

## Manual Transaxle System




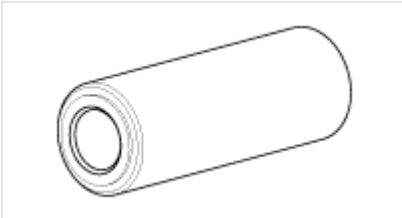
## Lubricants

Items	Recommmend lubricant	Quantity
Transmission gear oil	SAE 75W/85 API GL-4	2.2ℓ (2.3US qt, 1.94Imp qt)
Transmission housing	MS721-40	As required

## Manual Transaxle System



## Special Service Tools

Tool (Number and Name)	Illustration	Use
09452-25200 Oil seal installer		Installation of extension housing oil seal
09432-25400 Oil seal installer		Installation of control shaft oil seal

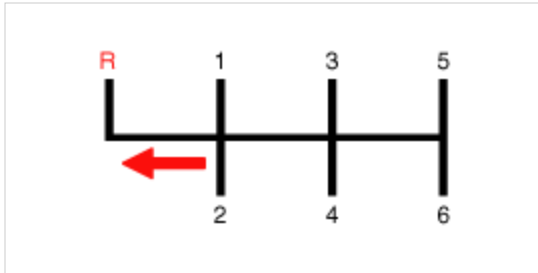
## Manual Transaxle System



## Main character

- Optimized design with compact and less weight through analyzing partial systems.
- Structure of 5th gear ratio(1:1) to improve power and fuel economy (forward 6th speed, backward 1st speed)
- Multi-cone synchronizer to improve shift feeling and minimize shifting force
  - 1,2,3rd : Triple-cone synchronizer
  - 4th : Double cone synchronizer
- 'HIGH FORCE TYPE' for shifting to 'R'

- Better shift feeling and sporty
- How to shift 'R' : swiftly pull the lever to the left and shift to 'R'



- Gear teeth optimization and grinding surface of teeth for noise reduction (2nd to 6th gear)
- Applying permanent transmission fluid with low viscosity

### Manual Transaxle System

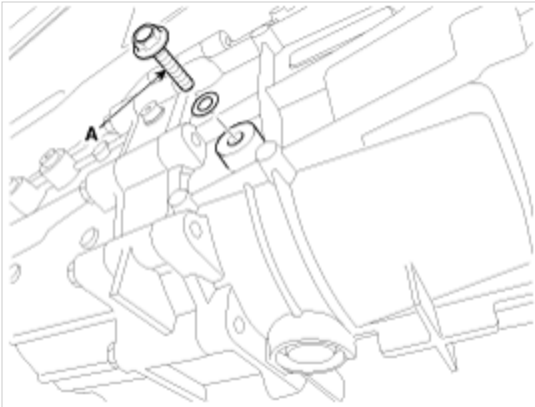


## Service Adjustment Procedure

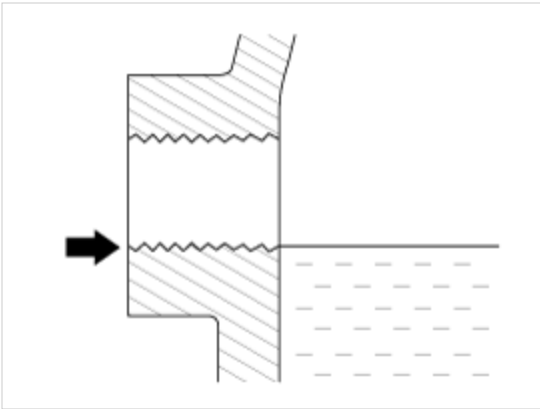
### Transmission Gear Oil Level

#### Inspection

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 with a new gasket.

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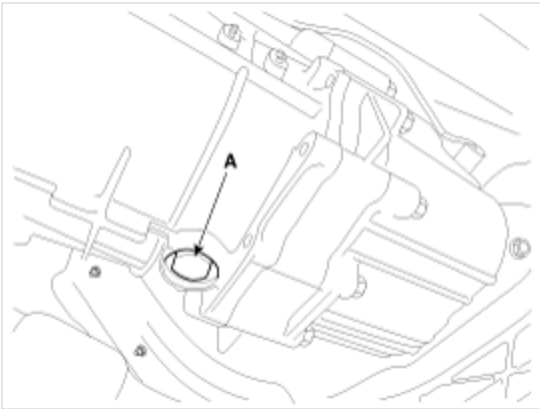
**Tightening torque :**

60 ~ 80 N.m (6.0 ~ 8.0 kgf.m, 43.4 ~ 57.8 lb-ft)

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## Replacement

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



3. Install the drain plug with new gasket.

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**Tightening torque :**

60 ~ 80 N.m (6.0 ~ 8.0 kgf.m, 43.4 ~ 57.8 lb-ft)

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4. Add new oil through the filler plug hole and, fill it just below the plug opening.

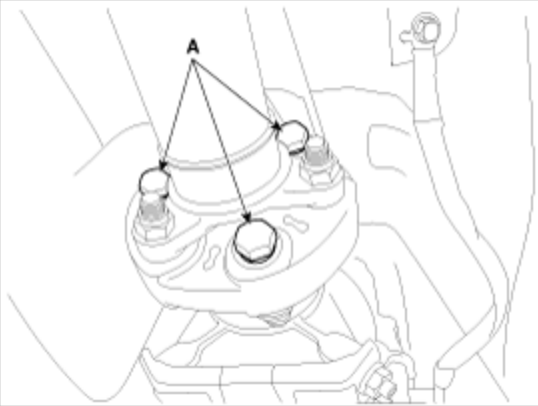
**Standard oil :**SAE 75W/85, API GL-4

**Oil capacity :**2.2ℓ (2.3US qt, 1.94Imp qt)

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## Extension Housing Oil Seal Replacement

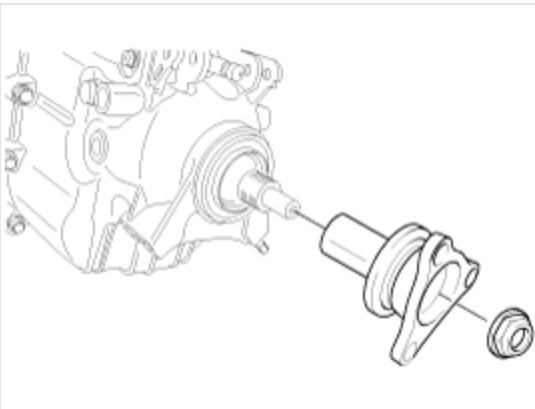
1. Remove the popellar shaft from the transmission by removing the bolts(A-3ea).



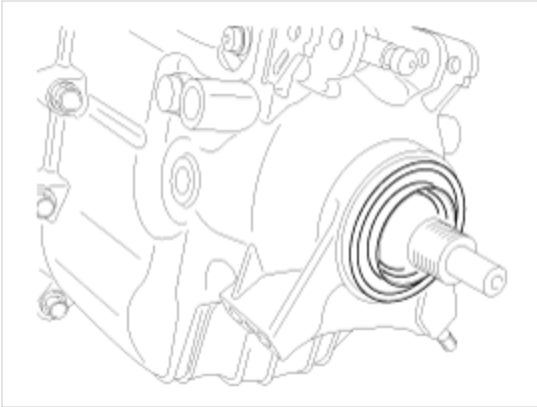
2. After releasing the caulking, remove the flange assembly by removing the locking nut(35mm) and O-ring.

### **CAUTION**

Do not reuse locking nut and O-ring.



3. Remove the oil seal by using a screw driver.

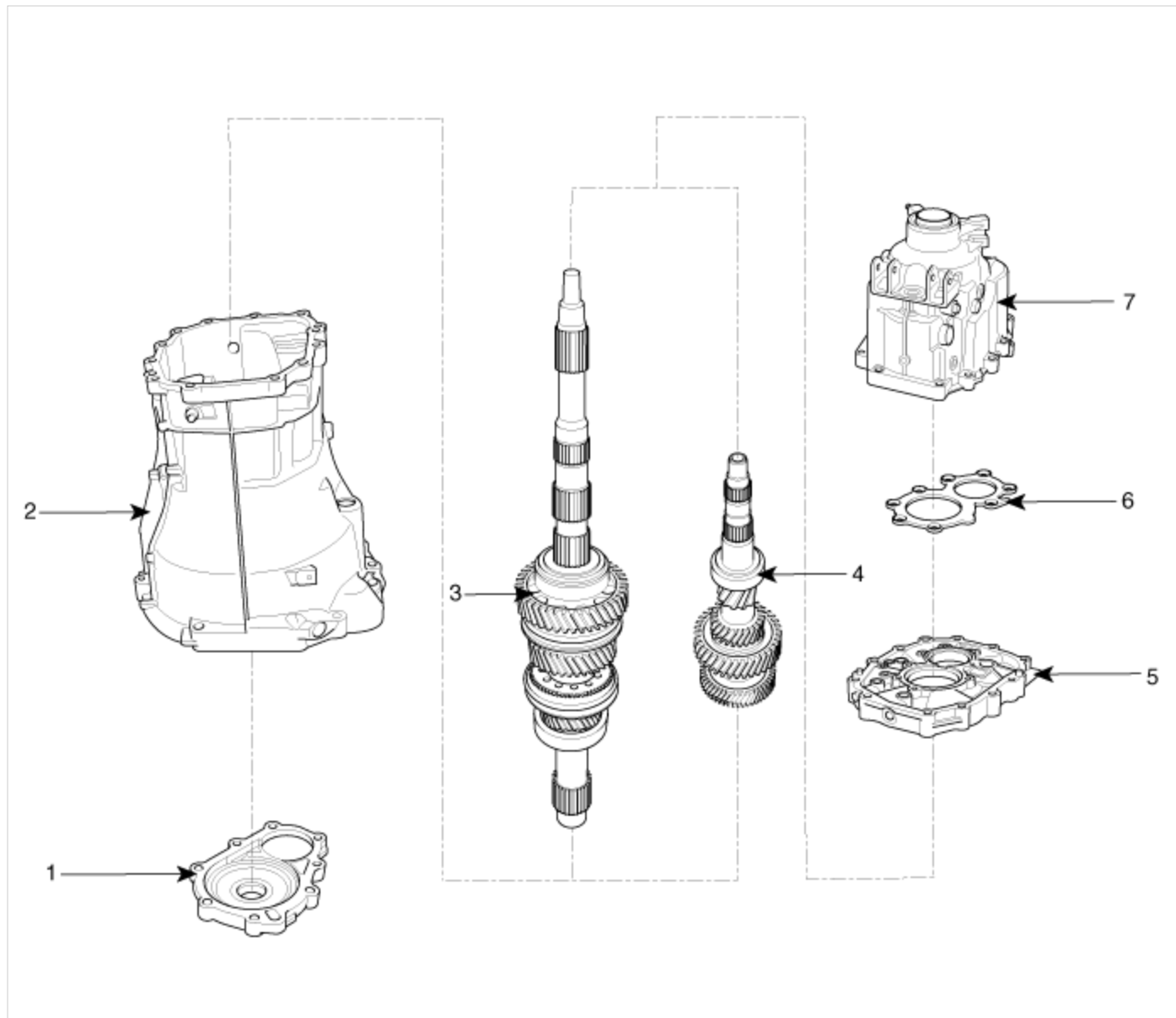


4. Replace a new one and install the oil seal by using the special service tool(09452-25200).
5. Apply the lithium grease (0.2 ~ 0.5g) to lip of the oil seal.
6. Install the removed parts in reverse order of removal.

#### Manual Transaxle System



### Components (1)

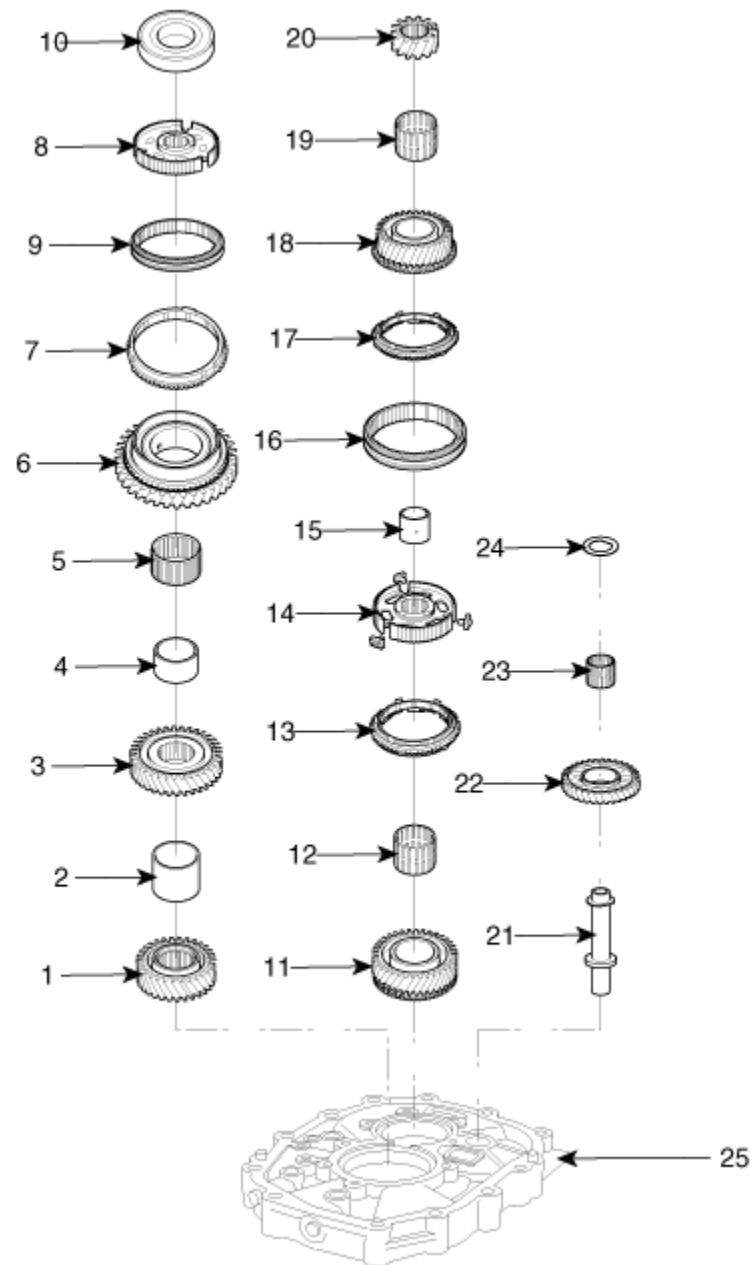


1. Front bearing retainer assembly  
2. Transmission case assembly

5. Intermediate plate  
6. Rear bearing retainer  
7. Extension housing assembly

- 3. Main shaft assembly and main drive assembly
- 4. Counter shaft assembly

## Components (2)





1. 4th gear	10. Ball bearing	19. Needle roller bearing
2. Spacer	11. 4th speed gear	20. Counter reverse gear
3. 3rd gear	12. Needle roller bearing	21. Reverse idler shaft
4. Reverse gear sleeve	13. Synchronizer ring assembly	22. Reverse idler gear
5. Needle roller bearing	14. 3&4th synchronizer hub	23. Needle roller bearing
6. Reverse speed gear	15. 3rd gear sleeve	24. Reverse spacer
7. Synchronizer ring	16. 3&4th synchronizer sleeve	25. Intermediate plate
8. Reverse synchronizer hub	17. Synchronizer ring assembly	
9. Reverse synchronizer sleeve	18. 3rd speed gear	

## Manual Transaxle System

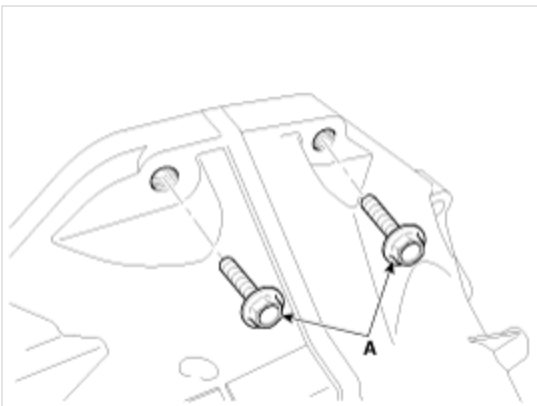


### Installation

1. Temporarily install the transmission assembly to the engine assembly.
2. Install the mounting bolts (A-2ea) on the transmission.

#### Tightening torque :

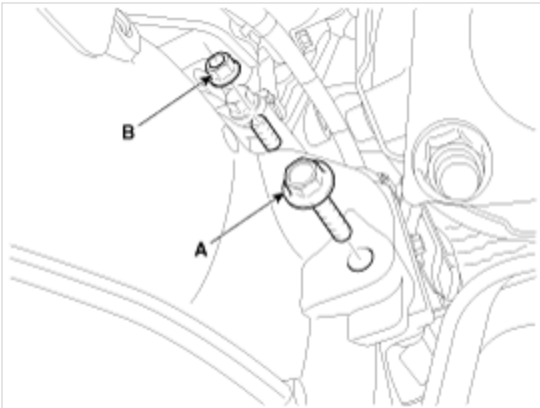
65 ~ 85 N.m (6.5 ~ 8.5 kgf.m, 47.0 ~ 61.5 lb-ft)



3. Install the starter motor mounting bolt (A) and nut (B).

#### Tightening torque :

43 ~ 55 N.m (4.3 ~ 5.5 kgf.m, 31.1 ~ 39.8 lb-ft)

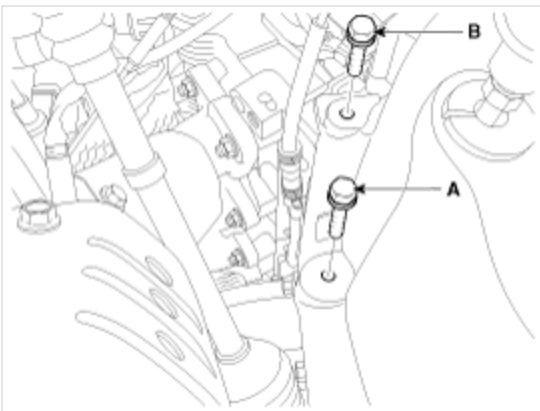


4. Install the mounting bolts (A,B) left in the engine side.

**Tightening torque :**

[A] 65 ~ 85 N.m (6.5 ~ 8.5 kgf.m, 47.0 ~ 61.5 lb-ft)

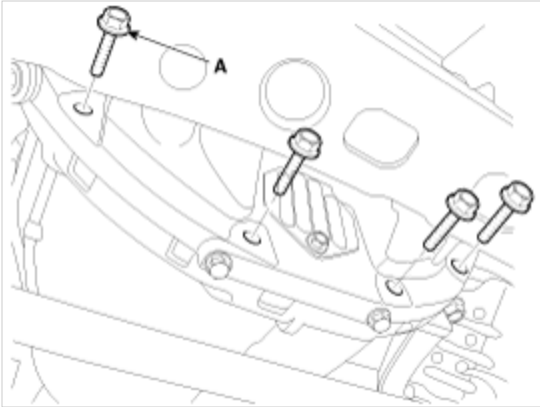
[B] 35 ~ 47 N.m (3.5 ~ 4.7 kgf.m, 25.3 ~ 34.0 lb-ft)



5. Install the mounting bolts (A-4ea) from the engine side.

**Tightening torque :**

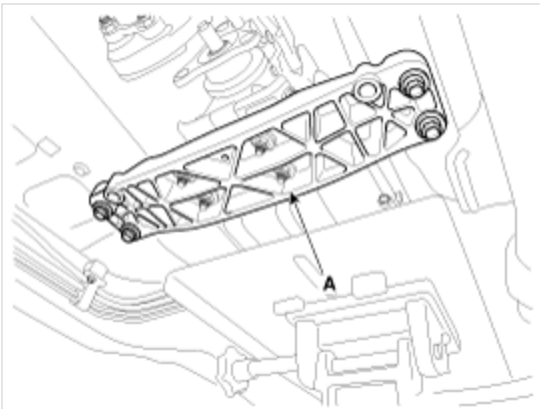
43 ~ 49 N.m (4.3 ~ 4.9 kgf.m, 31.1 ~ 35.4 lb-ft)



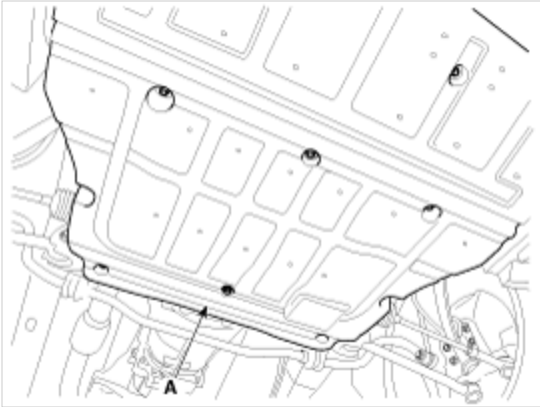
6. Install the crossmember (A) by installing the bolts(4ea) and put aside the supporting jack.

**Tightening torque :**

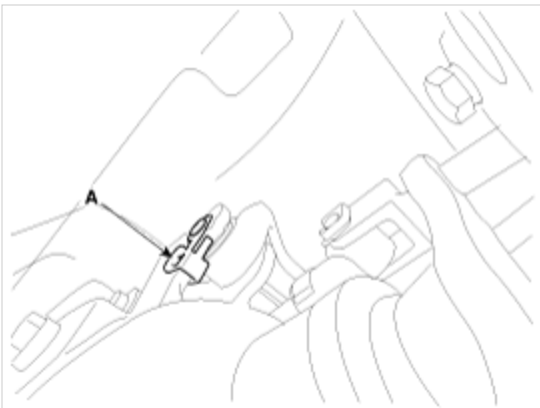
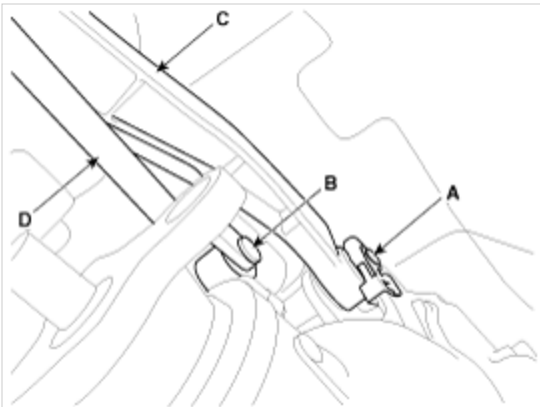
50 ~ 65 N.m (5.0 ~ 6.5 kgf.m, 36.2 ~ 47.0 lb-ft)



7. Install the under shield cover (A).



8. Install the base bracket (C) and select rod (D) to the transmission with clips (A-2ea) and snap pin (B).

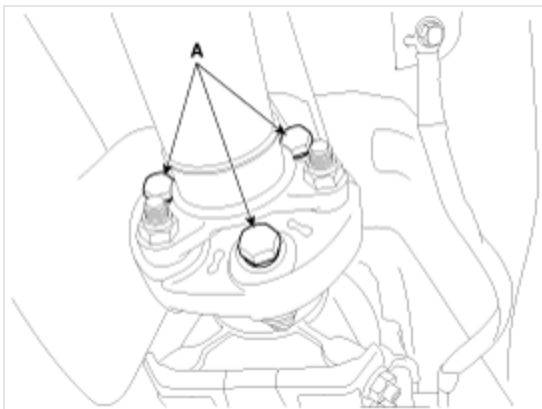


9. Install the propellar shaft to the transmission by installing the bolts (A-3ea).

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**Tightening torque :**

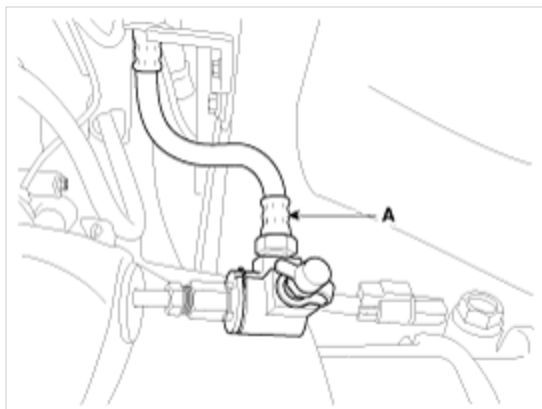
90 ~ 110 N.m (9 ~ 11 kgf.m, 65.1 ~ 79.5 lb-ft)



10. Install the clutch hose (A) to the C.S.C assembly.

**NOTICE**

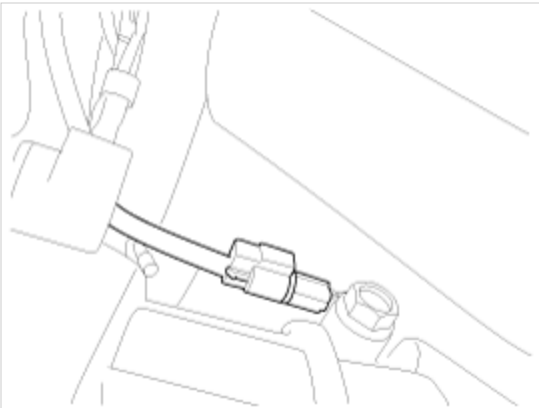
In case of loss of clutch fluid , refill the fluid. (refer to Bleeding in CH group)



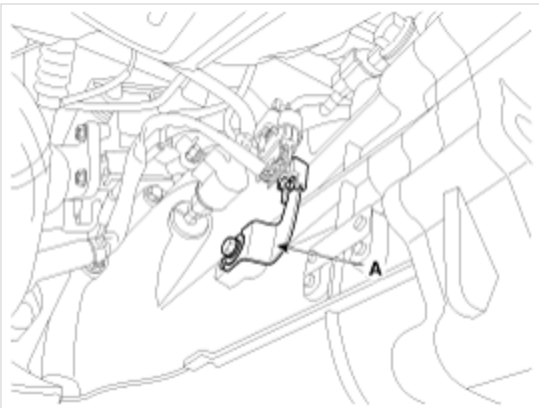
11. Install the CKP sensor (A) by installing a bolt.

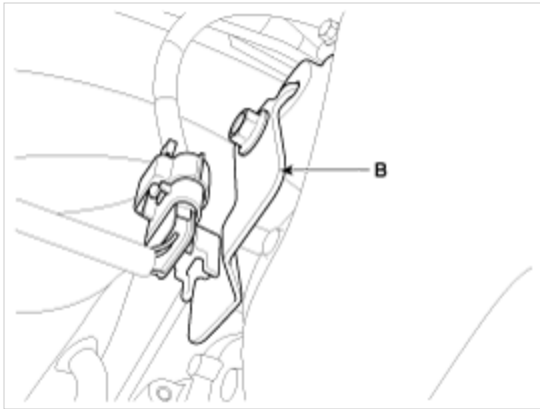


12. Connect the back up lamp switch connector.

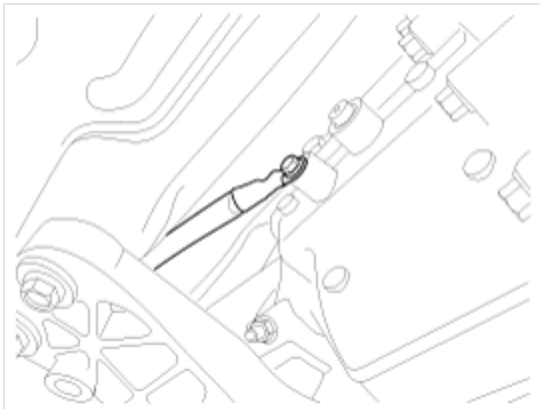


13. Connect the oxygen sensor connectors (A,B) from both sides of transmission.

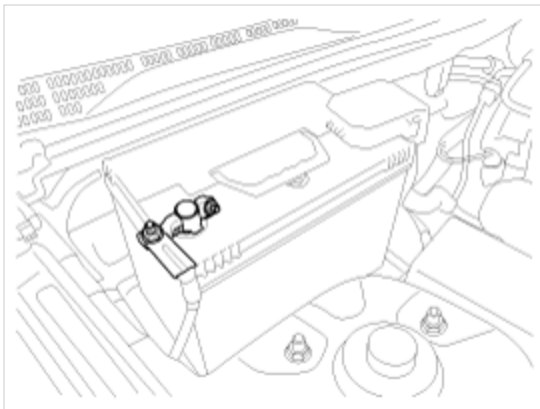




14. Install the ground wire by installing a bolt.



15. Connect (-) terminal to the battery.



16. Refill the transmission fluid.  
(Refer to Service Adjustment Procedure)

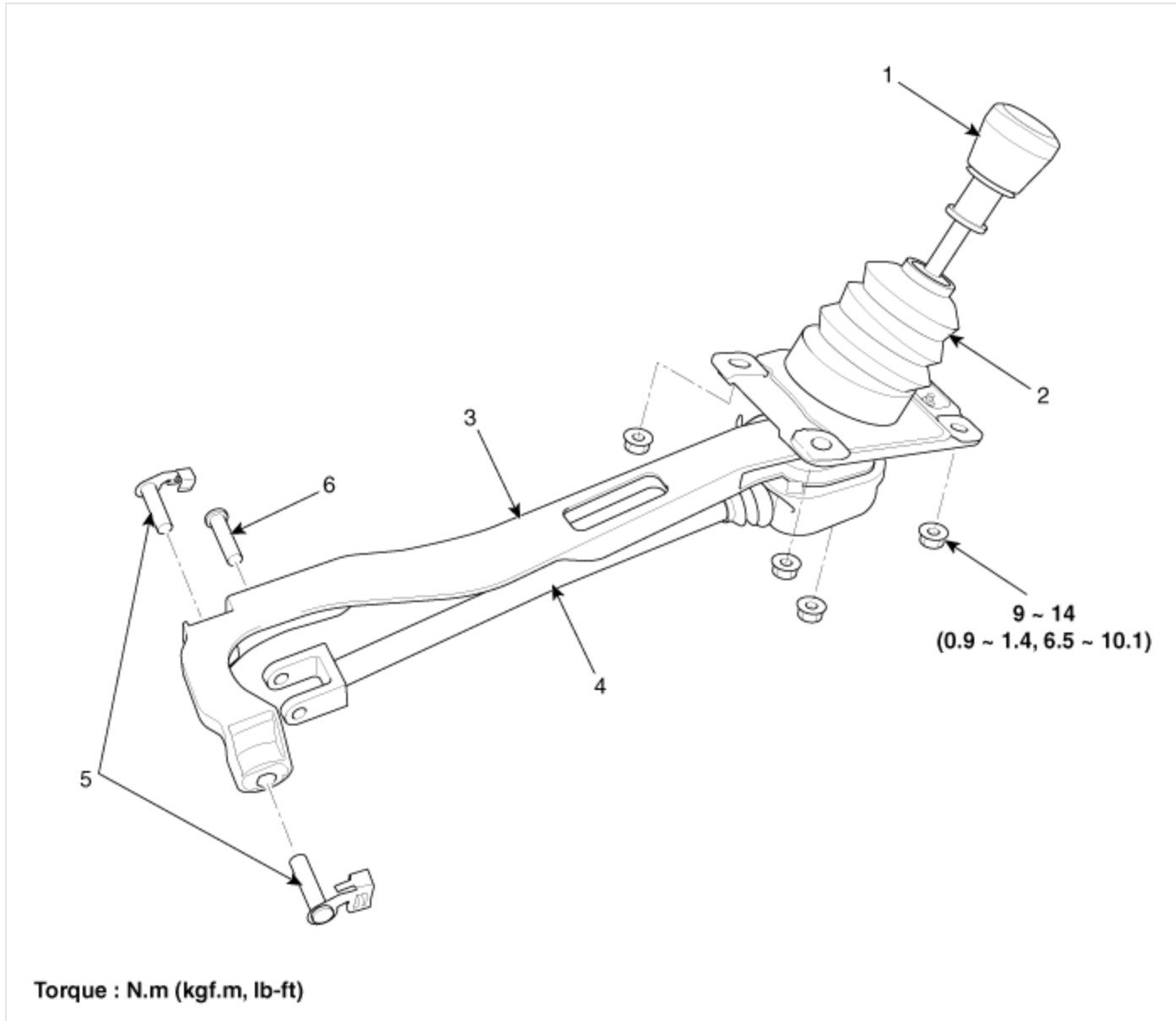
**Manual Transaxle System**

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**Components**





<p>1. Shift lever knob</p> <p>2. Shift lever assembly</p> <p>3. Base bracket</p>	<p>4. Select rod</p> <p>5. Clip</p> <p>6. Pin</p>
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## Installation

1. Temporarily install the shift lever assembly with the base bracket and select rod.

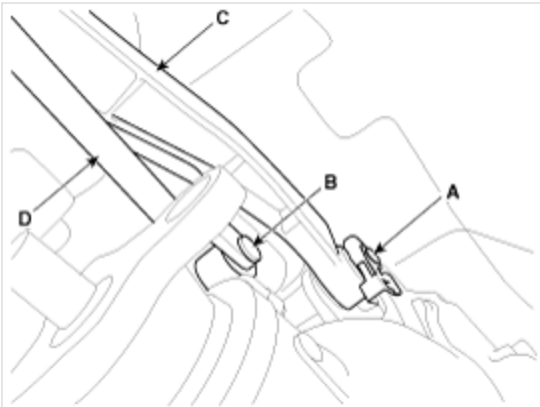
**CAUTION**

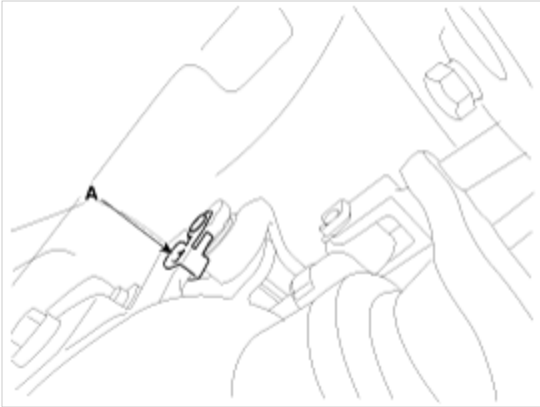
Be careful not to damage to the shift lever assembly.

2. Install the mounting nuts (A-4ea) of shift lever assembly.

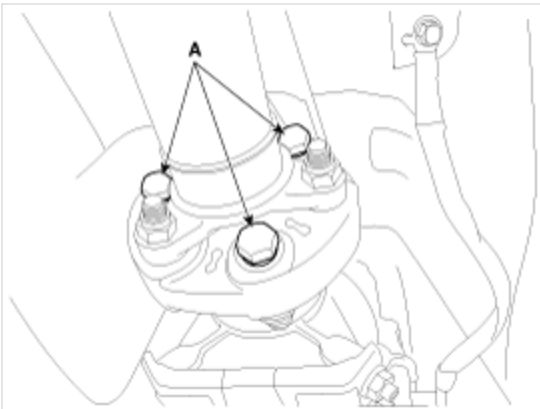


3. Install the base bracket (C) and select rod (D) to the transmission with clips (A-2ea) and snap pin (B).

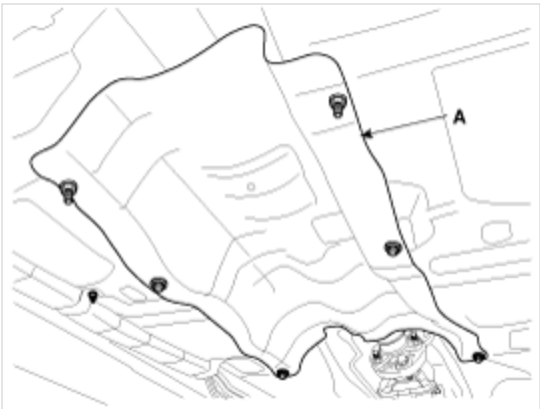




4. Reassemble the propellar shaft to the transmission by installing the bolts (A-3ea).



5. Install the heat shield cover (A).

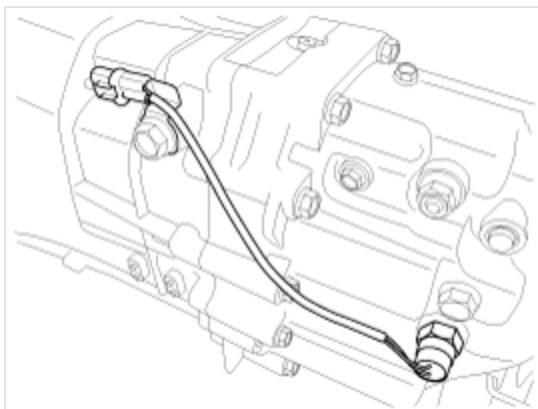


6. Install the muffler assembly.  
(Refer to Muffler in EM group)
7. Zip the leather cover of shift lever.

### Manual Transaxle System



## Components



### Manual Transaxle System



## Description

Back up lamp switch is depressed, turning on the back up lamps, when the reverse lug contacts it while it is shifted into reverse.

### Manual Transaxle System



## Specifications

1. Current voltage : 12V
2. Working voltage : 10~15V
3. Operating force : 1.0 kg +0.2kg Max. (at 2mm stroke position)
4. Voltage drop : Max 0.15V with rated load before test, Max 0.24V with rated load after test
5. Working temperature : -30°C ~ 80°C

### Manual Transaxle System

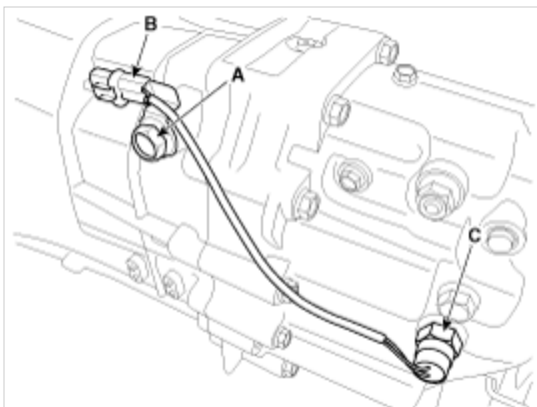


## Replacement

1. Disconnect the back up lamp switch connector.
2. Remove the connector bracket (B) by removing the hinge bolt (A).

### Tightening torque :

55~69 Nm (5.5~6.9 kgf.m, 39.8~49.9 lb-ft)



3. Remove the back up lamp switch (C) with gasket.
4. Replace a new one with a new gasket and install the back up lamp switch.

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**Tightening torque :**

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

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5. Install the removed parts in reverse order of removal.

**⚠ CAUTION**

Be sure to use a new gasket.