

SPECIFICATION

Transaxle type		M6GF2
Engine type		Diesel 2.0
Gear ratio	1st	3.615
	2nd	1.794
	3rd	1.542
	4th	1.176
	5th	0.921
	6th	0.732
	Reverse	3.416
Final gear ratio		4.063/2.955

Service Standard

Items	Standard value [in(mm)]
Input shaft rear bearing end play (At 70kgf load)	0.0019T-0(0.05T-0)
1st output shaft bearing end play (At 70kgf load)	0.0019T-0.0039T(0.05T-0.10T)
2nd output shaft front bearing end play (At 70kgf load)	0.0019T-0.0039T(0.05T-0.10T)
Differential bearing end play (At 70kgf load)	0.0059T-0.0078T(0.15T-0.20T)

T: Indicate tightening of -(minus) direction of end play

L: Indicate loosening of +(plus) direction of end play

TIGHTENING TORQUE

Standard value		Nm	kgf.m	lb-ft
Oil drain plug		60-80	6.0-8.0	43.4-57.9
Oil filler plug		30-35	3.0-3.5	21.7-25.3
Shift control cable bracket on transaxle side		15-22	1.5-2.2	10.9-16.0
Rear roll support bracket bolt		60-80	6.0-8.0	43.4-57.8
Front roll support bracket bolt		60-80	6.0-8.0	43.4-57.8
Transaxle support bracket bolts		60-80	6.0-8.0	43.4-57.8
Transaxle mounting bracket bolts		60-80	6.0-8.0	43.4-57.8
Transaxle upper mounting bolts		60-80	4.3-5.5	43.4-57.8
Transaxle lower mounting bolts	to ENG. Oil pan	30-42	3.0-4.2	21.7-30.4
	to ENG. Block	60-80	6.0-8.0	43.4-57.8

WARNING

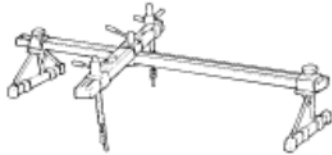
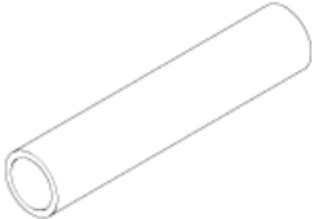
Always follow torque tightening levels. Failure to follow such levels can result in parts breaking if over-tightened or loosening if under-tightened. In either case, serious personal injury or death could result to vehicle occupants.

LUBRICATIONS

English ▼

Items	Recommmend lubricant	Quantity
Transaxle gear oil	SAE 75W/85 API GL-4 TGO-7(MS517-14) ZIC G-F TOP 75W/85 HD GEAR OIL XLS 75W/85	1.9L(2.0US qt, 1.67Imp qt)
Air bleeder	MS721-38	As required
Transaxle housing	MS721-40 or MS721-38	As required
Surface of release fork and bearing	Grease (CASMOLY L9508)	As required

SPECIAL TOOL

TOOL (Number and Name)	Illustration	Use
09200-38001 Engine support fixture		Removal and installation of the transaxle
09624-38000 Crossmember supporter		Supporting of crossmember
09432-3K000 Oil seal installer		Installation of differential oil seal

TROUBLESHOOTING

Symptom	Probable cause	Remedy
Vibration, noise	Loose or damaged transaxle and engine mounts	Tighten or replace mounts
	Inadequate shaft end play	Correct end play
	Worn or damaged gears	Replace gears
	Inadequate grade of oil	Replace with specified oil
	Low oil level	Replenish
	Inadequate engine idle speed	Adjust idle speed
Oil leakage	Broken or damaged, oil seal or O-ring	Replace control cable oil seal or O-ring
Hard shift	Faulty control cable	Replace control cable
	Poor contact or wear of synchronizer ring and gear cone	Correct or replace
	Weakened synchronizer spring	Replace synchronizer spring
	Inadequate grade of oil	Replace with specified oil
Jumps out of gear	Worn gear shift fork or broken detent pin	Replace shift fork or detent pin
	Synchronizer hub-to-sleeve spline clearance too large	Replace synchronizer hub and sleeve

SERVICE ADJUSTMENT PROCEDURE

TRANSAXLE GEAR OIL LEVEL

INSPECTION

Inspect each component for evidence of leakage.

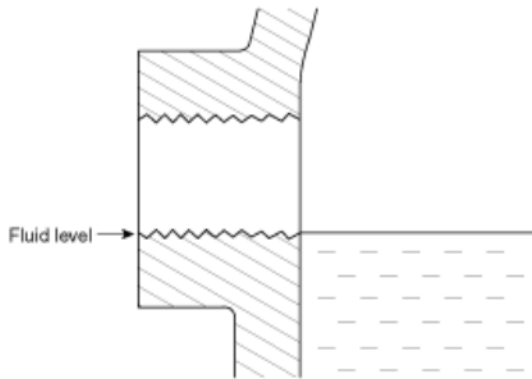
Check the gear oil level by removing the filler plug.

If the oil is contaminated, it is necessary to replace it with new oil.

1. Remove oil filler plug(A).



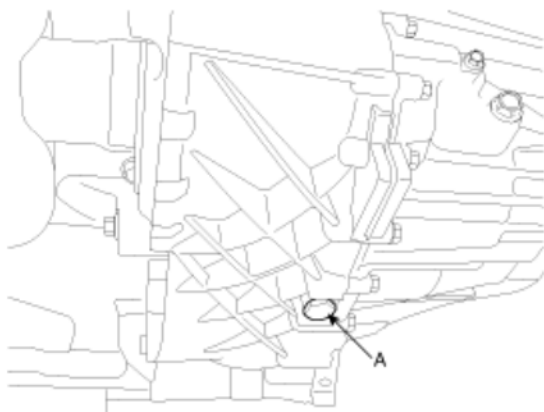
2. Check level with finger.
Oil level must be up to fill the hole, if not, add oil until it runs over.



3. Install filler plug.
Torque : 30-35Nm (3.0-3.5 kgf.m, 21.7-25.3 lb-ft)

REPLACEMENT

1. With the vehicle parked on a level surface, remove the drain plug.
2. Drain the transaxle oil after loosening the drain plug(A).

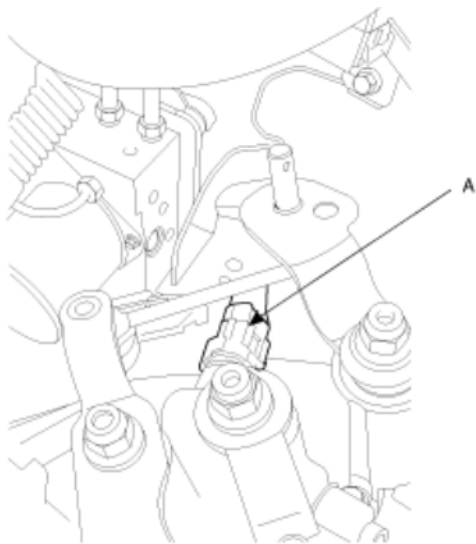


3. Install the drain plug with new washer.
Torque : 60-80Nm (6.0-8.0 kgf.m, 43.4-57.9 lb-ft)
4. Add new oil through the fille plug hole and, fill it just below the plug opening.
Standard oil SAE 75W/85, API GL-4
Oil capacity: 1.9 liter (2.0 US qt, 1.67 Imp qt)

BACKUP LAMP SWITCH

INSPECTION

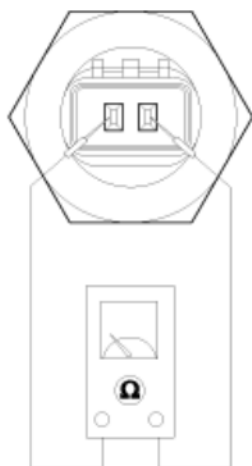
1. Disconnect the backup lamp switch(A).



2. Check the continuity between no. 1 and 2 terminals of backup lamp switch.
When the shift lever is in reverse, there should be continuity.

Condition	1	2
Reverse Range	●	●
Other Range		

*The back up Lamp "ON" shall keep over 0.5mm(0.02in) From ON-OFF point.



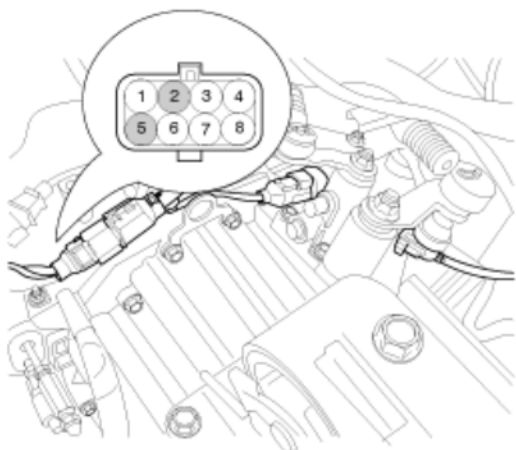
3. If necessary, repair or replace the backup lamp switch.

Torque : 30-35Nm (3.0-3.5 kgf.m, 21.7-25.3 lb-ft)

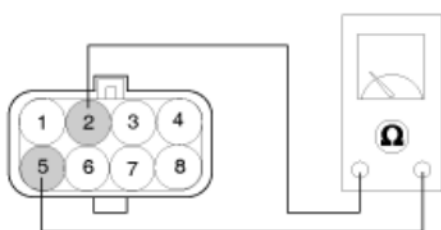
NEUTRAL SWITCH

INSPECTION

1. Disconnect the common connector (A).

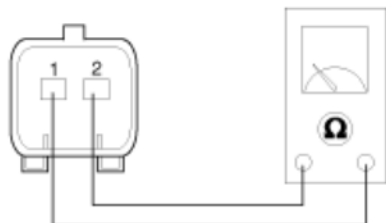


2. Check the continuity between no. 2 and 5 terminals when the shift lever is in neutral position. If there isn't continuity, go to next step.



3. Disconnect the neutral switch connector.
4. Check the continuity between no. 1 and 2 terminals of neutral switch, when the shift lever is in neutral position, there should be continuity.

Condition	1	2
Neutral	●	●
Other		

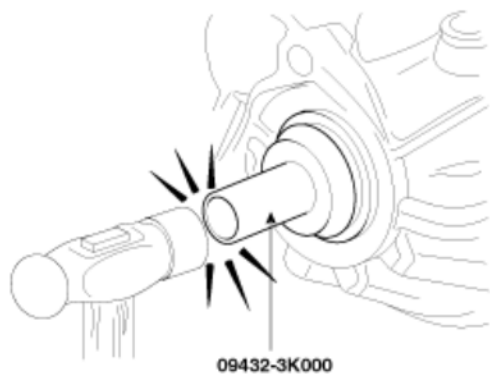


5. If necessary, repair or replace the neutral switch.
Torque : 30-35 Nm (3.0-3.5 kgf.m, 21.7-25.3 lb-ft)

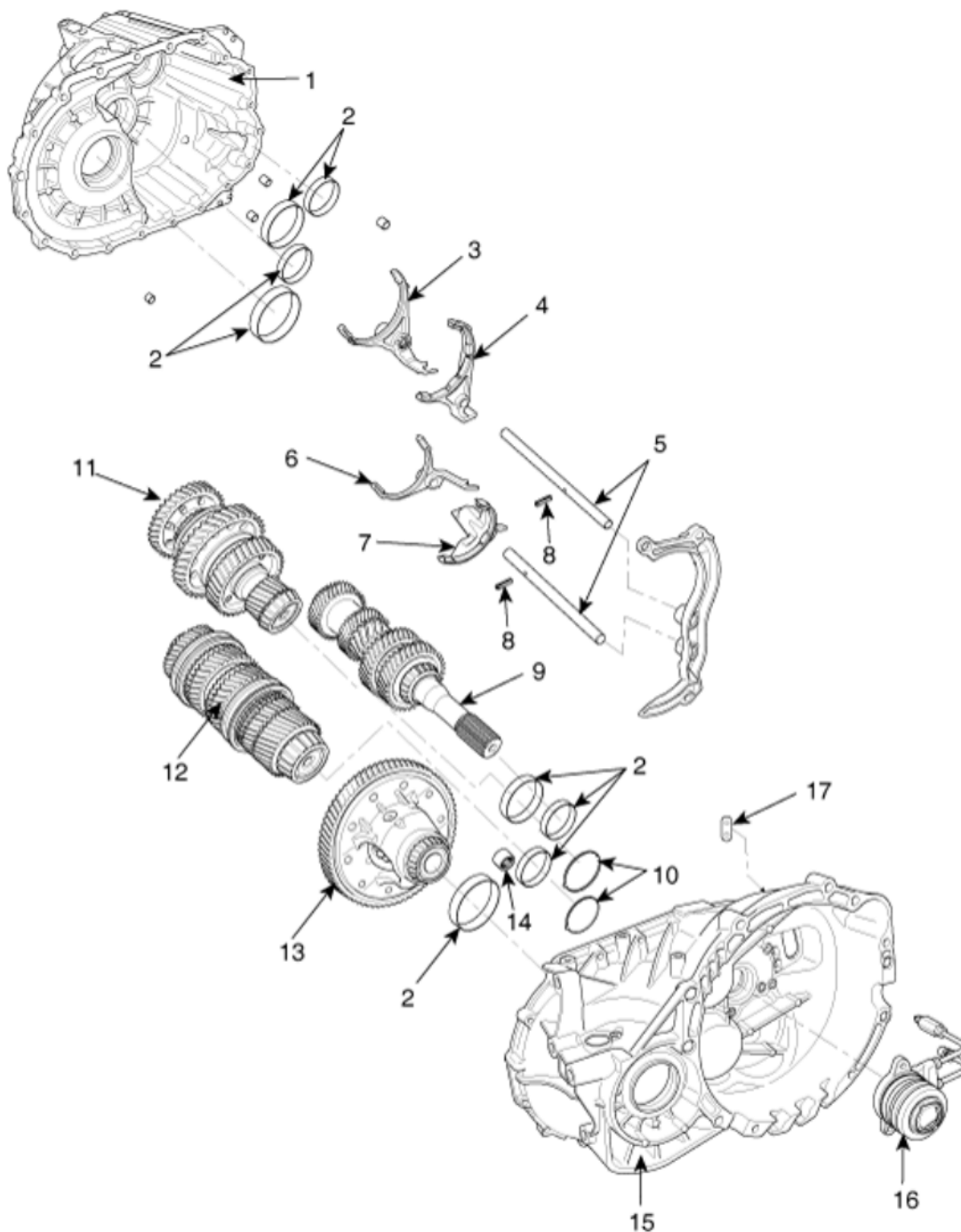
DRIVE SHAFT OIL SEAL

REPLACEMENT

1. Disconnect the drive shaft from the transaxle. (refer to Drive shaft in DS group)
2. Using a flat-tip screwdriver, remove the oil seal.
3. Using the special tool(09432-3K000), tap the drive shaft oil seal into the transaxle.



COMPONENTS



- | | | |
|------------------------------------|-----------------------|--|
| 1. Transaxle case | 7. 5th/6th shift fork | 13. Differential assembly |
| 2. Taper roller bearing outer race | 8. Spring pin | 14. Needle bearing |
| 3. 1st/2nd shift fork | 9. Input shaft | 15. Clutch housing |
| 4. Reverse shift fork | 10. Oil guide | 16. Concentric slave cylinder assembly |
| 5. Shift rail | 11. 1st output shaft | 17. Boot |
| 6. 3rd/4th shift fork | 12. 2nd output shaft | |

REMOVAL

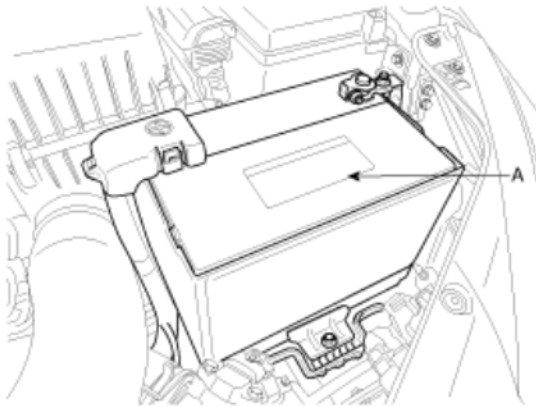
⚠ CAUTION

- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.

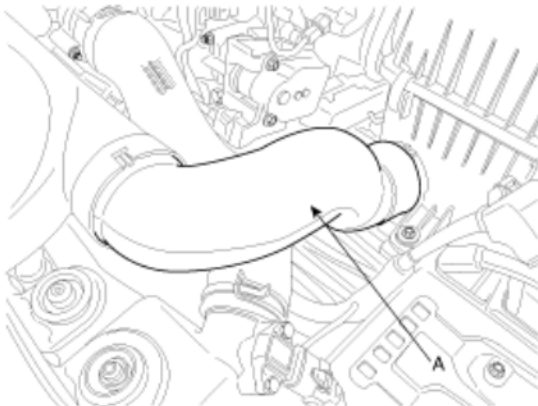
NOTICE

- Mark all wiring and hoses to avoid misconnection.

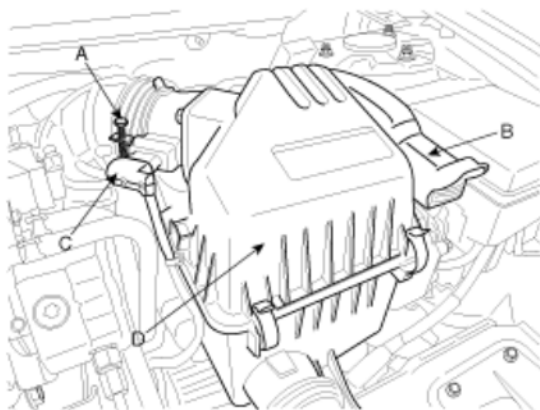
1. Remove the engine cover. (refer to Engine and Transaxle Assembly in EM group)
2. Remove the battery (A) after removing the battery terminal.



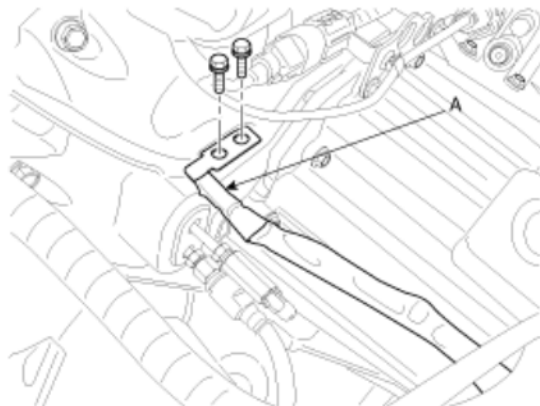
3. Disconnect the air intake hose (A).



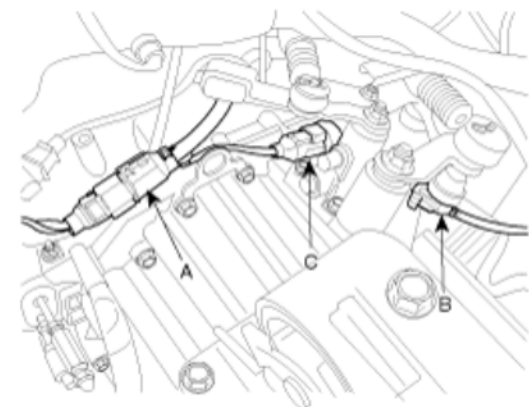
4. Remove the air cleaner assembly (D) by disconnecting the clamp (A), the PCM connector (B), and AFS connector (C).



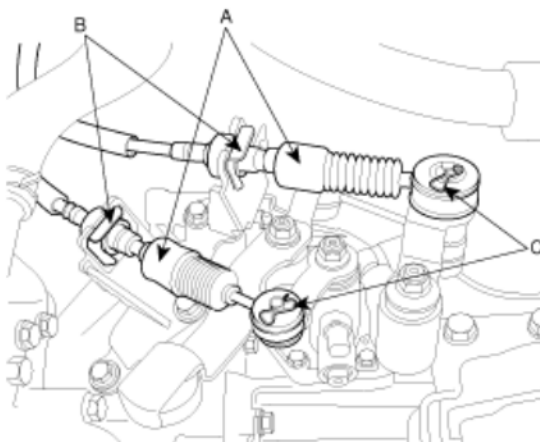
5. Remove the ground cable from transaxle (A).



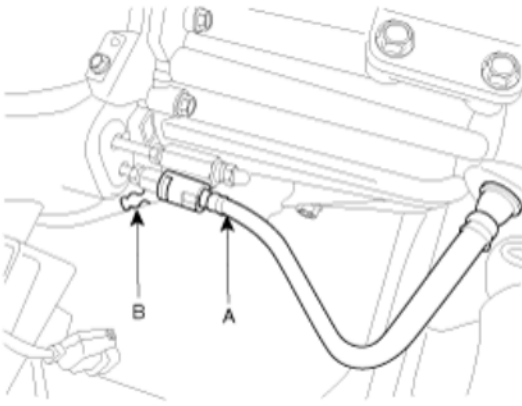
6. Disconnect the vehicle speed sensor connector (A), the back up lamp switch (B) and the neutral position switch (C).



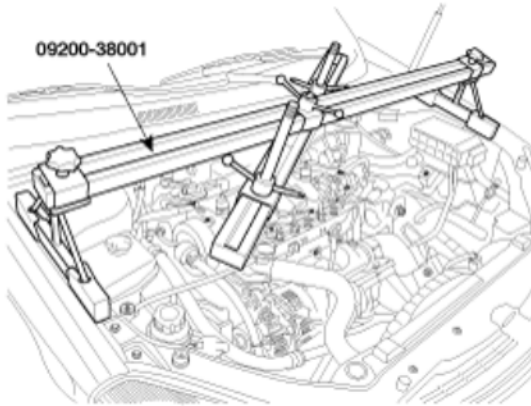
7. Remove the control cable assembly (A) by removing the snap pins (C) and clips (B).



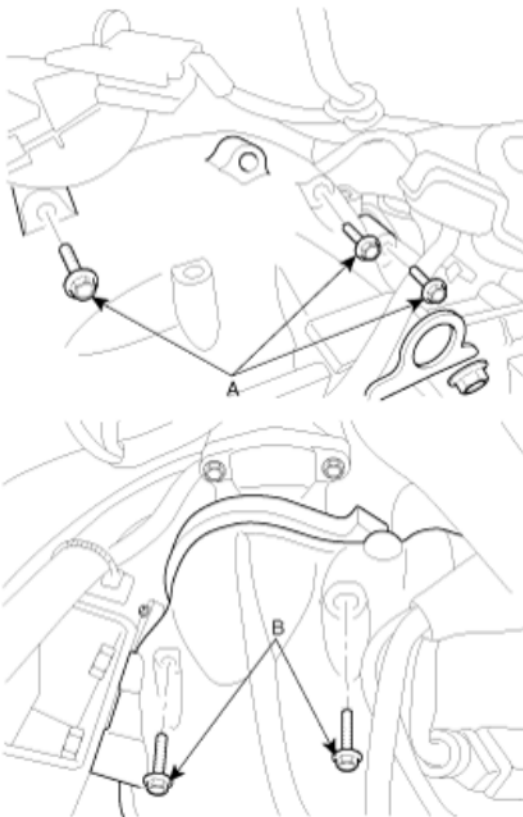
8. After removing the clip(B) with clamping the concentric slave cylinder tube, disconnect the tube(A).



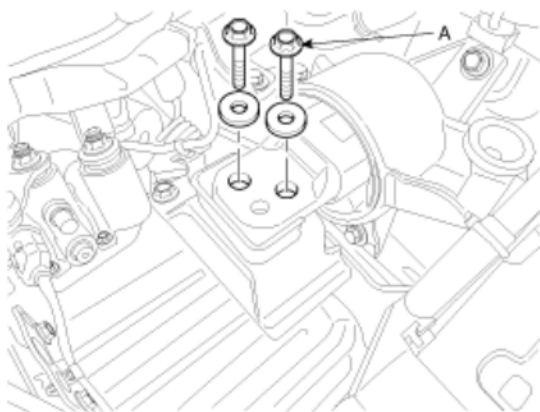
9. Using the special tool (09200-38001), support the engine assembly safely.



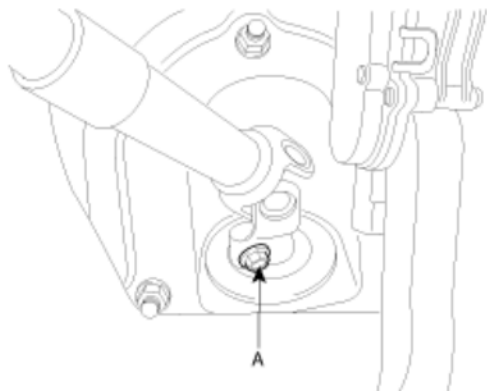
10. Remove the transaxle upper mounting bolts (A-3ea) and the starter motor mounting bolts (B-2ea).



11. Remove the transaxle support bracket mounting bolts (A-2ea).



12. Remove the steering joint assembly bolt. (refer to Steering column/shaft in ST group)

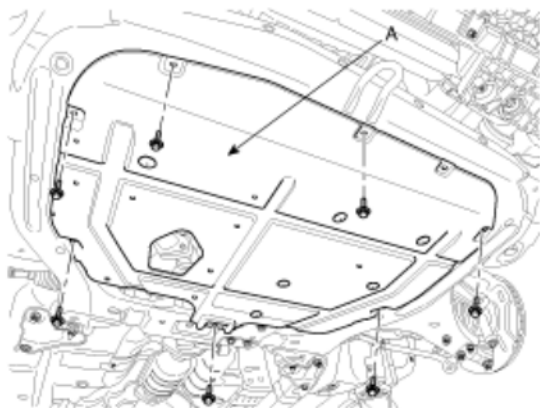


13. Lifting up the vehicle.

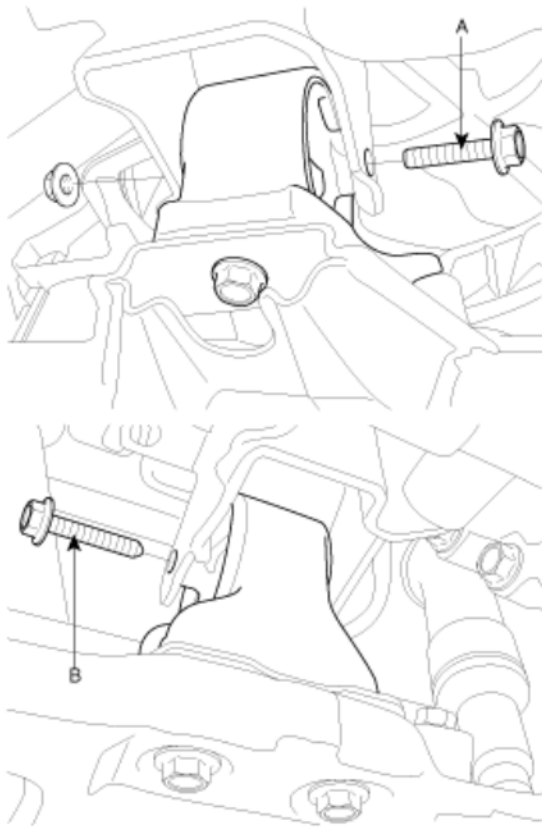
14. Remove the front wheels and tires. (refer to Front suspension system in SS group)

15. Remove the lower arm ball joint mounting nut, the stabilizer link mounting nut, and the tie rod end mounting nut from the front knuckles. (refer to Front suspension system in SS group)

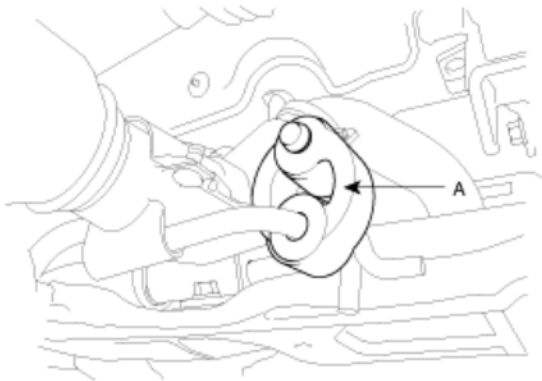
16. Remove the under shield cover(A).



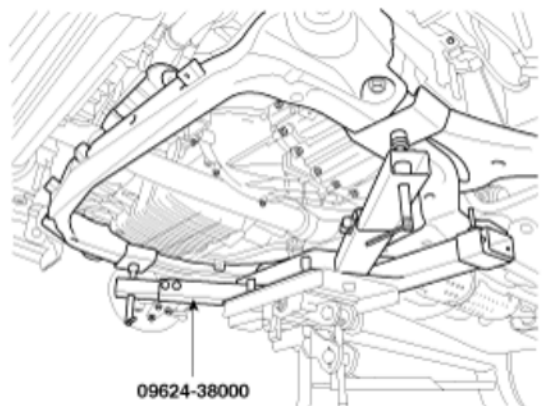
17. Remove the roll stopper mounting bolts (A,B).



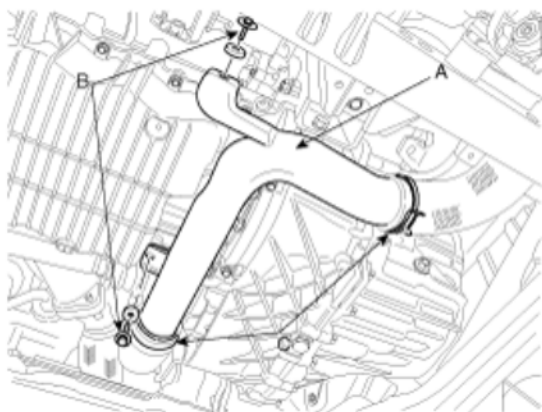
18. Disconnect the muffler hanger rubber (A).



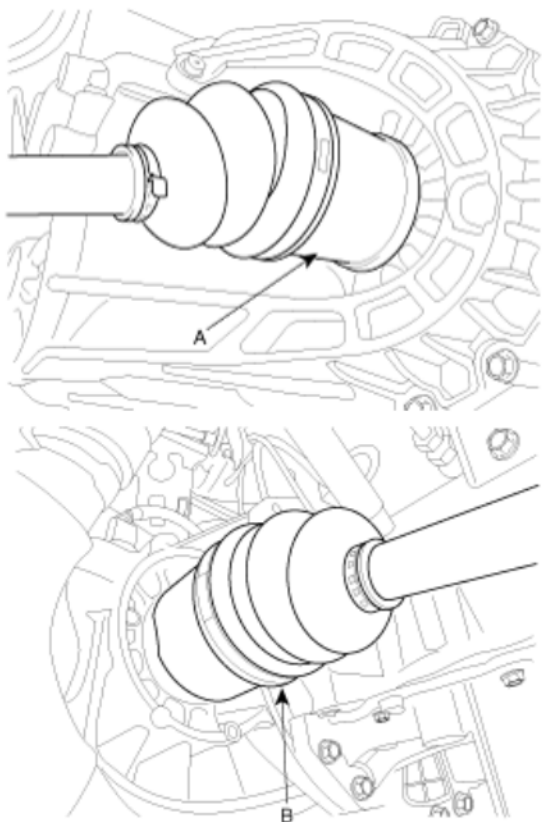
19. Supporting the sub frame (A) with a jack and the Special tool (09624-38000), remove the mounting bolts.(refer to Front Stabilizer in SS group)



20. Remove the intercooler tube (A) by removing the two bolts (B) and loosening the clamps (C).



21. Disconnect the drive shafts (A,B) from the transaxle.



22. Supporting the transaxle with a jack, remove the transaxle lower mounting bolts(A-2ea, B-4ea).



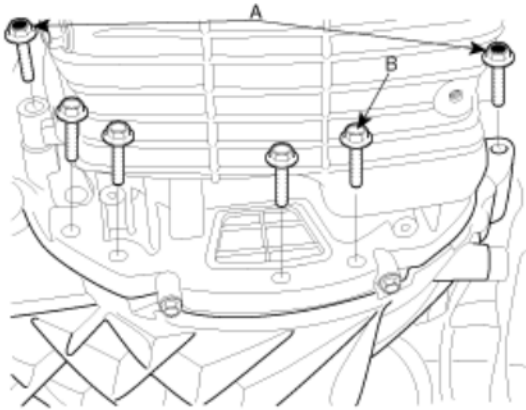
23. Lowering the jack slowly, remove the transaxle.

1. Install the transaxle lower mounting bolts (A-2ea,B-4ea) after fitting the transaxle assembly into the engine assembly.

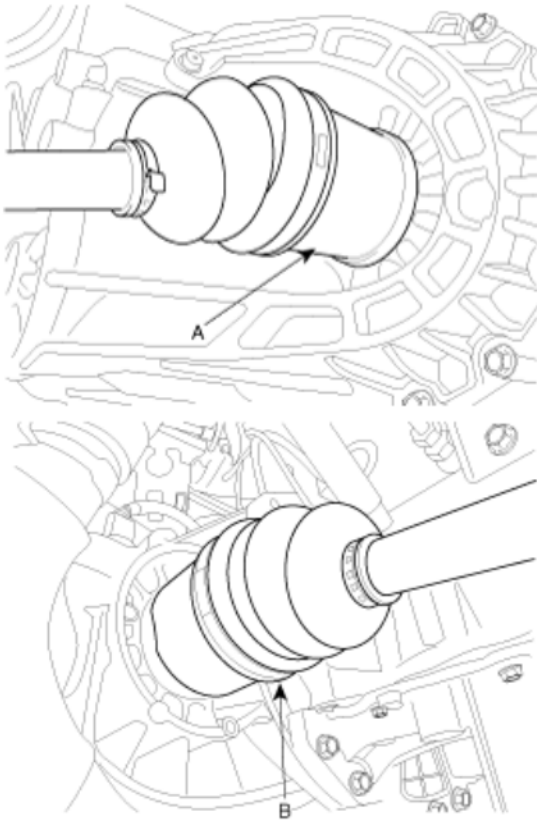
Torque :

[A] 80-100Nm (8.0-10.0kgf.m,57.9-72.3 lb-ft)

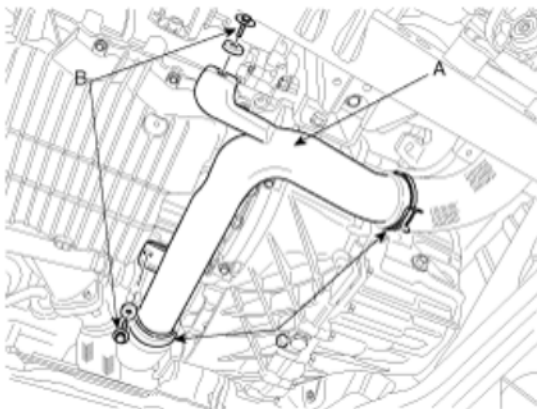
[B] 30-42Nm (3.0-4.2kgf.m,21.7-30.4 lb-ft)



2. Connect the drive shafts(A,B) to the transaxle.

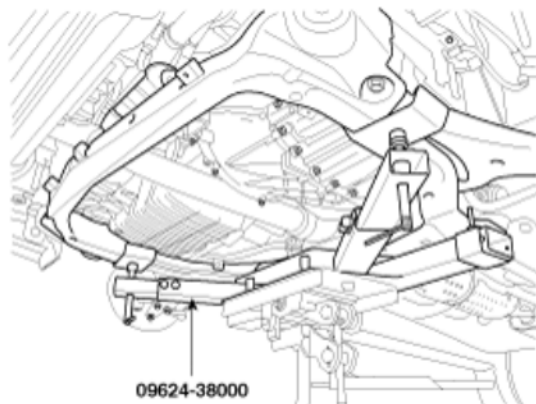


3. Install the intercooler tube (A) by installing the two bolts (B) and tightening the clamps (C).



4. Supporting the sub frame(A) with a jack and the Special tool(09624-38000), install the mounting bolts. (refer to Front Stabilizer in SS group)

Torque : 140-160Nm(14-16kgf.m,101-118 lb-ft)

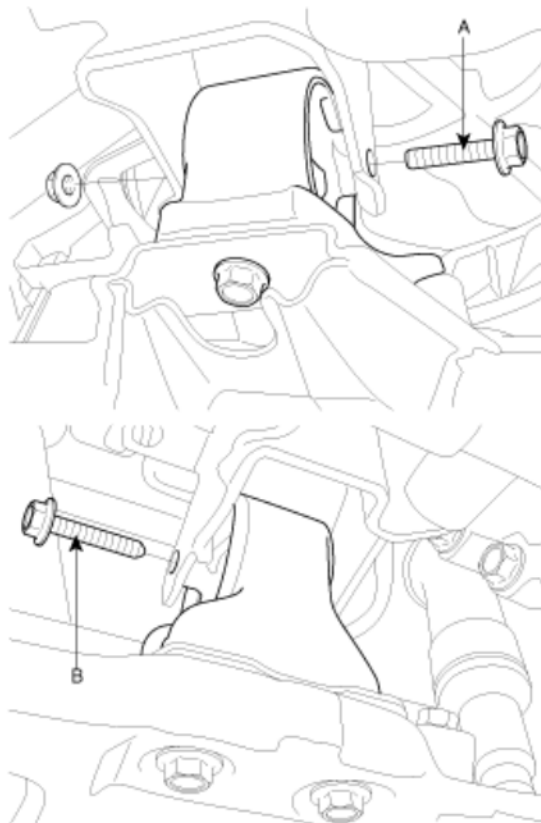


5. Install the muffler hanger rubber (A).

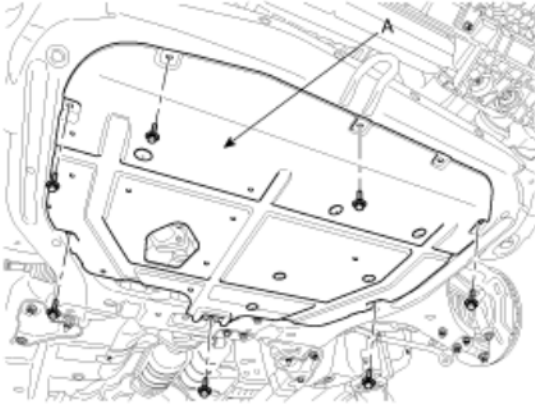


6. Install the roll stopper bracket bolts(A,B).

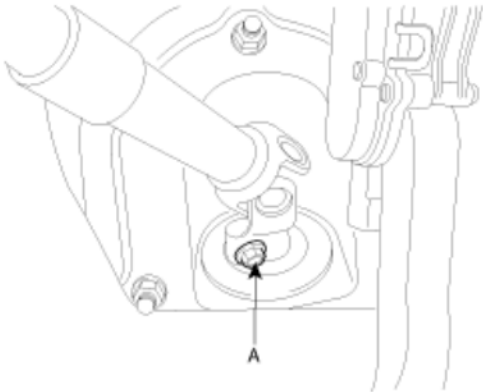
Torque : 50-65Nm(5-6.5kgf.m, 36.2-47.0 lb-ft)



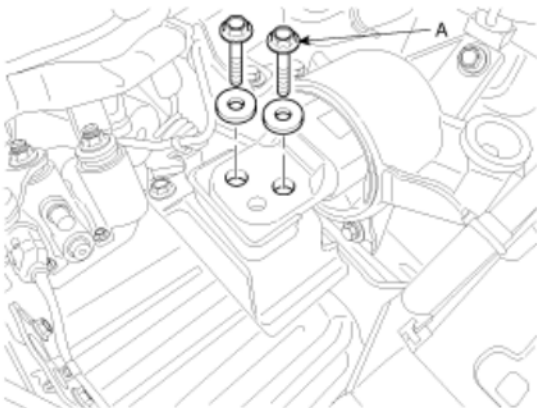
7. Install the under shield cover (A).



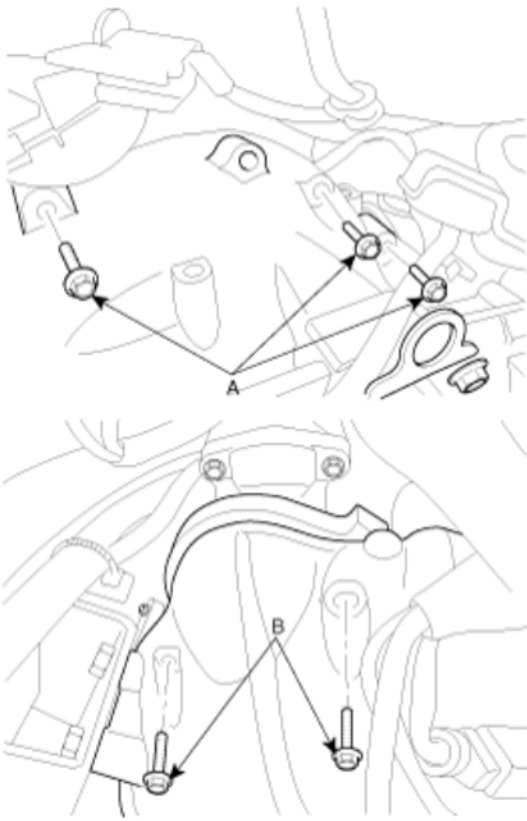
8. Install the lower arm ball joint mounting nut, the stabilizer link mounting nut, and the tie rod end mounting nut to the front knuckles. (refer to Front suspension system in SS group)
9. Install the front wheels and tires. (refer to Front suspension system in SS group)
10. Install the steering joint assembly bolt (A). (refer to Steering column/shaft in ST group)
- Torque : 18-25Nm (1.8-2.5kgf.m, 13.0-18.1 lb-ft)



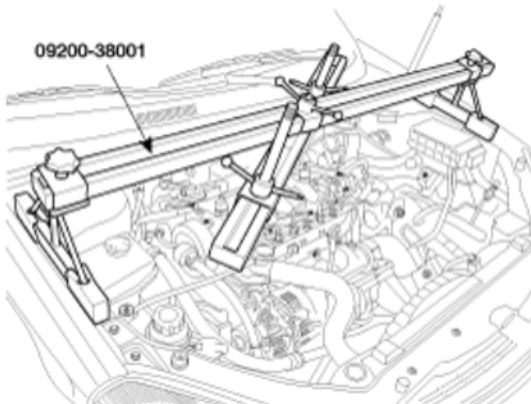
11. Install the transaxle support bracket mounting bolts (A-2ea).
- Torque : 60-80Nm (6.0-8.0kgf.m, 43.4-57.9 lb-ft)



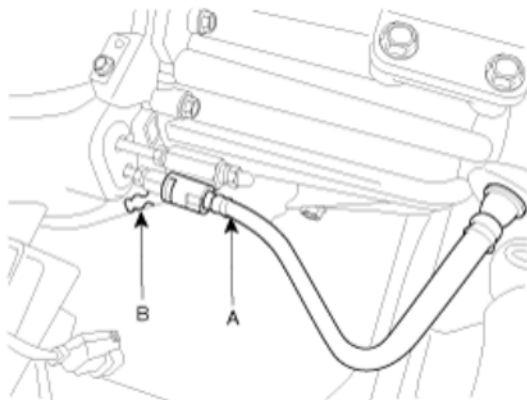
12. Install the transaxle upper mounting bolts (A-3ea) the starter motor mounting bolts. (B-2ea).
- Torque :
- [A] 43-55Nm(4.3-5.5kgf.m, 43.4-57.9 lb-ft)
- [B] 43-55Nm(4.3-5.5kgf.m, 31.1-39.8 lb-ft)



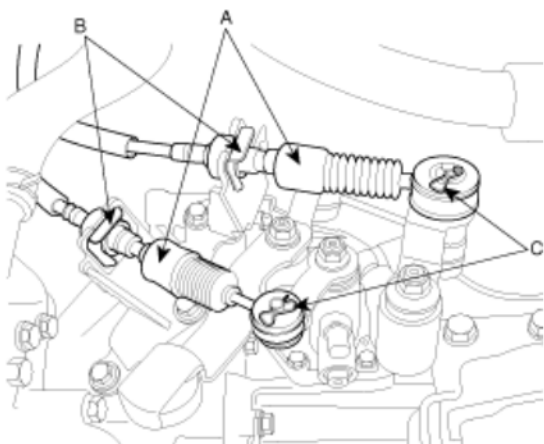
13. Remove the special tool (09200-38001).



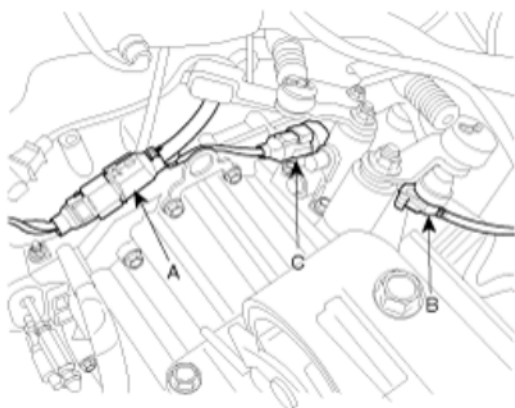
14. Connecting the concentric slave cylinder tube(A) install the clip(B).



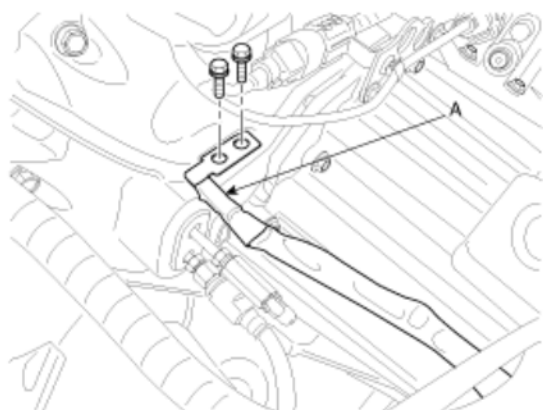
15. Install the shift cable assembly (A) by installing the clips (B) and pins (C).



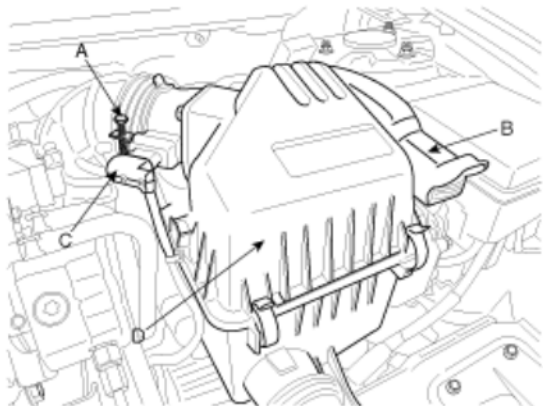
16. Connect the vehicle speed sensor connector (A), the back up lamp switch (B) and the neutral position switch (C).



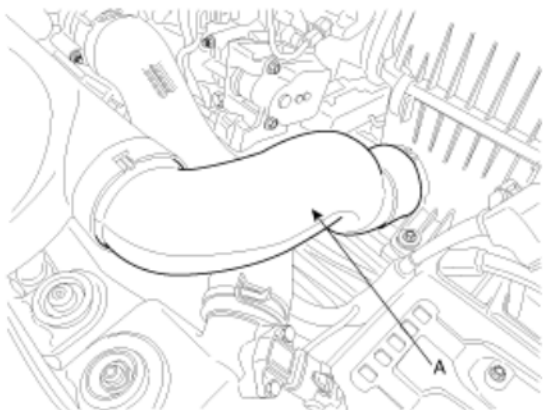
17. Install the ground cable (A) to transaxle.



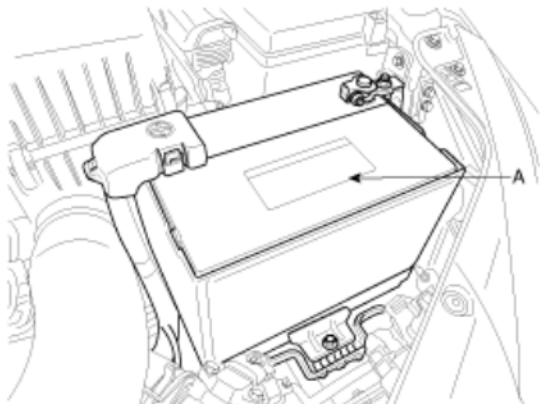
18. Install the air cleaner assembly (D) by connecting the clamp (A), the ECM connector (B), and the AFS connector (C).



19. Connect the air intake hose (A).

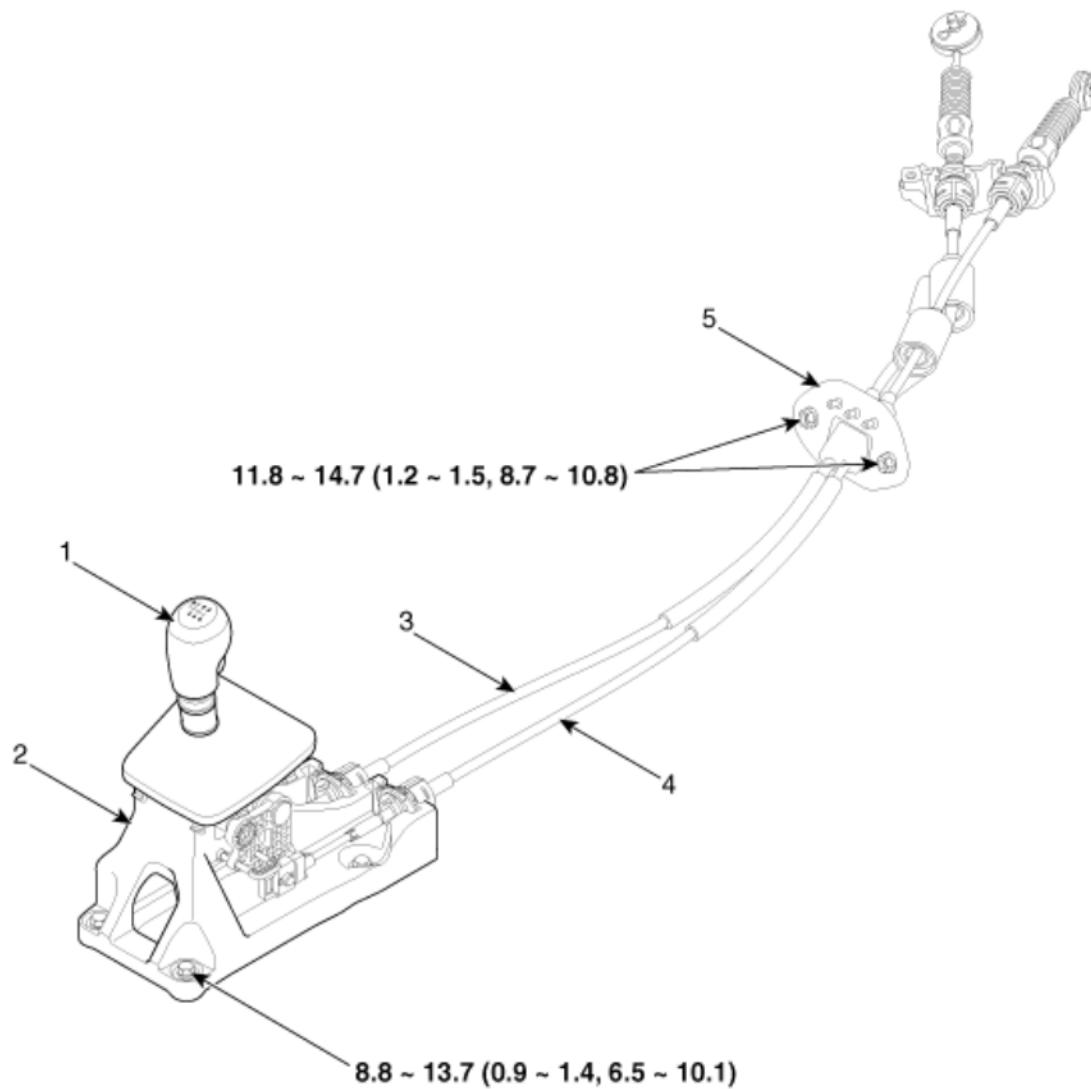


20. Install the battery (A) and the battery terminal.



21. Install the engine cover. (refer to Engine and Transaxle Assembly in EM group)

COMPONENTS



Torque : N.m (kgf.m, lb-ft)

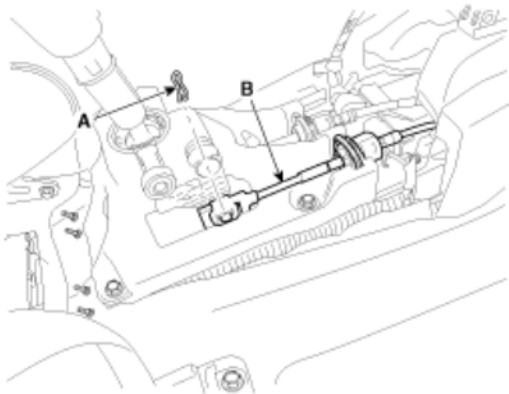
1. Shift lever knob
2. Shift lever assembly
3. Shift cable assembly

4. Select cable assembly
5. Retainer

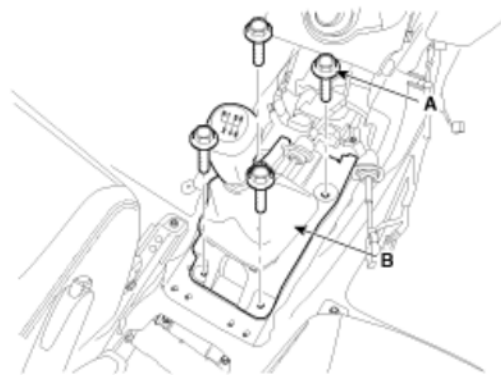
REMOVAL

Shift Lever Assembly Replacement

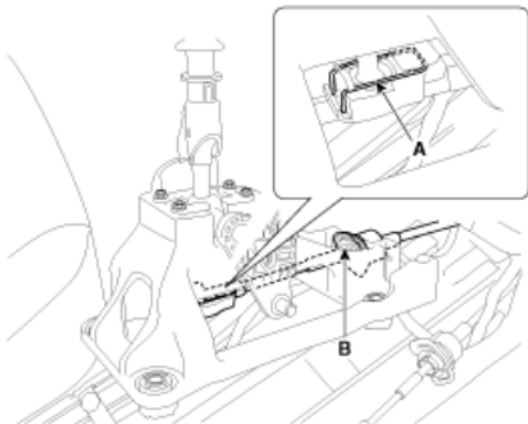
1. Remove the floor console assembly.
(Refer to "Interior(Console)" in BD group)
2. Remove the snap pin (A) and the select cable (B).



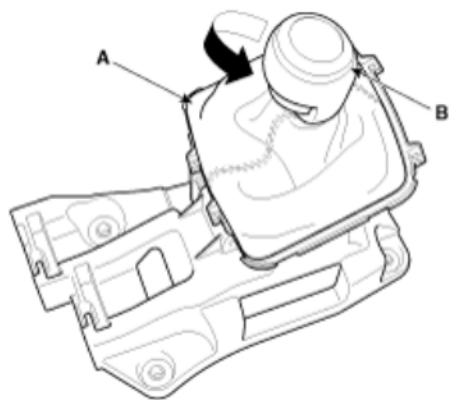
3. Remove the shift lever assembly (B) after removing shift lever assembly mounting bolts (A).
Tightening torque:
8.8 ~ 13.7 N.m (0.9 ~ 1.4 kgf.m, 6.5 ~ 10.1 lb-ft)



4. Remove the pin (A) after disconnect the shift cable (B).



5. Remove the boots (A) and knob (B) from the lever assembly by rotating counter-clockwise.



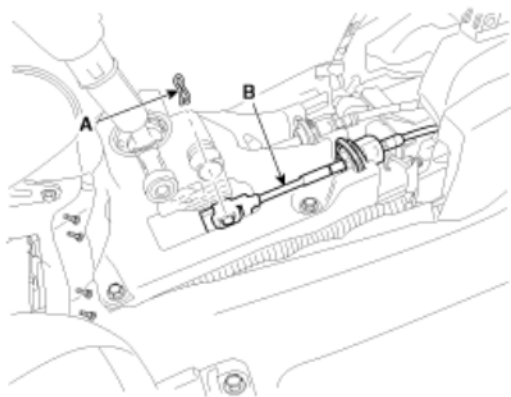
6. Installation is the reverse of removal.

NOTICE

- Make sure vehicle does not roll before setting room side shift lever and T/M side manual control lever to "N" position.

Shift Cable Replacement

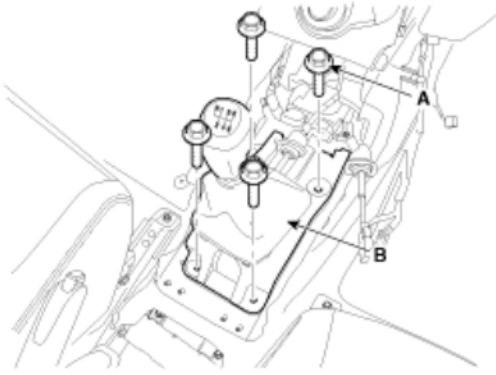
1. Remove the floor console assembly.
(Refer to "Interior(Console)" in BD group)
2. Remove the snap pin (A) and select cable assembly (B).



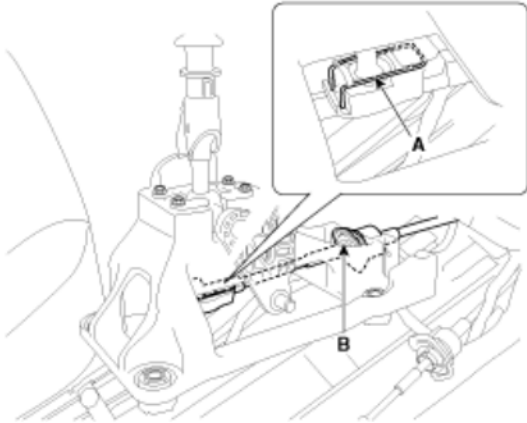
3. Remove the shift lever assembly (B) after removing shift lever assembly mounting bolts (A).

Tightening torque:

8.8 ~ 13.7 N.m (0.9 ~ 1.4 kgf.m, 6.5 ~ 10.1 lb-ft)



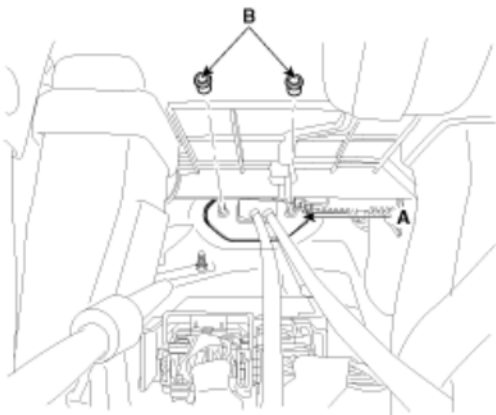
4. Remove the pin(A) after disconnect the shift cable (B).



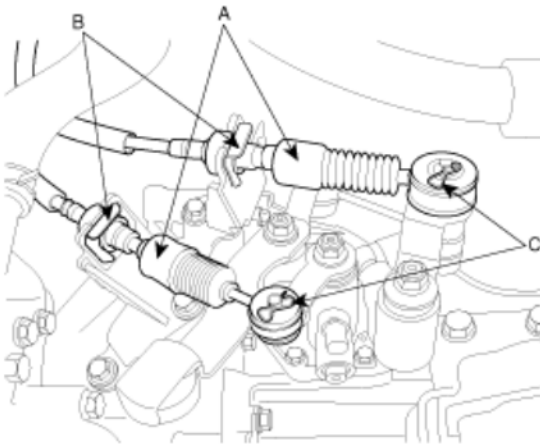
5. Remove the retainer (A) and nut (B).

Tightening torque:

11.7 ~ 14.7 N.m (1.2 ~ 1.5 kgf.m, 8.6 ~ 10.8 lb-ft)



6. Remove the snap pins (C) and clips (B) and then remove the shift & select cable (A).



7. Remove the shift cable and select cable at cabin room.

NOTICE

- Make sure vehicle does not roll before setting room side shift lever and T/M side manual control lever to "N" position.

INSPECTION

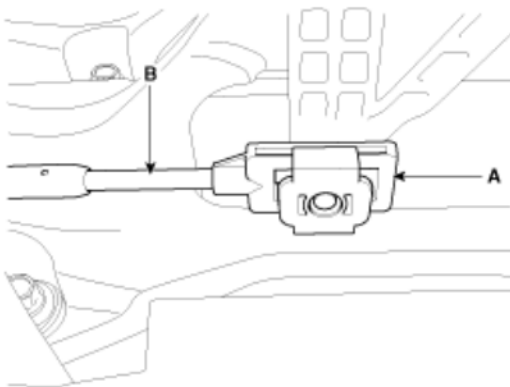
1. Check the select cable for proper operation and for damage.
2. Check the shift cable for proper operation and for damage.
3. Check the boots for damage.
4. Check the boots for wear abrasion sticking, restricted movement or damage.
5. Check for the weak or damaged spring.

INSTALLATION

1. Installation is the reverse of removal.

NOTICE

- Make sure vehicle does not roll before setting room side shift lever and T/M side manual control lever to "N" position.
- Install the guide member (A) of the select cable (B).



- Adjust the slide clip (B) to fit it into the select lever pin (A) and install the snap pin (C).

