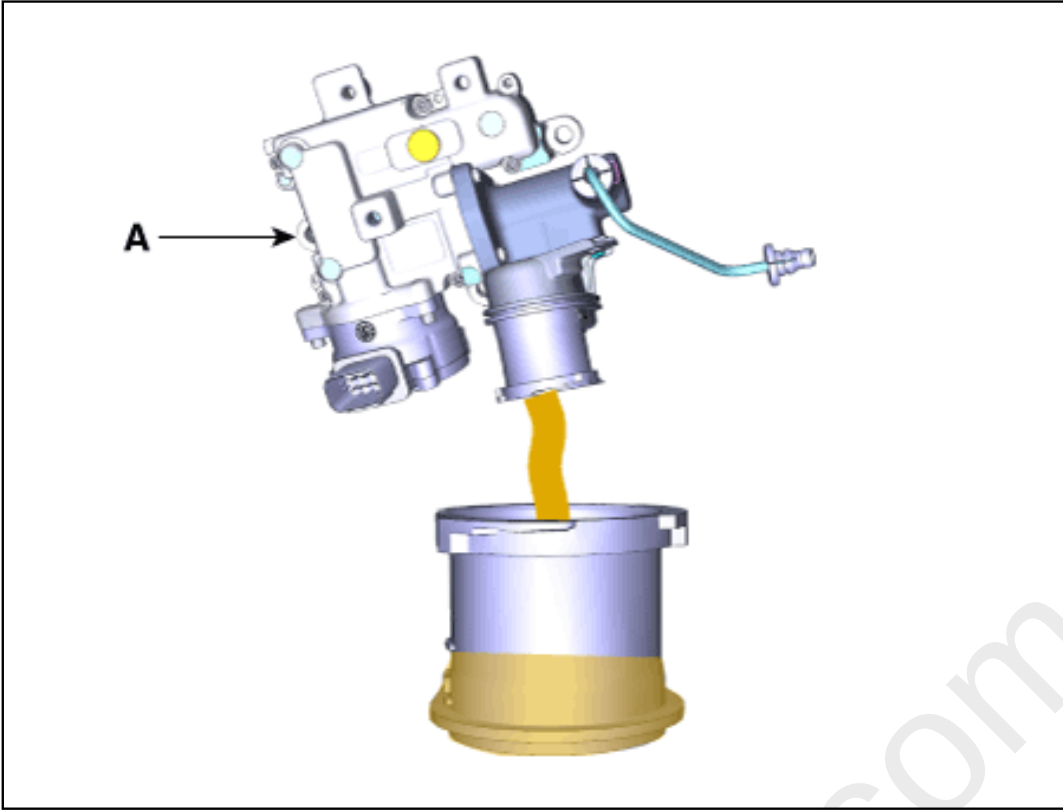
7. Remove the reservoir cap (A) and invert the IMT system actuator assembly.



•Do not remove the pin (A) from the clutch actuator assembly.



8. Keep the actuator (A) inverting until stopping brake fluid flowing out.



9. Install the IMT system actuator assembly.

(Refer to Intelligent Manual Transaxle (IMT) Control System – "IMT System Actuator")

10. Fill a new IMT system actuator fluid up to the MAX mark.

Recommended :

- DOT-LV4 (Recommended), DOT-4 or DOT-3
 - Recommended fluid : SAE J1704 DOT-4 LV, ISO4925 CLASS-6
 - Useable fluid : FMVSS116 DOT-4, FMVSS116 DOT-3
-

11. Perform the IMT filling check by using the diagnostic tool.

(Refer to Intelligent Manual Transaxle (IMT) Control System - "IMT System Learning Procedures")

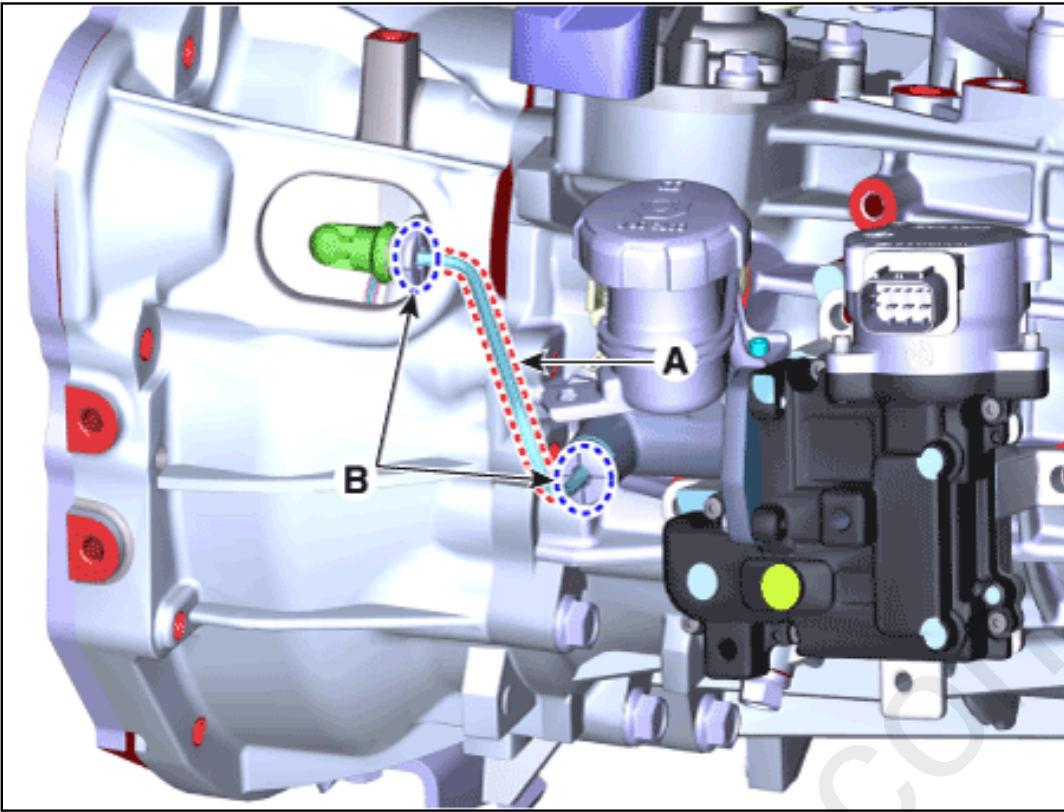
Inspection

IMT system clutch tube and line

1. Remove the air cleaner assembly and the air duct.

(Refer to Engine Mechanical System – “Air Cleaner”)

2. Check conditions (disassembled, damaged) of the clutch tube (A) and check leakages of the connectors (B) with sweeping in a circumference direction.



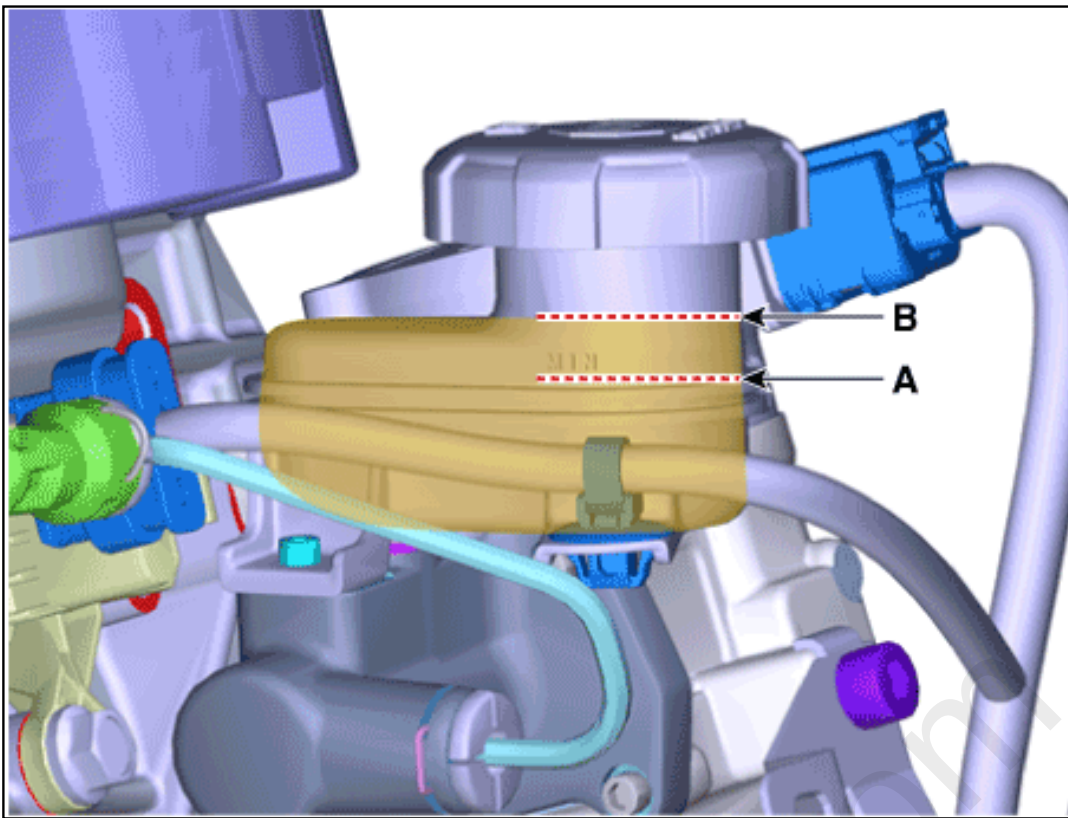
3. If IMT system clutch tube and line have been faulty, remove related parts, then replace or re-install the parts.
(Refer to Intelligent Manual Transaxle (IMT) Control System – "IMT System Actuator")

IMT system actuator fluid

4. Remove the air cleaner assembly and the air duct.
(Refer to Engine Mechanical System – "Air Cleaner")
5. Check the Imt system actuator fluid level.
(1) If the level is below MIN mark (A), fill the fluid oil up to the MAX mark (B).

Recommended :

- DOT-LV4 (Recommended), DOT-4 or DOT-3
 - Recommended fluid : SAE J1704 DOT-4 LV, ISO4925 CLASS-6
 - Useable fluid : FMVSS116 DOT-4, FMVSS116 DOT-3
-



- When changing and adding IMT system actuator fluid, handle it carefully.
- Which has been exposed to open air for an extended time should never be used as its quality cannot be guaranteed. It should be properly disposed.
- Have your eyes examined by a doctor as soon as possible.



- Do not allow IMT system actuator fluid to contact the vehicle's body paint, as paint damage will result.
- Which has been exposed to open air for an extended time should never be used as its quality cannot be guaranteed. It should be properly disposed.
- Don't put in the wrong kind of fluid. A few drops of mineral based oil, such as engine oil, in the IMT system actuator can damage IMT system actuator parts.

(2) Perform the IMT filling check by using the diagnostic tool.

(Refer to Intelligent Manual Transaxle (IMT) Control System - "IMT System Learning Procedures")

IMT System Concentric Slave Cylinder

6. The fault of CSC could be inspected by the using the diagnostic tool.

7. Perform the filling check function by using the diagnostic tool.

(Refer to Intelligent Manual Transaxle (IMT) Control System - "IMT System Learning Procedures")



- If there are no leakages of IMT system clutch tube and line but oil level of the actuator reservoir go down rapidly and continuously during the IMT filling check procedure, make a guess the fault of the CSC.

8. Turn ignition on in vehicle condition and check “clutch motor current” in the sensor data by the using the diagnostic tool.



- If the clutch motor current is less than “1 A” and clutch motor position is more than “10 mm (0.39 in.)” when it is being actuated and held clutch pedal with gear N, make a guess the fault of the CSC.

9. Identify type of oil and source of leakages.



- If transaxle is removed from vehicle for once, replacement of CSC is recommended when clutch disc has caused excessive wear.
- When unknown oil is spread out in the engine room (especially on the under cover) but the oil couldn't find nearby the clutch housing downward halls, the leakages would occur in other parts.
- Do not confuse transaxle oil as IMT system actuator fluid. The transaxle oil is more slippery than IMT system actuator fluid.
- To avoid a misdiagnosis, inspect leakages of the transaxle oil and leakages of the IMT system actuator fluid from IMT system clutch tube and line.



- When changing and adding IMT system actuator fluid, handle it carefully.
- Do not let it come in contact with your eyes.
- If IMT system actuator fluid should come in contact with your eyes, immediately flush them with a large quantity of fresh tap water.
- Have your eyes examined by a doctor as soon as possible.
- Do not allow IMT system actuator fluid to contact the vehicle's body paint, as paint damage will result.
- The IMT system actuator fluid, which has been exposed to open air for an extended time should never be used as its quality cannot be guaranteed. It should be properly disposed.
- Don't put in the wrong kind of fluid. A few drops of mineral based oil, such as engine oil, in the IMT system actuator can damage IMT system actuator parts.d.

10. If the oil is identified as IMT system actuator fluid, remove the transaxle.

(Refer to Intelligent Manual Transaxle (IMT) System - "Intelligent Manual Transaxle (IMT)")

11. Check leakage in the clutch housing and nearby bearing of CSC Then check the fault of CSC by inspecting damages of external shape.

12. If fault of CSC occur, replace the CSC.

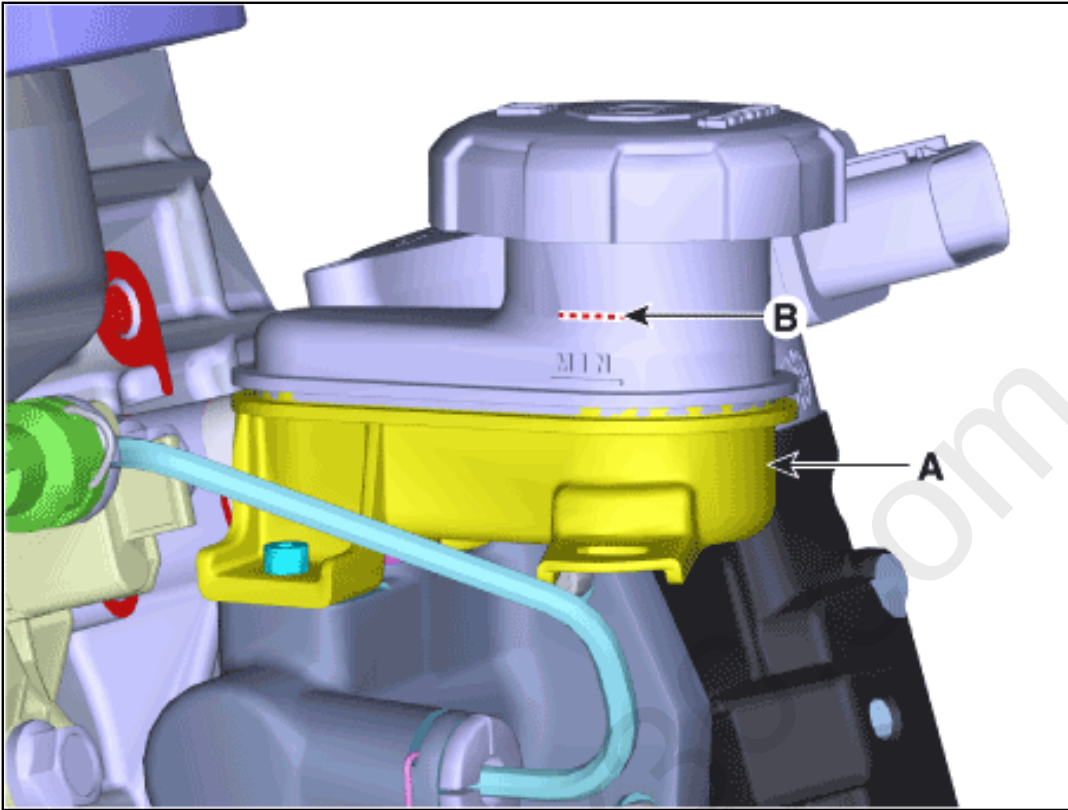
13. If there are no leakages in the clutch housing and no external damages of CSC, replace the IMT system actuator.

(Refer to Intelligent Manual Transaxle (IMT) Control System – "IMT System Actuator")

14. Install the transaxle and fill the IMT system actuator fluid (A) up to the MAX mark (B).

Recommended :

- DOT-LV4 (Recommended), DOT-4 or DOT-3
 - Recommended fluid : SAE J1704 DOT-4 LV, ISO4925 CLASS-6
 - Useable fluid : FMVSS116 DOT-4, FMVSS116 DOT-3
-



15. After mounting, perform the IMT system learning procedures.

(Refer to Intelligent Manual Transaxle (IMT) Control System - "IMT System Learning Procedures")

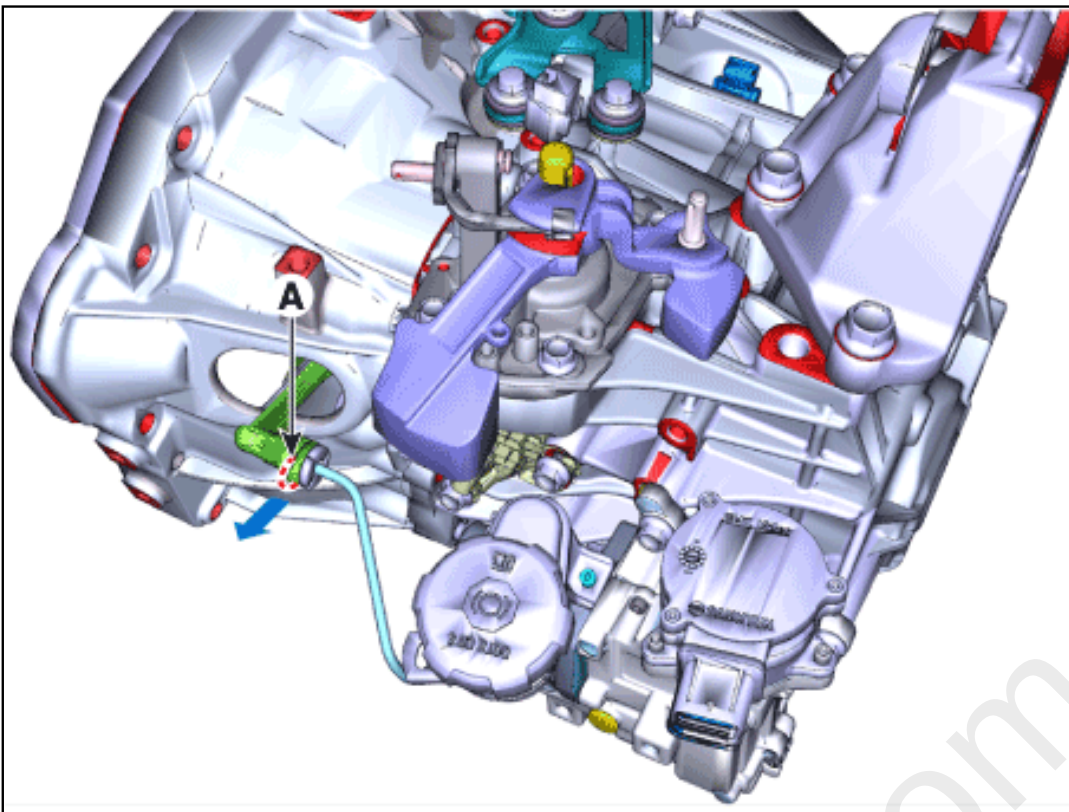
Removal

In case of transaxle separated from the vehicle

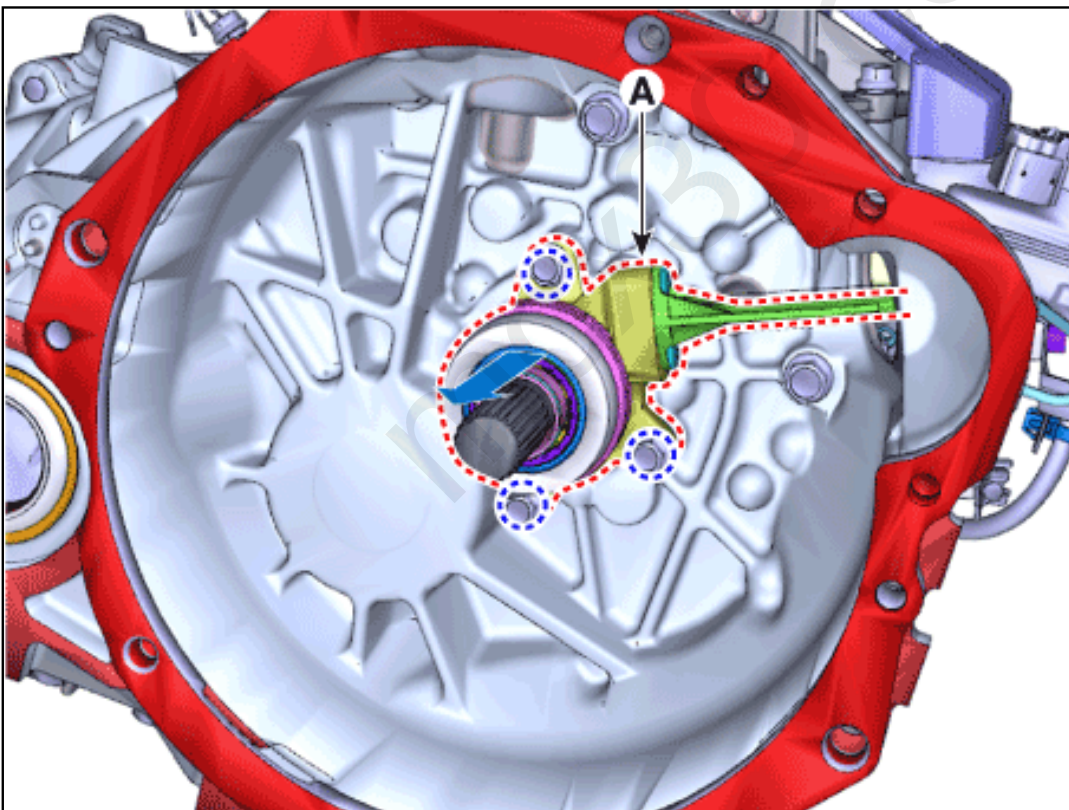
1. Remove the Intelligent Manual Transaxle (IMT).

(Refer to Intelligent Manual Transaxle (IMT) System (M6CF3-1e) - "Intelligent Manual Transaxle (IMT)")

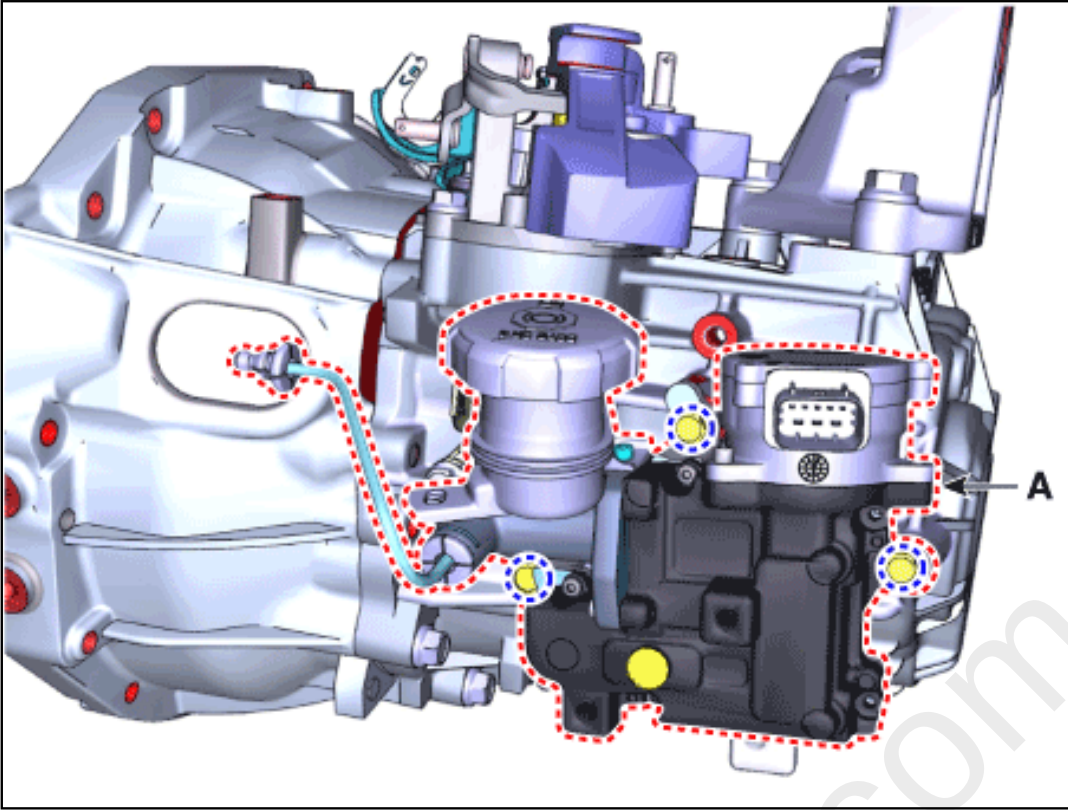
2. Pull the clip (A).



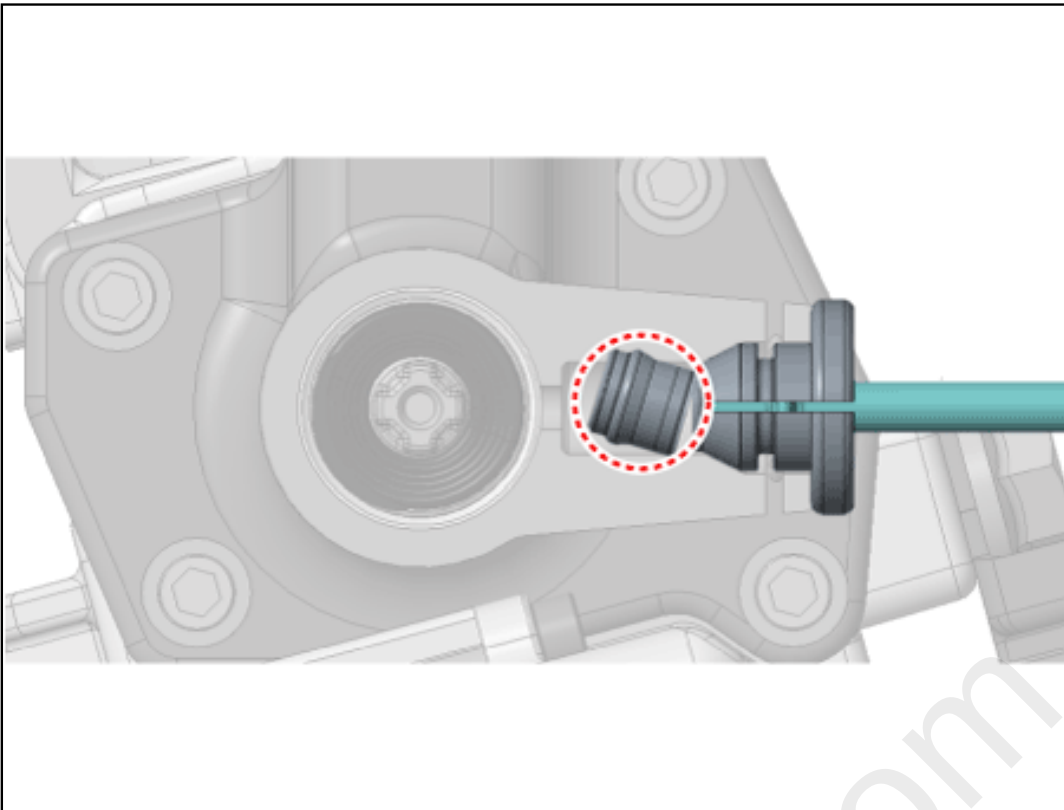
3. Loosen the bolts and then removing the concentric slave cylinder (A).



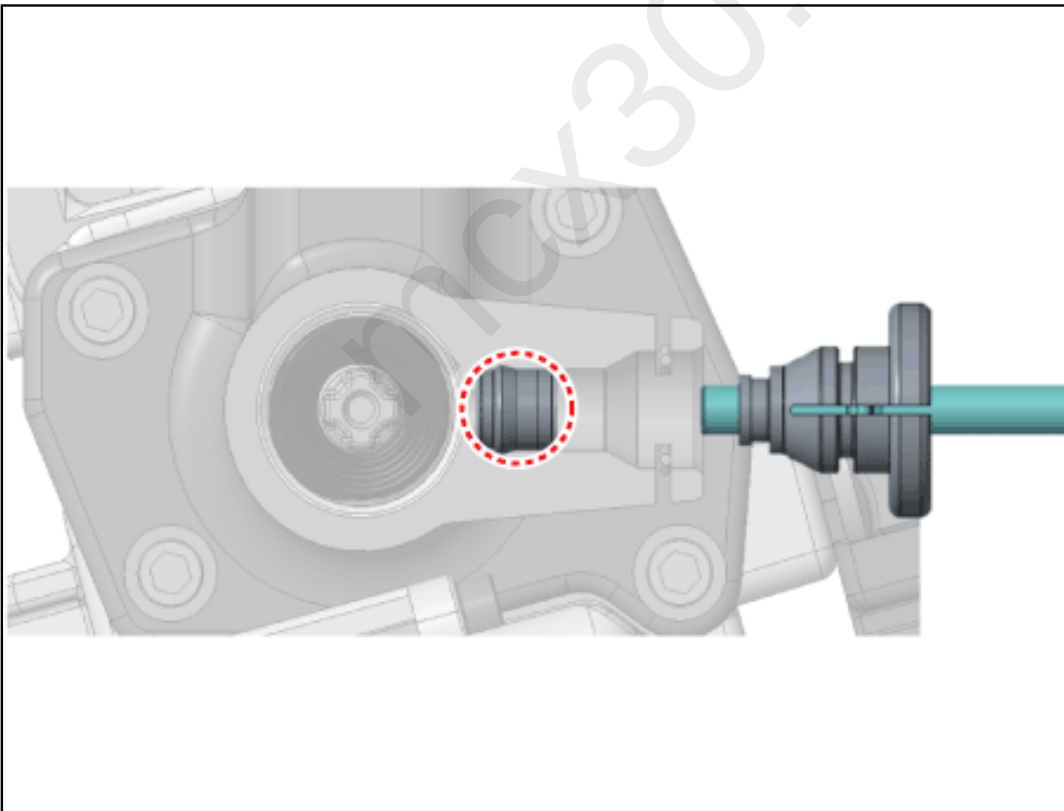
4. Loosen the bolts and then removing the IMT system actuator (A).



- All of the pin have to be assembled in original placement right after disassembly.
- If the clutch tube is twisted and bended strongly for disassembling, the rubber caps and the quick connectors can be damaged.
- The rubber caps can be tilted when the clutch tube has been disassembled with wrong condition (twisted or bended).



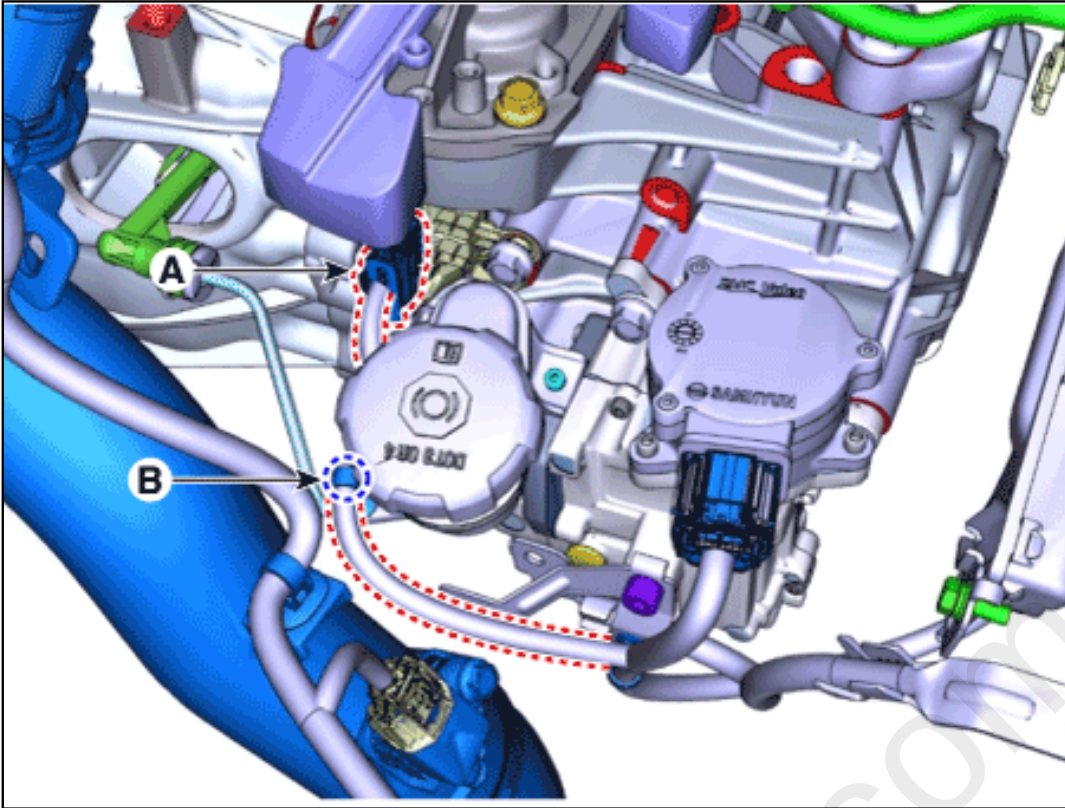
- If the rubber cap have been lost right after disassembly, the rubber cap can be found in the female connector of the CSC or the IMT system actuator assembly. In this case, rubber caps have to eliminated from the CSC and the IMT system actuator assembly.



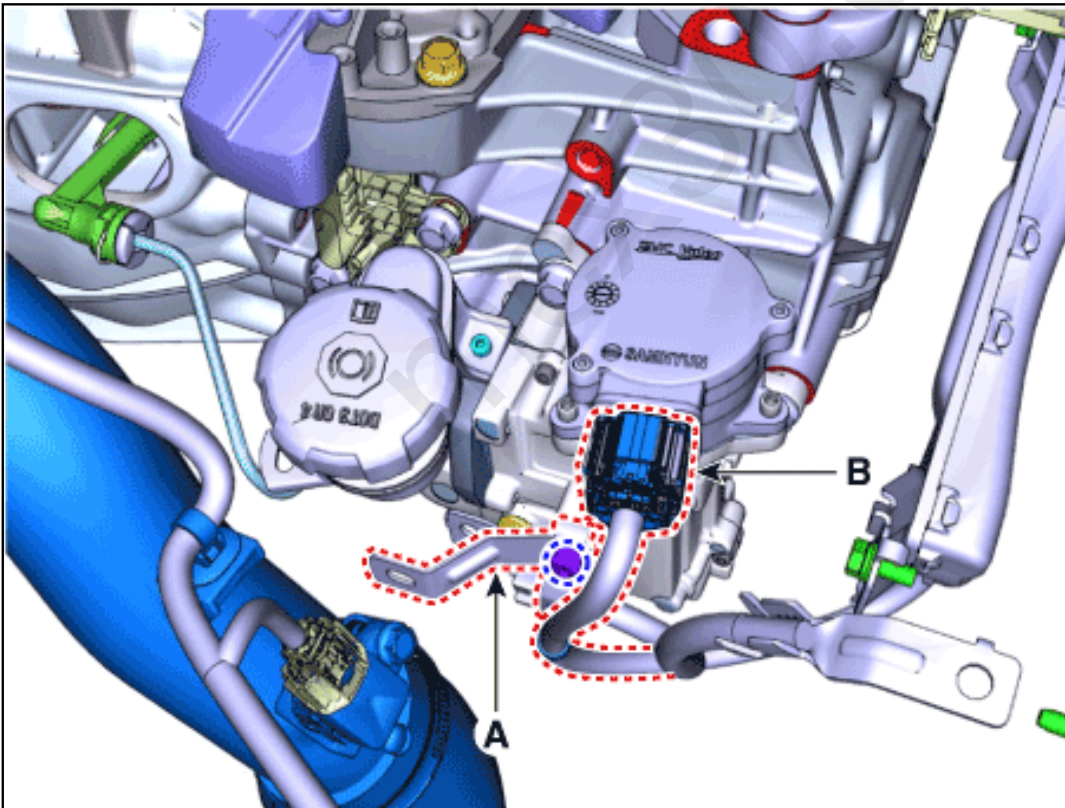
In case of transaxle mounted on the vehicle

5. Remove the air cleaner assembly and the air duct.
(Refer to Engine Mechanical System - "Air Cleaner")

6. Disconnect the gear position sensor connector (A) and then separate the wiring clip (B).



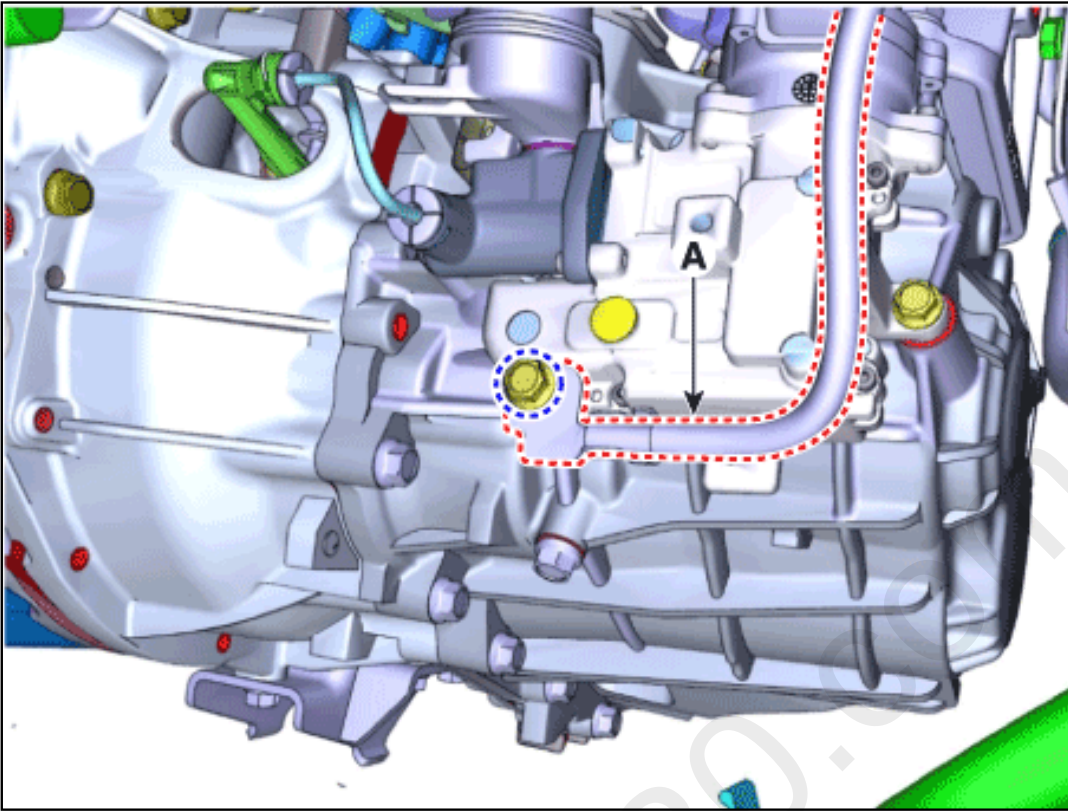
7. Loosen the bolt and then separate the wiring bracket (A) after disconnect the IMT system actuator connector (B).



8. Loosen the bolt and then removing the ground line (A).

Tightening torque :

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



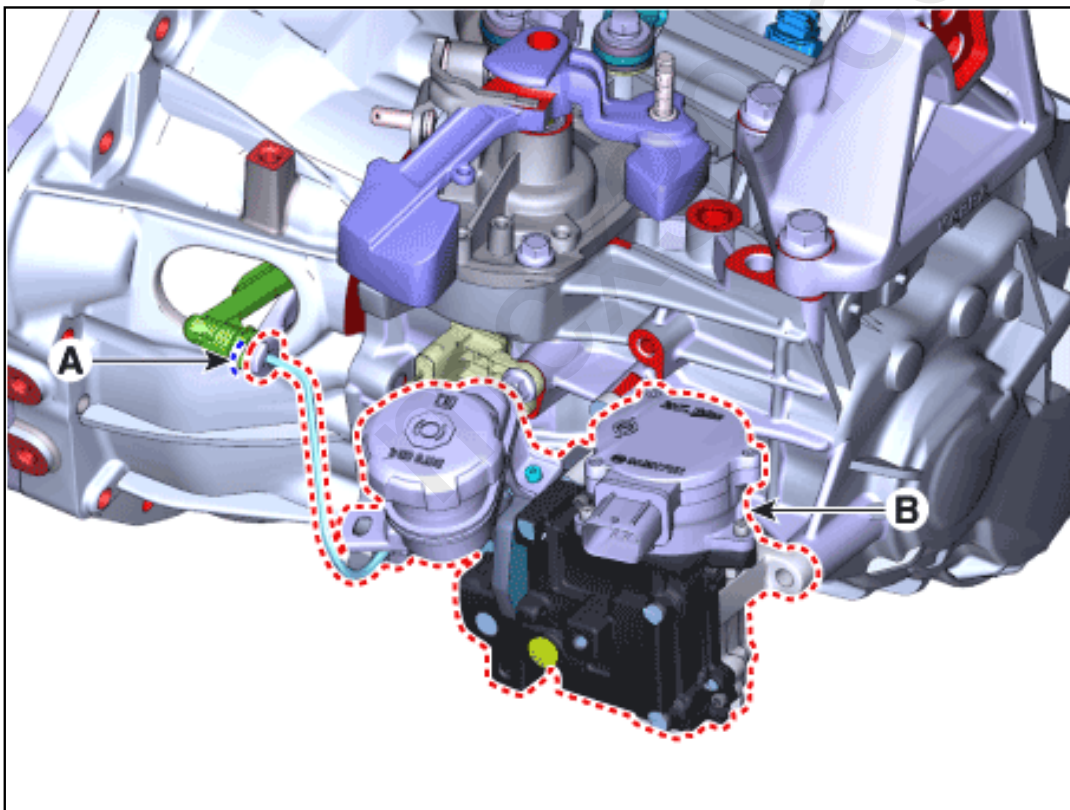
9. Remove the IMT system actuator assembly bolts (A).

Tightening torque :

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



10. Pull the snap pin (A) and then removing the IMT system actuator (B) and clutch tube at the same time.

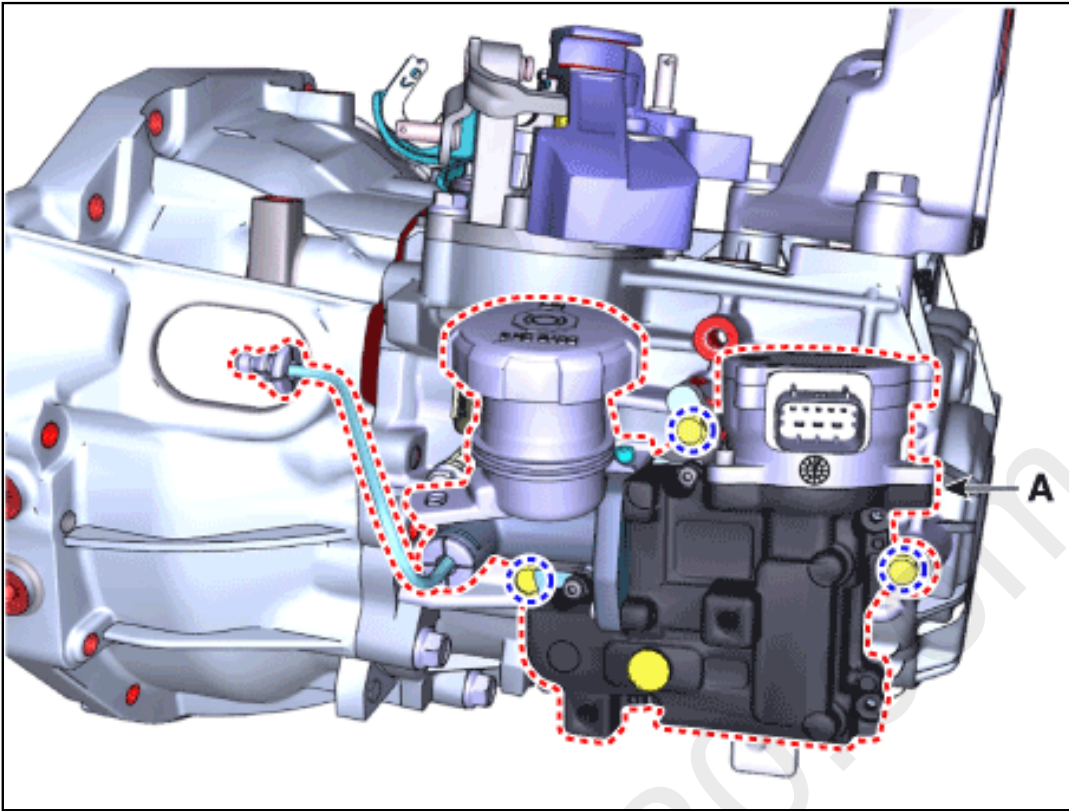


Installation

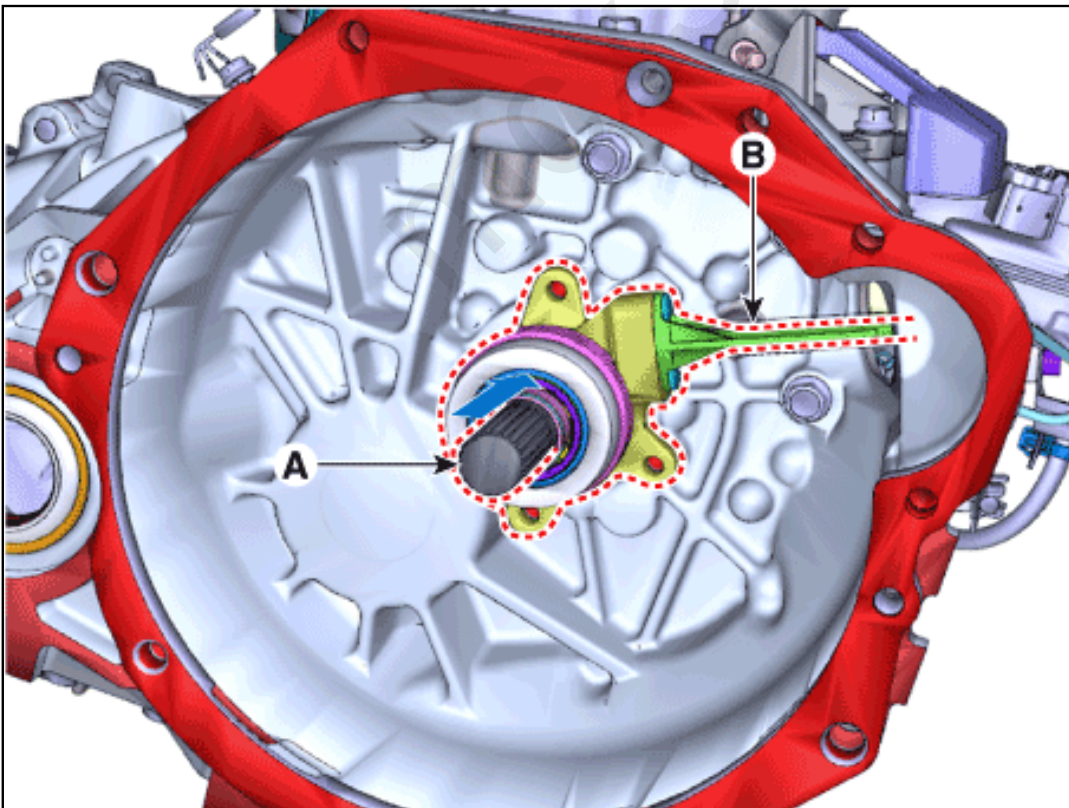
1. Install the IMT system actuator (A) and then tightening the bolts.

Tightening torque:

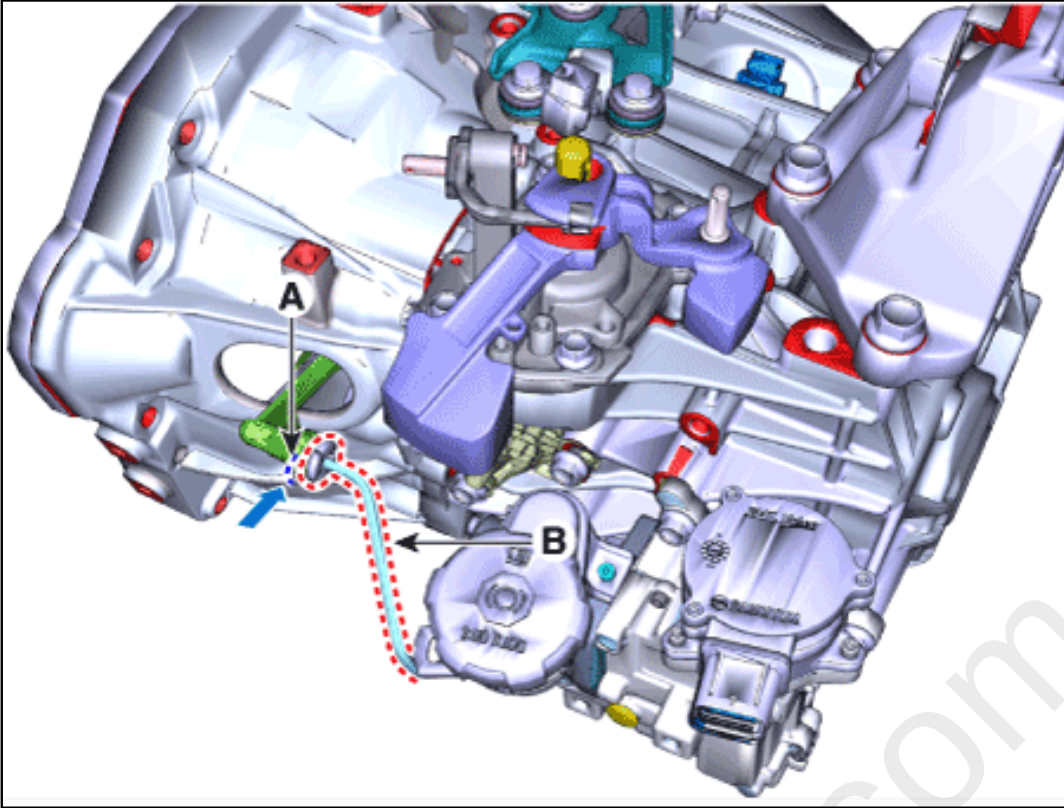
19.6 - 26.5 N.m (2.0 - 2.7 kgf.m, 14.5 - 19.5 lb-ft)



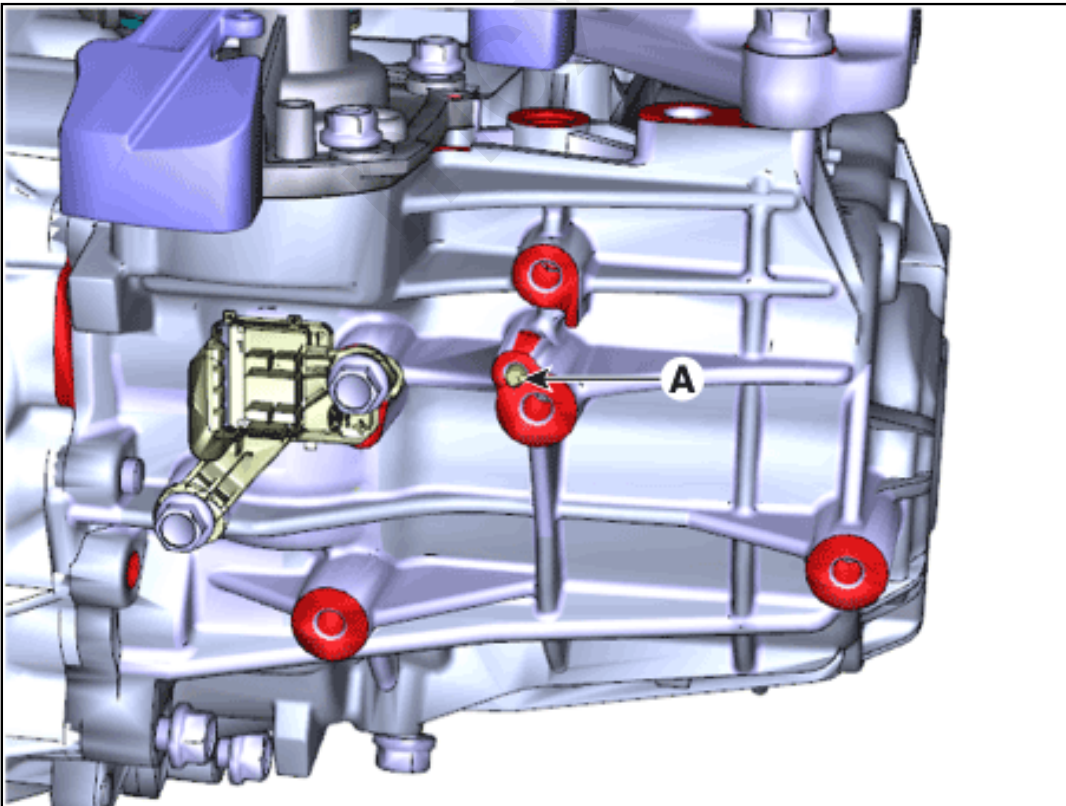
2. Lightly install the concentric slave cylinder (B) on the input shaft (A).



3. Insert the clutch tube (B) into the concentric slave cylinder and then push the clip (A).

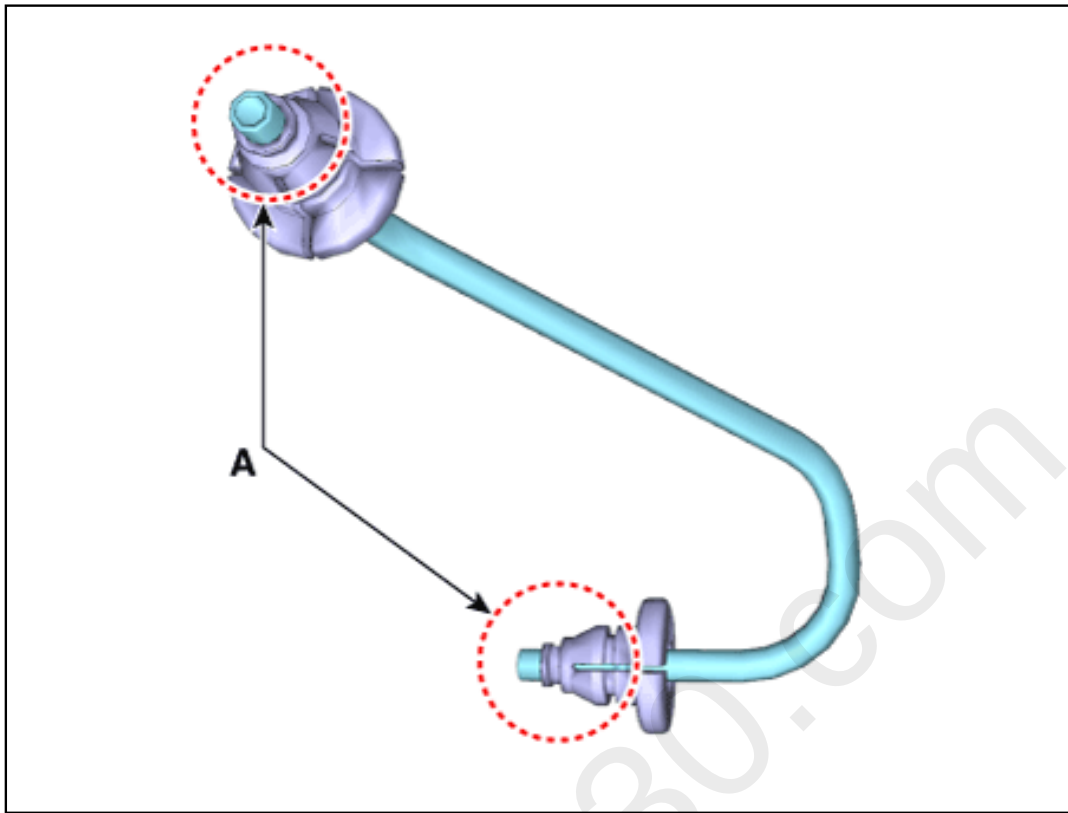


- The clips of the concentric slave cylinder (CSC) and the IMT system actuator assembly don't need to remove for assembling.
- Insert the dowel pin (A) into the hole of the transaxle case before tightening the bolts of IMT system actuator assembly.



- Check the rubber caps (A) of the clutch tube and apply the grease before assembling the clutch tube. Assembling would be difficult without the grease. Don't use engine oil, gearbox oil, coolant, windscreen clear and etc. instead of "RG306".

Specified grease : RG306

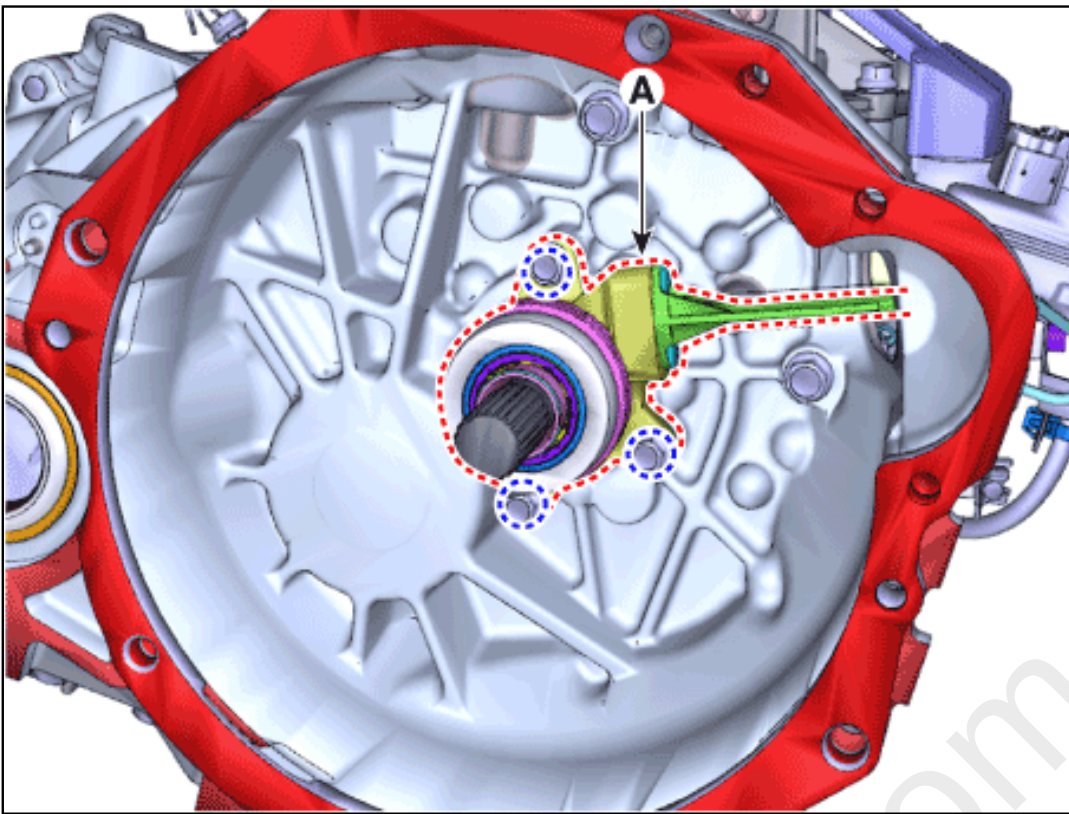


- Check 'click' sound when the clutch tube is inserted into the female connector of the CSC and the IMT system actuator assembly.

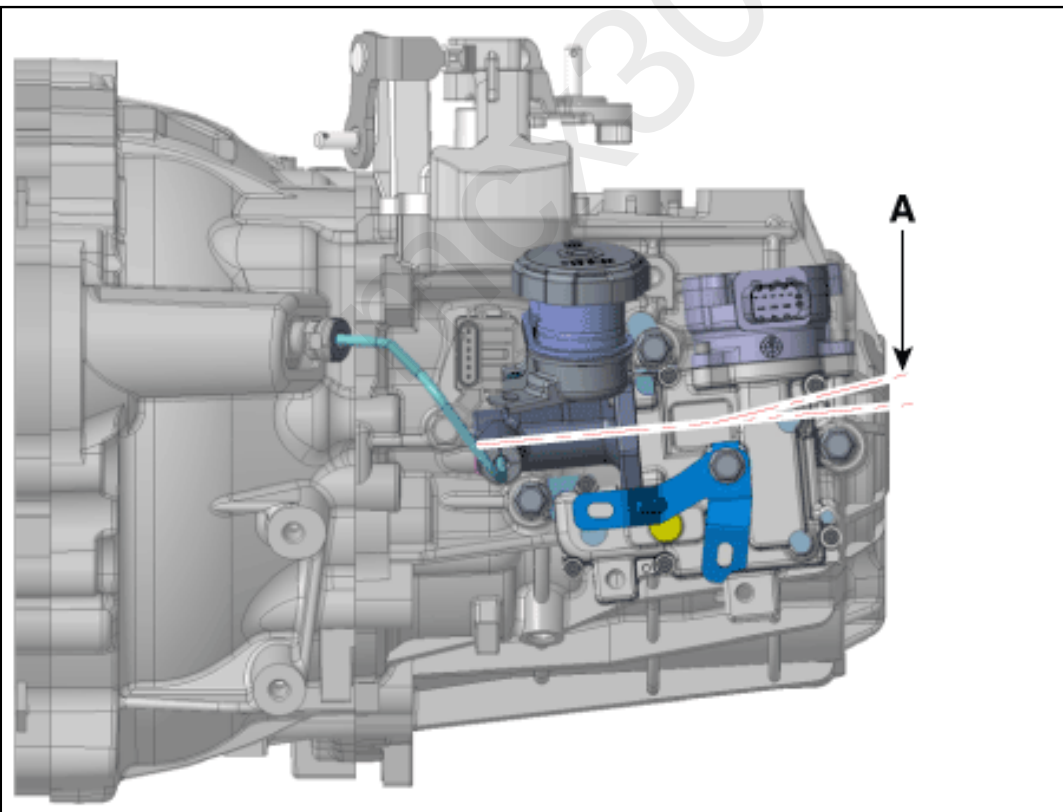
4. Install the concentric slave cylinder (A) and then tightening the bolts.

Tightening torque:

19.6 - 26.5 N.m (2.0 - 2.7 kgf.m, 14.2 - 19.5 lb-ft)



- Check the assembling angle (5°) (A) of the IMT system actuator assembly. It is normal that the IMT system actuator assembly is assembled with tilted condition.



5. After mounting, perform the IMT system learning procedures.
(Refer to Intelligent Manual Transaxle (IMT) Control System – "IMT System Learning Procedures")