

SPORTAGE(SL) > 2013 > G 2.4 DOHC > Manual Transaxle System

Manual Transaxle System > General Information > Specifications

Specifications

| Manual transaxle type |         | M6GF2          |     |
|-----------------------|---------|----------------|-----|
| Engine type           |         | Gasoline 2.4   |     |
|                       |         | 2WD            | 4WD |
| Gear ratio            | 1st     | 3.267          |     |
|                       | 2nd     | 1.794          |     |
|                       | 3rd     | 1.542          |     |
|                       | 4th     | 1.176          |     |
|                       | 5th     | 0.974          |     |
|                       | 6th     | 0.829          |     |
|                       | Reverse | 3.416          |     |
| Final gear ratio      |         | 5.071(1,2,R)   |     |
|                       |         | 3.737(3,4,5,6) |     |

Tightening Torques

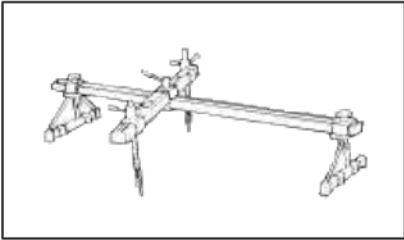
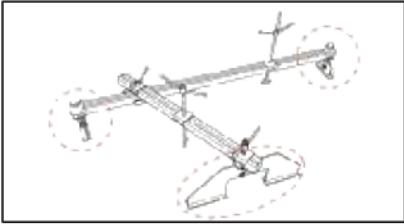
| Item                                    | N.m        | kgf.m     | lb-ft     |
|-----------------------------------------|------------|-----------|-----------|
| Oil drain plug bolt                     | 58.9~78.5  | 6.0~8.0   | 43.4~57.9 |
| Oil filler plug bolt                    | 29.4~34.3  | 3.0~3.5   | 21.7~25.3 |
| Shift lever assembly bolt               | 8.8~13.7   | 0.9~1.4   | 6.5~10.1  |
| Back up lamp switch                     | 29.4~34.3  | 3.0 ~ 3.5 | 21.7~25.3 |
| Transaxle mounting bracket bolt         | 88.3~107.9 | 9.0~11.0  | 65.1~79.6 |
| Start motor installation bolt           | 42.2~53.9  | 4.3~5.5   | 31.1~39.8 |
| Transaxle upper mounting bolt (TM=>ENG) | 42.2~53.9  | 4.3~5.5   | 31.1~39.8 |
| Transaxle lower mounting bolt (ENG=>TM) | 42.2~48.1  | 4.3~4.9   | 31.1~35.4 |
|                                         | 42.2~53.9  | 4.3~5.5   | 31.1~39.8 |

Lubricants

| Item                               | Specified lubricants | Quantity                                         |
|------------------------------------|----------------------|--------------------------------------------------|
| Manual transaxle oil               | SAE 75W/85, API GL-4 | 1.8L(0.48 U.S. gal.,1.90 U.S. qt., 1.58Imp. qt.) |
| Manual transaxle input spline      | CASMOLY L9508        | 0.2 gr.                                          |
| Concentric slave cylinder assembly | KLUBER 9R100         | As required                                      |

Manual Transaxle System > General Information > Special Service Tools

Special Service Tools

| Tool<br>(Number and<br>name)                              | Illustration                                                                      | Use                                                                                                                                                   |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09200-38001<br>Engine support<br>fixture<br>(Beam)        |  | Removal and installation of the transaxle.<br>Except lower supporter, use beam only with new engine support<br>fixture supporter(SST No.:09200-2S000) |
| 09200 - 2S000<br>Engine support<br>fixture<br>(Supporter) |  | Removal and installation of the transaxle.<br>Use this supporter with the upper beam of the engine support<br>fixture(SST No.:09200-38001)            |

Manual Transaxle System > Manual Transaxle System > Repair procedures

Inspection

Manual transaxle oil Inspection

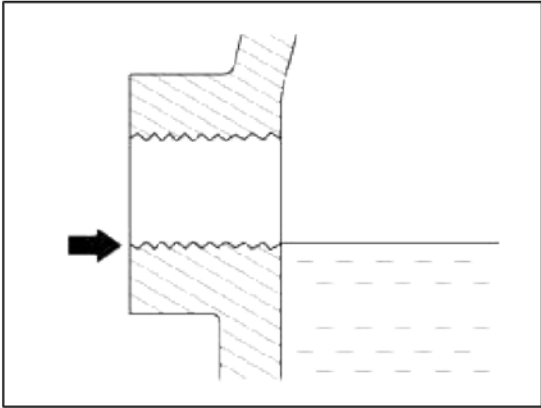
- 1. Park the vehicle on a level ground and stop the engine.
- 2. Retighten the oil filler plug(A) with a new washer.



- 3. Check level with finger.

NOTE

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



- 4. Retighten the oil filler plug(A) with a new washer.

Tightening torque :

29.4~34.3N.m (3.0~3.5kgf.m, 21.7~25.3lb-ft)

Manual transaxle oil replacement

- 1. Park the vehicle on a level ground and stop the engine.

2. Drain the manual transaxle oil after loosening the drain plug (A).



3. Install the drain plug with new gasket.

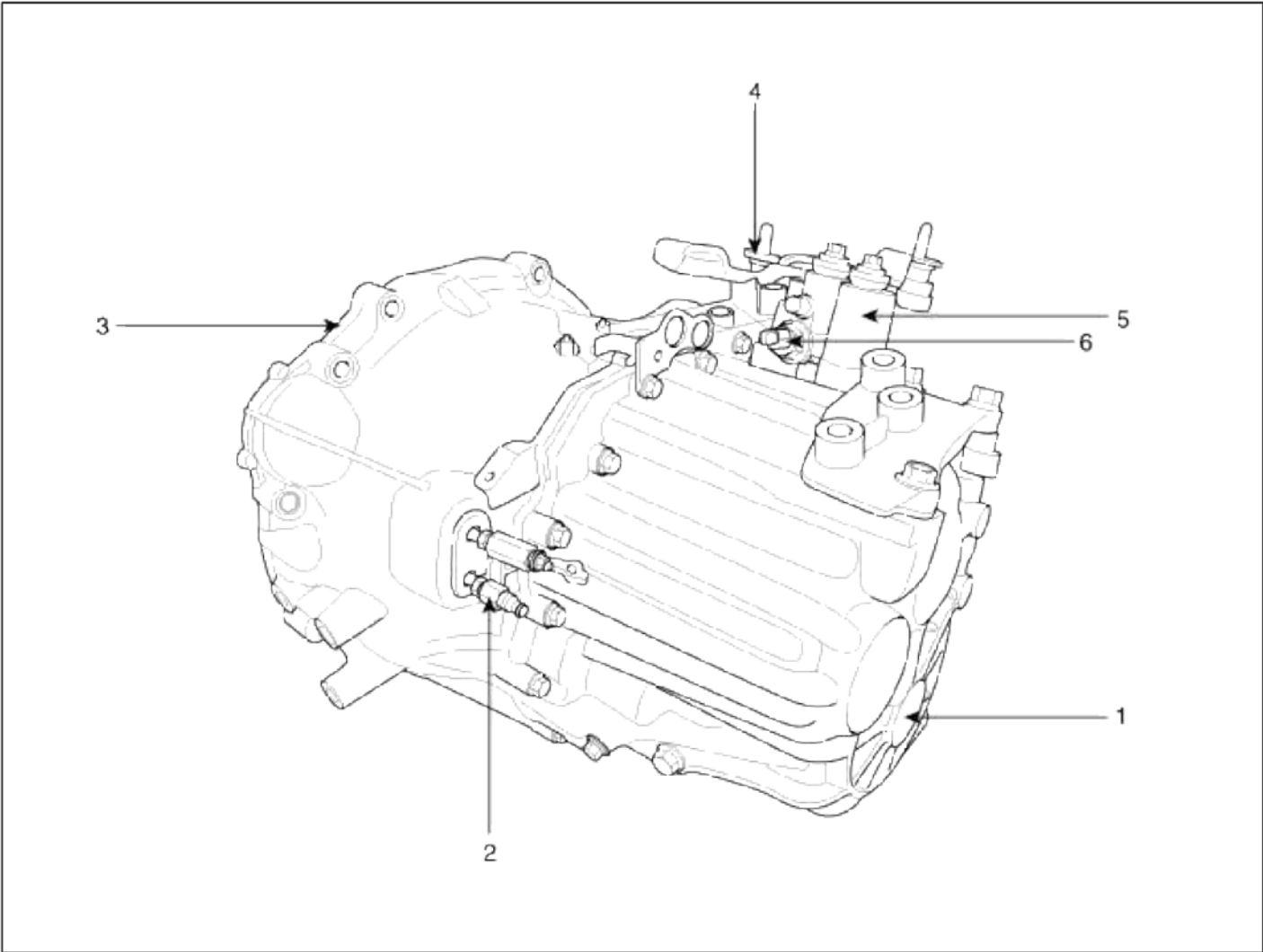
**Tightening torque :**  
58.9~78.5N.m (6.0~8.0kgf.m, 43.4~57.9lb-ft)

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 :** 1.8L(0.48 U.S. gal.,1.90 U.S. qt., 1.58Imp. qt.)

Manual Transaxle System > Manual Transaxle System > Manual Transaxle > Components and Components Location

Components



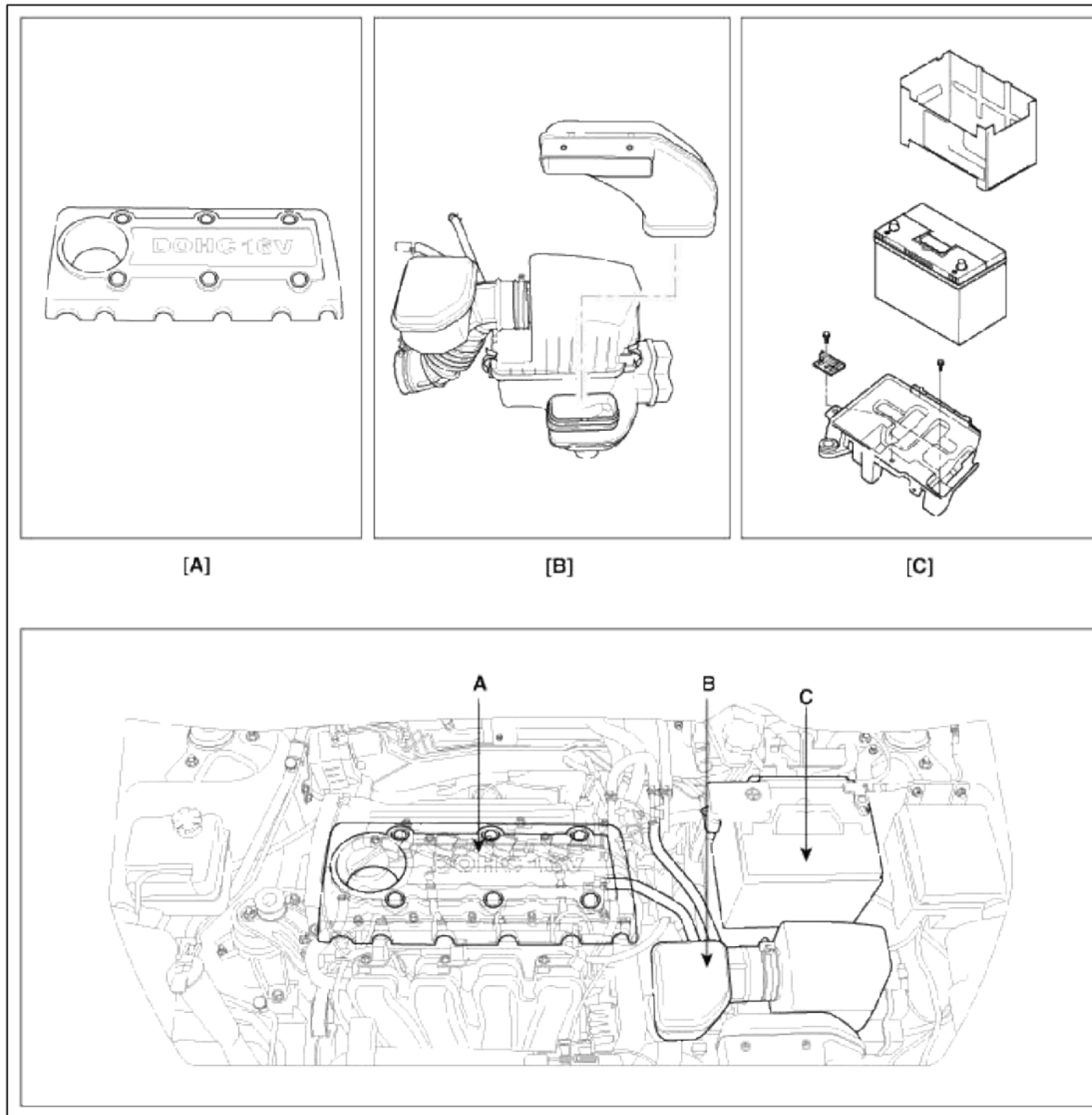
- |                              |                                 |
|------------------------------|---------------------------------|
| 1. Manual transaxle case     | 4. Shift cable bracket assembly |
| 2. Concentric slave cylinder | 5. Control complete shaft       |
| 3. Clutch housing            | 6. Back-up lamp switch          |

# Manual Transaxle System > Manual Transaxle System > Manual Transaxle > Repair procedures

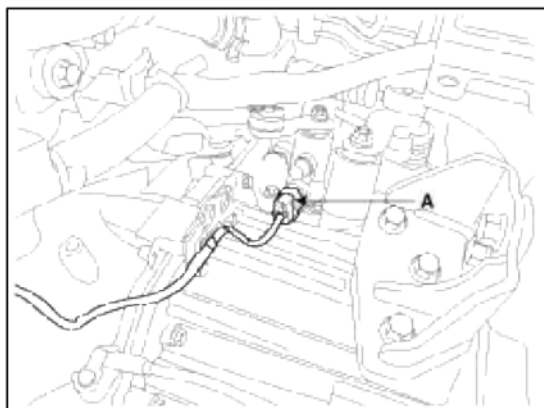
## Removal

### 1. Remove the following items;

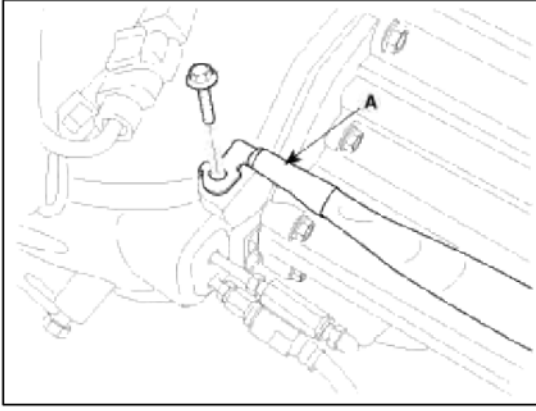
- A. Engine cover (A). (Refer to "Intake and Exhaust system" in EM group.)
- B. Air cleaner assembly and air duct(B) . (Refer to "Intake and Exhaust system" in EM group.)
- C. Battery and battery tray (C). (Refer to "Charging system" in EE group.)



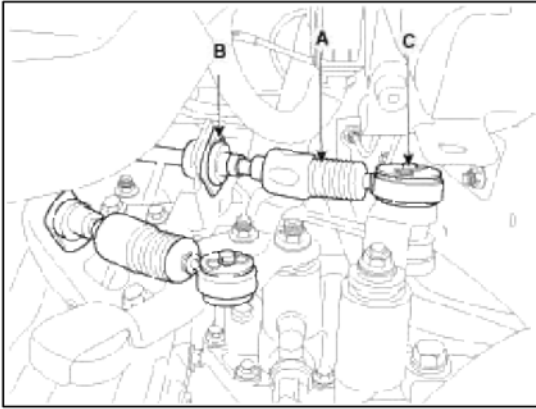
### 2. Disconnect the back up lamp switch connector (A).



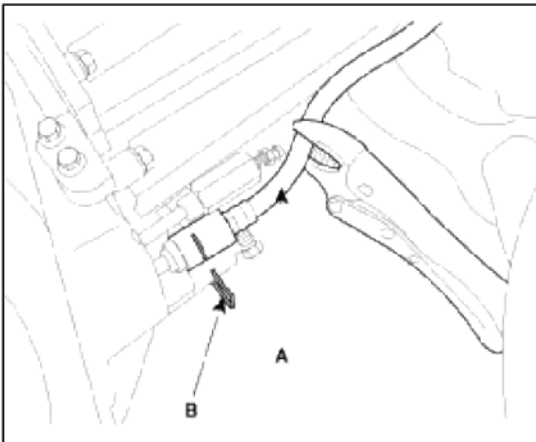
3. Remove the ground (A).



4. Disconnect the cable assembly (A) after removing the clips (B) and pins (C).



5. Disconnect the concentric slave cylinder tube (A) after removing the pins (B).

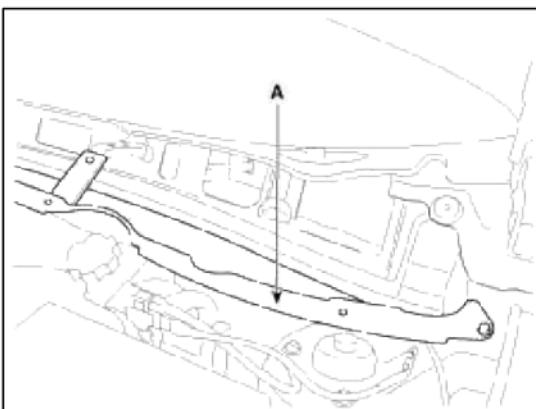


6. Remove the wiring bracket bolt (A).

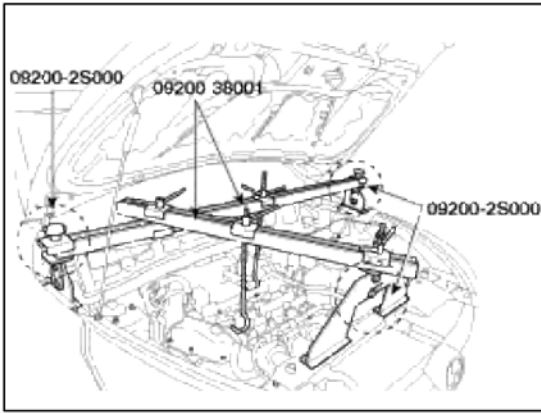


7. Remove the cowl top cover or wiper motor. (Refer to "Windshield Wiper/Washer" in BE group.)

8. Remove the cowl complete assembly panel (A).



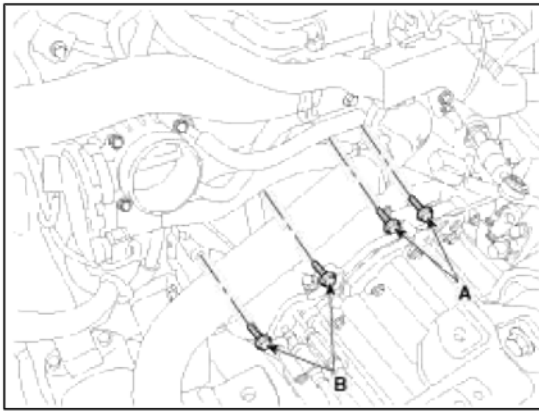
9. Using the engine support fixture (Support SST No.: 09200-2S000, Beam SST No.: 09200-38001), hold the engine and transaxle assembly safely.



10. Remove the transaxle upper mounting bolt (A-2ea) and the start motor mounting bolt (B-2ea).

**Tightening torque :**

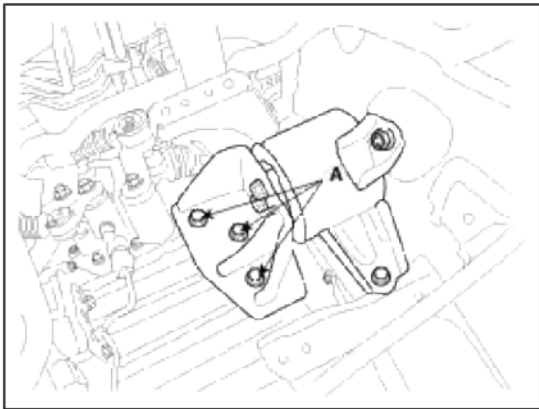
42.2~53.9N.m (4.3~5.5kgf.m, 31.1~39.8lb-ft)



11. Supporting the transaxle with a jack, remove the mounting bolts(A).

**Tightening torque :**

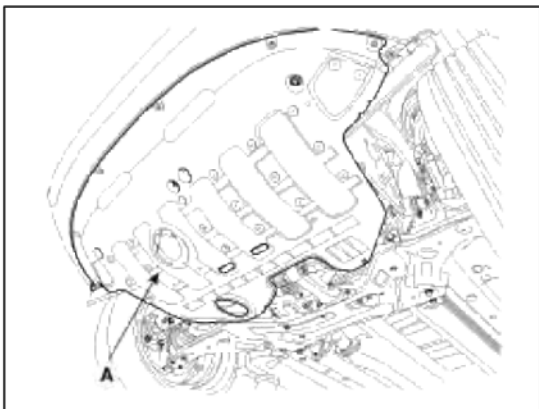
88.3~107.9N.m (9.0~11.0kgf.m, 65.1~79.6lb-ft)



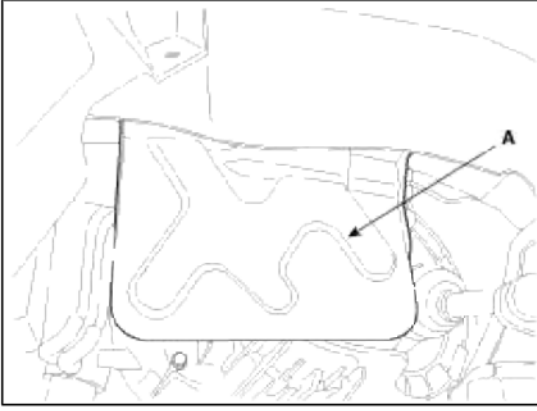
12. Remove the under cover (A).

**Tightening torque :**

19.6~21.6N.m (2.0~2.2kgf.m, 14.5~15.9lb-ft)



13. Remove the side cover(A).

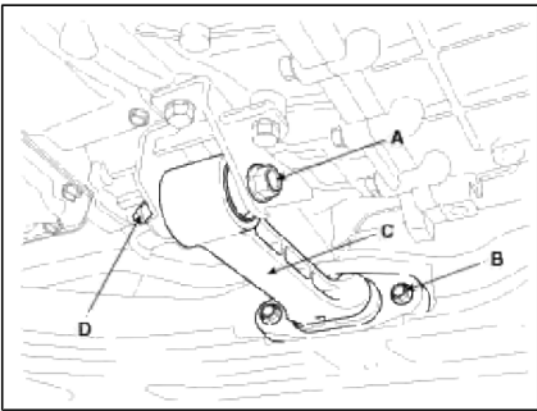


14. Remove the roll rod bracket(C) after removing bolt(A,B).

**Tightening torque :**

(B) 49.0~63.7N.m (5.0~6.5kgf.m, 36.2~47.0lb-ft)

(D) 107.9~127.5N.m (11~13kgf.m, 79.6~94.1lb-ft)



15. Remove the following items;

A. Drive shaft assembly. (Refer to "Drive shaft assembly" in DS group.)

B. Sub frame assembly. (Refer to "Front suspension system" in SS group)

C. In the case of 4WD vehicle, remove the transfer assembly. (Refer to "Transfer assembly" in WD group)

**NOTE**

In the case of 2WD vehicle, not remove the transfer assembly.

16. Remove the mounting bolts(A-4ea, B-2ea) of lower part of the transaxle, and the left side cover and remove the transaxle assembly by supporting it with a jack.

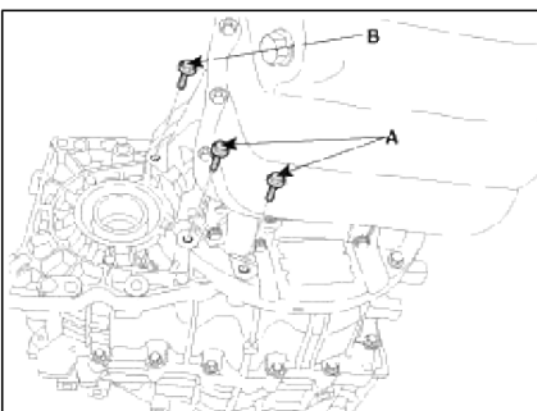
**CAUTION**

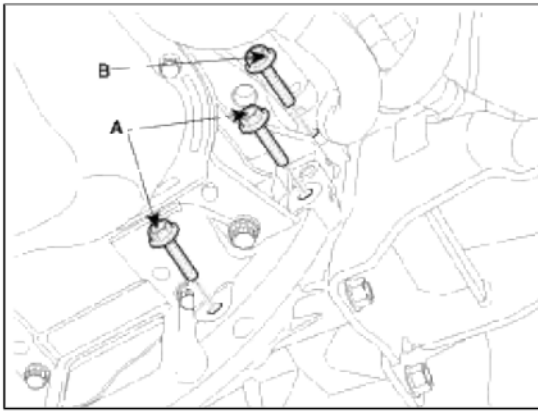
Be careful not to damage other system or parts near by when removing the engine and transaxle assembly.

**Tightening torque :**

(A) 42.2~48.1 N.m (4.3~4.9kgf.m, 31.1~35.4lb-ft)

(B) 42.2~53.9 N.m (4.3~5.5kgf.m, 31.1~39.8lb-ft)





#### Installation

1. Installation is the reverse of removal.

#### CAUTION

- Adding Manual transaxle fluid. (Refer to "Manual transaxle system" in this group.)
- Perform bleeding air procedure in concentric slave cylinder after pouring the brake fluid.(Refer to "Concentric slave cylinder" in CH group.)

### Manual Transaxle System > Manual Transaxle Control System > Back-up Lamp Switch > Description and Operation

#### Description

Back up lamp switch is pushed by the reverse lug sliding when select arm, and switches the back up lamp.

### Manual Transaxle System > Manual Transaxle Control System > Back-up Lamp Switch > Specifications

#### Specifications

1. Working voltage : DC 10~15V
2. Operating force : 3.0kg Max.
3. Voltage drop : - 0.4V
4. Working temperature : -30°C ~ 100°C [-30°F ~ 212°F]

### Manual Transaxle System > Manual Transaxle Control System > Back-up Lamp Switch > Repair procedures

#### Inspection

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

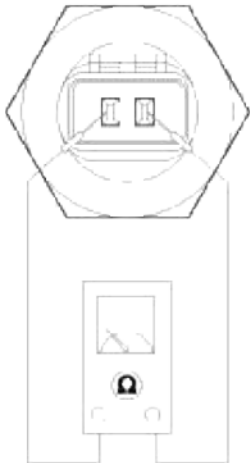


2. Check the continuity between no. 1 and 2 terminals of backup lamp switch. When the shift lever is in reverse, there should be continuity.

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

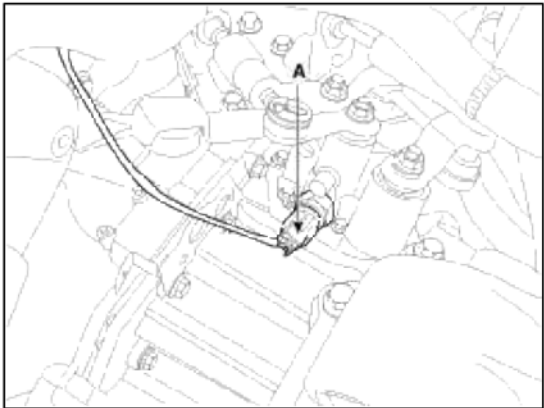
|               |   |   |
|---------------|---|---|
| Condition     | 1 | 2 |
| Reverse Range | ● | ● |
| Other Range   |   |   |

\* The back up lamp "ON" shall keep over 0.5mm(.02in) From ON-OFF point.

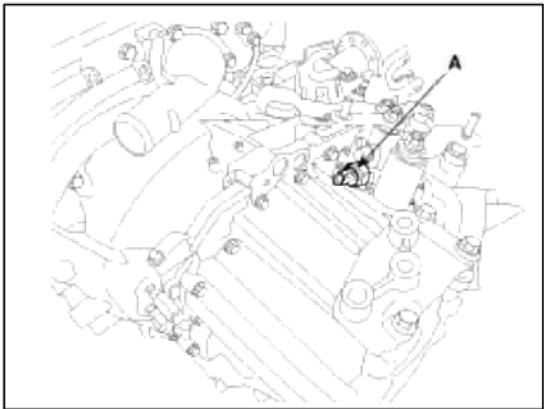


Replacement

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

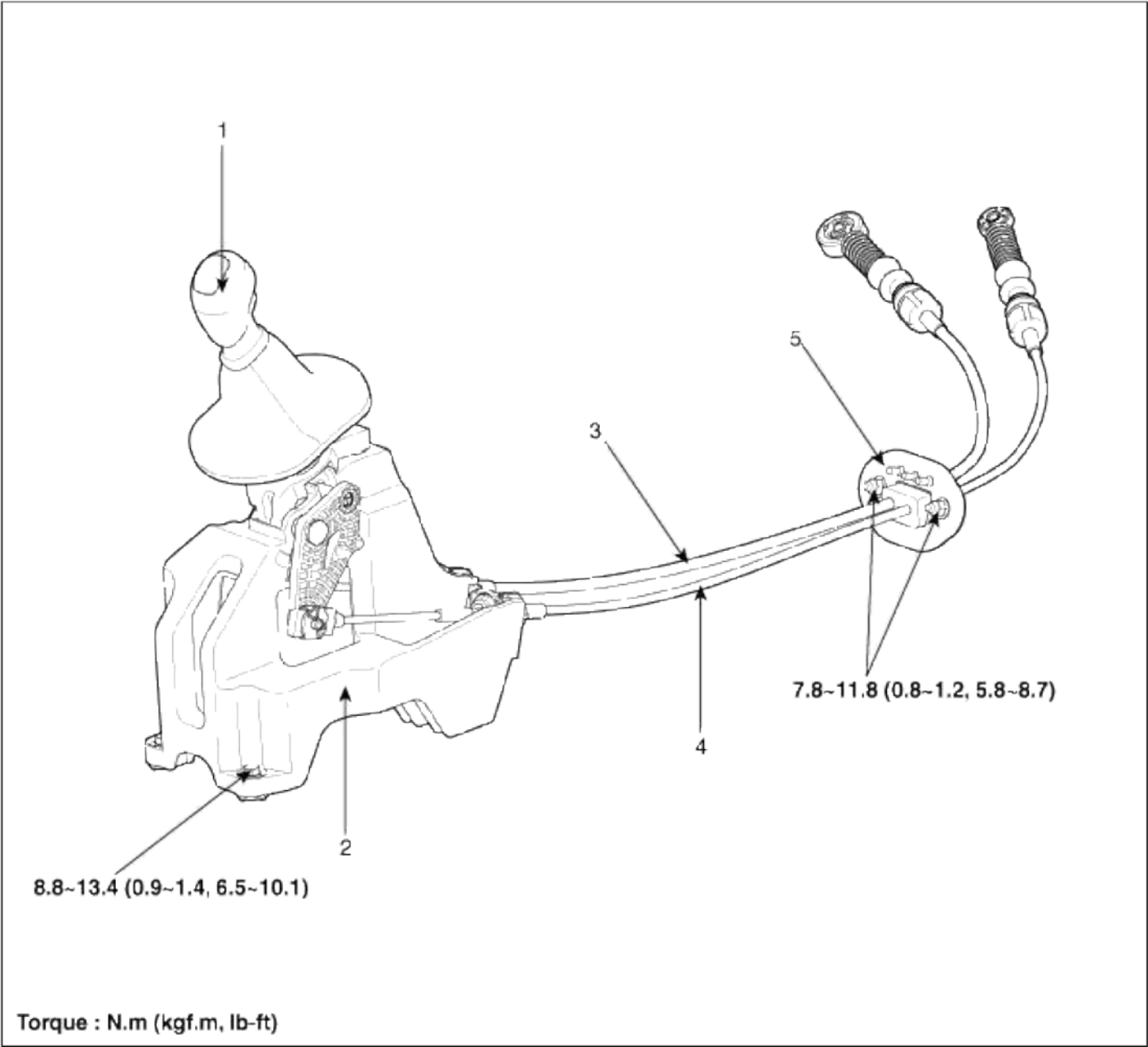


2. Remove the back up lamp switch (A).



3. Replace a new one and install the back up lamp switch.

**Tightening torque :**  
29.4~34.3N.m (3.0~3.5kgf.m, 21.7~25.3lb-ft)



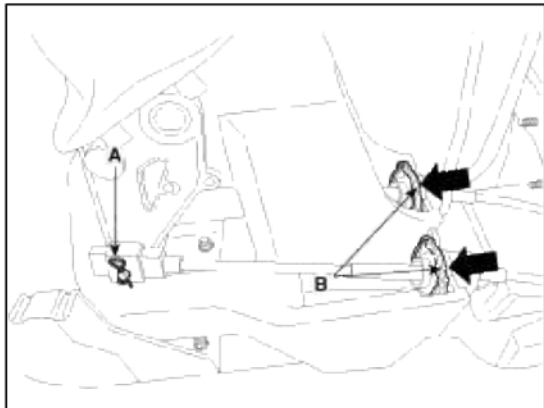
|                                     |                          |
|-------------------------------------|--------------------------|
| 1. Shift lever knob & boot assembly | 4. Select cable assembly |
| 2. Shift lever assembly             | 5. Retainer              |
| 3. Shift cable assembly             |                          |

**Manual Transaxle System > Manual Transaxle Control System > Shift Lever > Repair procedures**

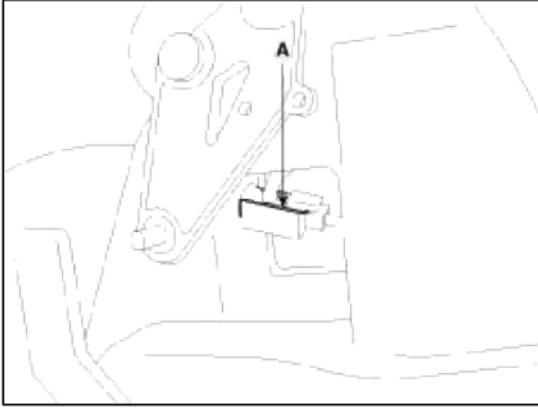
**Removal**

**Shift Lever Assembly Replacement**

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



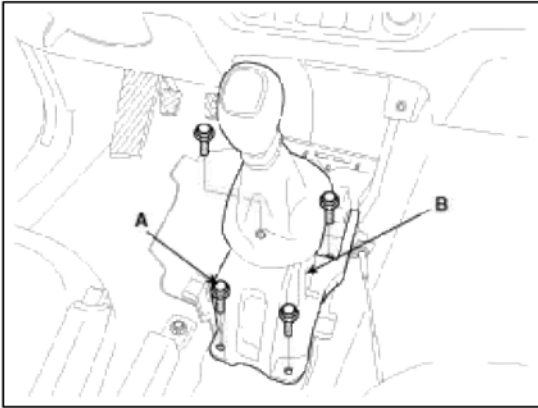
3. Remove the clip (A) from the shift cable assembly.



4. Remove the shift lever assembly(B) after removing shift lever assembly installation bolt(A).

**Tightening torque :**

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



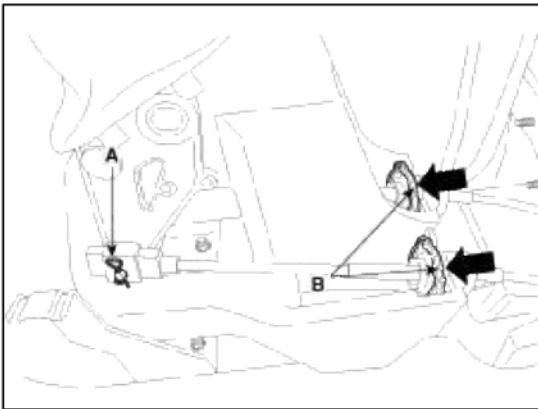
5. Installation is the reverse of removal.

**NOTE**

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



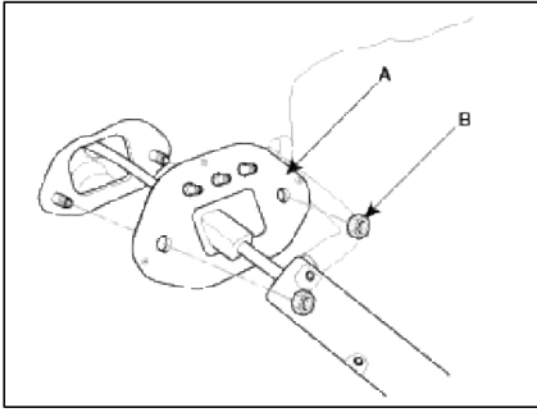
3. Remove the clip (A) from the shift cable assembly.



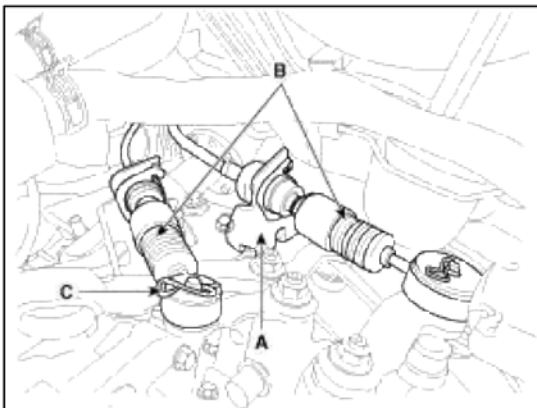
4. Remove the retainer (A) and nuts (B).

**Tightening torque :**

7.8~11.8N.m (0.8~1.2kgf.m, 5.8~8.7lb-ft)



5. Remove the cable(B) from the cable bracket(A) at manual transaxle assembly side.  
 6. Remove the pins(C).  
 7. Remove the shift cable and select cable at cabin room.



8. Installation is the reverse of removal.

**NOTE**

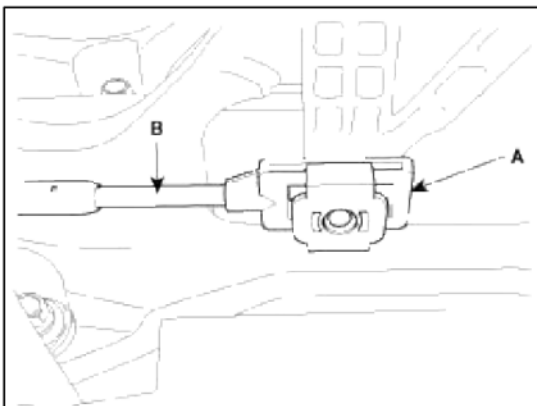
- Make sure vehicle does not roll before setting room side shift lever and T/M side manual control lever to "N" position.

**Inspection**

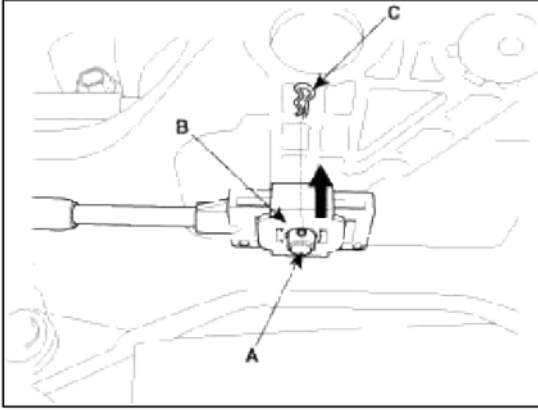
1. Check the select cable for proper operation and for damage.
2. Check the shift cable for proper operation and for damage.
3. Check the boots for damage.
4. Check the boots for wear abrasion sticking, restricted movement or damage.
5. Check for the weak or damaged spring.

**Adjustment**

1. Install the guide member (A) of the select cable (B).



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



3. Remove neutral position pin (A) after shift lever assembly.



