



Manual Transaxle System

General Information



SPECIFICATION

Engine type		μ 2.7
Manual transaxle type		M5GF2
Gear ratio	1st	3.615
	2nd	1.931
	3rd	1.969
	4th	1.273
	5th	0.974
	Reverse	3.416
Final gear ratio		5.071
		3.737
T/M oil capacity(ℓ)※		1.9 liter (2.0077US qt, 1.6718mp qt)

※ The quantity in the chart above is for the reference. The actual filling quantity of the automatic transaxle fluid must be set according to 'INSPECTION' or 'REPLACEMENT' procedure of the automatic transaxle fluid.

Recommended transaxle oil			SAE75W/85 or API GL-4
Check&Replenishment			Every one year or every 100,000km
Replacement	Private use	Normal use	No service required
		Severe use(※)	Every 100,000 Km
	Business use		

※ Severe use(marked '※') is defined as:

1. Driving on rough road(bumpy road, gravel road, snowy road, unpaved road etc.).
2. Driving on mountain road, ascent/descent.
3. Repetition of short distance driving.
4. More than 50% operation in heavy city traffic during hot weather above 32°C(89.6°F).
5. Police car, Taxi, Commercial type operation or trailer towing, etc.

TIGHTENING TORQUE

Item	Nm	kgf.m	lb-ft
Oil drain plug	30~35	3.0~3.5	21.7~25.3
Oil filler plug	30~35	3.0~3.5	21.7~25.3
Back up lamp switch	30~35	3.0~3.5	21.7~25.3
Control shaft assembly	10~12	1.0~1.2	7.2~8.7
Select lever	43~55	4.3~5.5	31.1~39.8
Shift link assembly	43~55	4.3~5.5	31.1~39.8
Transaxle mounting bracket assembly	65~85	6.5~8.5	47.0~61.5
Transaxle and enging mounting bolt	65~85	6.5~8.5	47.0~61.5

SERVICE STANDARD

Item	Specification [mm(inch)]
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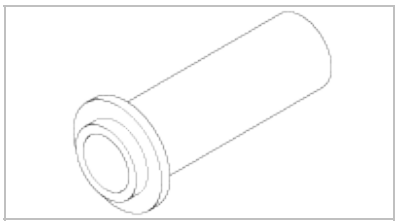
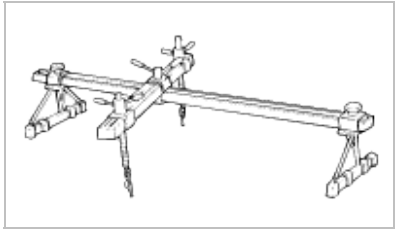
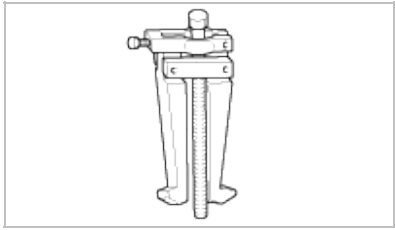
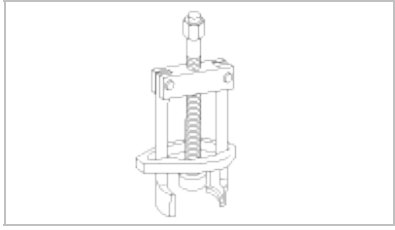
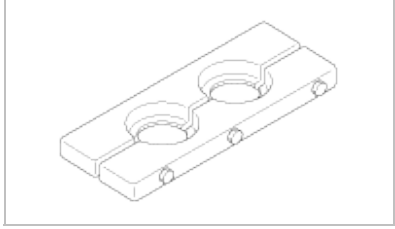
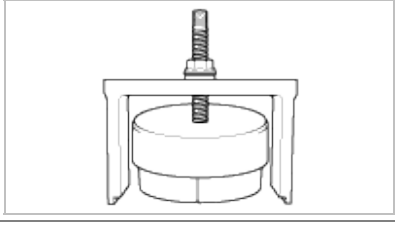
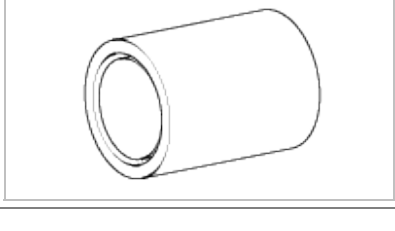
Differential end play	0.15T-0.20T (0.0059T~0.0079T)
Input shaft end play	0.05T-0 (0.0020T~0)
1st output shaft end play	0.05T-0.10T (0.0020T~0.0039T)
2nd output shaft end play	0.05T-0.10T (0.0020T~0.0039T)
1st gear end play	0.135T-0.435T (0.0053T~0.0171T)
2nd gear end play	0.230T-0.430T (0.0091T~0.0169T)
3rd gear end play	0.142T-0.472T (0.0056T~0.0186T)
4th gear end play	0.230T-0.430T (0.0091T~0.0169T)
5th gear end play	0.125T-0.305T (0.0049T~0.0120T)
Reverse gear end play	0.135T-0.345T (0.0053T~0.0136T)

LUBRICANTS

Item	Lubricant	Quantity
Transaxle input shaft splin	CASMOLY L9508	0.2 gr.
Transaxle case gasket	LOCTITE 587	As required
Concentric slave cylinder assembly	KLUBER 9R100	As required



SPECIAL TOOLS

Item(Numbe&Name)	Illustration	Use
09452-21200 Oil seal installer		Oil seal installation
09200-38001 Engine supporting fixture		Removal and installation of transaxle
09455-32200 Oil seal puller		Removal of oil seal
09455-21000 Bearing&gear puller		Removal of taper roller veering
09432-33200 plate		Removal of oil seal
09478-26100 Backing plate remover		Removal of 4WD coupling backing plate
09478-26000 Flange oil seal installer		Installation of 4WD coupling flange oil seal



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SERVICE ADJUSTMENT PROCEDURE

Transmission oil inspection and replacement

1. After parking the vehicle on a plain, stop the engine.
2. After removing the oil filler plug and washer, inspect the manual transaxle fluid condition and quantity.
3. If the manual transaxle fluid is contaminated, drain it out by removing the oil drain plug.
4. Tighten the new oil drain plug and feed manual transaxle fluid to a proper level.

TORQUE:

29.4~34.4 Nm(3.0~3.5kgf.m, 21.7~25.3lb-ft)

Oil type: SAE75W/85

Oil quantity:

1.9 liter(2.0077 US qt, 1.6718 Imp qt)

5. Retighten the oil filler plug with a new washer.

TORQUE:

29.4~34.4 Nm(3.0~3.5kgf.m, 21.7~25.3lb-ft)

Back up lamp switch inspection

1. Disconnect the back up lamp switch connector(B).

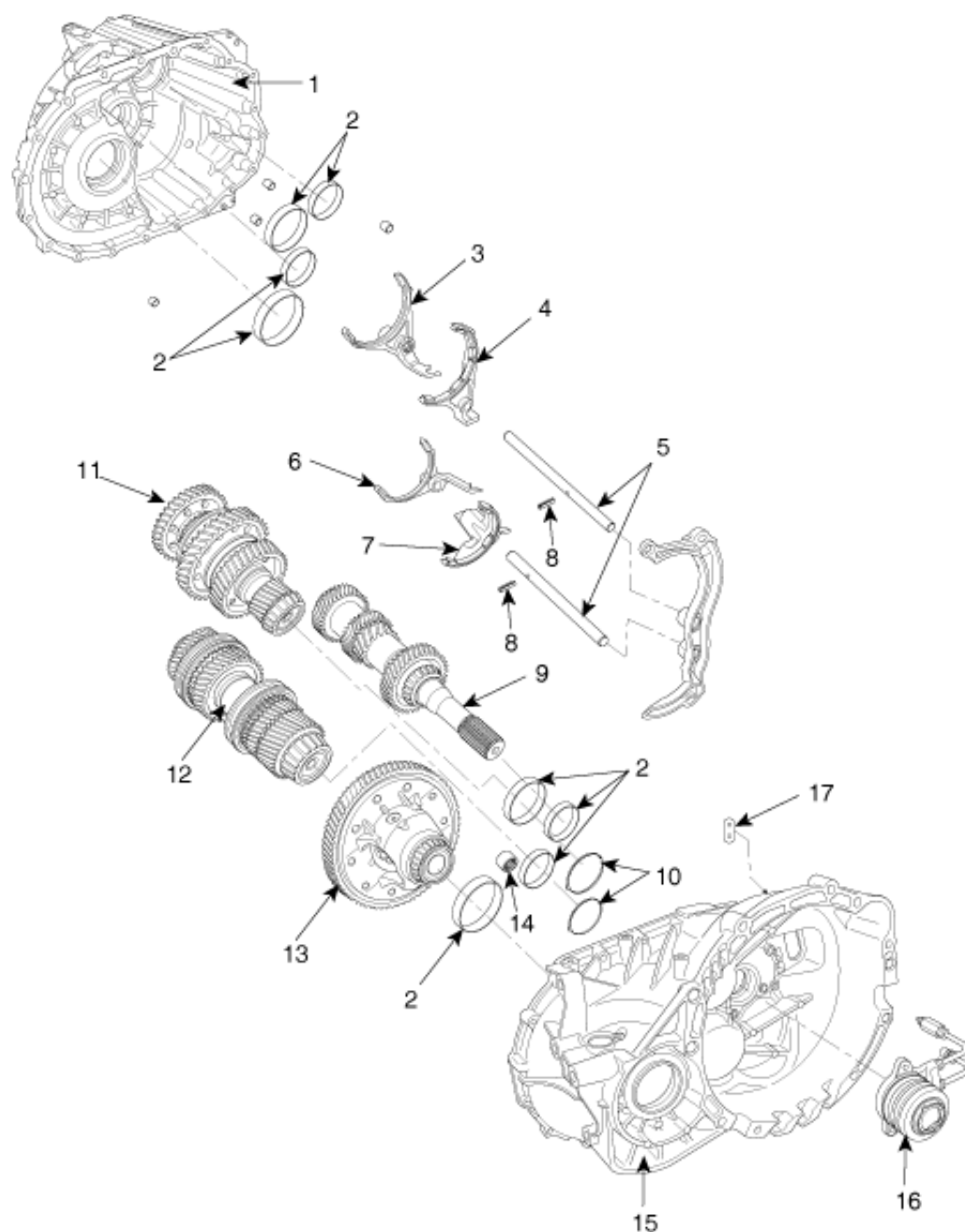


2. Inspect the continuity of the switch. When the shift lever is located in reverse range, it should be applied an electric current.
3. Replace the back up lamp switch, if necessary.

TORQUE:

29.4~34.4 Nm(3.0~3.5kgf.m, 21.7~25.3lb-ft)

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

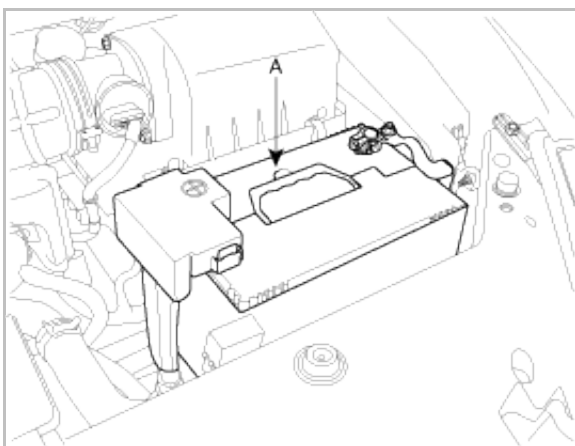
CAUTION

- Use a cover not to damage the vehicle surface.
- Disconnect connectors carefully not to be damaged.

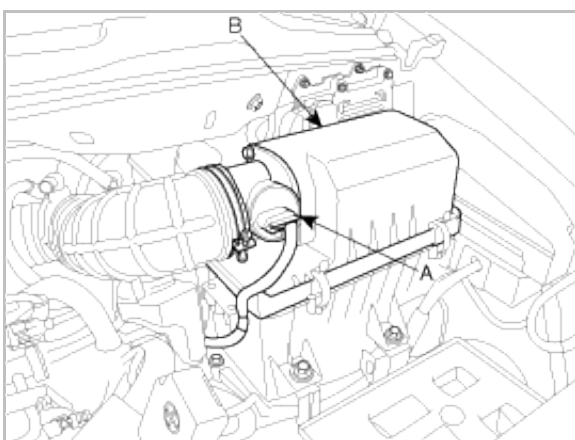
NOTICE

- Mark wires or hoses for identification not to be confused.

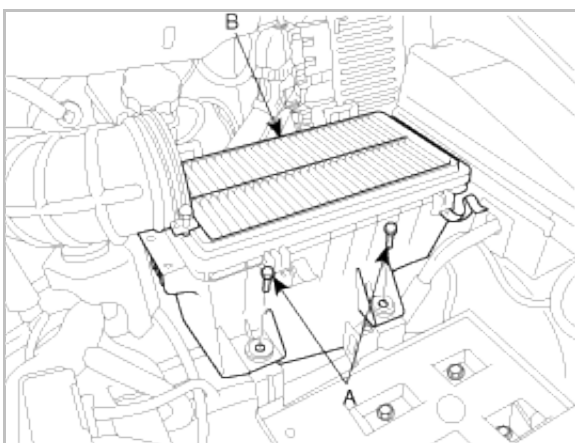
1. Remove the battery(A).



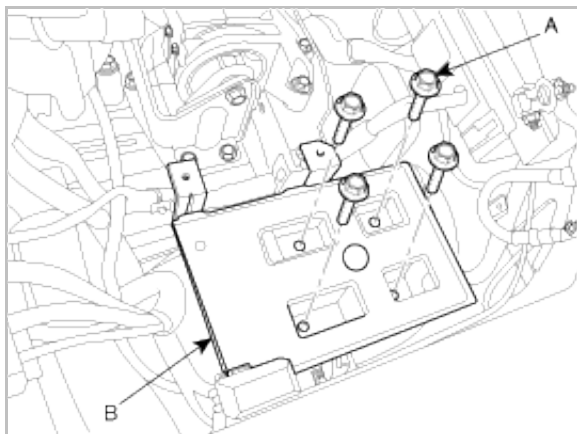
2. After disconnecting the AFS connector(A) and removing the air cleaner upper body(B) take the air cleaner filter out of the air cleaner under body.



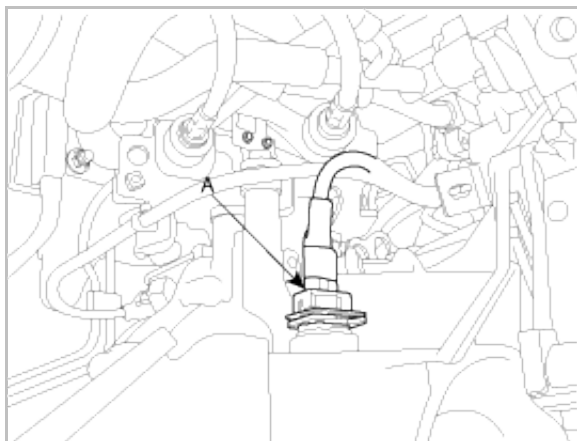
3. Remove the air cleaner assembly (B) by removing the two mounting bolts(A).



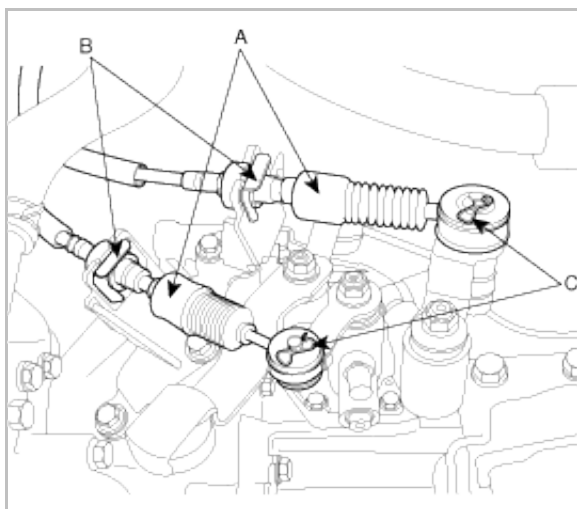
4. Remove the battery tray(B) by removing the four mounting bolts(A).



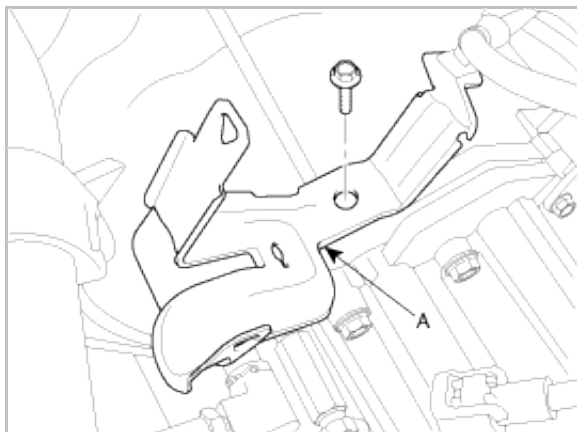
5. Disconnect the vehicle speed sensor connector (A) and the back up lamp switch(B).



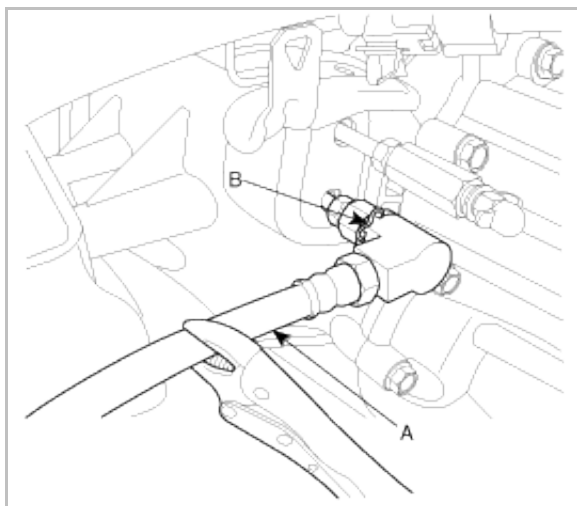
6. Disconnect the shift cable assembly(A) after remaing the clips(B) and pins(C).



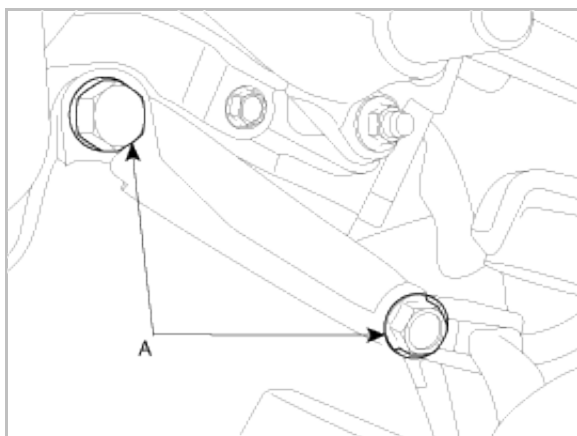
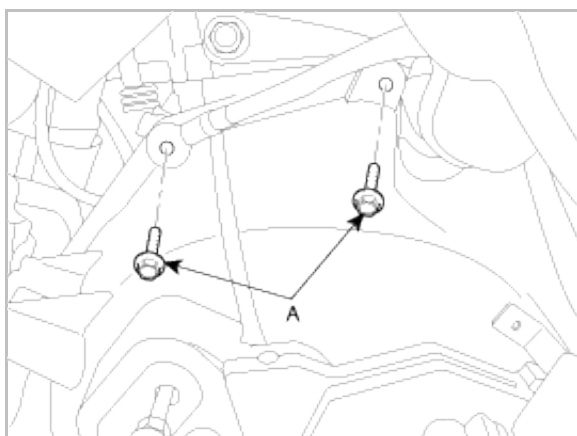
7. Remove the wire harness bracket(A).



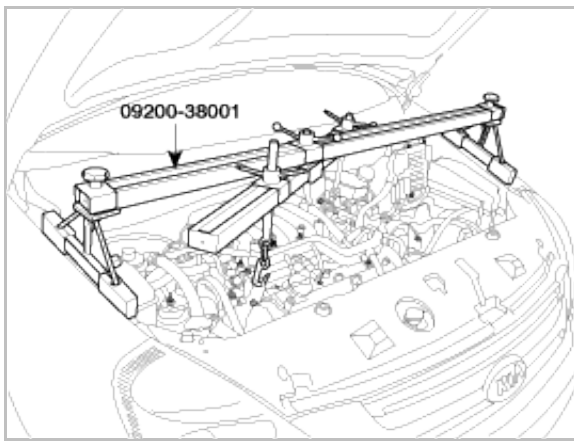
8. Remove C.S.C (Concentric Slave Cylinder) tube(A) which is being clamped by loosening the nut(B).



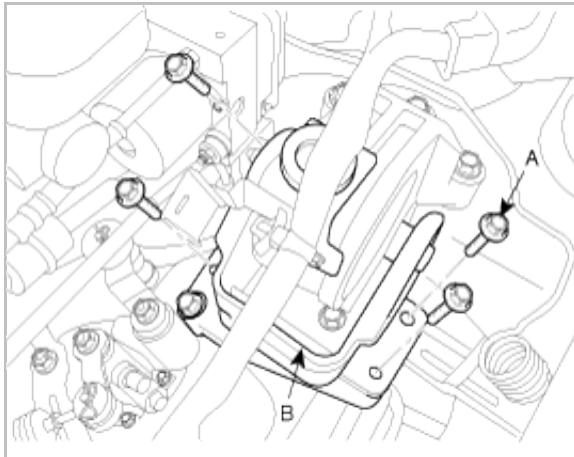
9. Remove the transaxle upper mounting bolts(A).



10. Support the engine and transaxle by using the special tool (09200-38001).



11. Remove the transaxle insulator bracket (B) by removing the bolts (A).

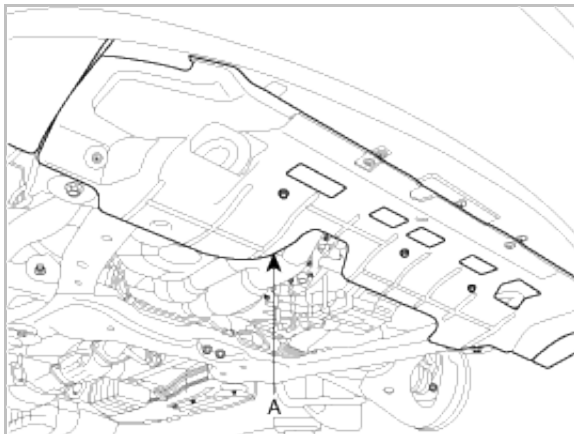


12. Remove the front wheels and tires. (see SS group)

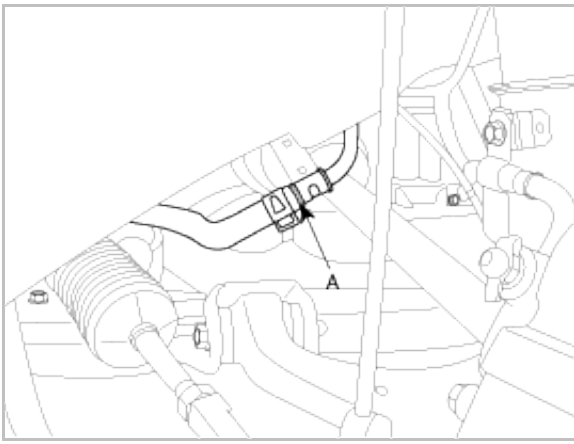
13. Lift up the vehicle.

14. Remove the steering column joint bolt. (see ST group).

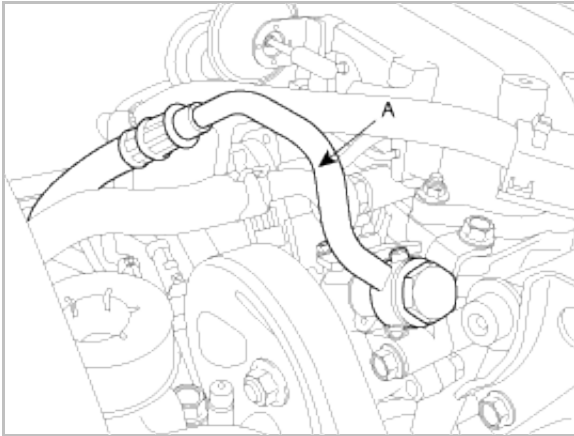
15. Remove the under cover(A).



16. Drain power steering oil through the return tube(A). (see ST group)

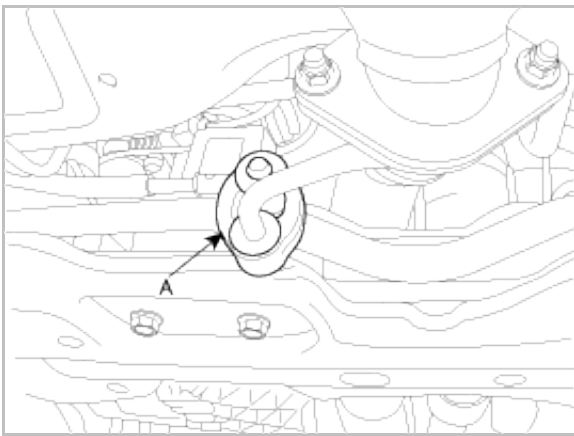


17. Disconnect the power steering pressure hose (A) from the power steering oil pump. (see ST group)



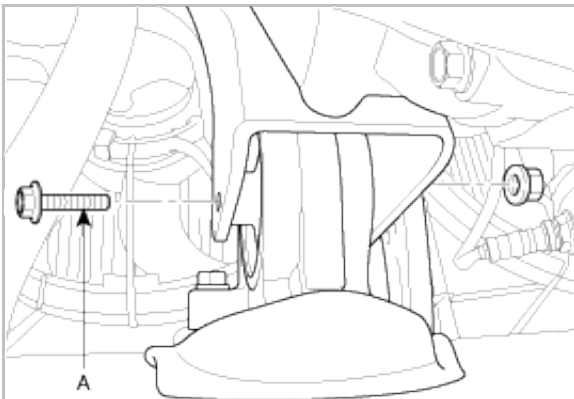
18. Drain the tranaxle fluid through the drain plug.

19. Remove the hanger(A).

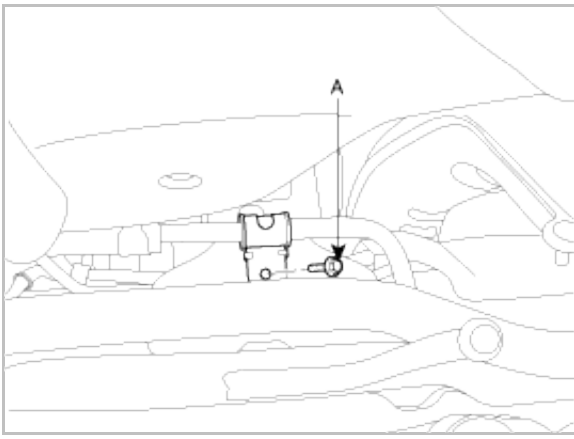


20. Disconnect the lower arm, the tie rod end ball joint, the stabilizer bar link from the front knuckle. (see SS group)

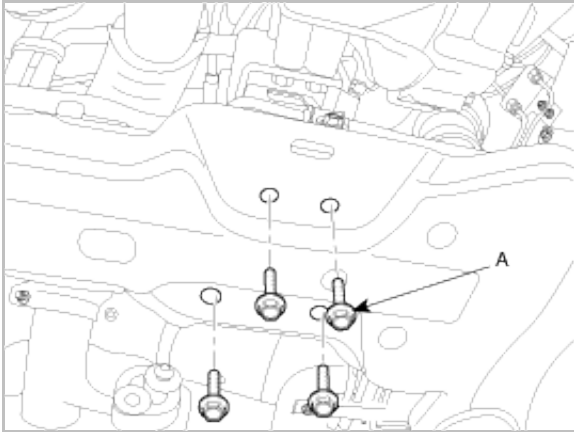
21. Remove the roll stopper mounting bolt(A).



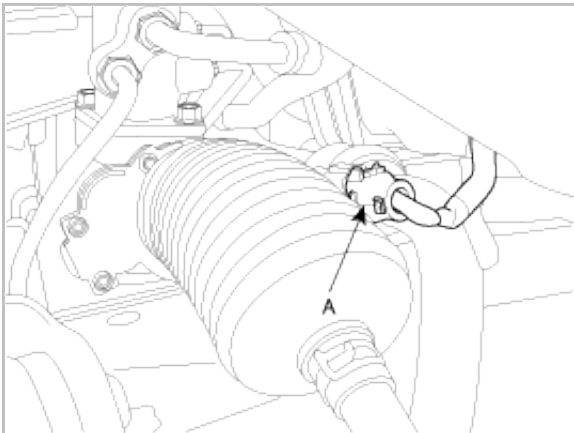
22. Remove the power steering return tube mounting bolt(A)



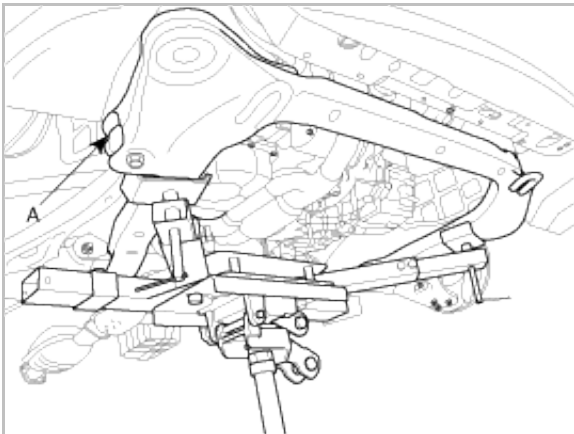
23. Remove the rear roll stopper mounting bolts(A).



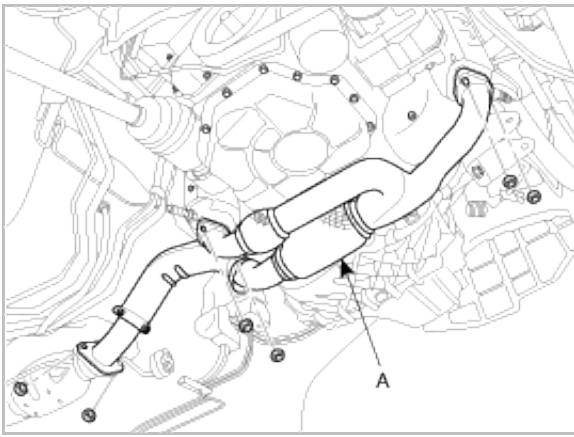
24. Disconnect the VRS connector(A). (see ST group)



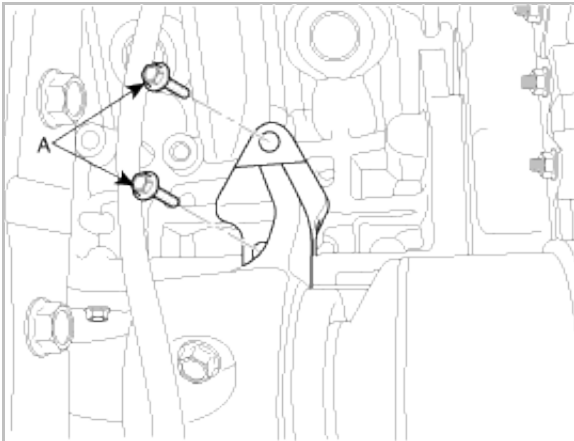
25. Remove the mounting bolts from the sub frame by supporting the sub frame(A) with a jack. (see SS group)



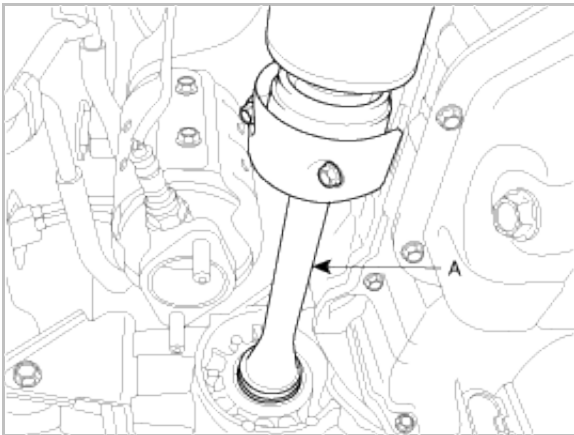
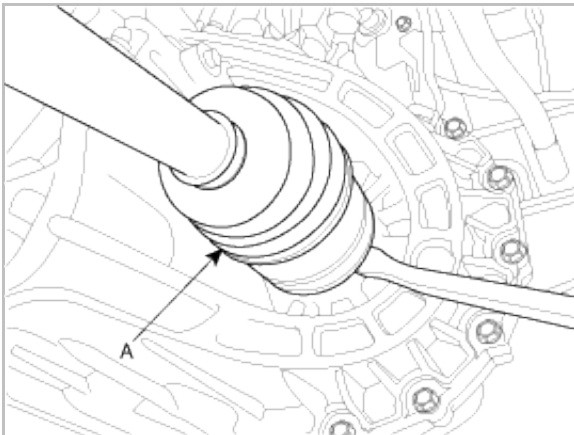
26. Remove the exhaust pipe(A).



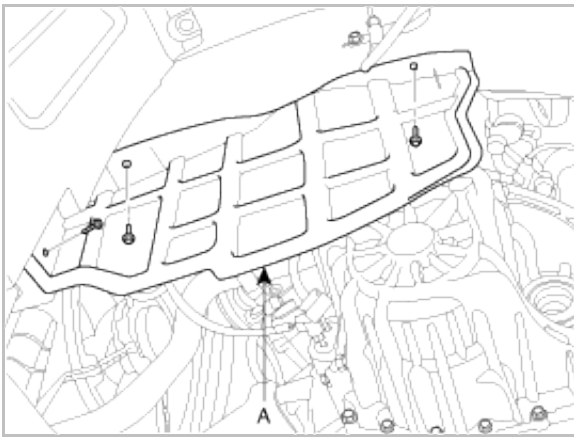
27. Remove the inner shaft bracket mounting bolt(A). RH



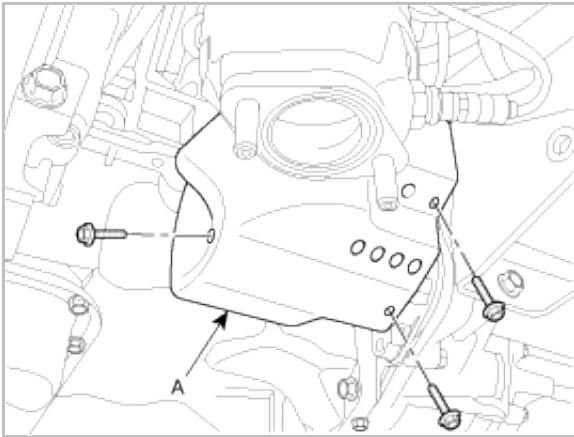
28. Remove the drive shafts(A) from the transaxle. (see DS group)



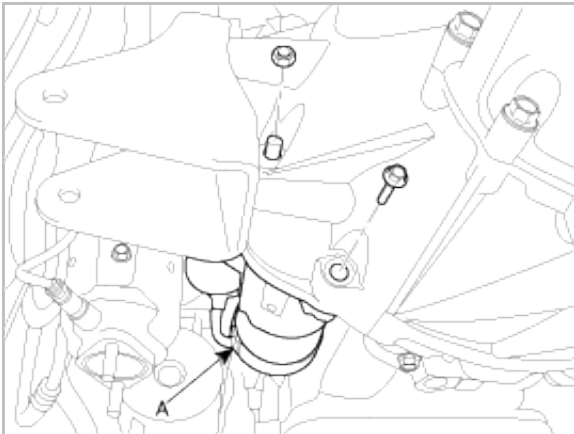
29. Remove the side cover(A).



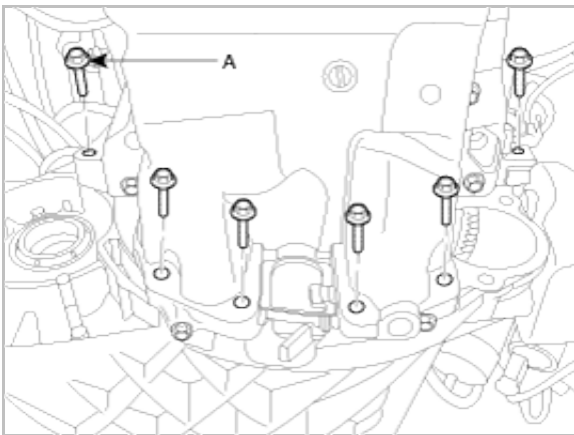
30. Remove the starter motor cover(A).



31. Disconnect the starter motor connector and remove the starter motor(A). (see EE group)



32. Remove the mounting bolts(A) of lower part of the transaxle, and remove the transaxle assembly by supporting it with a jack.



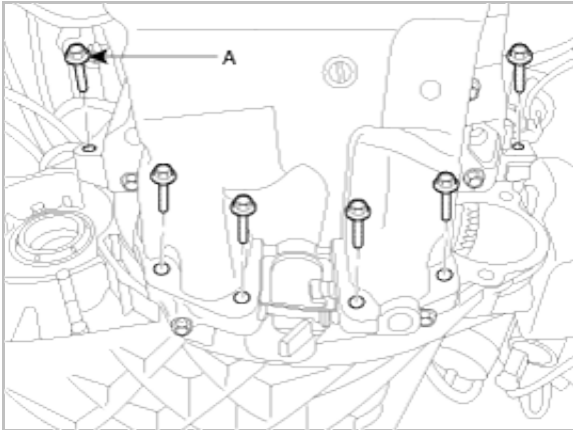
INSTALLATION

1. Lowering the vehicle or lifting up a jack, install the transaxle assembly.

2. Tighten the transaxle under mounting bolts.

TORQUE:

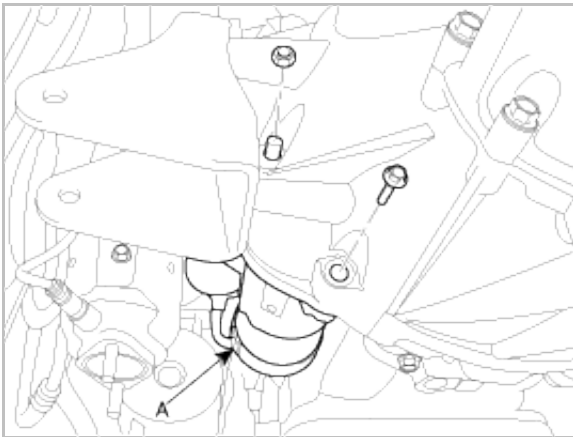
65~85 Nm(6.5~8.5 kgf.m, 47.0~61.5 lb-ft)



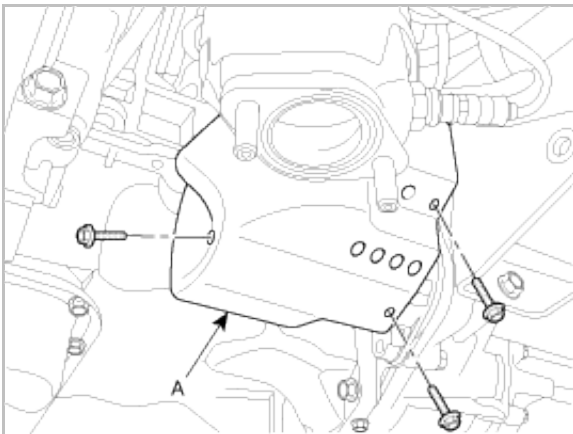
3. Install the starter motor(A) and connect the starter motor connector. (see EE group)

TORQUE:

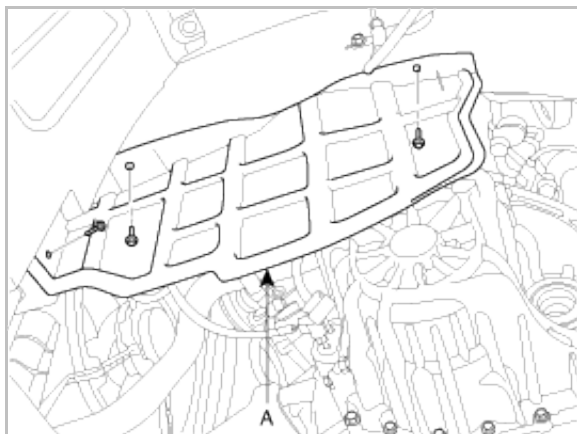
65~85 Nm(6.5~8.5 kgf.m, 47.0~61.5 lb-ft)



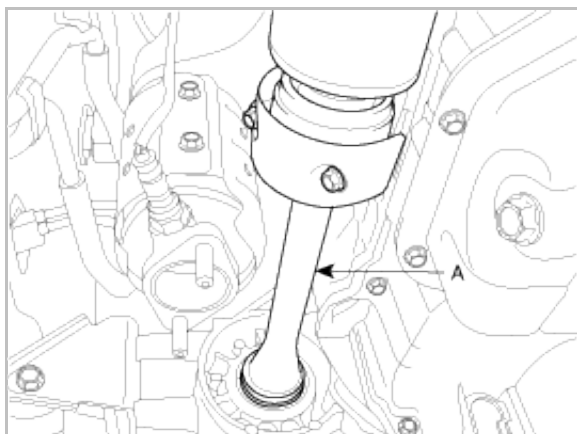
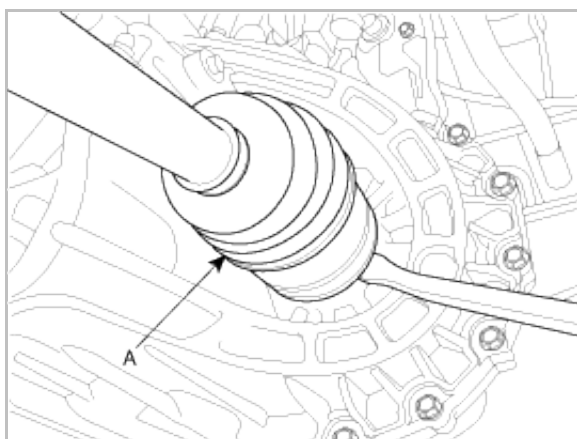
4. install the starter motor cover(A).



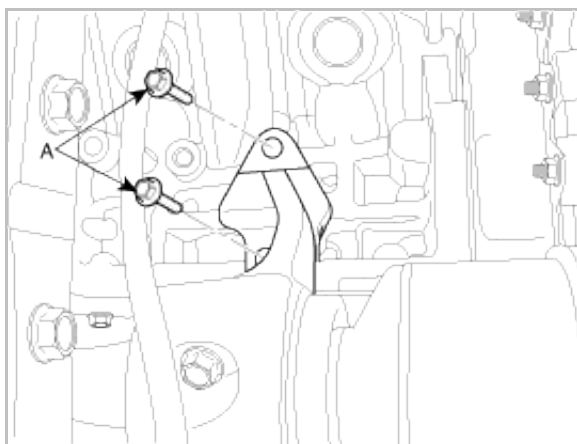
5. install the side cover(A).



6. Install the drive shafts(A) to the transaxle. (see DS group)



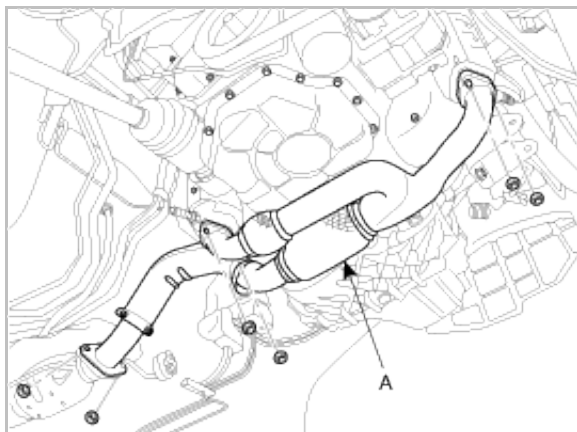
7. Install the inner shaft bracket mounting bolt(A). (see DS group)



8. Install the exhaust pipe(A).

TORQUE:

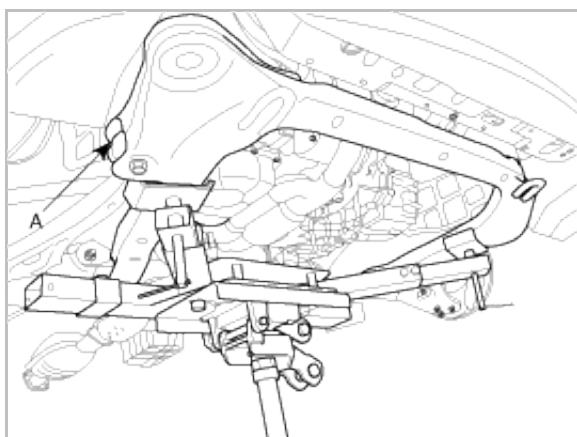
39.2~58.8Nm(4.0~6.0kgf.m, 28.9~43.4lb-ft)



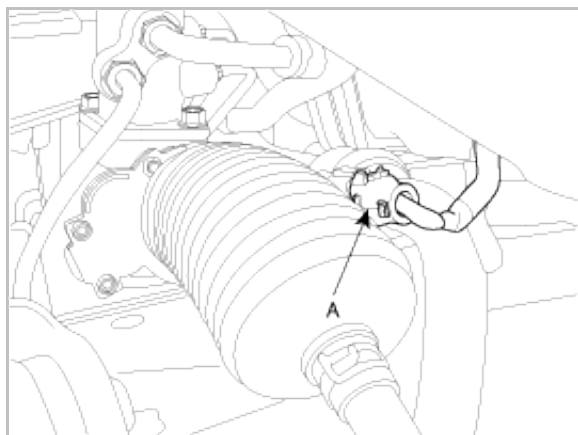
9. Install the sub frame(A). (see SS group)

TORQUE:

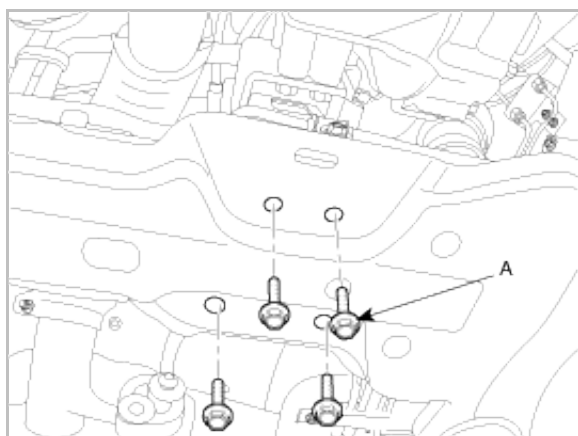
60~80Nm(6.0~8.0kgf.m, 65.1~79.5lb-ft)



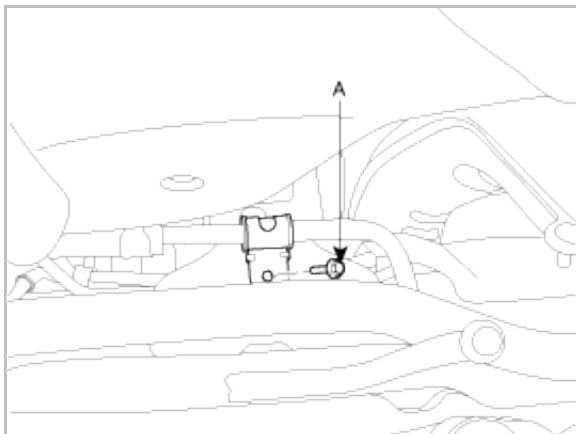
10. Connect the vrs connector(A). (see ST group)



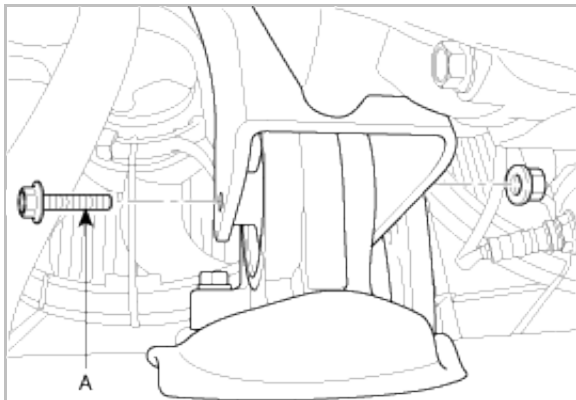
11. Install the rear roll stopper mounting bolts(A).



12. Install the power steering return tube mounting bolt(A).

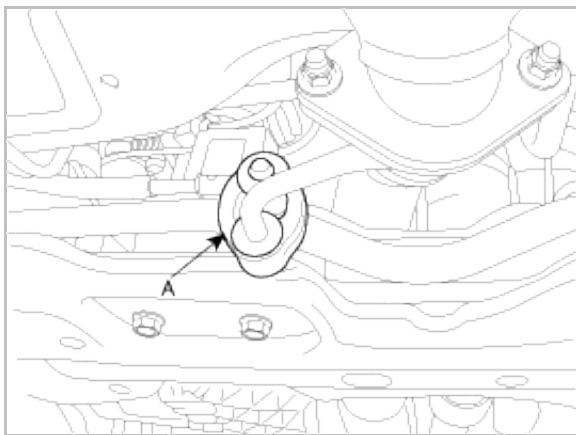


13. Install the front roll stopper mounting bolt(A).



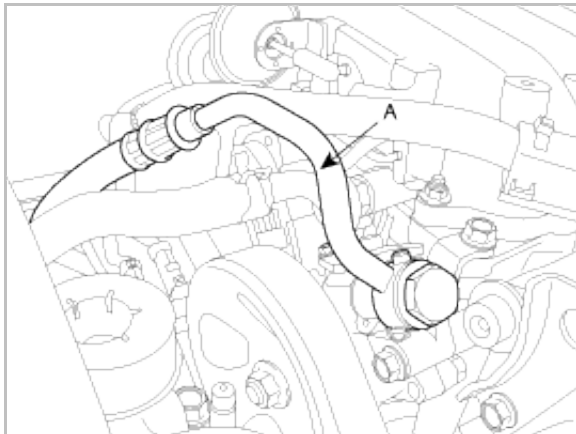
14. Connect the lower arm, the rod end ball joint, the stabilizer bar link to the front knuckle.(see SS group)

15. Install the hanger(A).

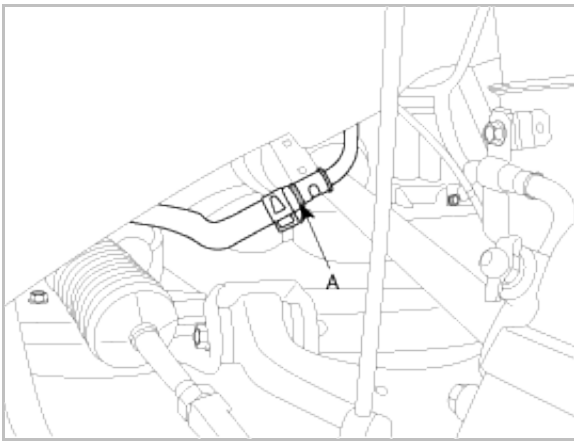


16. Refill the transaxle with fluid.

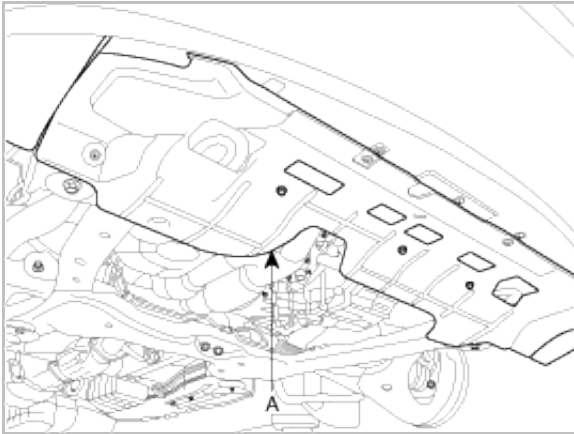
17. Connect the power steering pressure hose (A) to the power steering oil pump.



18. Connect the power steering return hose(A). (see ST group)



19. Install the under cover(A).



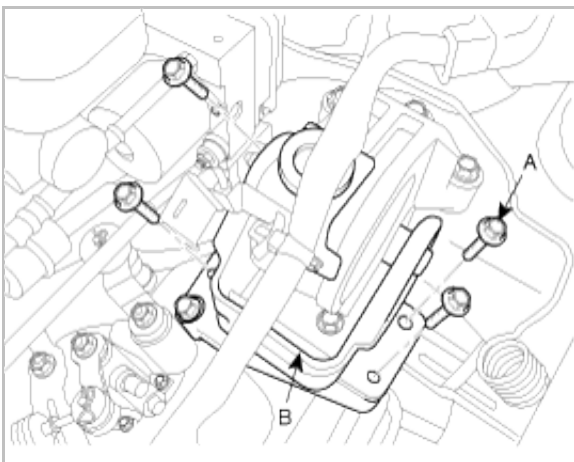
20. Install the steering column joint bolt.(See ST group).

21. Install the front wheels and tires. (see SS group)

22. Install the transaxle insulator and mounting bracket (B) by tightening the bolts (A).

TORQUE:

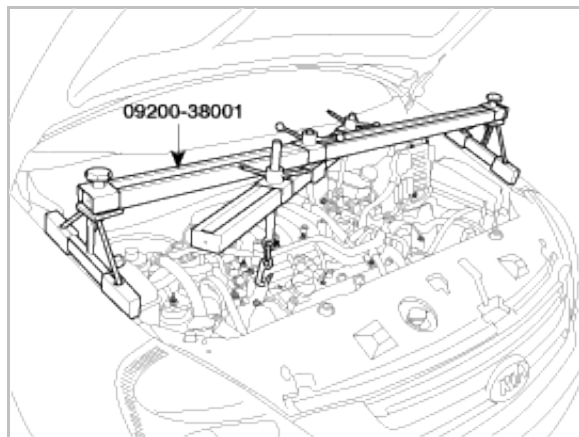
60~80 Nm (6~8 kgf.m, 43.6~58.2 lb-ft)



23. remove the SST (09200-38001) holding the engine and transaxle assembly.

TORQUE:

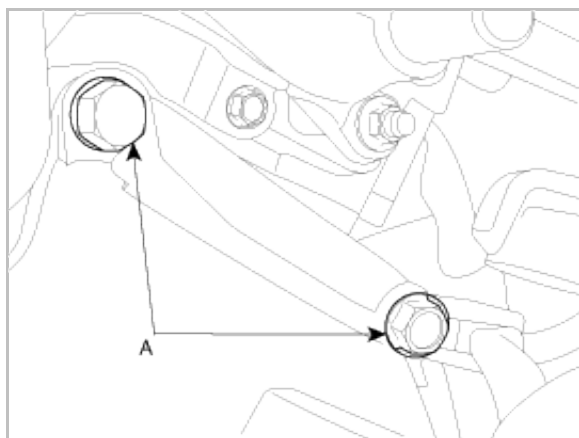
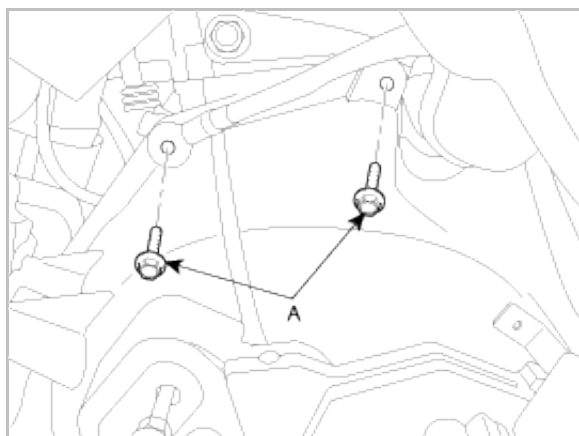
65~85 Nm (6.5~8.5kgf.m, 47.0~61.5 lb-ft)



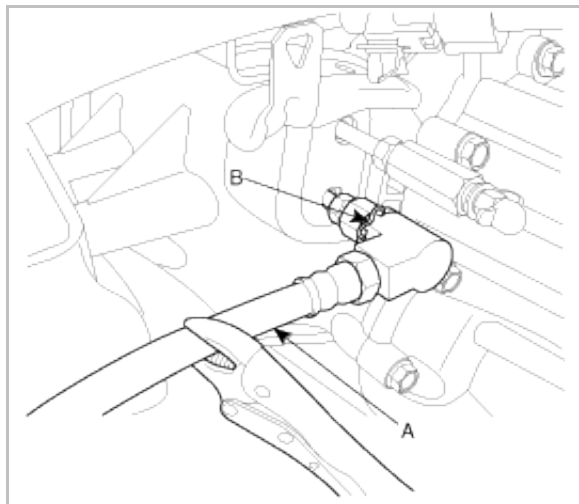
24. Install the transaxle upper mounting bolts(A).

TORQUE:

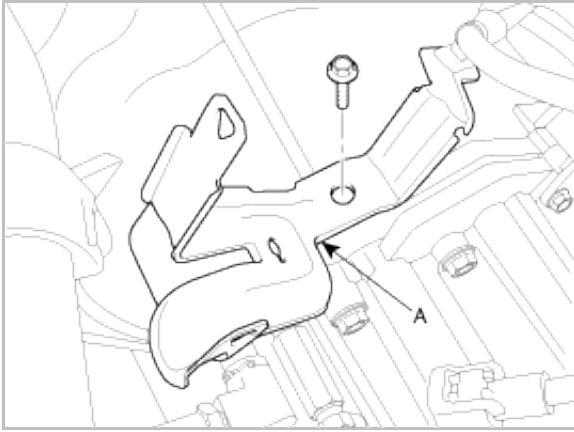
65~85Nm(6.5~8.5kgf.m, 47.0~61.5lb-ft)



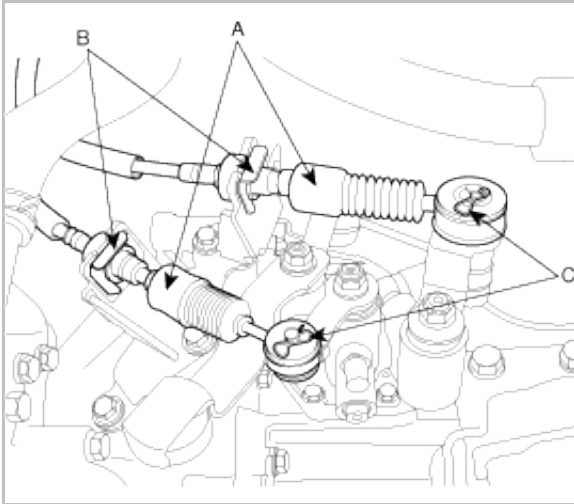
25. Install the C.S.C (Cincentric Slave Cylinder) tube(A) by tightening the nut(B).



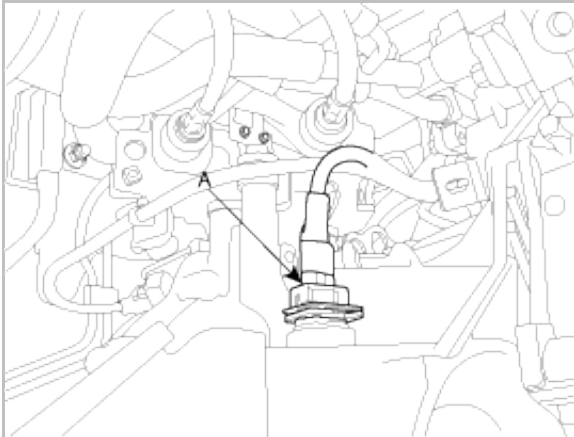
26. Install the wire harness bracket(b).



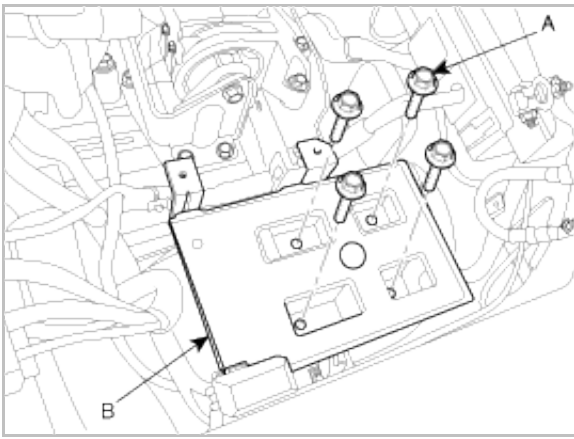
27. Install the shift cable assembly (A) with the clips(B) and pins(C).



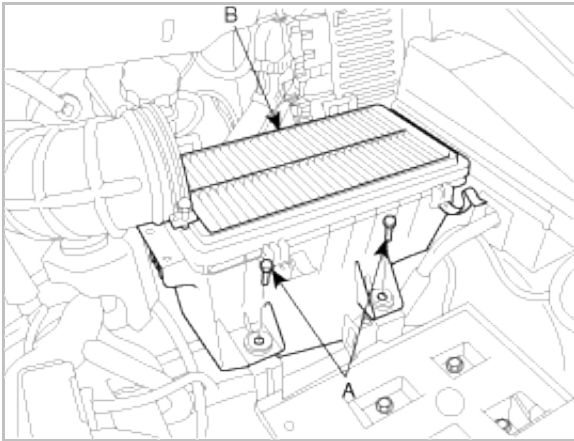
28. Install the vehicle speed sensor connector (A) and the back up lamp switch(B).



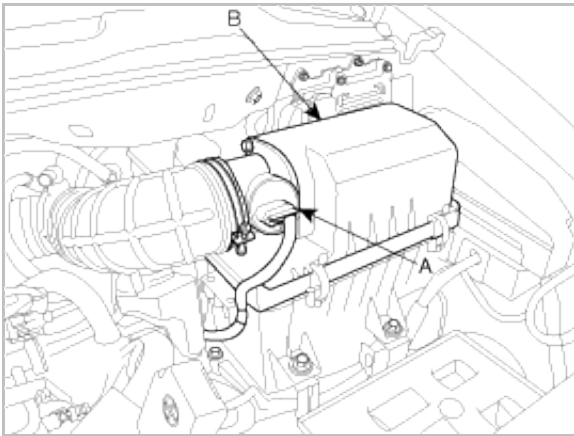
29. Install the battery tray(B) by removing the four mounting bolts(A).



30. Install the air cleaner assembly(B) by tightening the two mounting bolts(A).



31. Reassemble the air cleaner filter, install the air cleaner upper body(B) and connect the air flow sensor connector(A).



32. Install the battery(A).

