



Specifications

Item		Specifications
Transaxle type		A6MF2
Engine model		Gssoline 1.6 T-GDI
Torque converter type		3-element, 1-stage, 2-phase type
Torque converter size		Ø236 mm (9.2913 in.)
Oil pump system		Parachoid
Friction elements		Clutch: 2EA
		Brake: 3EA
		OWC: 1EAP
Planetary gear		3EA
Gear ratio	1st	4.639
	2nd	2.826
	3rd	1.841
	4th	1.386
	5th	1.000
	6th	0.772
	Reverse	3.385
Final gear ratio		3.648
Fluid pressure balance piston		2EA
Accumulator		4EA
Solenoid valve		8EA (*VFS:6EA, ON/OFF:2EA)
Shift lever position		4 Range (P,R,N,D)
Oil filter		1EA

VFS: Variable Force Solenoid

Sensors

Input Speed Sensor

- ▷ Type: Hall effect sensor
- ▷ Specifications

Operation condition (°C)°F		((-40 ~ 150)) -40 ~ 302
Air gap(mm)in.		(1.2 ~ 1.8) 0.0472 ~ 0.0709
Output voltage(V)	High	1.18 ~ 1.68
	Low	0.59 ~ 0.84

Output Speed Sensor

- ▷ Type: Hall effect sensor
- ▷ Specifications

Operation condition (°C)°F		((-40 ~ 150)) -40 ~ 302
Air gap(mm)in.		(0.85 ~ 1.3) 0.0335 ~ 0.0512
Output voltage	High	1.18 ~ 1.68
	Low	0.59 ~ 0.84

Oil Temperature Sensor

- ▷ Type: Negative thermal coefficient type
- ▷ Specifications

Temp.[(°C)°F]	Resistance (kΩ)
(-40)-40	48.10

(-20)-4.0	15.60
(0)32.0	5.88
(20)68.0	2.51
(40)104.0	1.19
(60)140.0	0.61
(80)176.0	0.32
(100)212.0	0.18
(120)248.0	0.10
(140)284.0	0.06
(150)302.0	0.05

Inhibitor Switch

▷ Type: Combination of output signals from 4 terminals

▷ Specifications

Power supply (V)	12
Output type	Combination of output signals

Solenoid Valves

Direct control VFS[26/B, T/CON]

▷ Control type : Normal low type

Control Pressure kpa (kgf/cm ² , psi)	9.81 ~ 500.14 (0.1 ~ 5.1, 1.42 ~ 72.54)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Direct control VFS[UD/B, OD/C, 35R/C]

▷ Control Type : Normal high type

Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Line Pressure Control VFS

▷ Control type : Normal high type

Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

ON/OFF Solenoid Valve(SS-A, SS-B)

▷ Control type : Normal low type

Control pressure kpa (kgf/cm ² , psi)	490.33 (5.0, 71.12)
Internal resistance(Ω)	10 ~ 11

Solenoid Valve Operation Table

	SS-A	SS-B	UD/B-VFS	OD/C-VFS	35R/C-VFS	26/B-VFS
			N/H	N/H	N/H	N/L
N, P	●		●		●	
1	Δ			Δ	●	
2				●	●	●
3		●		●		
4					●	
5		●	●			

6			•		•	•
L	•				•	
R	•	•	•			

• : Connected status

Δ : Connected at vehicle speed above 8km/h

Clutch & Brake Operation Table

	Clutch			Brake		
	OD/C	35R/C	OWC	LR/B	UD/B	26/B
N, P				•		
1			•	○	•	
2					•	•
3		•			•	
4	•				•	
5	•	•				
6	•					•
L				•		
R		•		•	•	

• : Operated state

○ : Operated at vehicle speed below 5km/h

Tightening Torques

Item	N.m	Kgf.m	lb-ft
TCM mounting nut	9.8 ~ 11.8	1.0 ~ 1.2	7.2 ~ 8.7
Shift cable bracket mounting bolt	14.7 ~ 21.6	1.5 ~ 2.2	10.8 ~ 15.9
Input shaft speed sensor mounting bolt	9.8 ~ 11.8	1.0 ~ 1.2	7.2 ~ 8.7
Output shaft speed sensor mounting bolt	9.8 ~ 11.8	1.0 ~ 1.2	7.2 ~ 8.7
Shift lever assembly bolt	8.8 ~ 13.7	0.9 ~ 1.4	9.4 ~ 10.8
Inhibitor switch mounting bolt	9.8 ~ 11.8	1.0 ~ 1.2	7.2 ~ 8.7
Valve body cover mounting bolt	13.7 ~ 15.7	1.4 ~ 1.6	10.8 ~ 11.6
Injection hole (eyebolt)	4.9 ~ 5.9	0.5 ~ 0.6	3.6 ~ 4.3
Oil drain plug	38.2 ~ 48.1	3.9 ~ 4.9	28.2 ~ 35.4
Torque converter mounting bolt	45.1 ~ 52.0	4.6 ~ 5.3	33.3 ~ 38.3
Starter mounting bolt	49.0 ~ 63.7	5.0 ~ 6.5	36.2 ~ 47.0
Automatic transaxle upper mounting bolt (TM=>Eng)	42.2 ~ 53.9	4.3 ~ 5.5	31.1 ~ 39.8
Automatic 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
Automatic transaxle support bracket mounting bolt	58.9 ~ 78.5	6.0 ~ 8.0	43.4 ~ 57.8
Automatic transaxle mounting bracket bolt	88.3 ~ 107.9	9.0 ~ 11.0	65.1 ~ 79.6

Lubricants

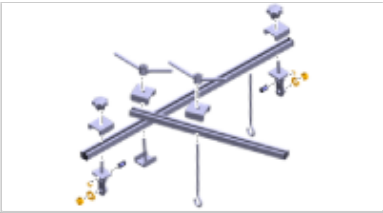
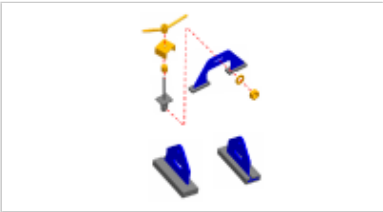
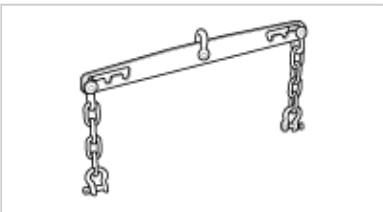
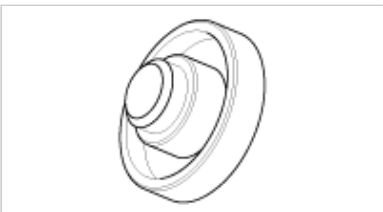
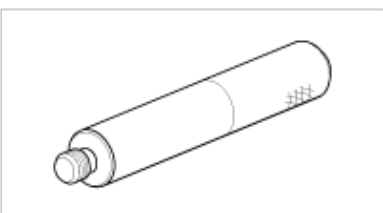
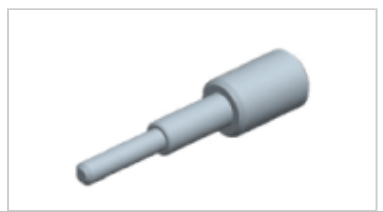
Item	Specified lubricant	Quantity
Transaxle fluid	ATF SP-IV or equivalent	7.1L (1.88 U.S gal., 7.50 U.S.qt., 6.25 Imp.qt.)

Automatic Transaxle System

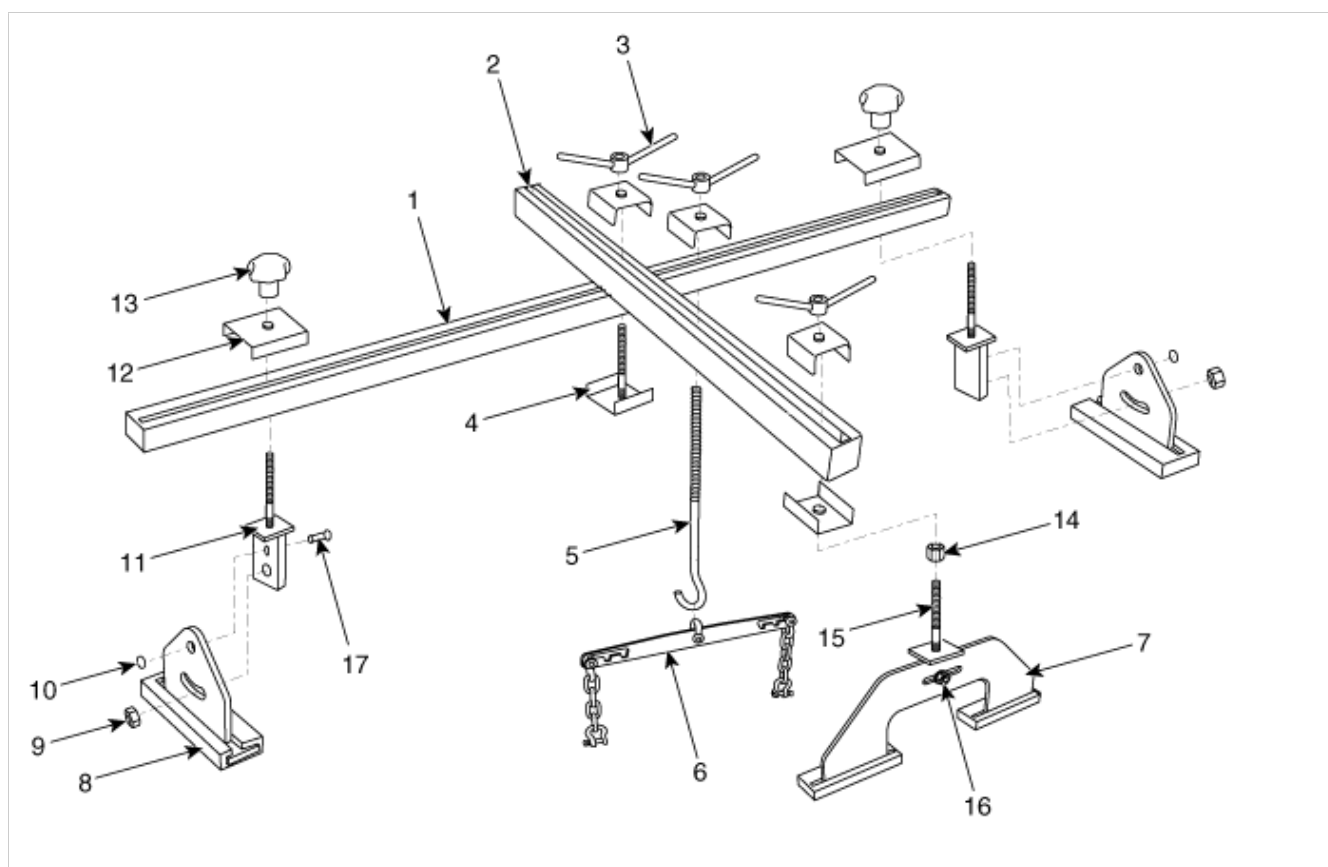


Special Service Tools

Tool Name / Number	Illustration	Description
09200-3N000 Engine support fixture (Bar)		

		Used for holding engine assembly when removing / installing transaxle Used with the adapter (09200-4X000) and supporter (09200-2S000)
09200-2S000 Engine support fixture (Supporter)		Used for holding engine assembly when removing / installing transaxle Used with the bar (09200-3N000) and adapter (09200-4X000)
09200-4X000 Engine support fixture (Adapter)		Used for holding engine assembly when removing / installing transaxle Used with the bar (09200-3N000) and supporter (09200-2S000)
09453-3L240 Oil seal installer		Used with the handle (09231-H1100)
09231-H1100 Handle		Used with the oil seal installer (09453-3L240)
09480-A3800 Inhibitor switch guide pin		

※ Engine support fixture special tool assembly drawing



1. 09200-3N000 (Main bar)
2. 09200-3N000 (Sub bar)
3. 09200-3N000 (Handle)
4. 09200-3N000 (Stopper)
5. 09200-3N000 (Bolt-1)
6. 09200-4X000 (Adapter)
7. 09200-2S000 (Supporter)
8. 09200-2S000 (Supporter)
9. 09200-3N000 (Nut)

10. 09200-3N000 (Snap ring)
11. 09200-3N000 (Sub fixture)
12. 09200-3N000 (Stopper)
13. 09200-3N000 (Nut)
14. 09200-2S000 (Spacer)
15. 09200-2S000 (Sub fixture)
16. 09200-2S000 (Nut)
17. 09200-3N000 (Pin)

Automatic Transaxle System



Fault Diagnosis

Features a fail-safe mechanism that provides "limp-home" 4th gear hold to enable the vehicle to be driven to the owner's home or dealer shop.

Fail-Safe: The TCM provides 4th gear hold and Reverse gear in the event of a malfunction.

Limp Home: Maintains minimal functionality (Drive(4th gear hold), Reverse) in the event of a malfunction, making it possible for the vehicle to reach the dealer shop.

Self-diagnosis

Transaxle Control Module (TCM) is in constant communication with the control system's components (sensors and solenoids).

If an abnormal signal is received for longer than the predefined duration, TCM recognizes a fault, stores the fault code in memory, and then sends out a fault signal through the self-diagnosis terminal. Such fault codes are independently backed up and will not be cleared even if the ignition switch is turned off, the battery is disconnected, or the TCM connector is disconnected.

CAUTION

- Disconnecting a sensor or an actuator connector while the ignition switch is in the "On" position generates a Diagnostic Trouble Code (DTC) and commits the code to memory. In such event, disconnecting the battery will not clear the fault diagnosis memory. The diagnosis tool must be used to clear the fault diagnosis memory.

Before removing or installing any part, read the diagnostic trouble codes and then disconnect the battery negative (-) terminal.

- Before disconnecting the cable from battery terminal, turn the ignition switch to OFF. Removal or connection of the battery cable during engine operation or while the ignition switch is ON could cause damage to the Transaxle Control Module (TCM).
- When checking the generator for the charging state, do not disconnect the battery '+' terminal to prevent the Engine Control Module (ECM) from damage due to the voltage.
- When charging the battery with the external charger, disconnect the vehicle side battery terminals to prevent damage to the TCM.

Checking Procedure (Self-diagnosis)

⚠ CAUTION

- When battery voltage is excessively low, diagnostic trouble codes can not be read. Be sure to check the battery for voltage and the charging system before starting the test.

Inspection Procedure (Using the GDS)

1. Turn OFF the ignition switch.
2. Connect the GDS to the data link connector on the lower crash pad.
3. Turn ON the ignition switch.
4. Use the GDS to check the diagnostic trouble code.
5. Repair the faulty part from the diagnosis chart.
6. Erase the diagnostic trouble code.
7. Disconnect the GDS.

⚠ CAUTION

- After replacing the automatic transaxle, use the GDS to reset (erase the TCM learning values). Then perform Transaxle Control Module (TCM) learning to provide optimum shift quality.
(Refer to Automatic Transaxle Control System - "Repair procedures")
- Adding automatic transaxle fluid.
(Refer to Hydraulic System - "Fluid")
- After servicing the automatic transaxle or TCM, clear the Diagnostic Trouble Code (DTC) using the GDS tool. Diagnostic Trouble Codes (DTC) cannot be cleared by disconnecting the battery.

Troubleshooting

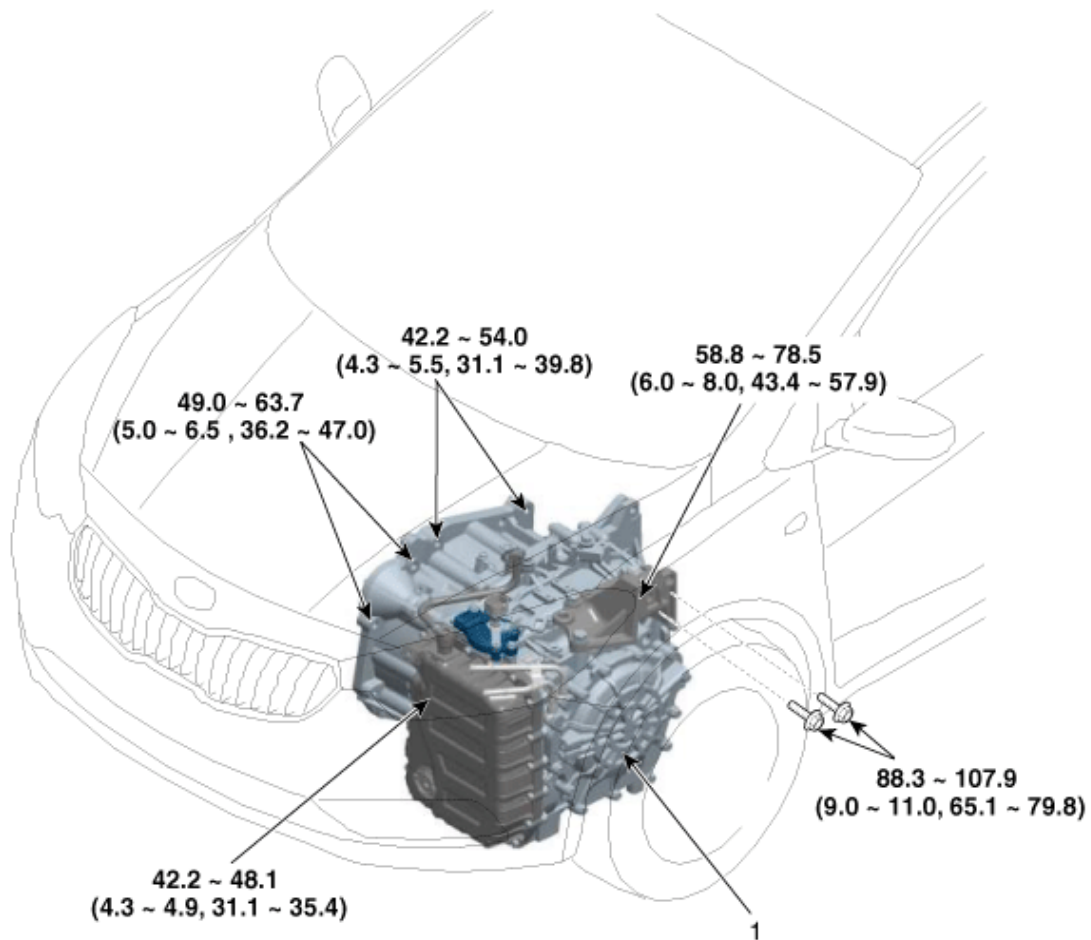
Trouble symptom	Suspect area	Remedy
Shift delay	Breakdown of clutch or brake	Clutch, Brake
	Faulty hydraulic control	Solenoid valve, Valve body
	Faulty hydraulic supply	Electric oil pump
		Mechanical oil pump
		Cleanliness of automatic transaxle fluid (foreign material)
		Automatic transaxle fluid level
Vibration of the vehicle, when the shifting	Damaged clutch / brake	Clutch, Brake
Shift shock	Faulty hydraulic control	Solenoid valve, Valve body
	Faulty hydraulic supply	Electric oil pump
	Faulty transaxle mounting	Mechanical oil pump
	Faulty speed sensor	Cleanliness of automatic transaxle fluid (foreign material)
	Faulty harness	Automatic transaxle fluid level
	Damaged connector & wiring	Speed sensor and connector
		Harness & connector of transaxle
		Connector & wiring of vehicle
Fixed gear (shift impossible)	Faulty solenoid valve	Clutch, Brake
	Faulty TCM software program	Solenoid valve, Valve body
		Electric oil pump
		Mechanical oil pump

		Cleanliness of automatic transaxle fluid (foreign material)
		Automatic transaxle fluid level
		Speed sensor and connector
		Harness & connector of transaxle
		Connector & wiring of vehicle
limited gear (shift possible)	Faulty inhibitor switch	Inhibitor switch & connector
	Faulty hydraulic supply	Connector & wiring of vehicle
		POWER
Driving impossible	Faulty CAN Communication	CAN Communication line
		TCM, ECM
		POWER
Poor acceleration	Faulty hydraulic control	Solenoid valve, Valve body
	Faulty hydraulic supply	Electric oil pump
		Mechanical oil pump
		Cleanliness of automatic transaxle fluid (foreign material)
		Automatic transaxle fluid level
		Connector & wiring of vehicle
		POWER

Automatic Transaxle System



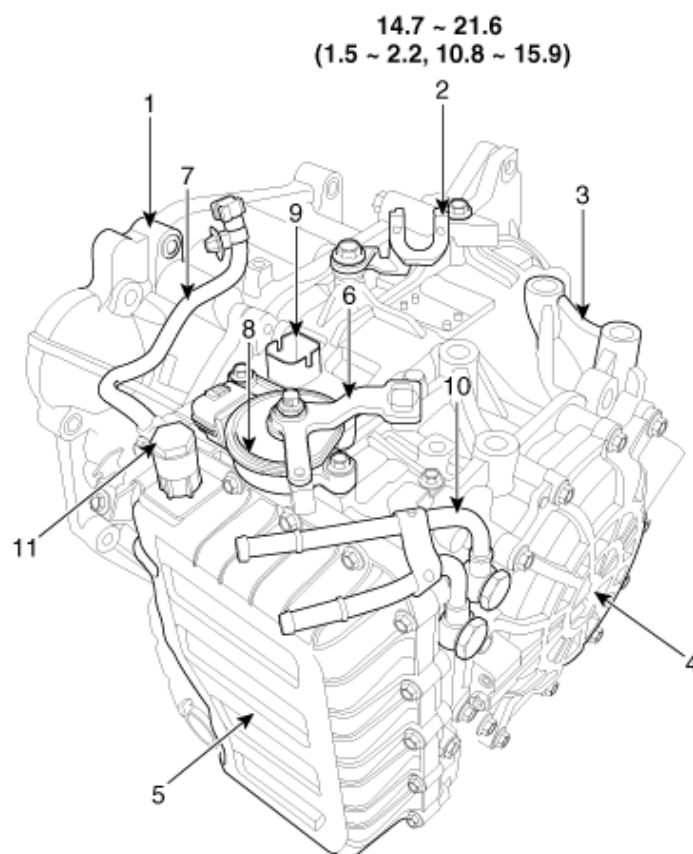
Components Location



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

1. Automatic transaxle

Components



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

1. Converter housing
2. Shift cable bracket
3. Automatic transaxle case
4. Rear cover
5. Valve body cover
6. Manual control lever

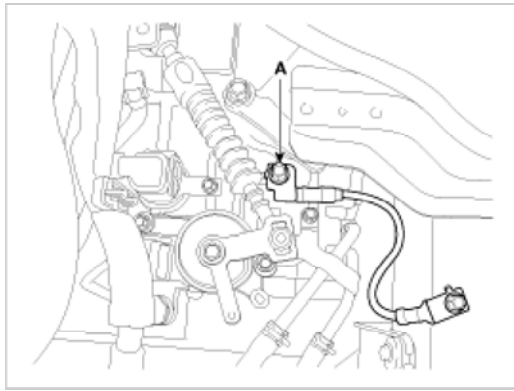
7. Air breather hose
8. Inhibitor switch
9. Solenoid valve connector
10. Oil cooler tube
11. Injection hole (eyebolt)

Automatic Transaxle System



Removal

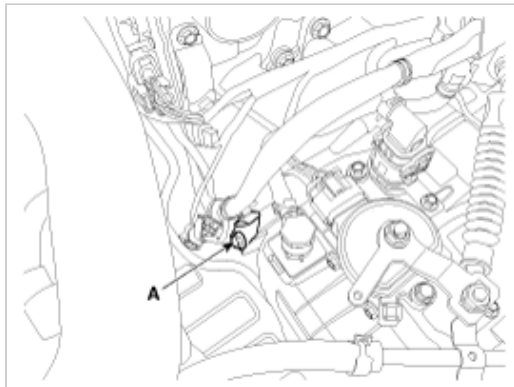
1. Air cleaner assembly and air duct.
(Refer to Engine Mechanical System - "Air cleaner")
2. Battery and battery tray.
(Refer to Engine Electrical System - "Battery")
3. Remove the ground line after removing the bolt (A).



4. Remove the wiring mounting bolt (A).

Tightening torque:

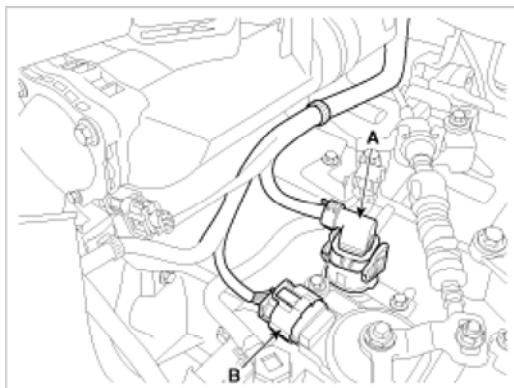
9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



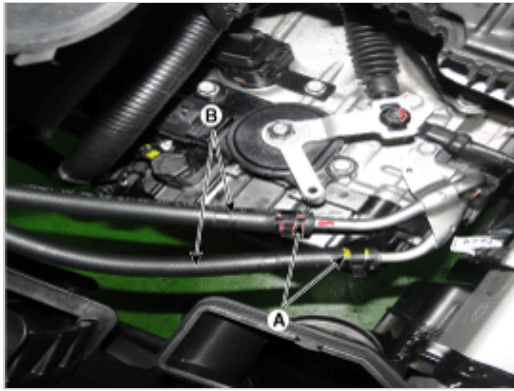
5. Remove the wiring clip from the bracket.



6. Disconnect the solenoid valve connector (A) and inhibitor switch connector (B).



7. Disconnect the hose (B) after removing the automatic transaxle fluid cooler hose clamp (A).

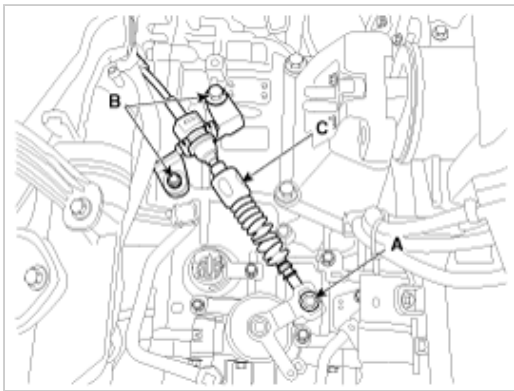


8. Remove the shift cable (C) after removing the nut (A) and the bolt (B).

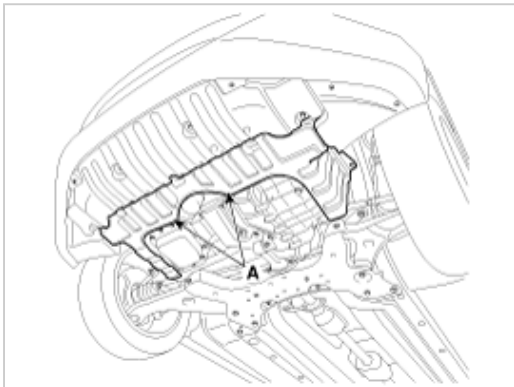
Tightening torque:

(A) 9.8 ~ 13.7 N.m (1.0 ~ 1.4 kgf.m, 7.2 ~ 10.1 lb-ft)

(B) 14.7 ~ 21.6 N.m (1.5 ~ 2.2 kgf.m, 10.9 ~ 15.9 lb-ft)



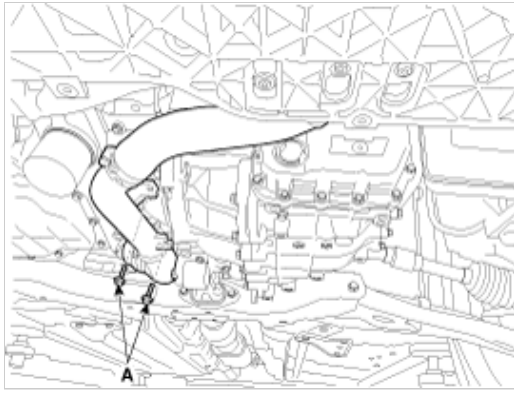
9. Remove the under cover (A).



10. Loosen the intercooler pipe bolts (A).

Tightening torque:

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

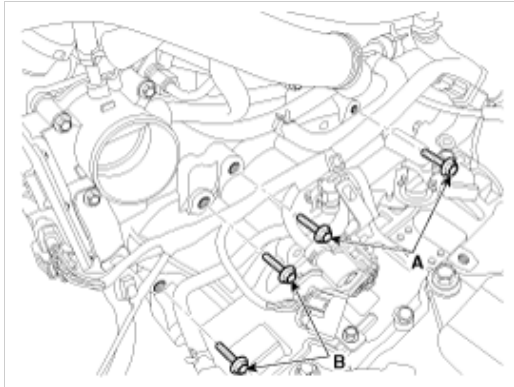


11. Remove the brake vacuum pump.
(Refer to Brake System - "Brake Booster")
12. Remove the automatic transaxle upper mounting bolt (A-2ea) and the starter mounting bolt (B-2ea).

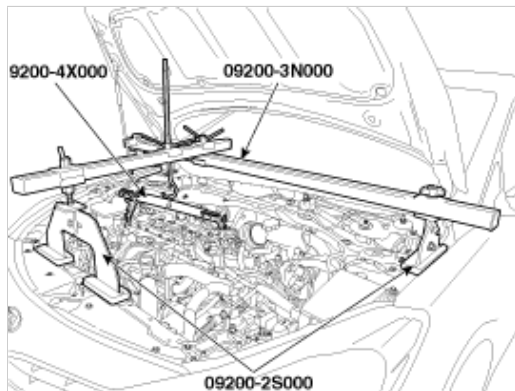
Tightening torque :

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

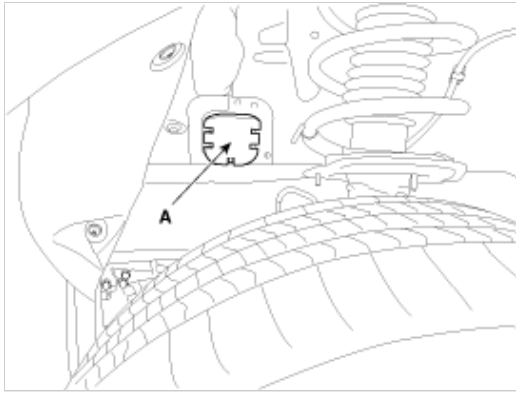
(B) 49.0 ~ 63.7 N.m (5.0 ~ 6.5 kgf.m, 36.2 ~ 47.0 lb-ft)



13. Remove the cowl top cover.
(Refer to Body - "Cowl Top Cover")
14. Assemble the engine support fixture.
(Refer to Special Service Tools-"Engine support fixture assembly drawing")
15. Using the engine support fixture (beam No.: 09200-3N000, supporter No.: 09200-2S000, adapter No.: 09200-4X000), hold the engine and transaxle assembly safely.



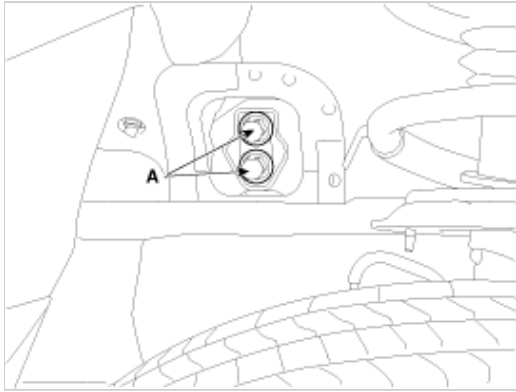
16. Remove the cover (A).



17. Loosen the transaxle mounting bracket bolts (A).

Tightening torque:

98.1 ~ 117.7 N.m (10.0 ~ 12.0 kgf.m, 72.3 ~ 86.8 lb-ft)



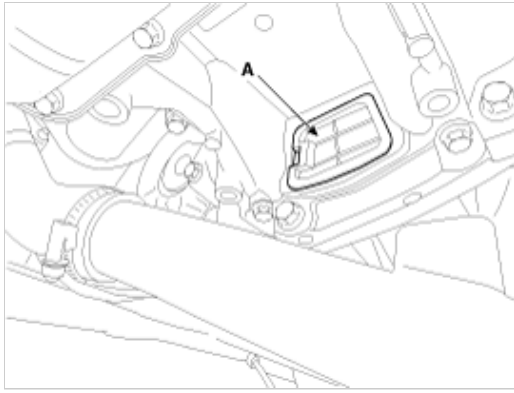
18. Remove the transaxle support bracket (A).

Tightening torque:

58.8 ~ 78.5 N.m (6.0 ~ 8.0 kgf.m, 43.4 ~ 57.9 lb-ft)



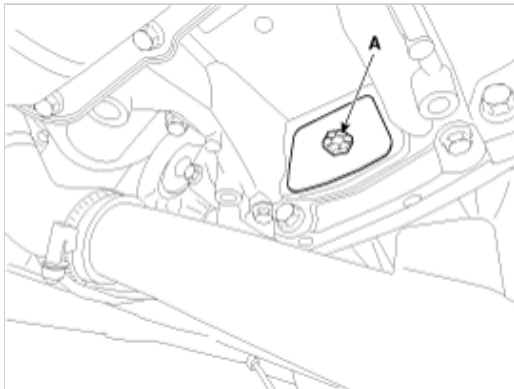
19. Remove the drive shaft assembly.
(Refer to Driveshaft and Axle - "Front Driveshaft")
20. Remove the dust cover (A).



21. Remove the torque converter mounting bolts (A) with rotating the crankshaft.

Tightening torque:

45.1 ~ 52.0 N.m (4.6 ~ 5.3 kgf.m, 33.3 ~ 38.3 lb-ft)

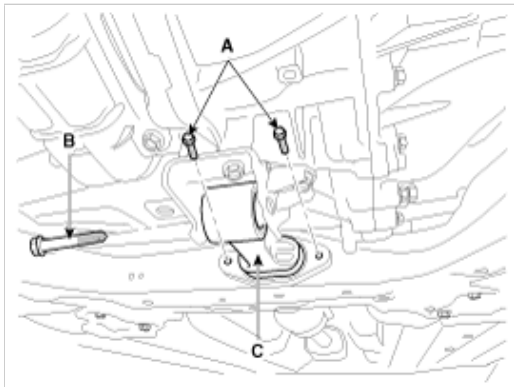


22. Remove the roll rod bracket (C) after removing bolt (A,B).

Tightening torque:

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

(B) 107.9 ~ 127.5 N.m (11.0 ~ 13.0 kgf.m, 79.6 ~ 94.0 lb-ft)

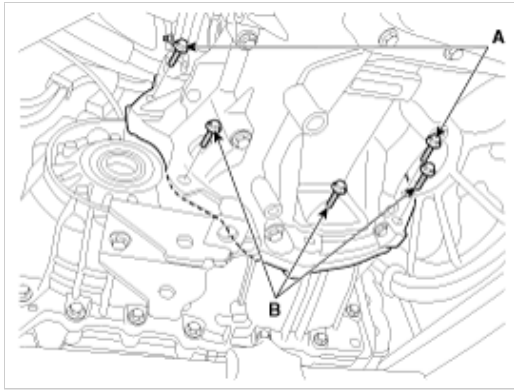


23. Remove the mounting bolt (A, B) after supporting the transaxle by a jack.

Tightening torque:

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

(B) 42.2 ~ 48.1 N.m (4.9 ~ 5.5 kgf.m, 31.1 ~ 35.4 lb-ft)



24. Remove the transaxle while slowly lower the jack.

NOTICE

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

Installation

1. Install in the reverse order of removal.

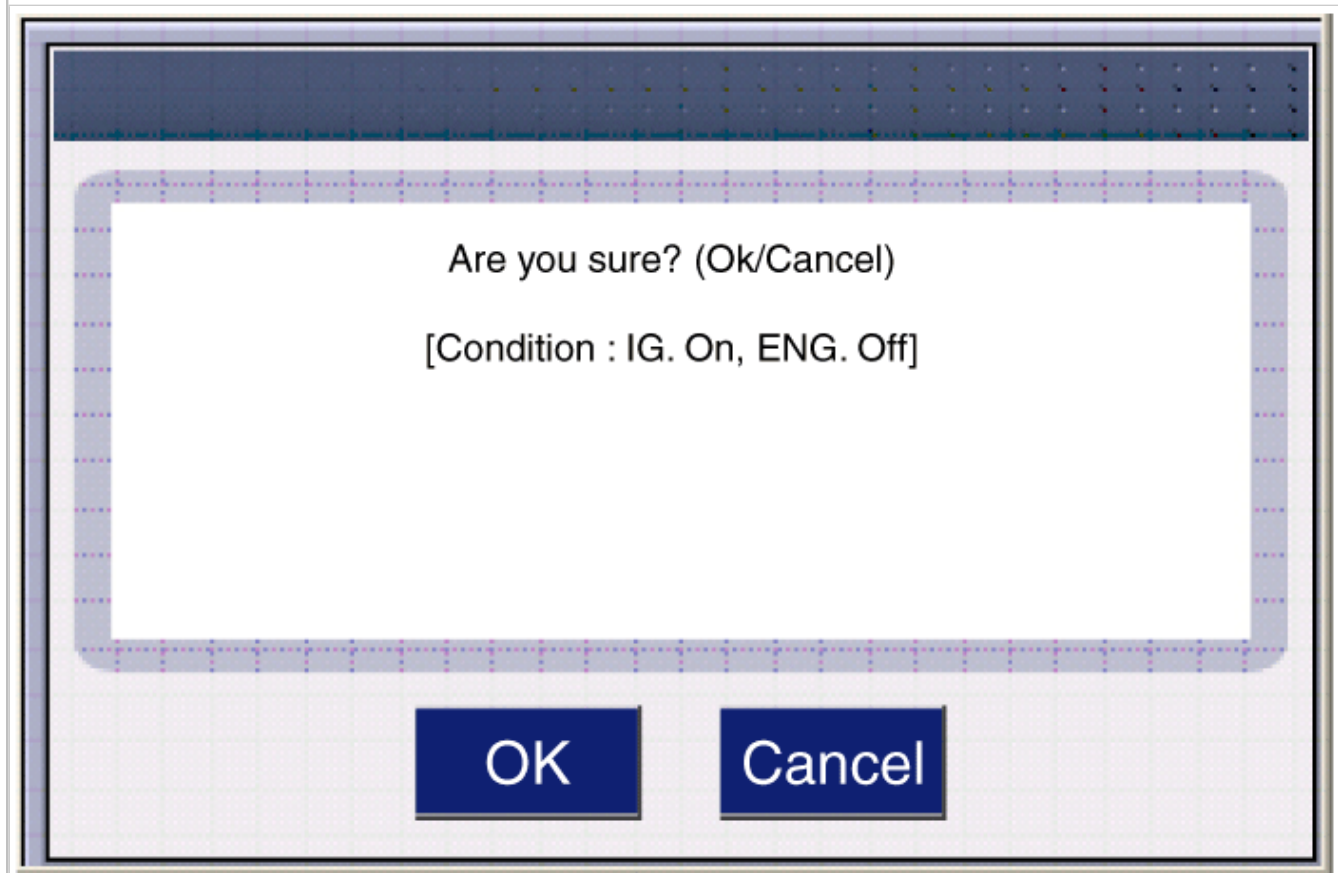
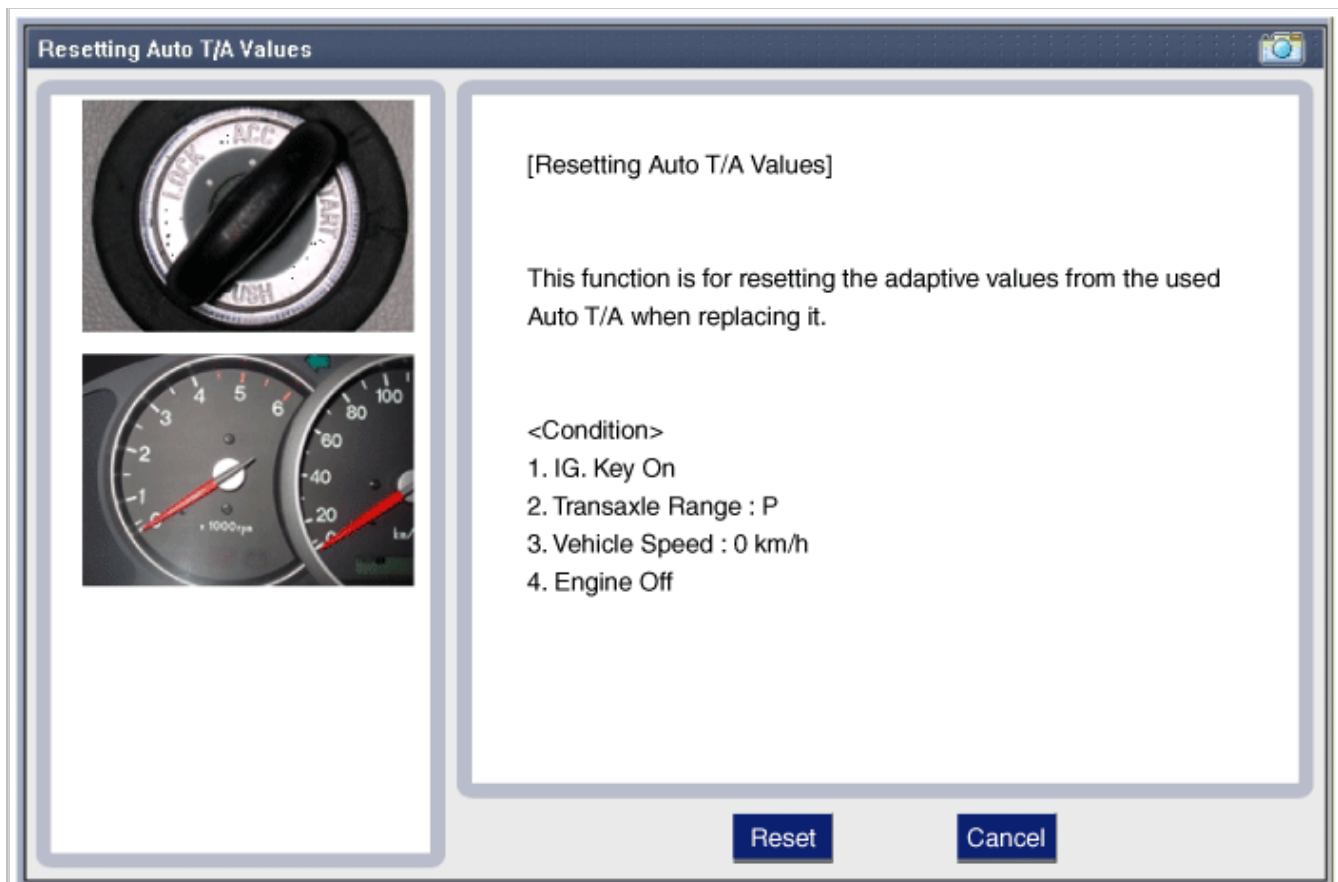
CAUTION

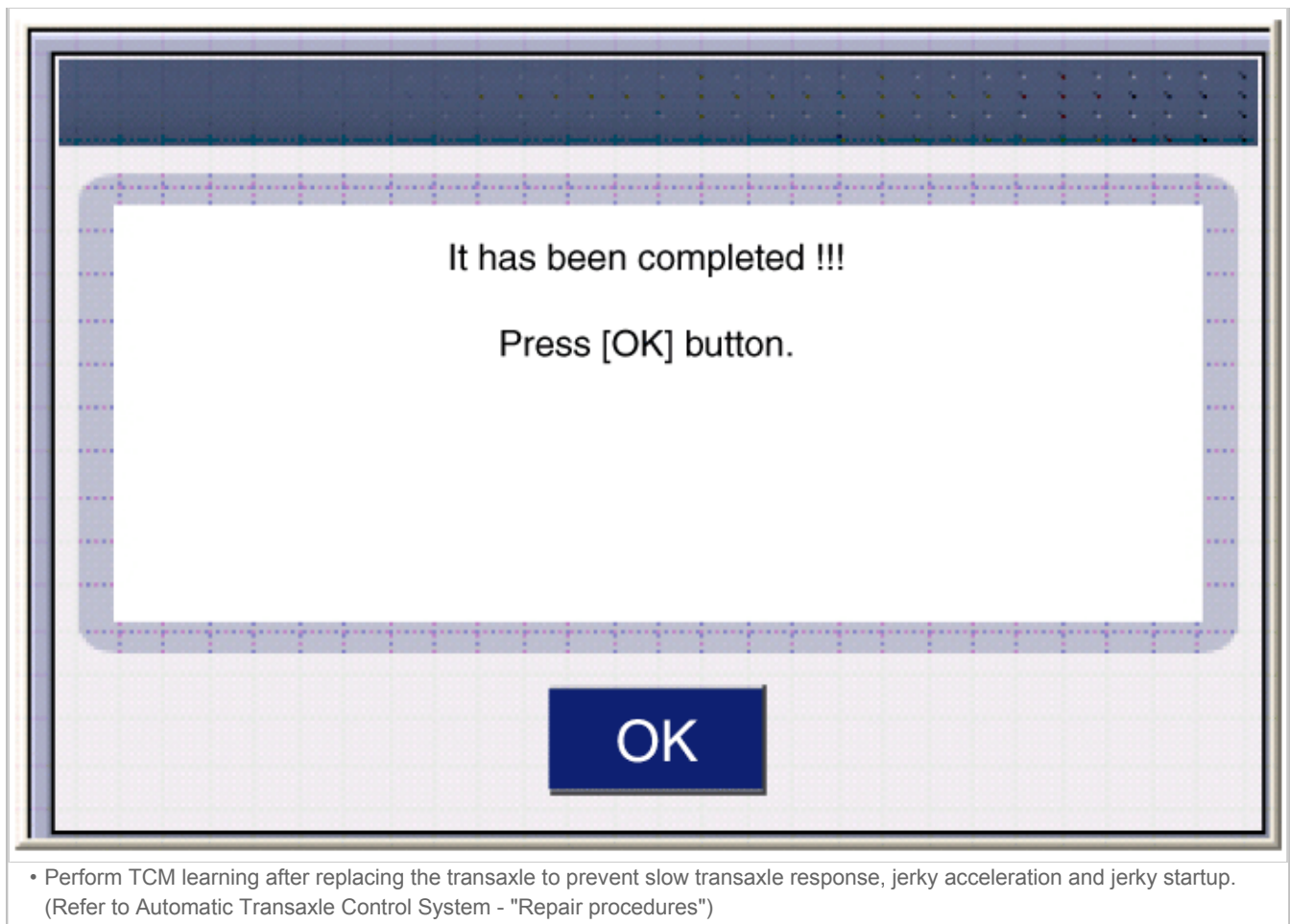
If the oil seal on the transaxle case side is damaged and fluid is leaking, replace the oil seal with a new unit. When installing the new oil seal, use the specialized tool (oil seal installer, 09453-3L240).

NOTICE

After replacement or reinstallation procedure of the automatic transaxle assembly, must perform procedures below.

- Adding automatic transaxle fluid.
(Refer to Hydraulic System - "Fluid")
- After replacing the automatic transaxle, clear the Diagnostic Trouble Code(DTC) using the GDS tool. DTC cannot be cleared by disconnecting the battery.
- When replacing the automatic transaxle, reset the automatic transaxle's values by using the GDS.





Automatic Transaxle System



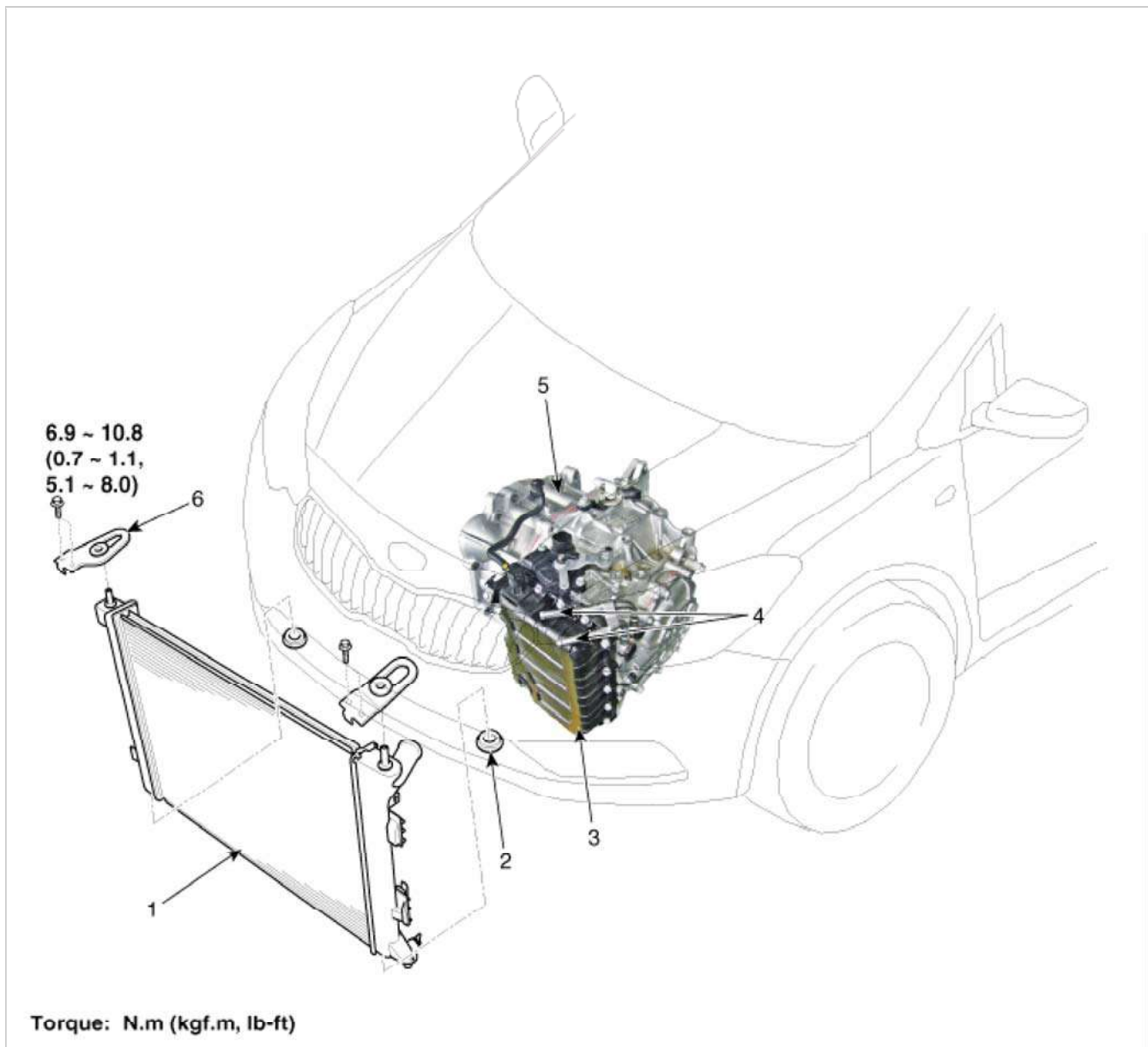
Description

The hydraulic system consists of oil, an oil filter, an oil pump, and a valve body (valves and solenoid valves). The oil pump is powered by the engine. ATF passes through the oil filter and gets distributed along the oil channels. The oil becomes highly pressurized as it exits the oil pump and passes through the line pressure valve before being fed to the clutch & brake control valve, clutch, and brakes. TCM controls the hydraulic pressure using solenoid valves and controls clutch and brake operations.

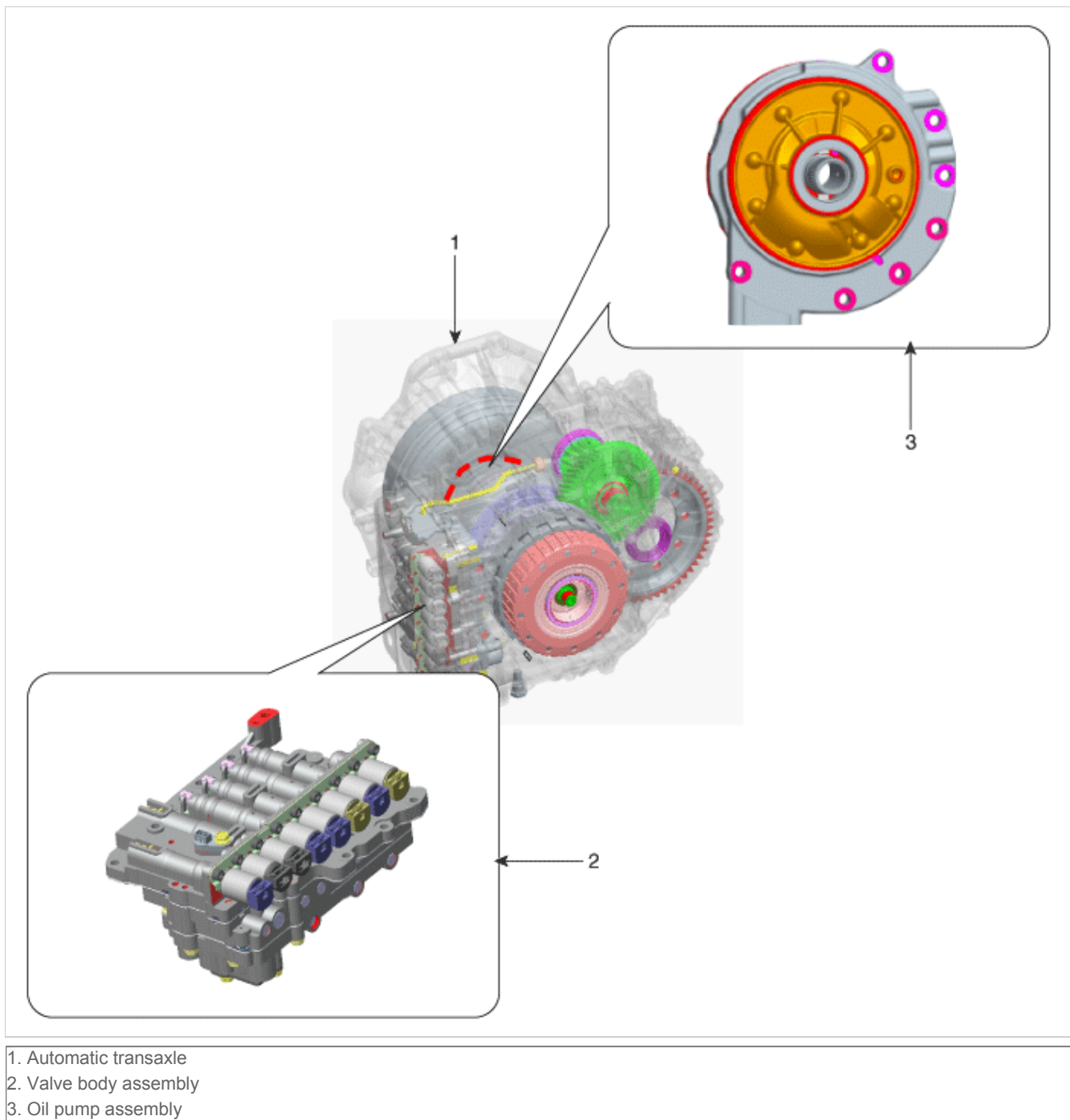
Automatic Transaxle System



Components Location



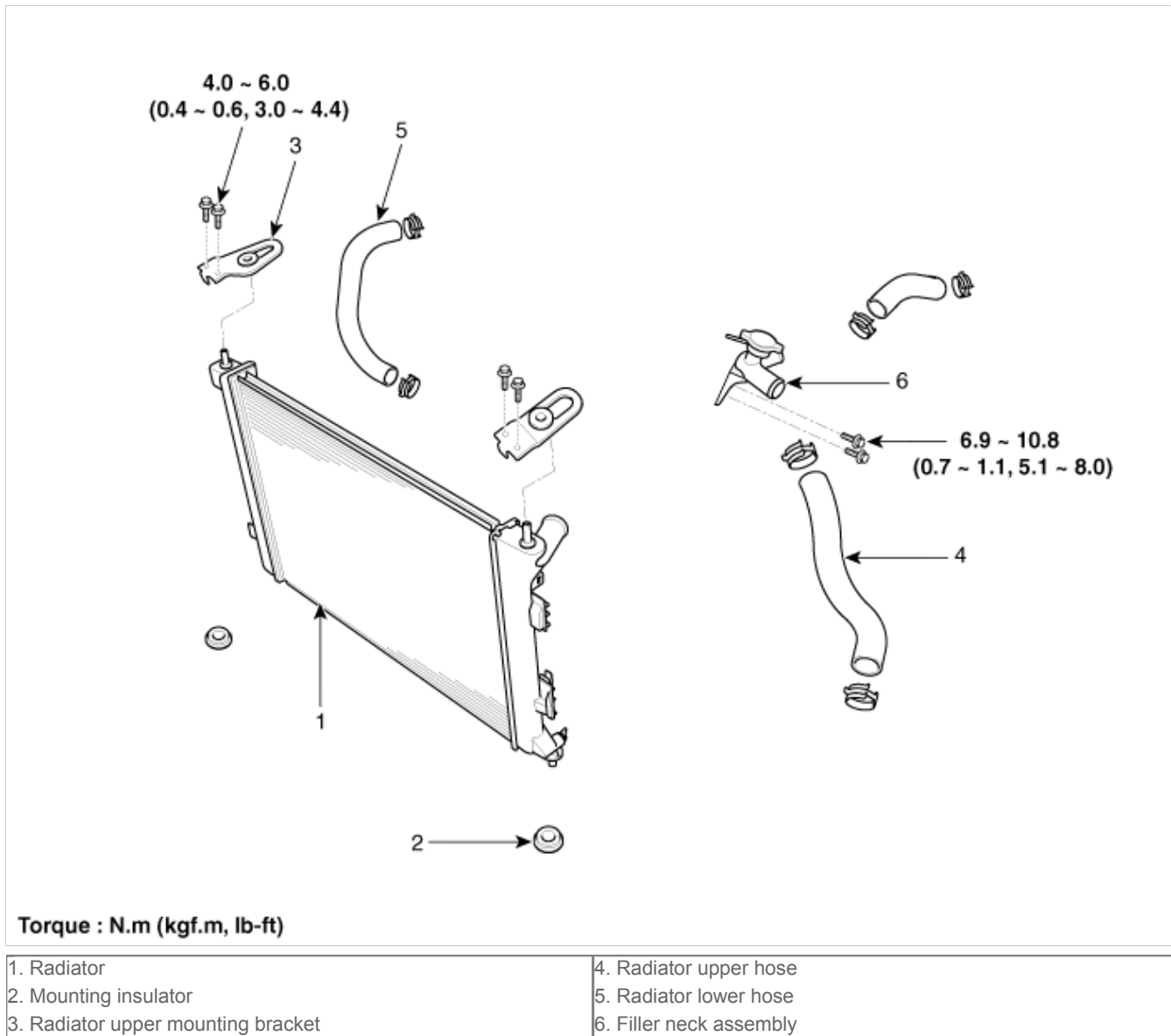
- | | |
|-----------------------|------------------------------------|
| 1. Radiator | 4. Oil cooler tube |
| 2. Mounting insulator | 5. Automatic transaxle |
| 3. Valve body cover | 6. Radiator upper mounting bracket |



Automatic Transaxle System



Components

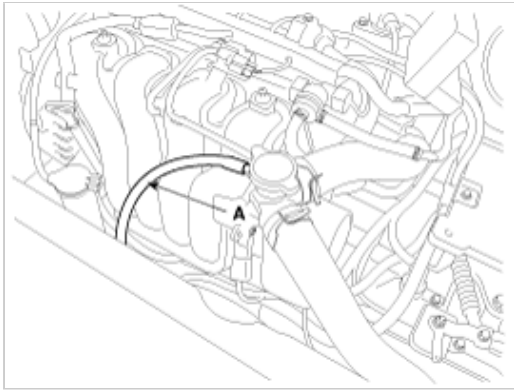


Automatic Transaxle System

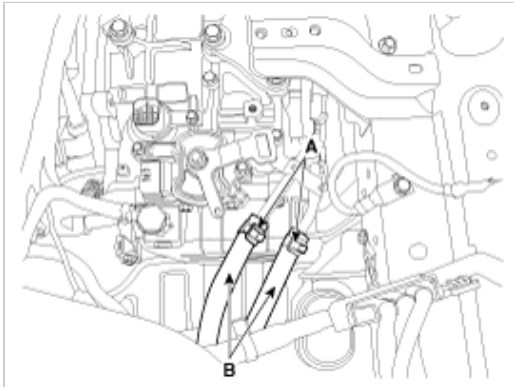


Removal and Installation

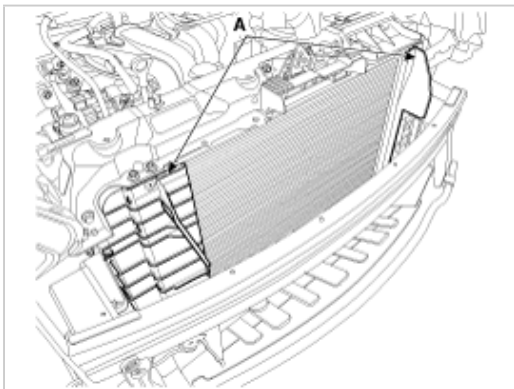
1. Disconnect the battery negative terminal.
2. Remove the air cleaner assembly.
(Refer to Intake and exhaust system - "Air Cleaner")
3. Remove the battery tray.
(Refer to Engine Electrical System - "Battery")
4. Disconnect the over flow hose (A) from the radiator.



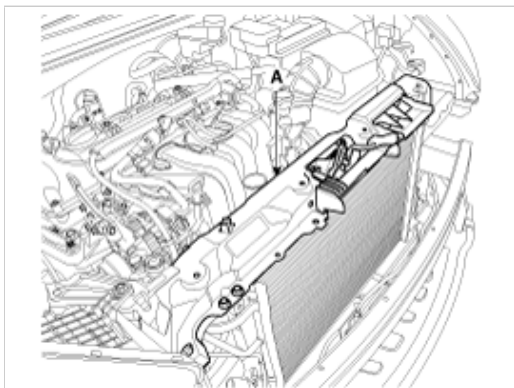
5. Loosen the drain plug, and drain the engine coolant. Remove the radiator cap to drain with speed.
6. Disconnect the radiator upper hose (A) and lower hose (B).
7. Disconnect the hose (B) after removing the automatic transaxle fluid cooler hose clamp (A).



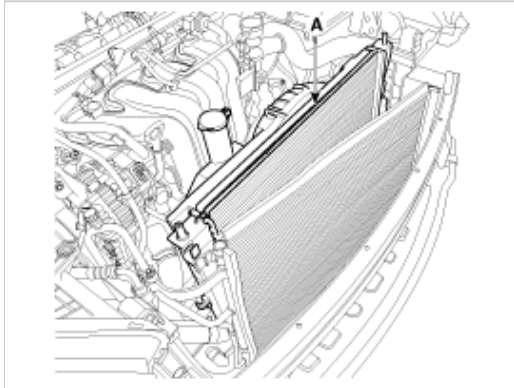
8. Remove the front bumper.
(Refer to Body - "Front Bumper")
9. Remove the air guard (A).



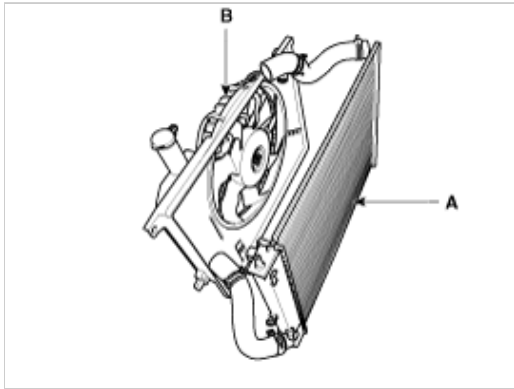
10. Remove the upper mounting bracket (A).



11. Separate the condenser from the radiator and then pull the radiator (A) upper from vehicle.



12. Remove the cooling fan & reservoir tank (A) from the radiator (B).

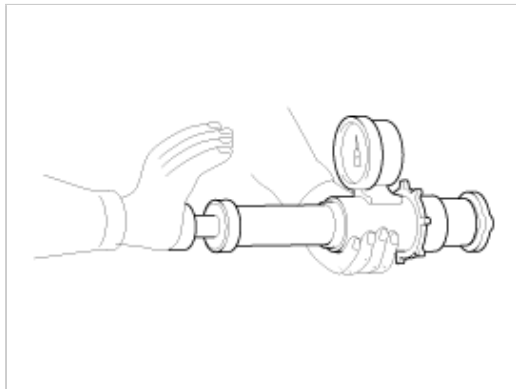


13. Installation is reverse order of removal.
 14. Fill the radiator with coolant and check for leaks.
 15. Put the radiator cap on tightly, then run engine again and check for leaks.

Inspection

Radiator Cap Testing

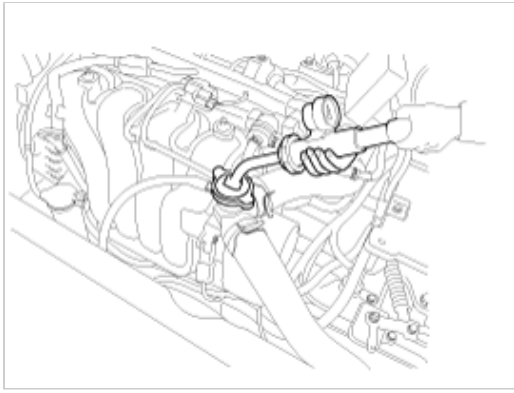
1. Remove the radiator cap, wet its seal with engine coolant, and then install it on a pressure tester.



2. Apply a pressure of 93.16 ~ 122.58kpa (0.95 ~ 1.25kg/cm², 13.51 ~ 17.78psi).
 3. Check for a drop in pressure.
 4. If the pressure drops, replace the cap.

Radiator Leakage Test

1. Wait until engine is cool, then carefully remove the radiator cap and fill the radiator with engine coolant, then install a pressure tester on it.



2. Apply a pressure of 93 ~ 123kPa (0.95 ~ 1.25kgf/cm², 14 ~ 19psi).
3. Inspect for engine coolant leaks and a drop in pressure.
4. If the pressure drops, check hoses, the radiator and the water pump for leakage. If there is no leakage, inspect the heater core, the cylinder block and the cylinder head.
5. Remove the tester and reinstall the radiator cap.

NOTICE

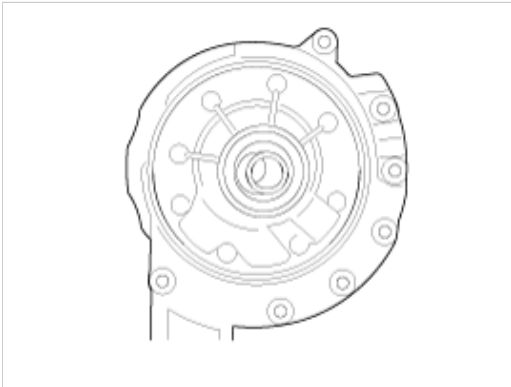
Check for engine oil in coolant and/or coolant in engine oil.

Automatic Transaxle System



Description

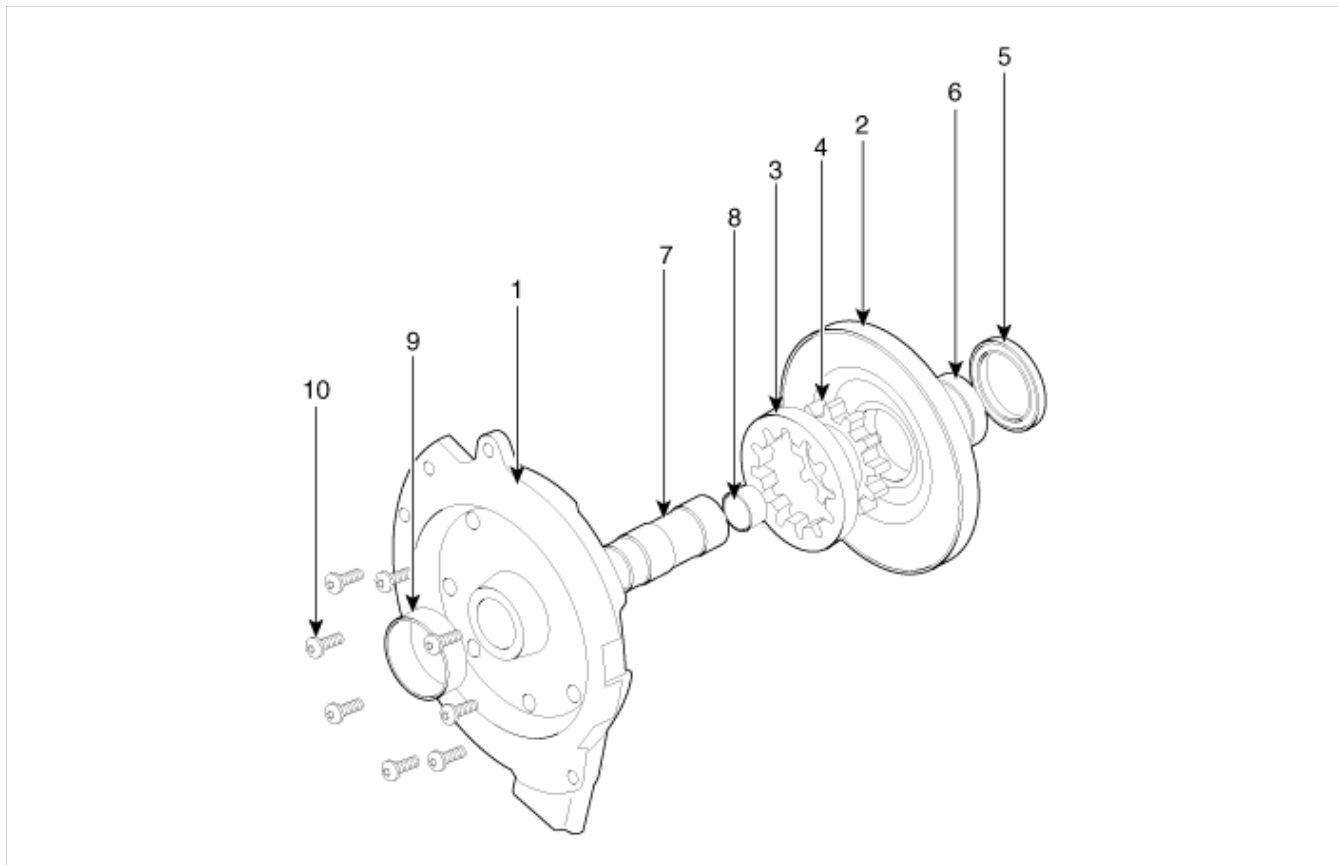
The oil pump is built-in as a single unit with the 26 brake chamber. Rotation of the pump builds the hydraulic pressure needed for the lubrication of the various parts of the transaxle and operation of the clutch and brakes. The oil also circulates through the torque converter and the cooler.



Automatic Transaxle System



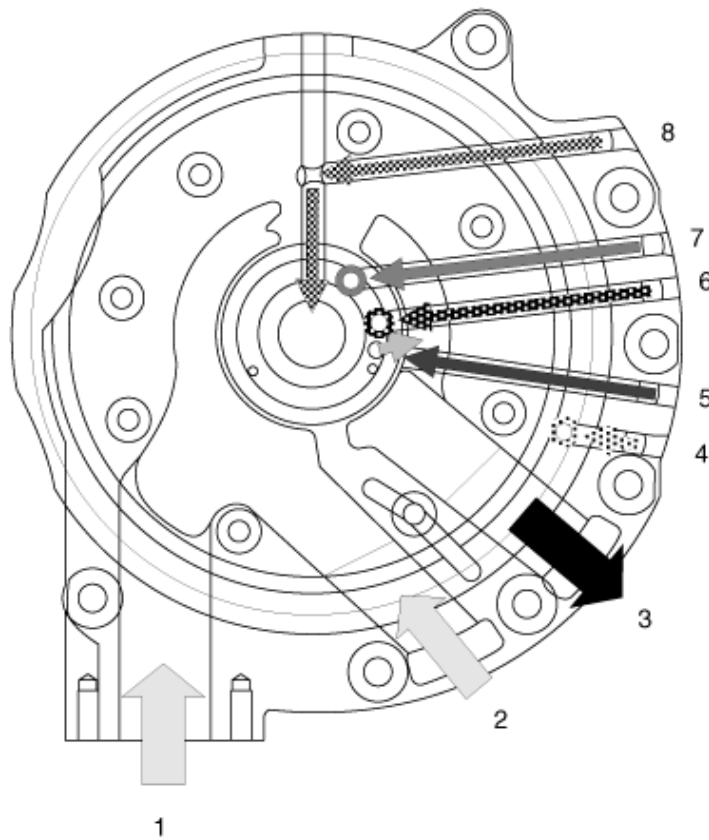
Components



1. Oil pump cover
2. Oil pump housing
3. Driven gear
4. Drive gear
5. Oil seal

6. Bushing-housing
7. Reaction shaft
8. Bushing-reaction shaft
9. Sleeve
10. Bolt

Oil Pump Operation Flow



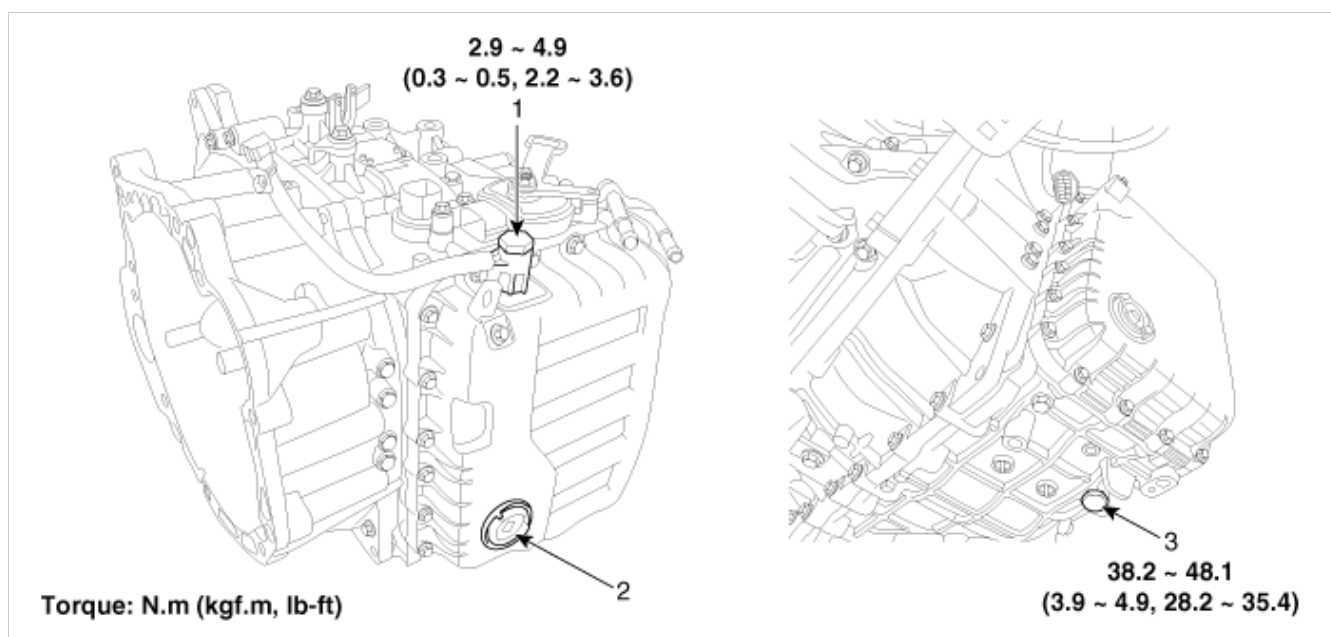
- 1. Inhale(Oil filter)
- 2. Inhale(Valve body)
- 3. Outlet
- 4. 26/B operation pressure

- 5. 35R/C operation pressure
- 6. Lubrication
- 7. Lock up clutch apply pressure
- 8. Lock up clutch release pressure

Automatic Transaxle System



Components Location



1. ATF Injection hole(eyebolt)
2. Oil level plug
3. Oil drain plug

Automatic Transaxle System



Service Adjustment Procedure

Oil level Check

NOTICE

A check of ATF level is not normally required during scheduled services. If an oil leak is found, perform the oil level check procedure after repairs are completed.

CAUTION

When checking the oil level, be careful not to enter dust, foreign matters, etc. from fill hole.

1. Remove the ATF Injection hole(eyebolt) (A).

Eyebolt tightening torque:

2.9 ~ 4.9 N.m (0.3 ~ 0.5 kgf.m, 2.2 ~ 3.6 lb-ft)



CAUTION

Always replace the O-Ring (A) of the eyebolt use new one whenever loosening eyebolt.

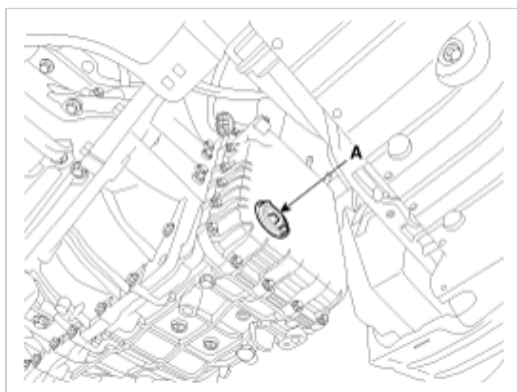


2. Add ATF SP-IV 700cc to the ATF injection hole.
3. Start the engine. (Don't step on brake and accelerator simultaneously.)
4. Confirm that the temperature of the A/T oil temperature sensor is 50 ~ 60°C(122 ~ 140°F) with the GDS.
5. Shift the select lever slowly from "P" to "D", then "D" to "P" and repeat one more at idle.

CAUTION

Stop in each gear position for 3 seconds.

6. Lift the vehicle, then remove the oil level plug (A) from the valve body cover.



CAUTION

At this time, the vehicle must be at a level state.

7. If the oil flows out of the overflow plug in thin steady stream, the oil level is correct. Then finish the procedure and tighten the oil plug.

NOTICE

Oil level check (excess or shortage) method

- Excess: Drain quantity exceed 900cc for two minutes.((50~60°C)122~140°F)
- Shortage: No oil flows out of the overflow plug.

CAUTION

If there is no damage at the automatic transaxle and the oil cooler, the oil cooler hose, transaxle case, valve body tightening state are normal, ATF must drop out after performing above 1 to 7 procedures. After performing above 1 to 7 procedures, if the oil doesn't drop out, inspect the automatic transaxle assembly.

CAUTION

The gasket of the oil level plug use new one.

Oil level plug tightening torque:

Tightening up stopper

8. Put down the vehicle with the lift and then tighten the eyebolt.

Replacement

NOTICE

ATF of 6 speed automatic transaxle doesn't be replaced. But, if the vehicle is severe use or business use, replace ATF every 60,000 miles for severe usage.

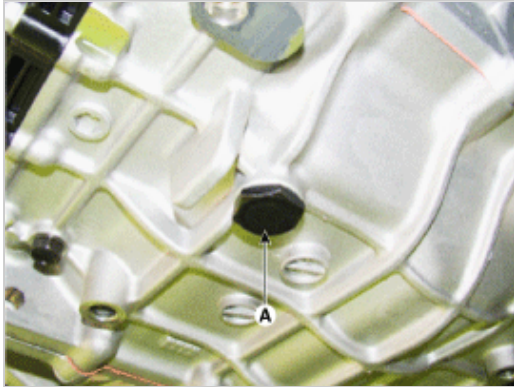
Severe usage is defined as

- Driving in rough road (Bumpy, Gravel, Snowy, Unpaved road, etc)
- Driving in mountain road, ascent/descent
- Repetition of short distance driving
- More than 50% operation in heavy city traffic during hot weather above 32°C(89.6°F) .
- Police, Taxi, Commercial type operation or trailer towing, etc

1. Remove the drain plug (A) and reinstall the drain plug after draining ATF totally.

Drain plug tightening torque:

38.2 ~ 48.1 N.m (3.9 ~ 4.9 kgf.m, 28.2 ~ 35.4 lb-ft)



⚠ CAUTION

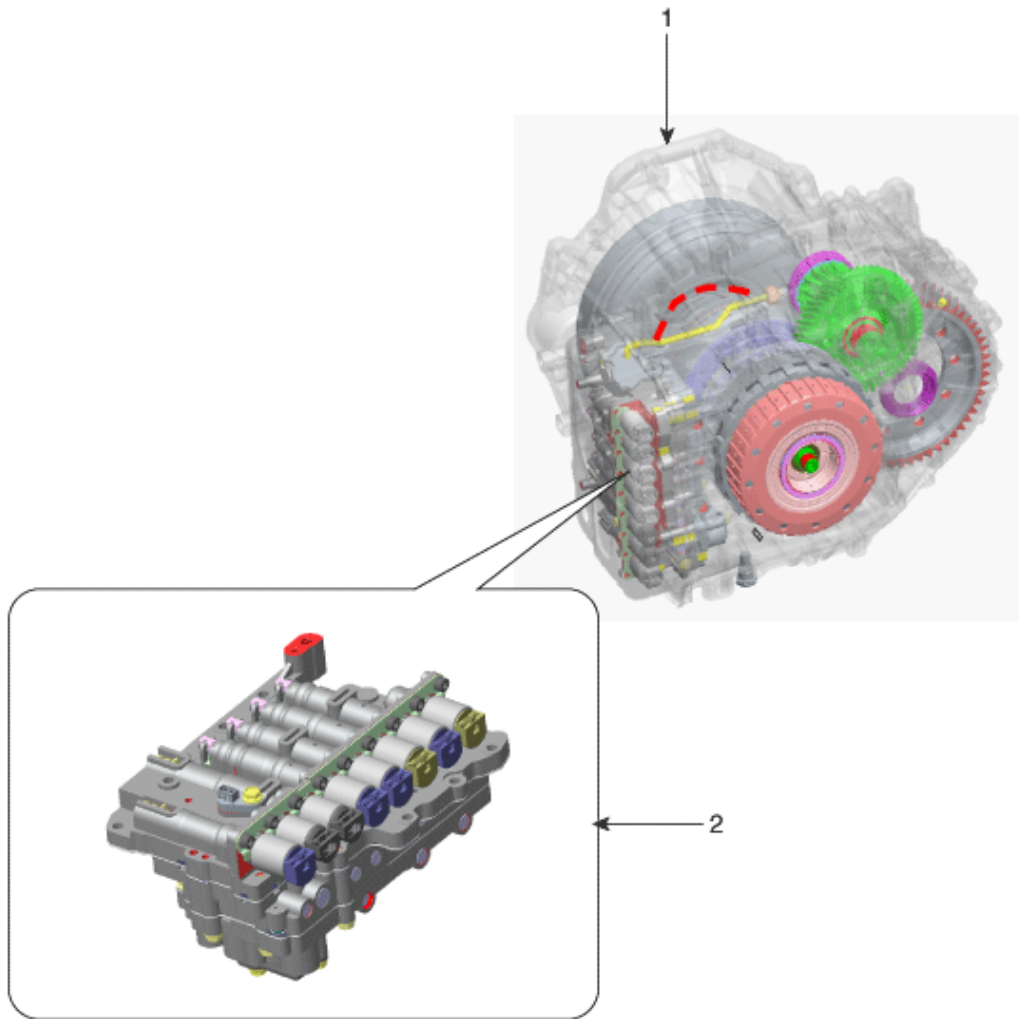
The gasket of the drain plug use new one.

2. Fill the oil about 5 liters.
3. Check the oil level.
(Refer to Hydraulic System - "Fluid")

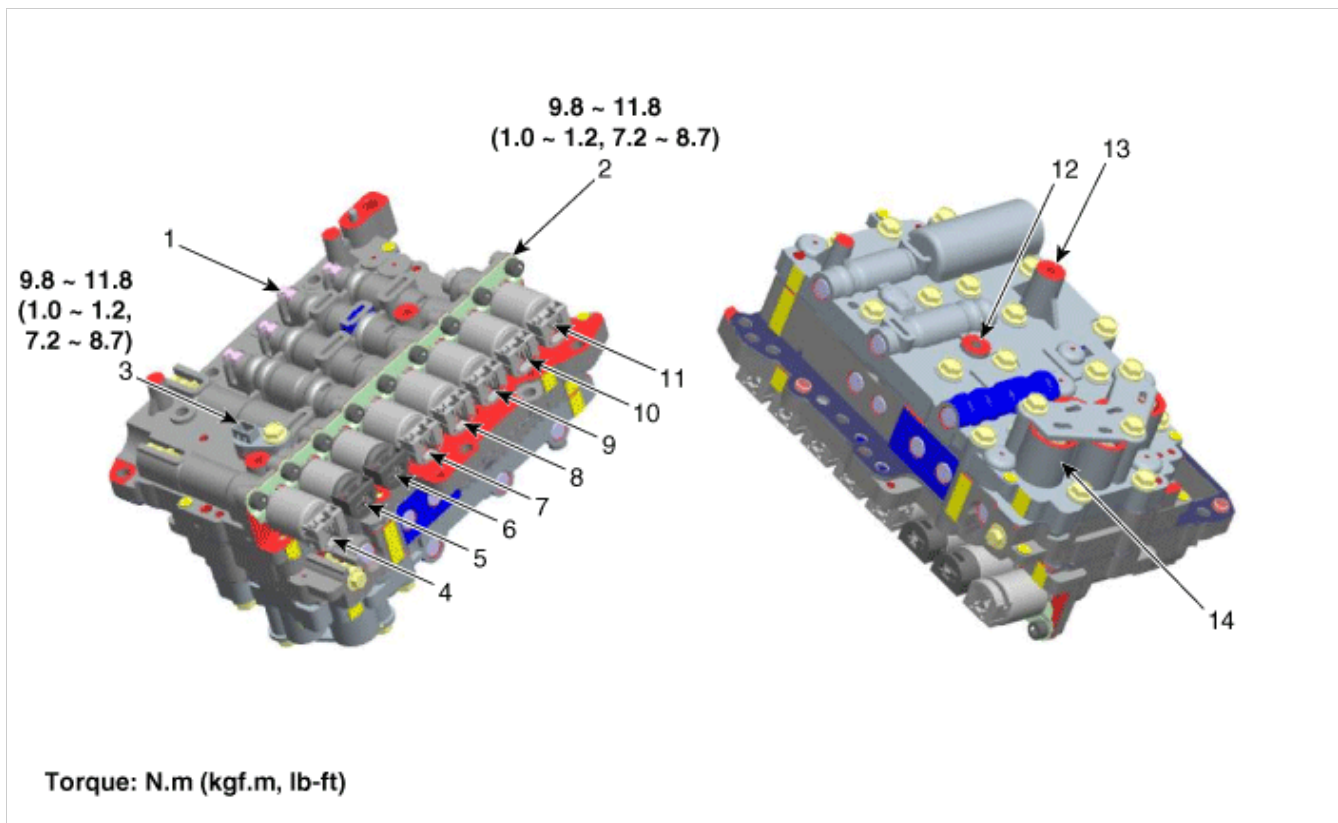
Automatic Transaxle System



Components Location



- | | |
|------------------------|--|
| 1. Automatic transaxle | |
| 2. Valve body assembly | |



1. Pressure Control Valve(PCV) adjust screw

2. Solenoid valve bracket

3. Oil temperature sensor

4. Line Pressure Control Solenoid Valve

5. SS-A Solenoid Valve(ON/OFF)

6. SS-B Solenoid Valve(ON/OFF)

7. Overdrive Clutch Control Solenoid Valve(OD/C)

8. Underdrive Brake Control Solenoid Valve(UD/B)

9. 26 Brake Control Solenoid Valve(26/B)

10. 35R Clutch Control Solenoid Valve(35R/C)

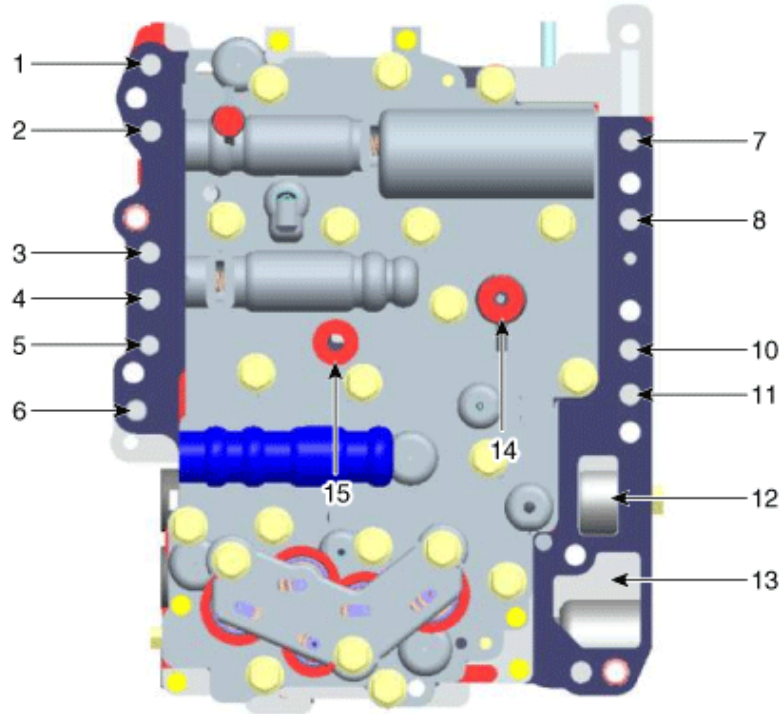
11. Torque Converter Control Solenoid Valve (T/CON)

12. Accumulator

13. Low & reverse brake(LR/B)pressure flow hole

14. Under drive brake(UD/B)pressure flow hole

Valve Body Flow



1. To cooler
2. From cooler
3. Lubrication(rear)
4. OD Clutch pressure
5. Reducing pressure (red2)
6. Reducing pressure (red1)
7. From damper pressure
8. To damper pressure

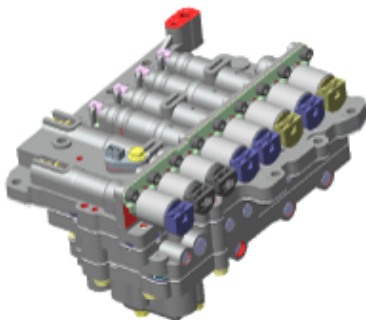
9. Lubrication(front)
10. 35R Clutch pressure
11. 26 Brake pressure
12. From oil pump
13. To oil pump
14. Underdrive(UD) Brake pressure
15. Low & reverse pressure

Automatic Transaxle System



Description

The valve body is essential to automatic transaxle control and consists of various valves used to control the oil feed from the oil pump. Specifically, these valves consist of pressure regulator valves, oil redirection valves, shift valves, and manual valves. The body also features electronic solenoid valves that ensure smooth gear changes.

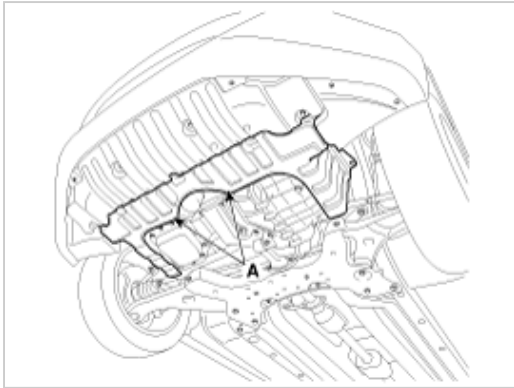


Automatic Transaxle System



Removal

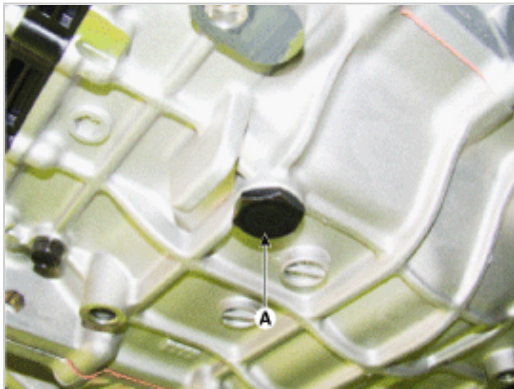
1. Remove the air cleaner assembly and air duct.
(Refer to Engine Mechanical System - "Air cleaner")
2. Remove the under cover (A).



3. Remove the drain plug (A) and reinstall the drain plug after draining ATF totally.

Drain plug tightening torque:

38.2 ~ 48.1 N.m (3.9 ~ 4.9 kgf.m, 28.2 ~ 35.4 lb-ft)



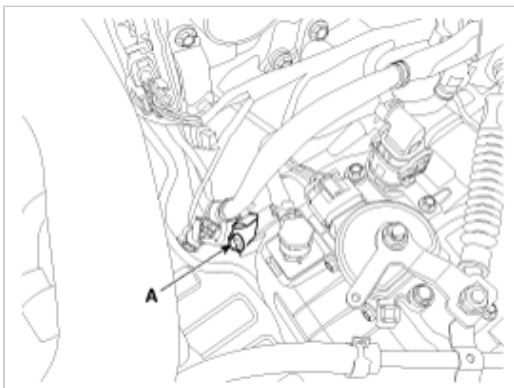
NOTICE

The gasket of the drain plug use new one.

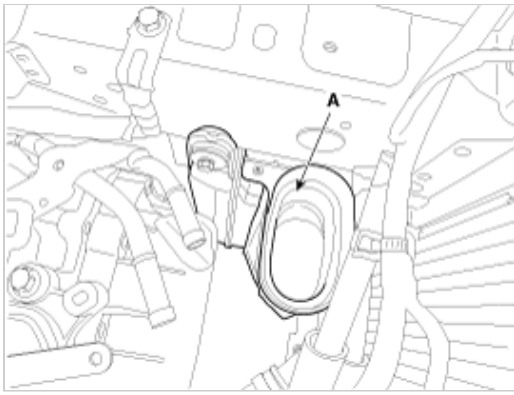
4. Remove the wiring mounting bolt (A).

Tightening torque:

(A) 9.8~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



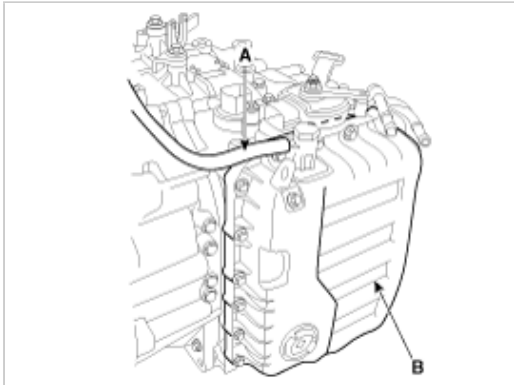
5. Remove the resonator (A).



6. Remove the valve body cover (B) after removing a air breather hose (A) from the valve body cover.

Tightening torque:

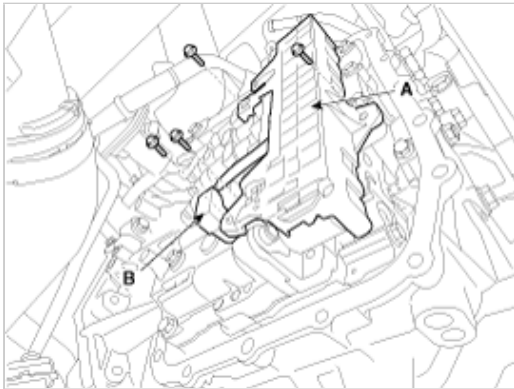
11.8 ~ 13.7 N.m (1.2 ~ 1.4 kgf.m, 8.7 ~ 10.1 lb-ft)



7. Remove the solenoid valve main connector (A) and oil temperature sensor (B) after removing the bolts.

Tightening torque:

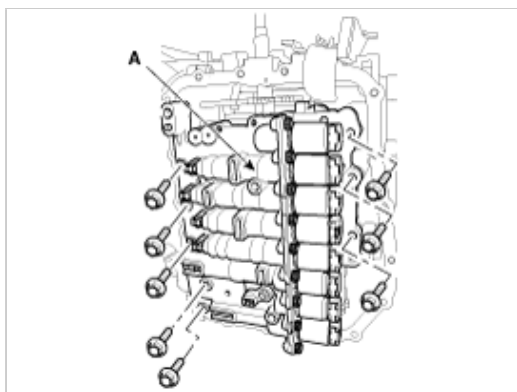
9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



8. Remove the valve body assembly (A).

Tightening torque:

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)

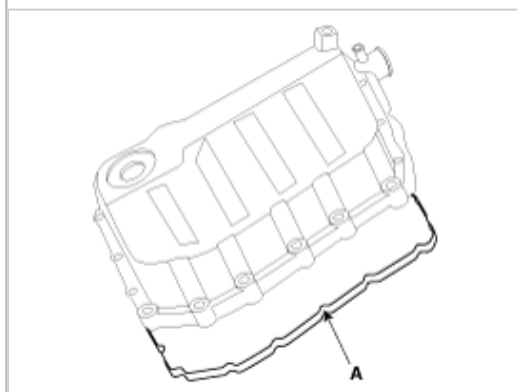


Installation

1. Installation is the reverse of removal.

NOTICE

- Adding Automatic Transaxle Fluid(ATF).
(Refer to Hydraulic System - "Fluid")
- Perform Transaxle Control Module(TCM) learning after replacing the valve body to prevent slow transaxle response, jerky acceleration and jerky startup.
(Refer to Automatic Transaxle Control System - "Repair procedures")
- Use new valve body gasket (A).



Automatic Transaxle System



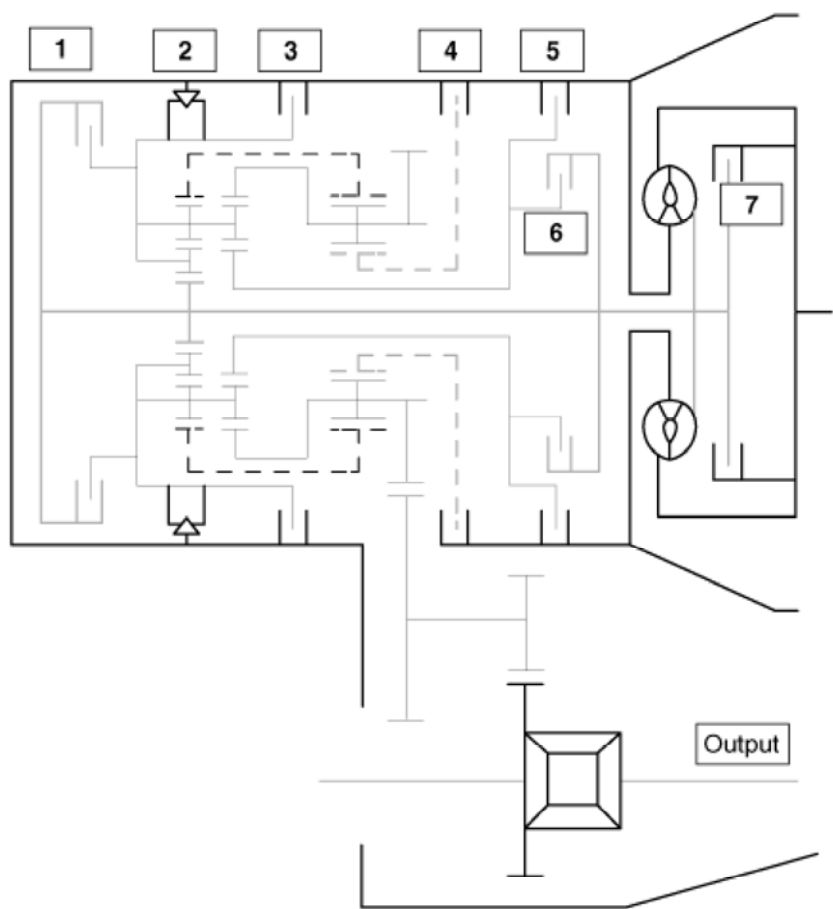
Description

The 6-speed automatic transaxle consists of an overdrive clutch (OD/C), a one-way clutch (OWC), a lower and reverse brake (LR/B), an underdrive brake (UD/B), a 26 brake (26/B), and a 35R clutch (35R/C). These clutches and brakes are operated by controlling the hydraulic pressure.

Automatic Transaxle System



Components Location



- 1. Overdrive clutch (OD/C)
- 2. One way clutch (OWC)
- 3. Low & Reverse brake (LR/B)
- 4. Underdrive brake (UD/B)

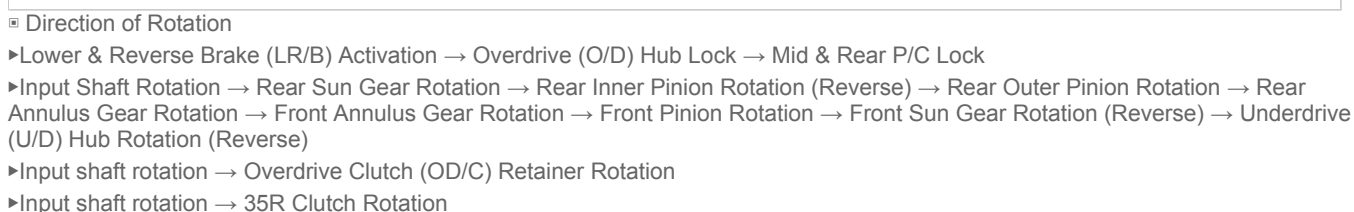
- 5. 26 brake(26/B)
- 6. 35R clutch (35R/C)
- 7. Damper clutch (D/C)

Automatic Transaxle System

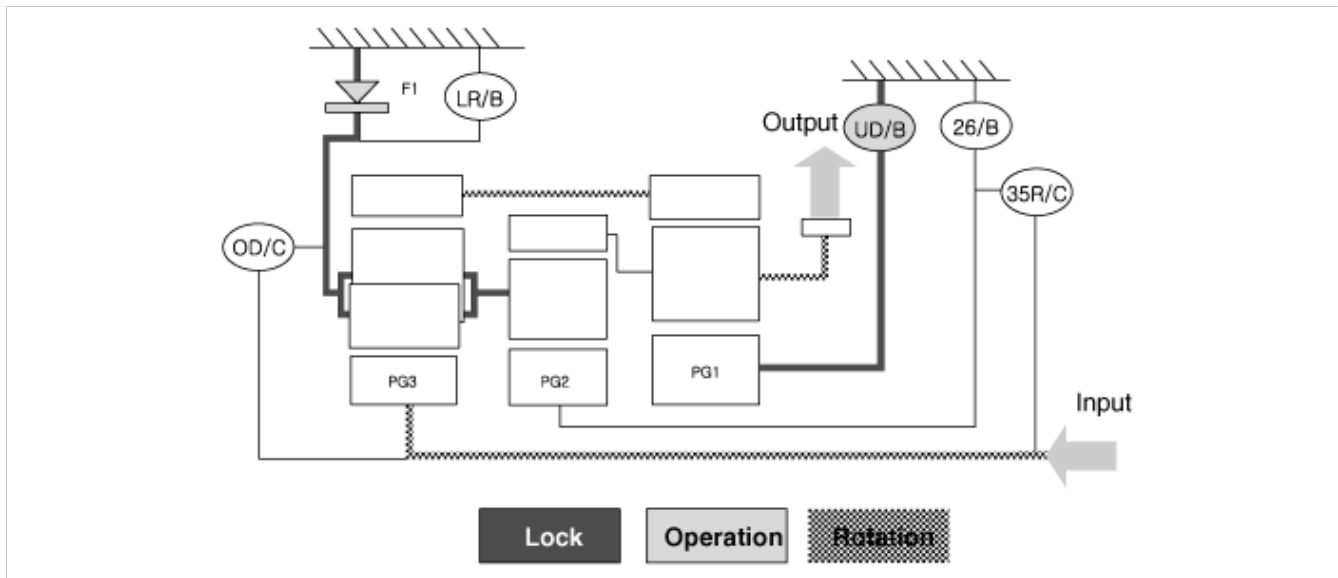


Power Flow Chart

P,N	UD/B	LR/B	26/B	35R/C	OD/C	OWC
		•				

[illegible]

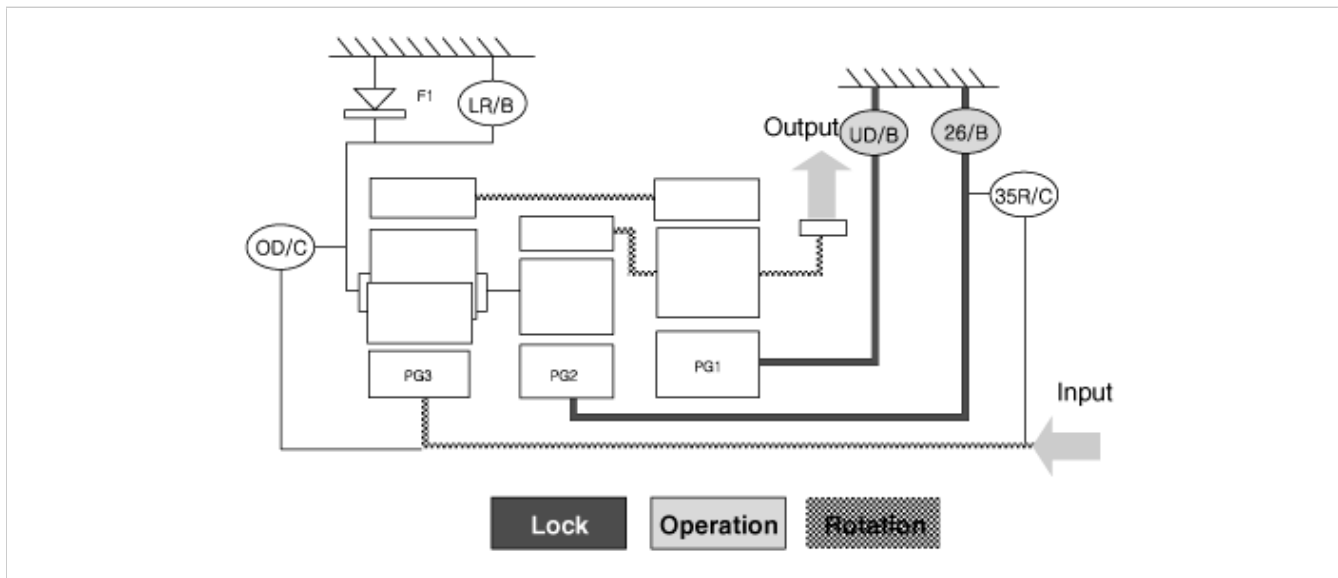
- | | | | | | | |
|----|------|------|------|-------|------|-----|
| D1 | UD/B | LR/B | 26/B | 35R/C | OD/C | OWC |
| | • | (o) | | | | • |



▣ Power Delivery Route

- Front sun gear and middle & rear carrier locked and rear sun gear in constant rotation
- When the rear sun gear is rotated, power is reduced at the rear planetary gear and then delivered to the rear and front annulus gears. The power is then reduced again at the front planetary gear, whose sun gear is locked in place, and then delivered to the front carrier.
- Here, the middle annulus gear, which comprises of a single unit with the front carrier, rotates and results in reverse, zero load rotation of the middle sun gear.

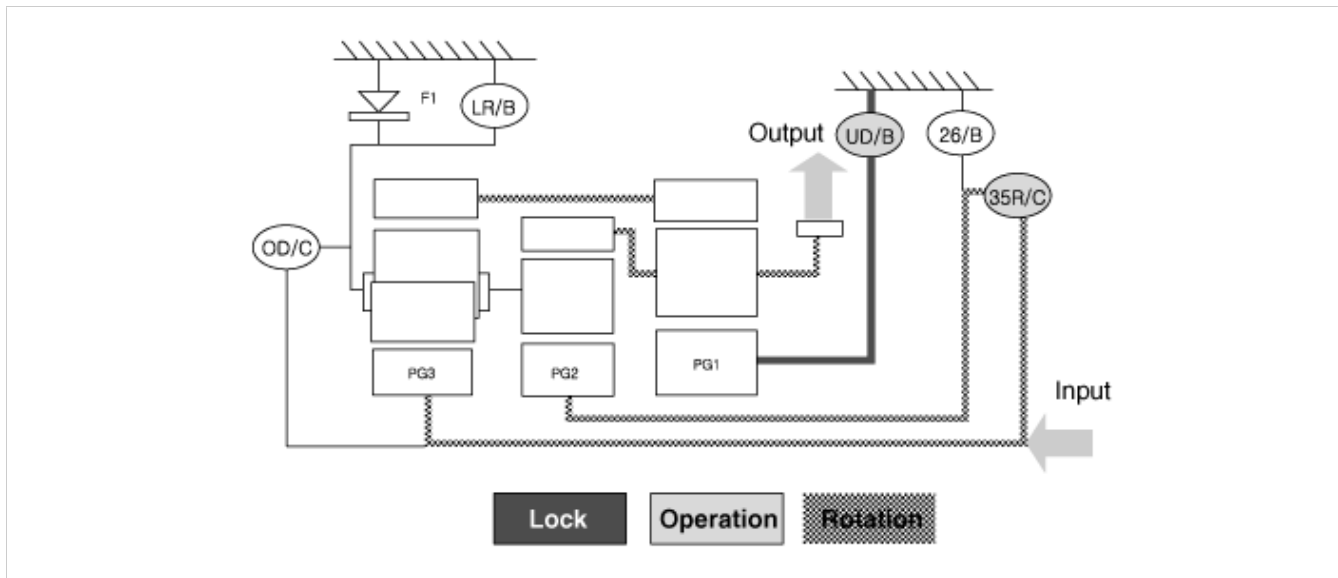
D2	UD/B	LR/B	26/B	35R/C	OD/C	OWC
	•		•			



▣ Power Delivery Route

- Front sun gear and middle sun gear locked and rear sun gear in constant rotation
- Rotating the rear sun gear delivers power to the rear & front annulus gears, and reaction from the front carrier and the middle annulus gear, to which the sun gear is attached, transfers to the middle and rear carriers, resulting in power equilibrium and power transfer to the front carrier.

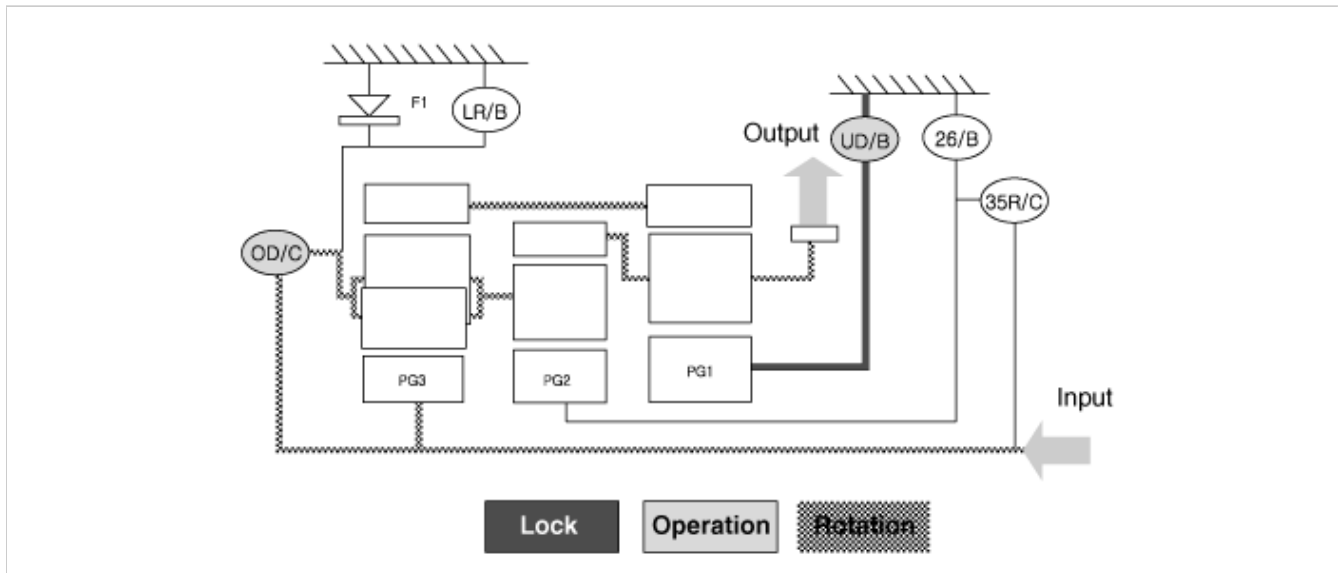
D3	UD/B	LR/B	26/B	35R/C	OD/C	OWC
	•			•		



▣ Power Delivery Route

- Front sun gear locked and middle and rear sun gears in rotation
- Rotating the middle sun gear and the rear sun gear transfers power to the rear and front annulus gears, and reaction from the front carrier and the middle annulus gear, to which the sun gear is attached, transfers to the middle and rear carriers, resulting in power equilibrium and power transfer to the front carrier.

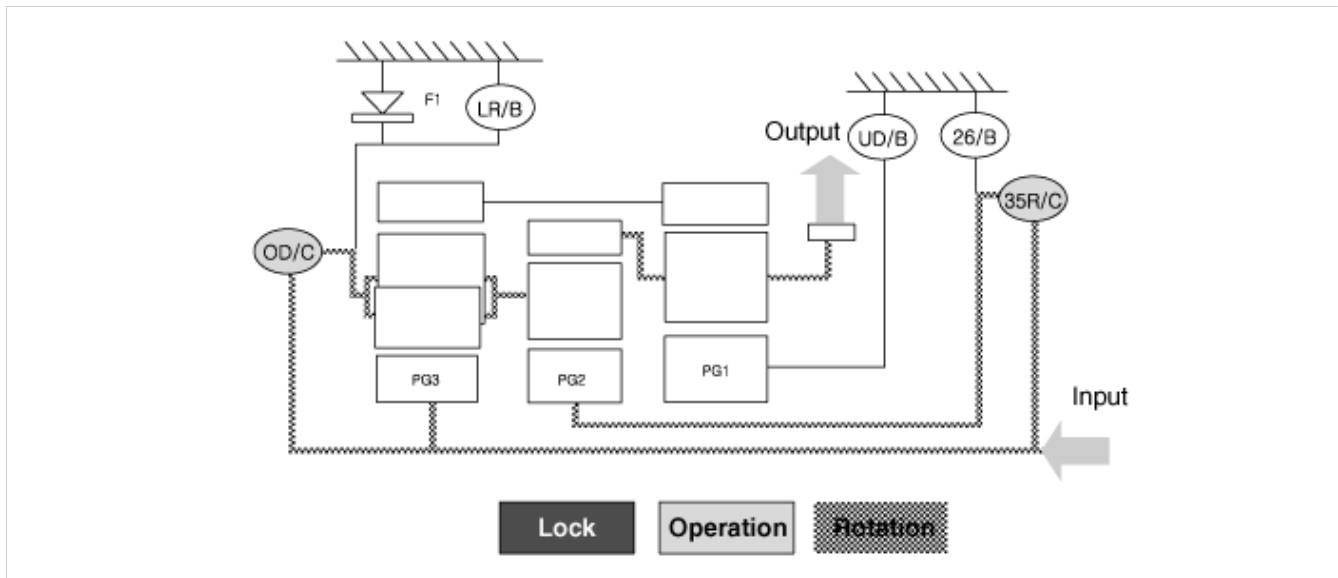
D4	UD/B	LR/B	26/B	35R/C	OD/C	OWC
	•				•	



▣ Power Delivery Route

- Front sun gear locked and rear carrier and rear sun gears in rotation
- Activation of the overdrive clutch (OD/C) synchronizes the rear planetary gear's carrier and sun gears. The 1:1 rotation ratio passes through the rear and front annulus gears and reaches the front planetary gear's front carrier, to which the sun gear is attached.
- Here, the middle planetary gear's middle sun gear rotates at a faster rate in the normal direction and at zero load due to the actions of the reduced annulus gear and the carrier having a 1:1 rotation ratio.

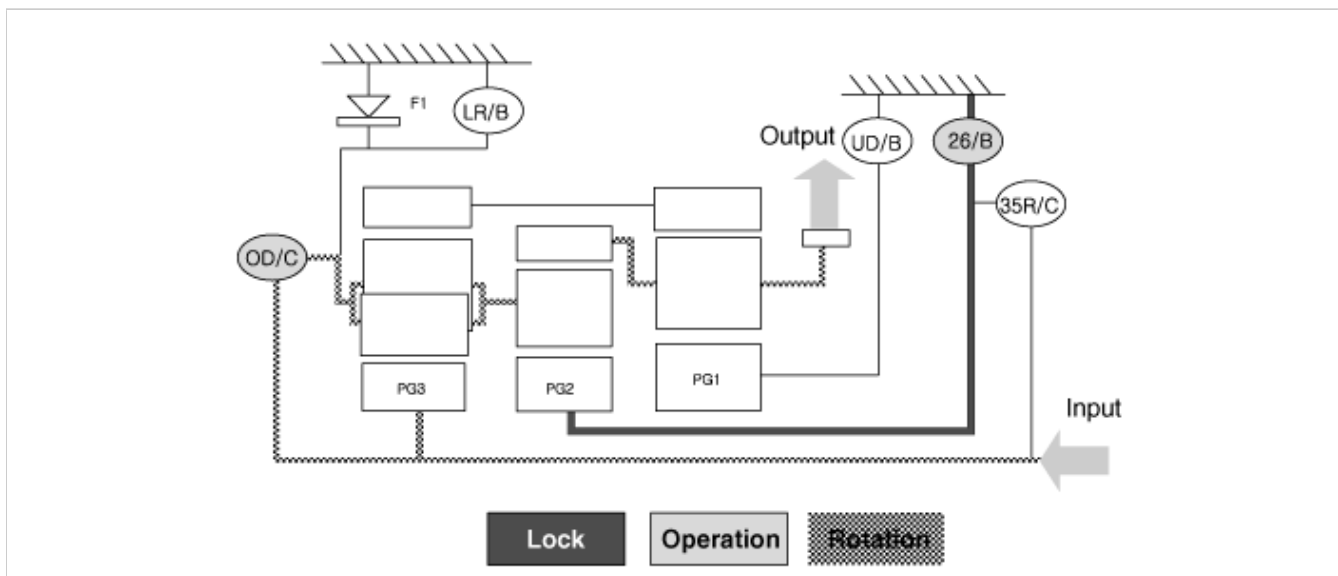
D5	UD/B	LR/B	26/B	35R/C	OD/C	OWC
				•	•	



▣ Power Delivery Route

- ▶ Middle and rear carriers, middle sun gear, and rear sun gear in rotation
- ▶ The middle planetary gear's middle carrier and sun gear rotate simultaneously, resulting in the 1:1 rotation ratio being transferred to the middle annulus gear (front carrier).
- ▶ Here, the rear planetary gear rotates in a 1:1 rotation ratio, as it would when the 4th gear is engaged; however, the front planetary gear remains unrestrained and the front sun gear rotates in the normal direction, at a zero load, and at a rotation ratio of 1:1.

D6	UD/B	LR/B	26/B	35R/C	OD/C	OWC
			•		•	



▣ Power Delivery Route

- ▶ Middle carrier in rotation and middle sun gear locked
- ▶ When the middle planetary gear's sun gear is locked in place and the train's carrier's allowed to rotate, the middle annulus gear increases its rate of rotation and transfers power to the front carrier.
- ▶ Here, the rear planetary gear maintains a 1:1 rotation ratio as it would when 4th or 5th gear is engaged; however, the front planetary gear remains unrestrained and the front sun gear rotates at a faster rate in the normal direction and at zero load.

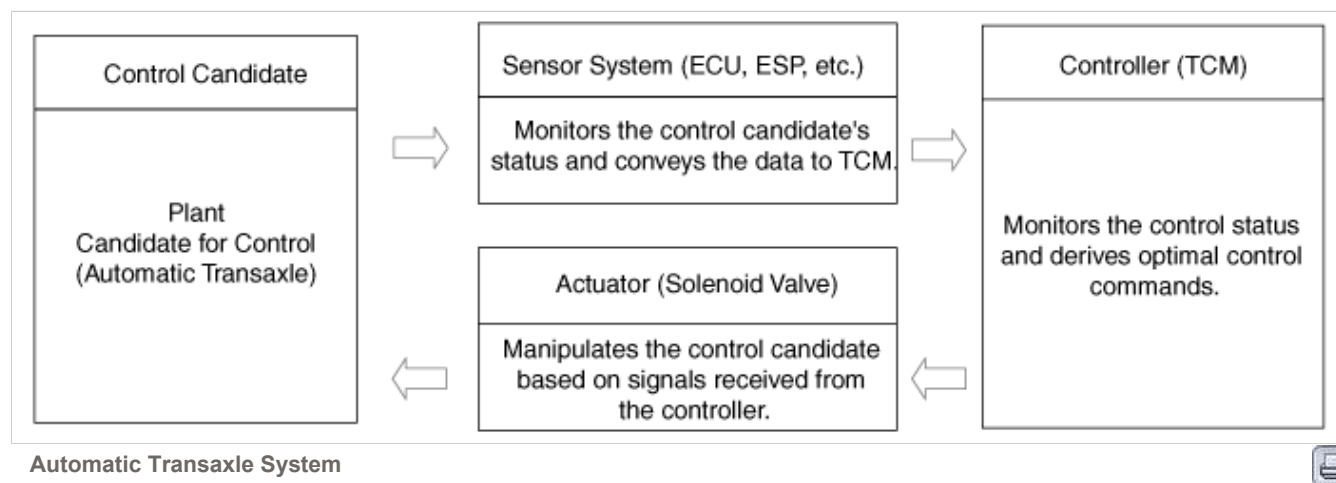
Automatic Transaxle System



Description

Automatic transaxle system relies on various measurement data to determine the current control status and extrapolate the necessary compensation values. These values are used to control the actuators and achieve the desired control output. If a problem with the drivetrain, including the transaxle, has been identified, perform self-diagnosis and basic transaxle inspection (oil and fluid inspection) and then check the control system's components using the diagnosis tool.

Control System Composition



Adjustment

Transaxle Control Module(TCM) Learning

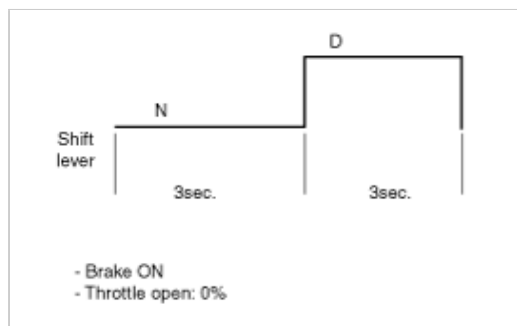
When shift shock is occurred or parts related with the transaxle are replaced, TCM learning should be performed.

In the following case, TCM learning is required.

- Transaxle assembly replacement
- TCM replacement
- TCM upgrading

TCM learning procedure

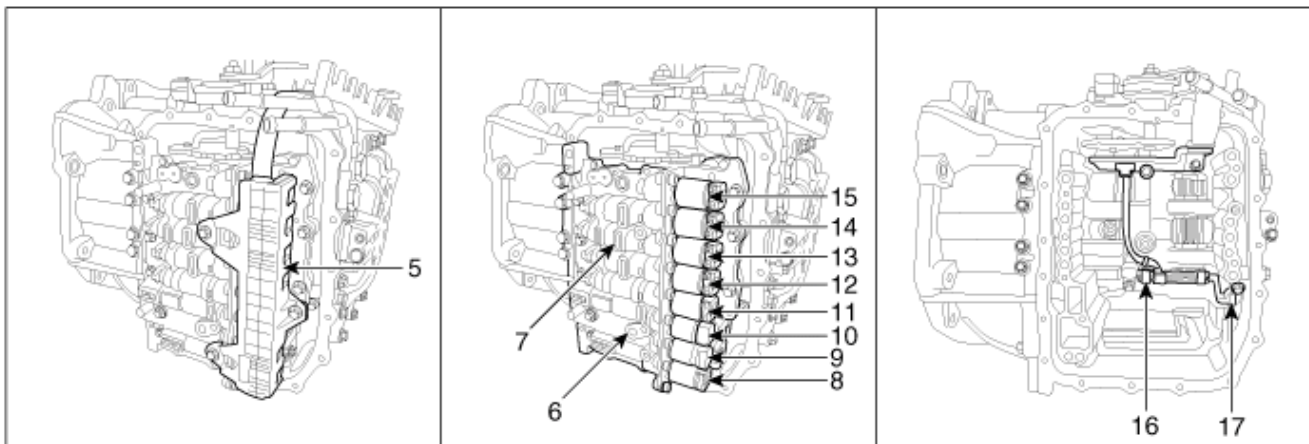
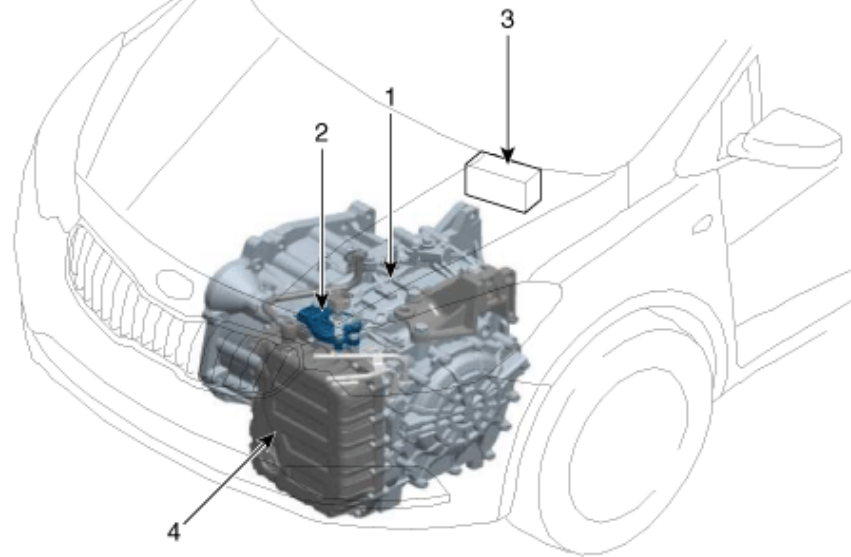
1. Automatic Transaxle Fluid (ATF) temperature: 40 ~ 100°C (104 ~ 212°F)
2. Static learning
Repeat the below shift pattern four times or more with stepping on the brake.



3. Driving learning
Drive the vehicle from a stop in D through all gears 1st, 2nd, 3rd, 4th, 5th and 6th gear while holding the throttle steady at the specified Throttle Position Sensor (TPS) value (15~25%).

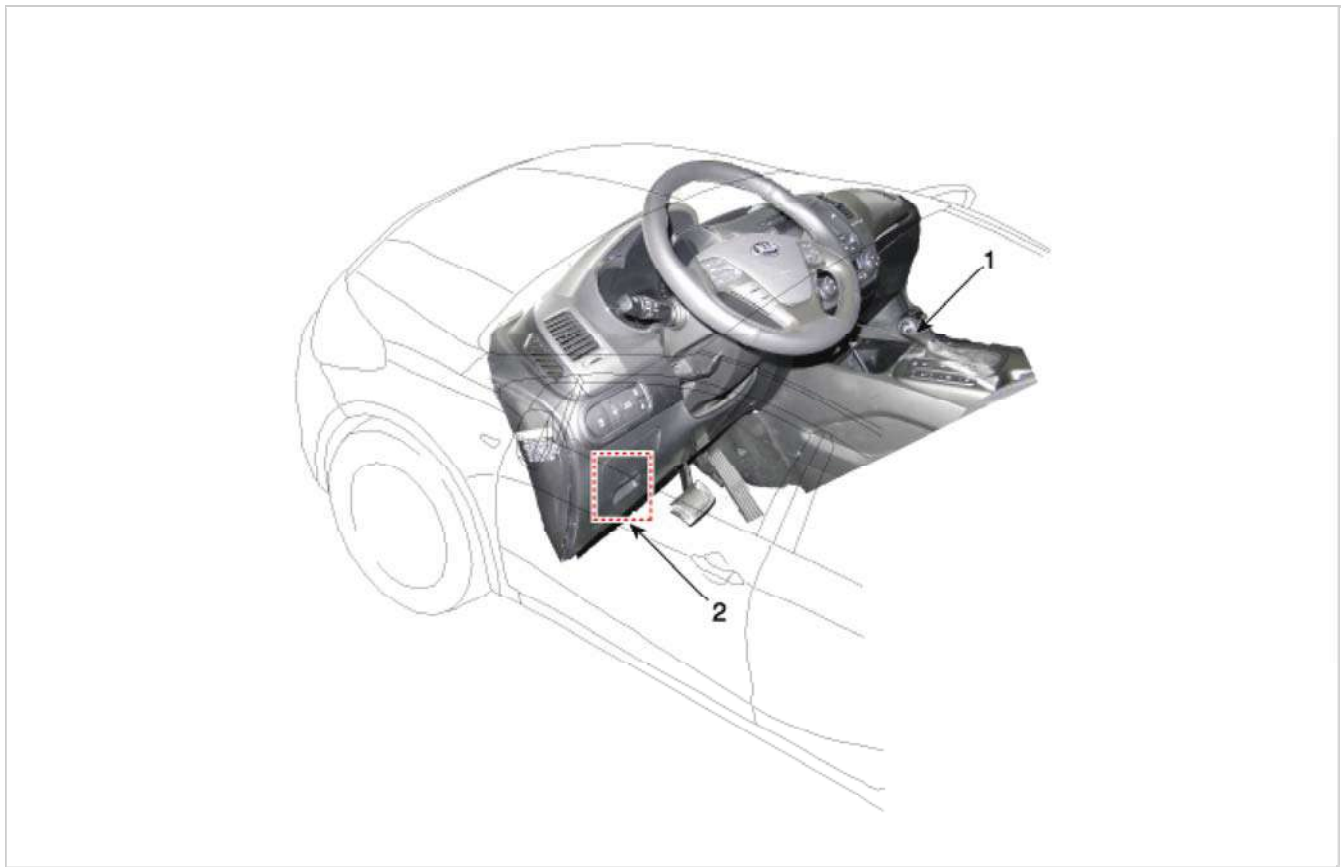
Automatic Transaxle System

Components Location



1. Automatic transaxle
2. Inhibitor switch
3. Transaxle Control Module (TCM)
4. Valve body cover
5. Solenoid valve connect
6. Oil temperature sensor
7. Valve body assembly
8. Line Pressure Control Solenoid Valve
9. SS-A Solenoid Valve(ON/OFF)

10. SS-B Solenoid Valve(ON/OFF)
11. Overdrive Clutch Control Solenoid Valve(OD/C)
12. Underdrive Brake Control Solenoid Valve(UD/B)
13. 26 Brake Control Solenoid Valve(26/B)
14. 35R Clutch Control Solenoid Valve(35R/C)
15. Torque Converter Control Solenoid Valve (T/CON)
16. Output speed sensor
17. Input speed sensor

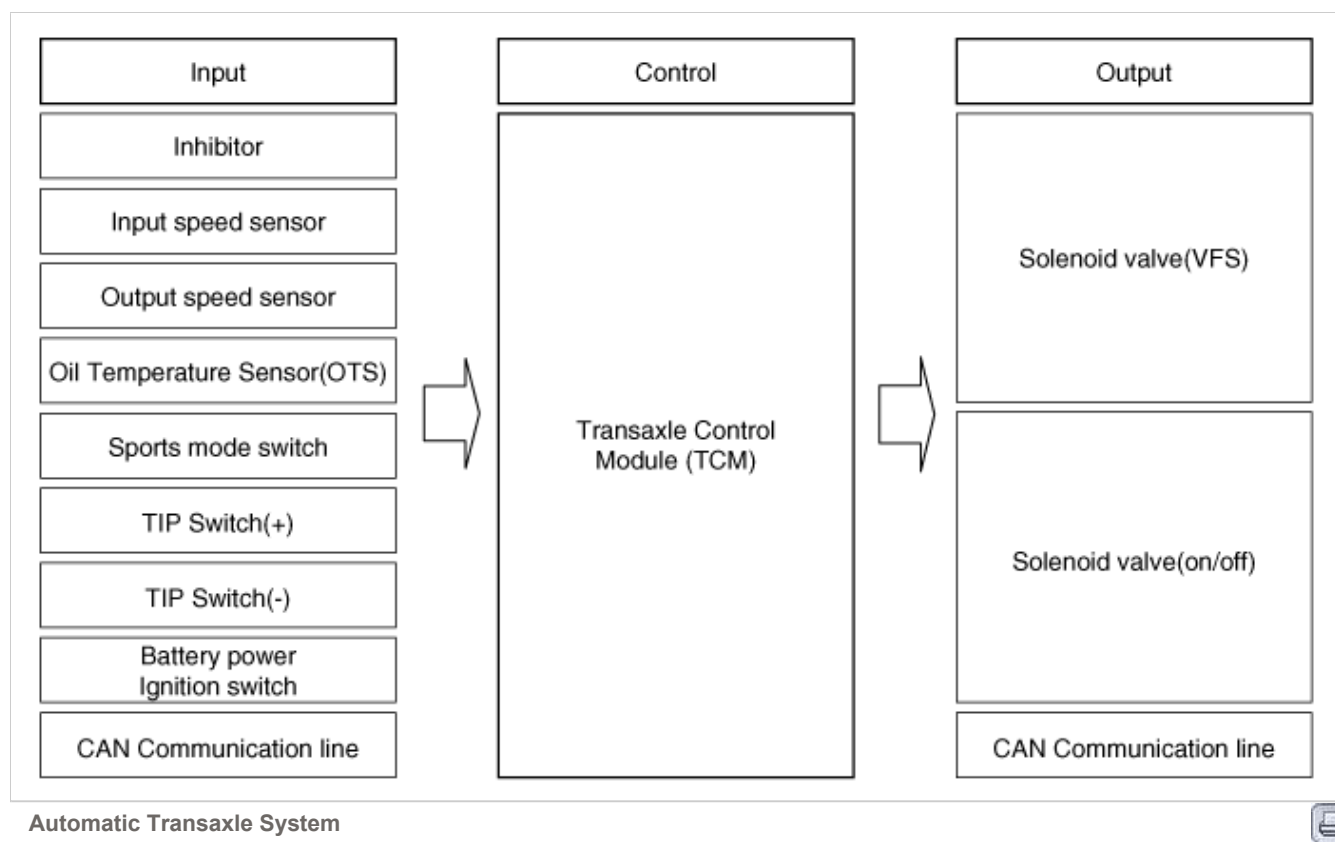


- | | |
|------------------------------|--|
| 1. Shift lever | |
| 2. Data Link Connector (DLC) | |

Automatic Transaxle System



Circuit Diagram

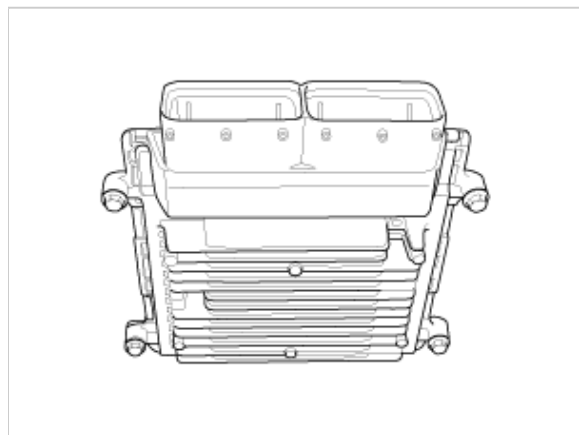


Description

Transaxle Control Module (TCM) is the automatic transaxle's brain. The module receives and processes signals from various sensors and implements a wide range of transaxle controls to ensure optimal driving conditions for the driver. TCM is programmed for optimal response to any on-road situation. In the event of a transaxle failure or malfunction, TCM stores the fault information in memory so that the technician may reference the code and quickly repair the transaxle.

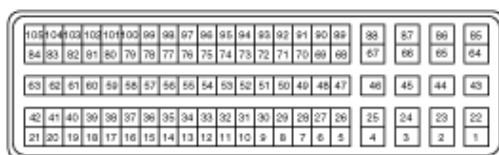
Functions

- Monitors the vehicle's operating conditions to determine the optimal gear setting.
- Performs a gear change if the current gear setting differs from the identified optimal gear setting.
- Determines the need for Damper Clutch (D/C) activation and engages the clutch accordingly.
- Calculates the optimal line pressure level by constantly monitoring the torque level and adjusts the pressure accordingly.
- Diagnoses the automatic transaxle for faults and failures.



Automatic Transaxle System

1. TCM connector and terminal function

**TCM Connector [A]****TCM Connector [B]**

2. TCM terminal function

Connector [A]

Pin	Description	Pin	Description
22	Overdrive clutch control solenoid valve	73	Inhibitor switch signal "S4"
23	Pressure control solenoid valve	74	Inhibitor switch signal "S2"
26	SS-B solenoid valve (ON/OFF)	75	Inhibitor switch signal "S3"
37	Sports mode up switch	87	Solenoid power 1
38	Sports mode select switch	88	Solenoid power 2
39	Oil temperature sensor (+)	89	SS-A solenoid valve A (ON/OFF)
43	Underdrive brake control solenoid valve	94	Inhibitor switch signal "S1"
44	35R clutch control solenoid valve	95	Output speed sensor power
45	Torque converter control solenoid valve	96	Input speed sensor power
46	26 brake control solenoid valve	99	Input speed sensor signal
58	Sports mode down switch	100	Output speed sensor signal
59	Oil temperature sensor (-)		

Connector [B]

Pin	Description	Pin	Description
1	GND (Power)	5	VB
2	GND (Power)	60	CAN High
3	VB (Battery voltage)	68	IG.1 (Ignition key)
4	Ground (Power)	77	CAN Low

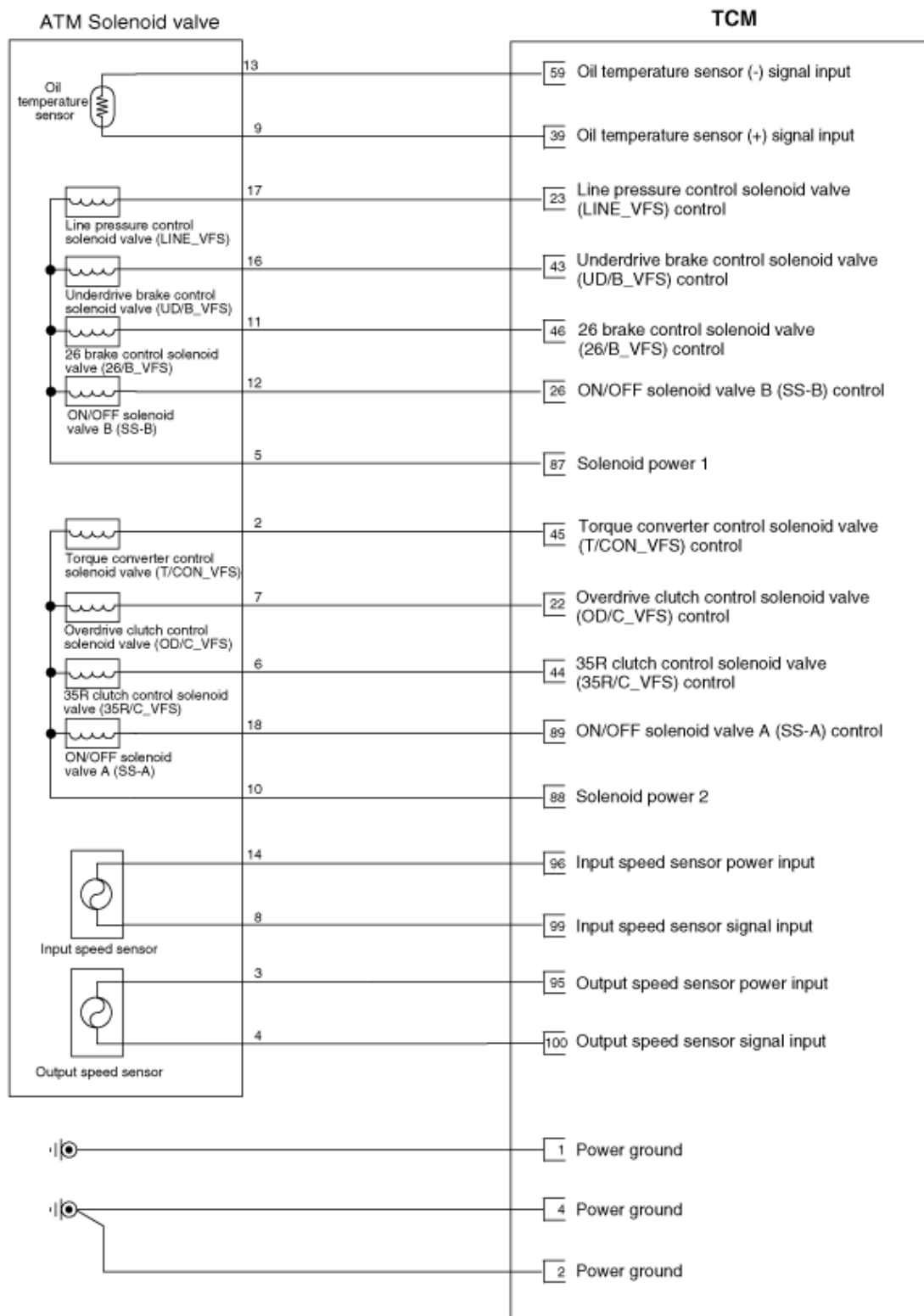
3. TCM Terminal input/ output signal

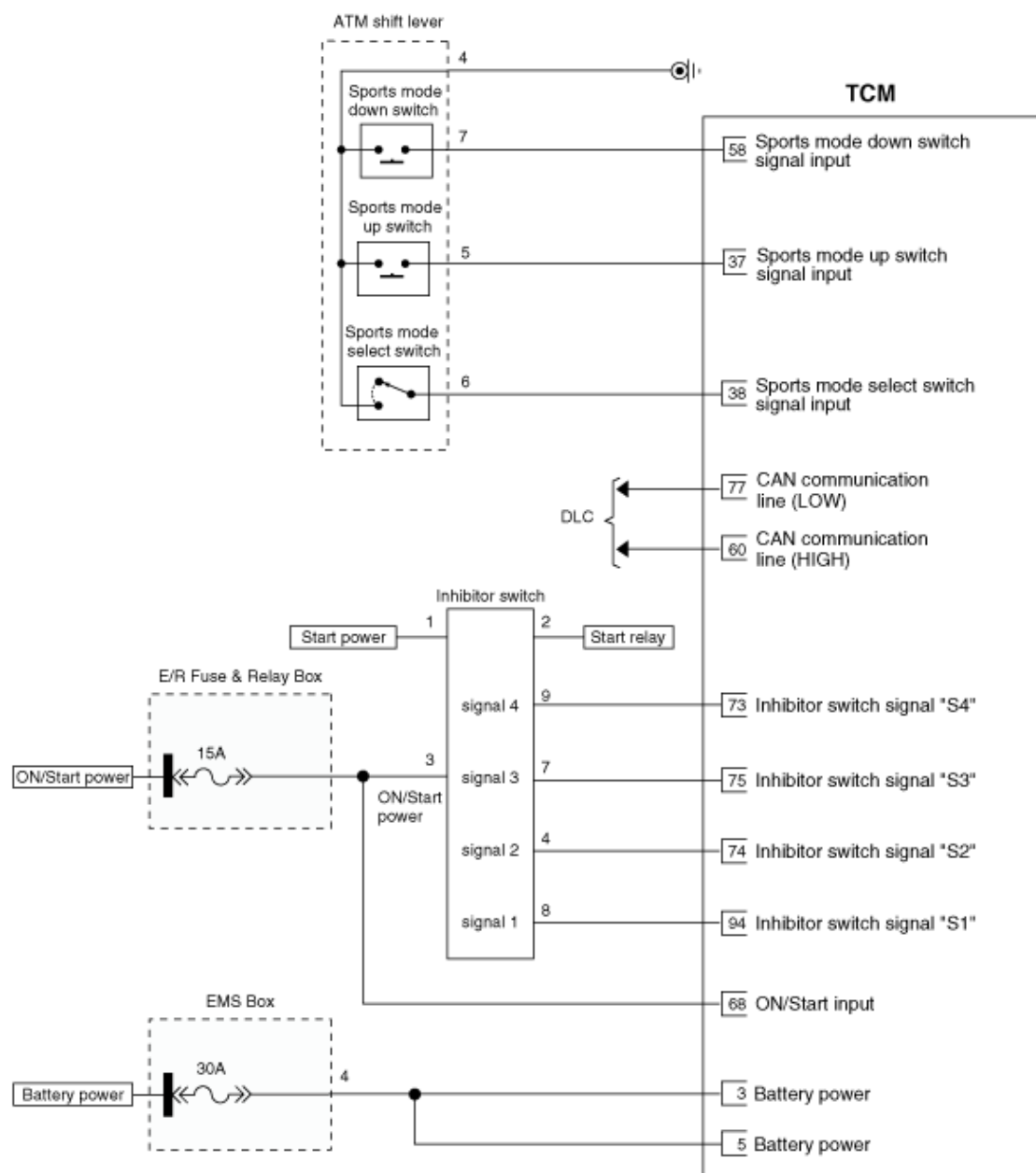
Connector [A]

Pin	Description	Condition	Input/output value	
			Type	Level
22	Overdrive clutch control solenoid valve	-	Output	0V/Battery voltage level
				9V < Battery voltage level < 16V
23	Line pressure control solenoid valve	-	Output	0V/Battery voltage level
				9V < Battery voltage level < 16V
26	SS-B solenoid valve (ON/OFF)	High	Output	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
37	Sports mode up switch	Up ON	Input	0V/Battery voltage level
		Other		9V < Battery voltage level < 16V
38	Sports mode select switch	Sport mode	Input	0V/Battery voltage level
		Other		9V < Battery voltage level < 16V
39	Oil temperature sensor (+)	ON	Input	0V/3.3V
		OFF		
43	Underdrive brake control solenoid valve	-	Output	0V/Battery voltage level
				9V < Battery voltage level < 16V
44	35R clutch control solenoid valve	-	Output	Power supply : V_SOL2
				0V/Battery voltage level

				9V < Battery voltage level < 16V
45	Torque converter control solenoid valve	-	Output	0V/Battery voltage level
				9V < Battery voltage level < 16V
46	26 brake control solenoid valve	-	Output	0V/Battery voltage level
				9V < Battery voltage level < 16V
				Power supply : V_SOL2
58	Sports mode down switch	Down ON	Input	0V/Battery voltage level
		Other		9V < Battery voltage level < 16V
59	Oil temperature sensor (-)	-	Ground	0V
73	Inhibitor switch signal "S4"	High	Input	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
74	Inhibitor switch signal "S2"	High	Input	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
75	Inhibitor switch signal "S3"	High	Input	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
89	SS-A solenoid valve A (ON/OFF)	High	Output	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
94	Inhibitor switch signal "S1"	High	Input	0V/Battery voltage level
		Low		9V < Battery voltage level < 16V
95	Output speed sensor power	ON	Power	0V/7.5V
		OFF		
96	Input speed sensor power	ON	Power	0V/7.5V
		OFF		
99	Input speed sensor signal	High	Input	0.7V/1.4V
		Low		
100	Output speed sensor signal	High	Input	0.7V/1.4V
		Low		

Circuit Diagram





Automatic Transaxle System



Inspection

Transaxle Control Module(TCM) Problem Inspection Procedure

1. TEST TCM GROUND CIRCUIT: Measure resistance between TCM and chassis ground using the backside of TCM harness connector as TCM side check point. If the problem is found, repair it.

Specification: Below 1Ω

2. TEST TCM CONNECTOR: Disconnect the TCM connector and visually check the ground terminals on TCM side and harness side for bent pins or poor contact pressure. If the problem is found, repair it.
3. If problem is not found in Step 1 and 2, the TCM could be faulty. If so, make sure there were no DTC's before swapping the TCM with a new one, and then check the vehicle again. If DTC's were found, examine this first before swapping TCM.
4. RE-TEST THE ORIGINAL TCM: Install the original TCM (may be broken) into a known-good vehicle and check the vehicle. If the problem occurs again, replace the original TCM with a new one. If problem does not occur, this is intermittent problem (Refer to "Intermittent Problem Inspection Procedure" in Basic Inspection Procedure).

Replacement

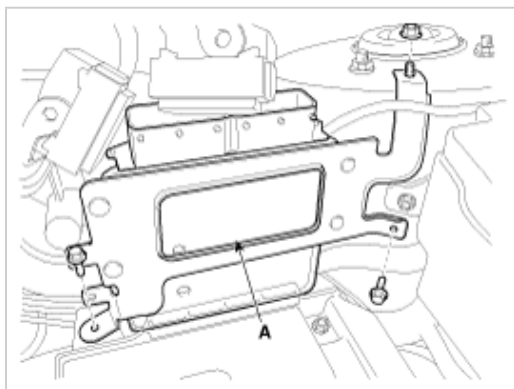
1. Turn ignition switch OFF.
2. Disconnect the negative (-) battery cable.
3. Disconnect the TCM connector (A).



4. Remove the TCM (A) after removing the bolt and nut.

TCM installation bolt/nut:

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



Installation

1. Install in the reverse order of removal.

NOTICE

- Perform TCM learning after replacing the transaxle to prevent slow transaxle response, jerky acceleration and jerky startup.
(Refer to Automatic Transaxle Control System - "Repair procedures")
- When replacing the TCM, the vehicle equipped with the immobilizer must be performed procedure as below.
[In the case of installing used TCM]
1) Perform "TCM Neutral mode" procedure with GDS.
(Refer to Body Electrical System - "Immobilizer System")
2) After finishing "TCM Neutral mode", perform "Key teaching" procedure with GDS.
(Refer to Body Electrical System - "Immobilizer System")
[In the case of installing new TCM]
Perform "Key teaching" procedure with GDS.
(Refer to Body Electrical System - "Immobilizer System")
- When replacing the TCM, the vehicle equipped with the smart key system (Button start) must be performed procedure as below.
[In the case of installing used TCM]
1) Perform "TCM Neutral mode" procedure with GDS.
(Refer to Body Electrical System - "Immobilizer System")
2) After finishing "TCM Neutral mode", insert the key (or press the start button) and turn it to the IGN ON and OFF position. Then the TCM learns the smart key information automatically.
[In the case of installing new TCM]

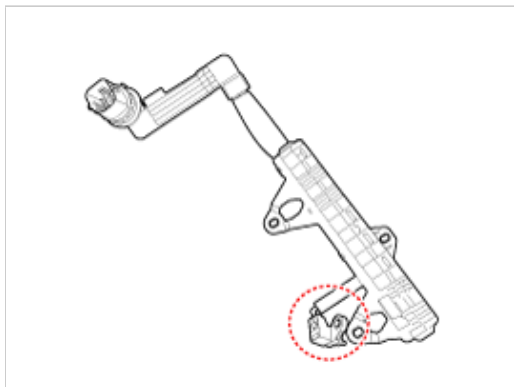
Insert the key (or press the start button) and turn it to the IGN ON and OFF position. Then the TCM learns the smart key information automatically.

Automatic Transaxle System



Description

Transaxle oil temperature sensor monitors the automatic transaxle fluid's temperature and conveys the readings to TCM. It is an NTC (Negative Thermal Coefficient) sensor whose resistance has an inversely proportional relationship with the temperature level. Data produced by this sensor is used to identify damper clutch activation and deactivation zones within the low temperature and high temperature range and to compensate hydraulic pressure levels during gear changes.



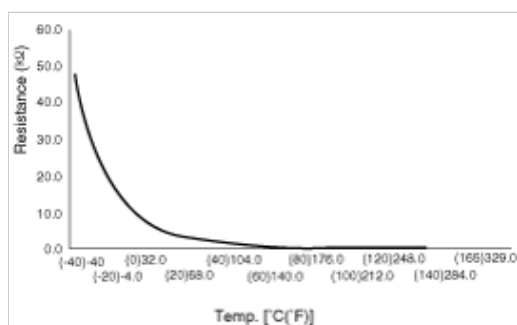
Automatic Transaxle System



Specifications

▷ Type: Negative Thermal Coefficient Type

Temp. [(°C)°F]	Resistance (kΩ)
(-40)-40	48.1
(-20)-4.0	15.6
(0)32.0	5.88
(20)68.0	2.51
(40)104.0	1.19
(60)140.0	0.61
(80)176.0	0.32
(100)212.0	0.18
(120)248.0	0.10
(140)284.0	0.06
(150)302.0	0.05

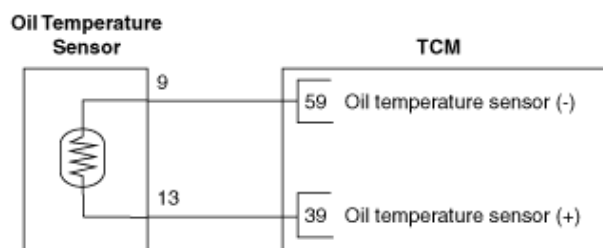


Automatic Transaxle System



Circuit Diagram

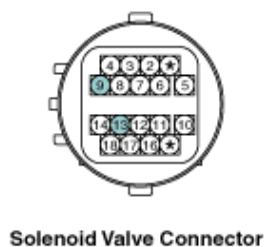
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
9	TCM(59)	Oil temperature sensor (-)
13	TCM(39)	Oil temperature sensor (+)

[Harness Connector]



TCM Connector [A]

TCM Connector [A]

TCM Connector [B]

TCM Connector [B]

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Remove the air duct cleaner.
(Refer to Engine Mechanical System - "Air cleaner")
3. Disconnect the solenoid valve connector (A).



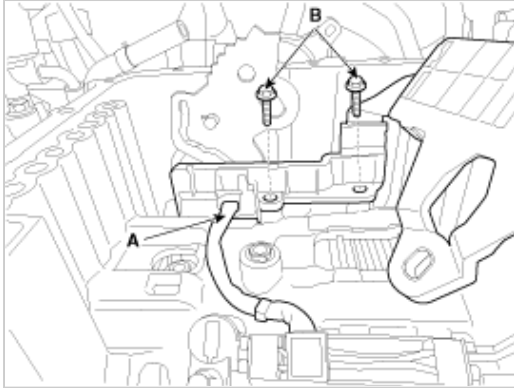
4. Measure resistance between sensor signal terminal and sensor ground terminal.
5. Check that the resistance is within the specification.

Removal

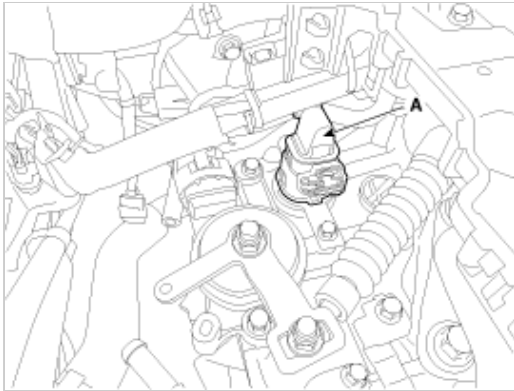
1. Remove the valve body assembly.
(Refer to Hydraulic System - "Valve Body")
2. Disconnect the input & output speed sensor connector (A).
3. Loosen the main connector bolt (B).

Tightening torque:

(B) 9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



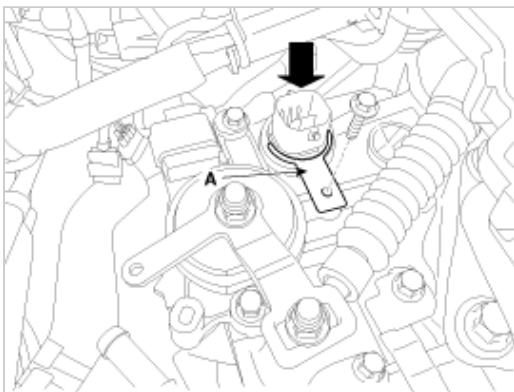
4. Disconnect the solenoid valve connector (A).



5. Remove the solenoid valve connector after removing a clip (A).

Tightening torque:

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)

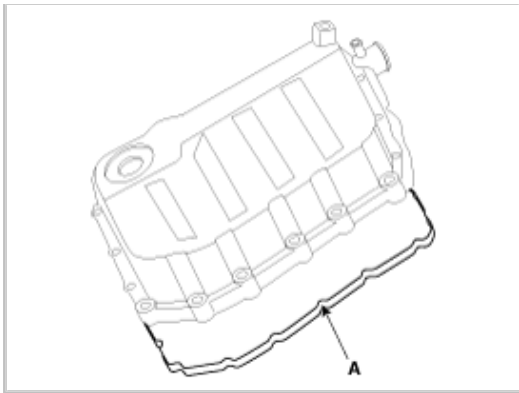


Installation

1. Installation is the reverse of removal.

NOTICE

- Adding Automatic Transaxle Fluid(ATF).
(Refer to Hydraulic System - "Fluid")
- Use new valve body gasket (A).

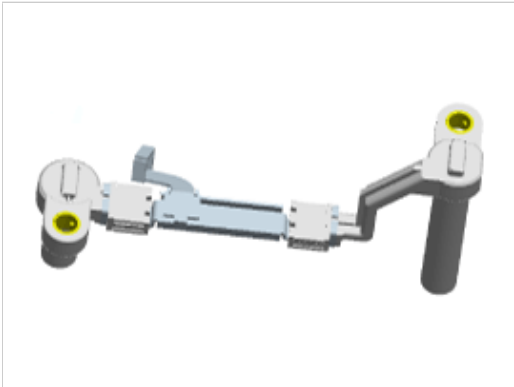


Automatic Transaxle System



Description

Input speed sensor (A) is a vital unit that measures the rate of rotation of the input shaft inside the transaxle and delivers the readings to the Transaxle Control Module(TCM). The sensor provides critical input data that's used in feedback control, damper clutch control, gear setting control, line pressure control, clutch activation pressure control, and sensor fault analysis.



Automatic Transaxle System



Specifications

▷ Type: Hall effect sensor

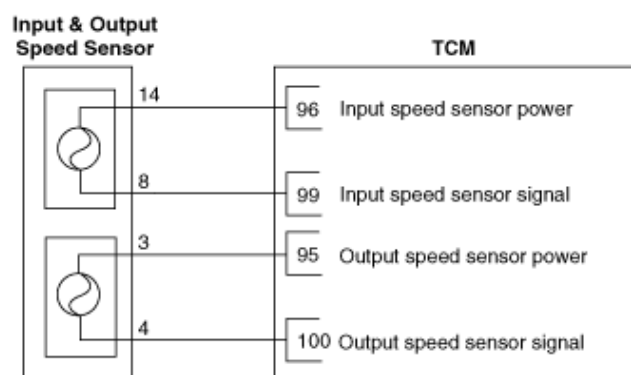
Operation condition [°C(°F)]		((-)40 ~ 150)) -40 ~ 302
Air gap(mm)in.		(0.95 ~ 1.55) 0.950 ~ 1.55
Output voltage(V)	High	1.18 ~ 1.68
	Low	0.59 ~ 0.84

Automatic Transaxle System



Circuit Diagram

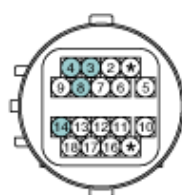
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
14	TCM(96)	Output speed sensor signal
8	TCM(99)	Input speed sensor power
3	TCM(95)	Input speed sensor signal
4	TCM(100)	Output speed sensor power

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Signal Waveform

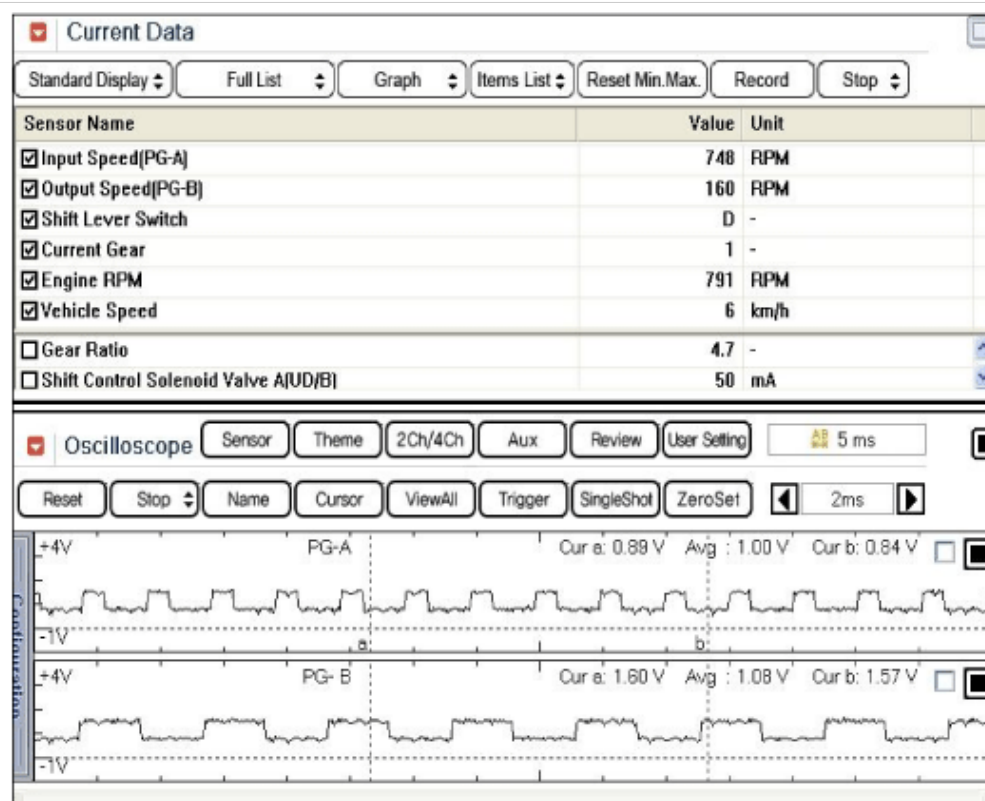
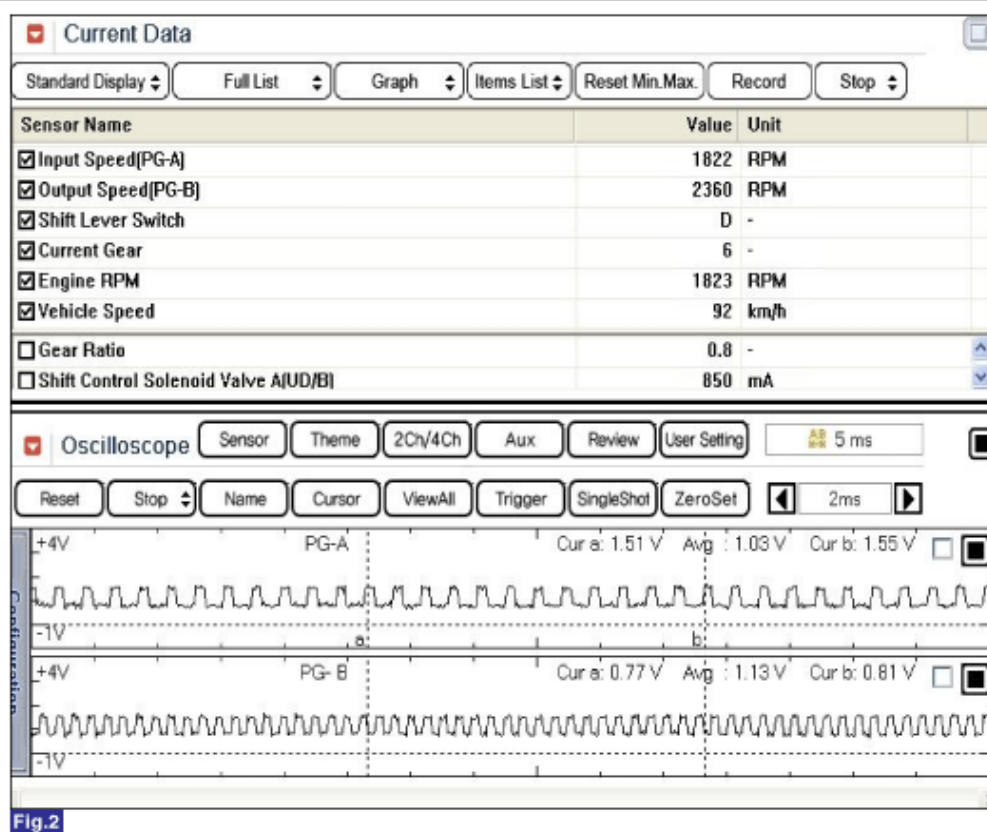


Fig.1



Automatic Transaxle System

Inspection

1. Check signal waveform of Input & output speed sensor using the GDS.

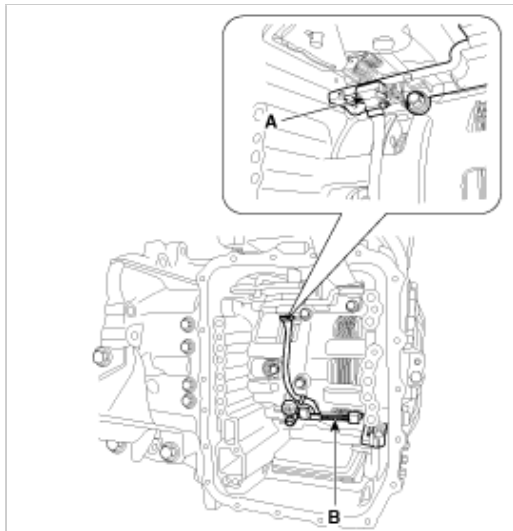
Specification: Refer to "Signal Wave Form" section.

Removal

1. Remove the valve body assembly.
(Refer to Hydraulic System - "Valve Body")
2. Disconnect the input & output speed sensor connector (A).
3. Remove the input & output speed sensor (B) after removing the bolts(2ea).

Tightening torque:

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



Installation

1. Installation is the reverse of removal.

NOTICE

- Adding Automatic Transaxle Fluid(ATF).
(Refer to Hydraulic System - "Fluid")
- Use new valve body gasket (A).

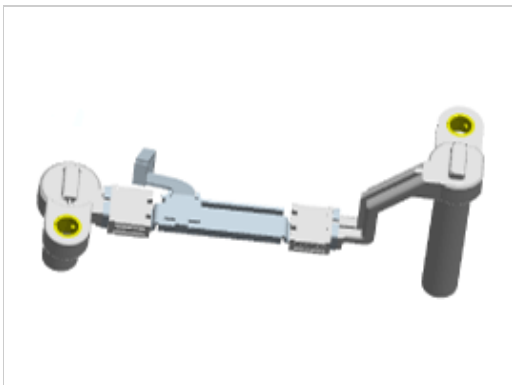


Automatic Transaxle System



Description

The output speed sensor (A) is a vital unit that measures the rate of rotation of the transaxle's turbine shaft and output shaft, and delivers the readings to the Transaxle Control Module(TCM). The sensor provides critical input data that's used in feedback control, damper clutch control, gear setting control, line pressure control, clutch activation pressure control, and sensor fault analysis.



Automatic Transaxle System



Specifications

▷ Type: Hall effect sensor

Operation condition [°C(°F)]		((-40 ~ 150)) -40 ~ 302
Air gap(mm)in.		(0.55 ~ 1) 0.0217 ~ 0.0394
Output voltage	High	1.18 ~ 1.68
	Low	0.59 ~ 0.84

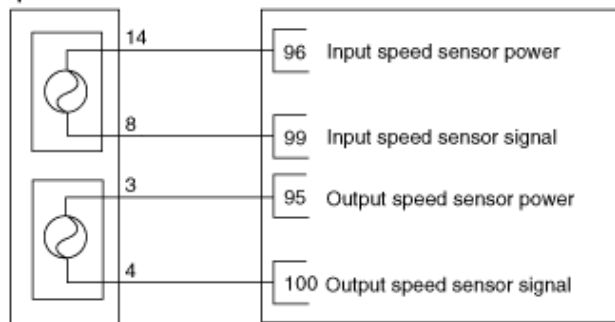
Automatic Transaxle System



Circuit Diagram

[Circuit Diagram]

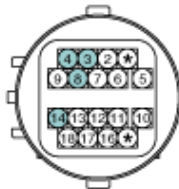
Input & Output
Speed Sensor



[Connection Information]

Terminal	Connected to	Function
14	TCM(96)	Output speed sensor signal
8	TCM(99)	Input speed sensor power
3	TCM(95)	Input speed sensor signal
4	TCM(100)	Output speed sensor power

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Signal Waveform

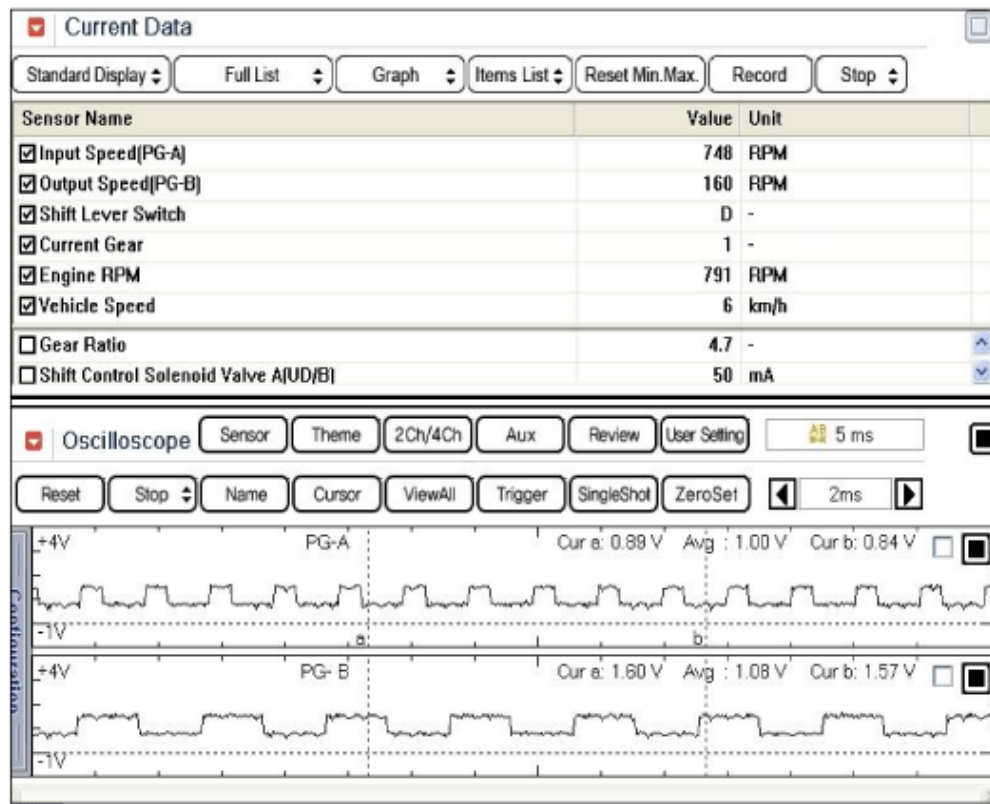


Fig.1

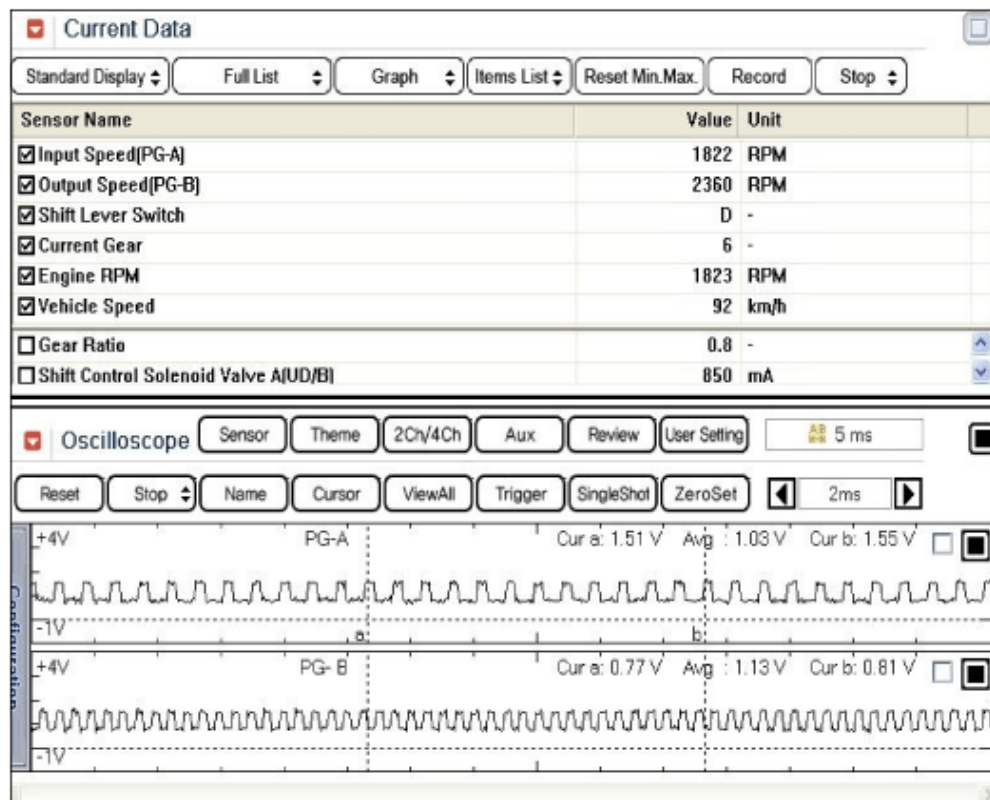


Fig.2

Automatic Transaxle System



Inspection

1. Check signal waveform of Input & output speed sensor using the GDS.

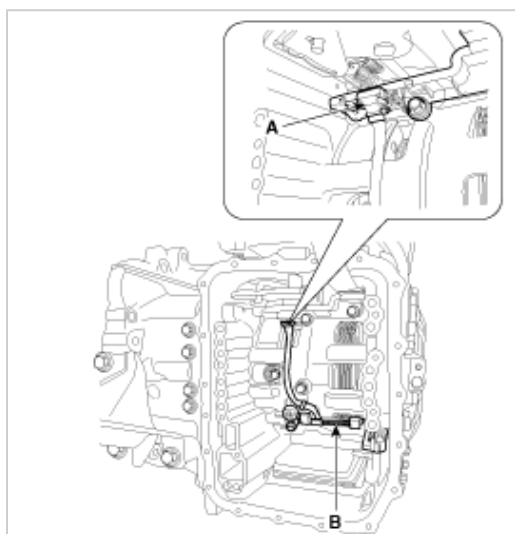
Specification: Refer to "Signal Wave Form" section.

Removal

1. Remove the valve body assembly.
(Refer to Hydraulic System - "Valve Body")
2. Disconnect the input & output speed sensor connector (A).
3. Remove the input & output speed sensor (B) after removing the bolts (2ea).

Tightening torque:

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



Installation

1. Installation is the reverse of removal.

NOTICE

- Adding Automatic Transaxle Fluid(ATF).
(Refer to Hydraulic System - "Fluid")
- Use new valve body gasket (A).



Automatic Transaxle System



Description

Torque converter control solenoid valve (T/CON) is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the torque converter.



Automatic Transaxle System



Specifications

Direct control VFS[T/CON]
▷ Control type : Normal low type

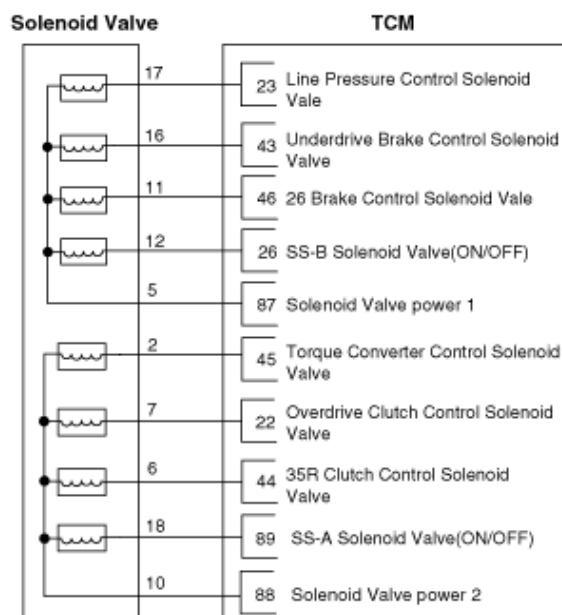
Control Pressure kpa (kgf/cm ² , psi)	9.81 ~ 500.14 (0.1 ~ 5.1, 1.42 ~ 72.54)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Automatic Transaxle System



Circuit Diagram

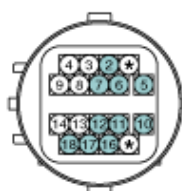
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



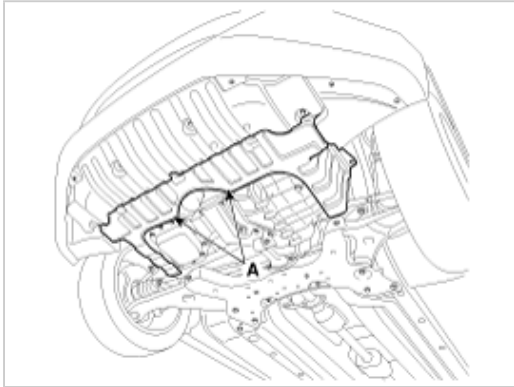
3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

1. Remove the air cleaner assembly.

(Refer to Engine Mechanical System - "Air cleaner")

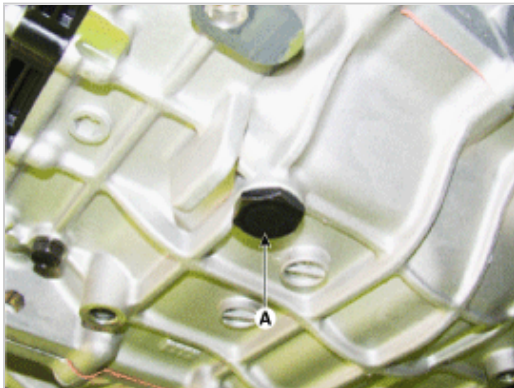
2. Remove the under cover (A).



3. Remove the drain plug (A) and reinstall the drain plug after draining ATF totally.

Tightening torque:

38.2 ~ 48.1 N.m (3.9 ~ 4.9 kgf.m, 28.2 ~ 35.4 lb-ft)



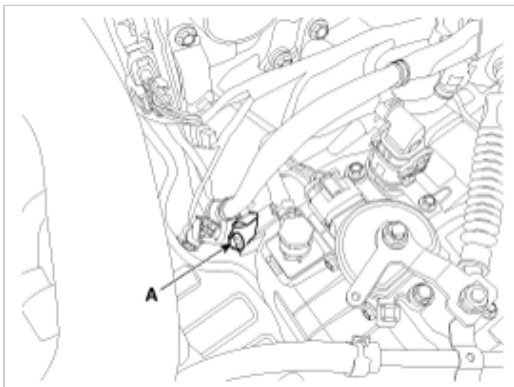
NOTICE

The gasket of the drain plug use new one.

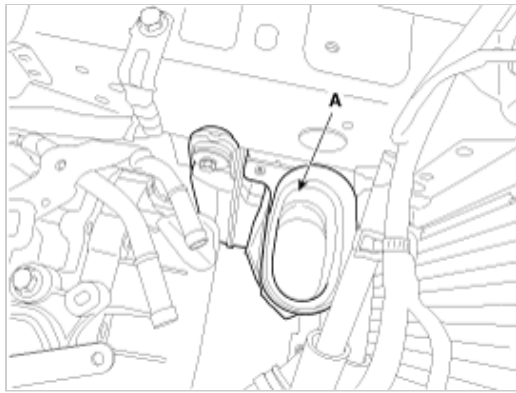
4. Remove the wiring mounting bolt (A).

Tightening torque:

(A) 9.8~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



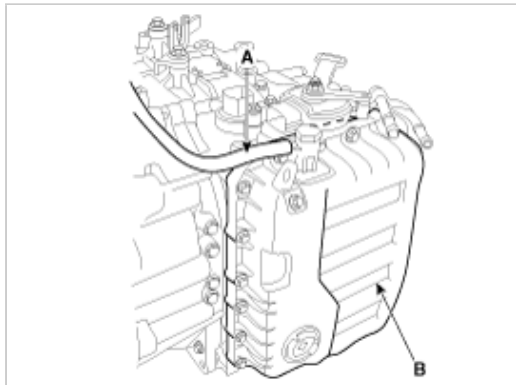
5. Remove the resonator (A).



6. Remove the valve body cover (B) after removing a air breather hose (A) from the valve body cover.

Tightening torque:

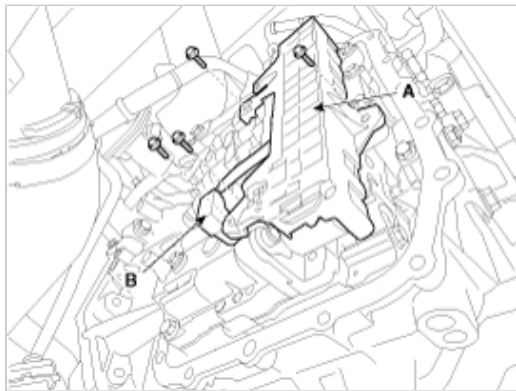
11.8 ~ 13.7 N.m (1.2 ~ 1.4 kgf.m, 8.7 ~ 10.1 lb-ft)



7. Remove the solenoid valve main connector (A) and oil temperature sensor (B) after removing the bolts.

Tightening torque:

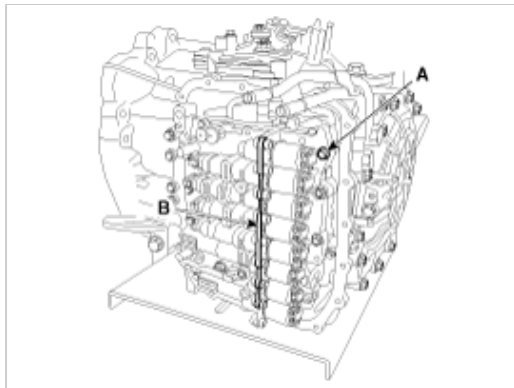
9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



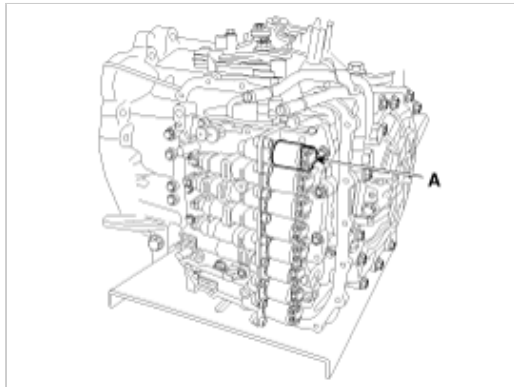
8. Remove the solenoid valve support bracket (B) and the valve body mounting bolt (A-1ea).

Tightening torque :

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



9. Remove the torque converter control solenoid valve (A).

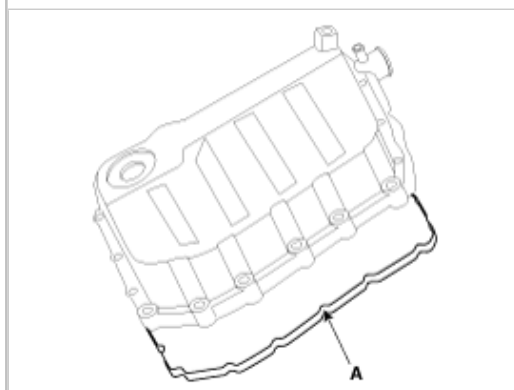


Installation

1. Installation is the reverse of removal.

NOTICE

- Adding Automatic Transaxle Fluid(ATF).
(Refer to Hydraulic System - "Fluid")
- Perform Transaxle Control Module(TCM) learning after replacing the valve body to prevent slow transaxle response, jerky acceleration and jerky startup.
(Refer to Automatic Transaxle Control System - "Repair procedures")
- Use new valve body gasket (A).



Automatic Transaxle System



Description

26Brake control solenoid valve(26/B) is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the 26Brake.

**Automatic Transaxle System**

Specifications

Direct control VFS[26/B]

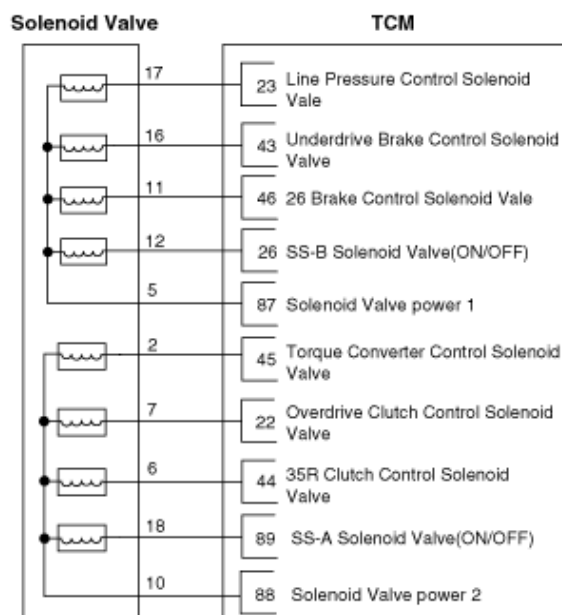
▷ Control type : Normal low type

Control Pressure kpa (kgf/cm ² , psi)	9.81 ~ 500.14 (0.1 ~ 5.1, 1.42 ~ 72.54)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Automatic Transaxle System

Circuit Diagram

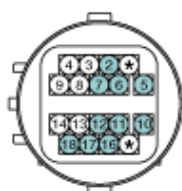
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

NOTICE

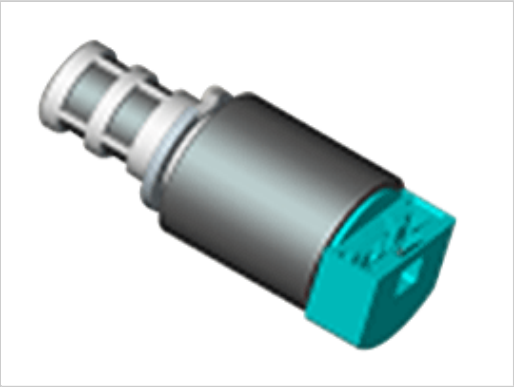
Replacing an on/off solenoid valve (SS-A, SS-B) does not require additional hydraulic pressure adjustment; however, the hydraulic pressure will need to be adjusted after replacing the VFS solenoid valve. If replacing the VFS solenoid valve; also replace the valve body assembly.
(Refer to Hydraulic System - "Valve Body")



Automatic Transaxle System

Description

Line pressure control solenoid valve is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the line pressure.



Automatic Transaxle System

Specifications

Direct control VFS[LINE Pressure]
▷ Control type : Normal high type

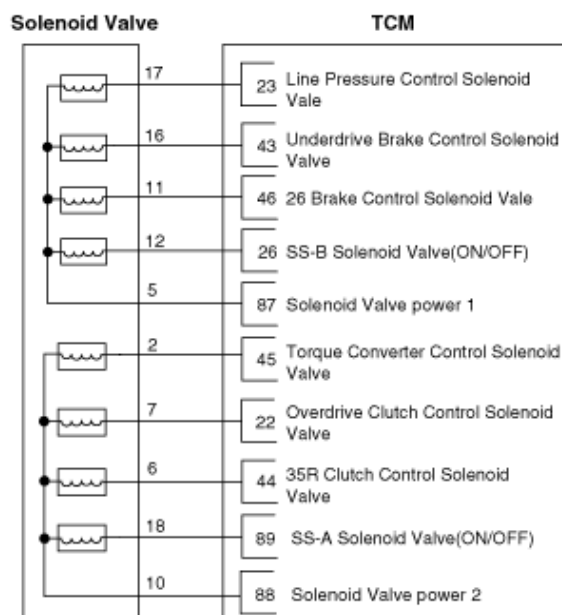
Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1



Automatic Transaxle System

Circuit Diagram

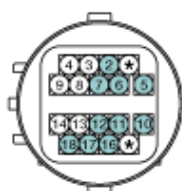
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

NOTICE

Replacing an on/off solenoid valve (SS-A, SS-B) does not require additional hydraulic pressure adjustment; however, the hydraulic pressure will need to be adjusted after replacing the VFS solenoid valve. If replacing the VFS solenoid valve; also replace the valve body assembly.

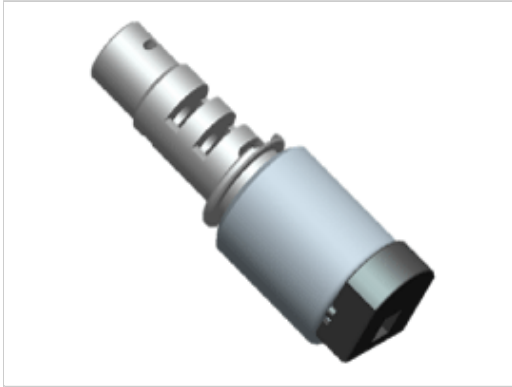
(Refer to Hydraulic System - "Valve Body")

Automatic Transaxle System



Description

35R Clutch control solenoid valve(35R/C) is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the 35R Clutch.



Automatic Transaxle System



Specifications

Direct control VFS[35R/C]

▷ Control type : Normal high type

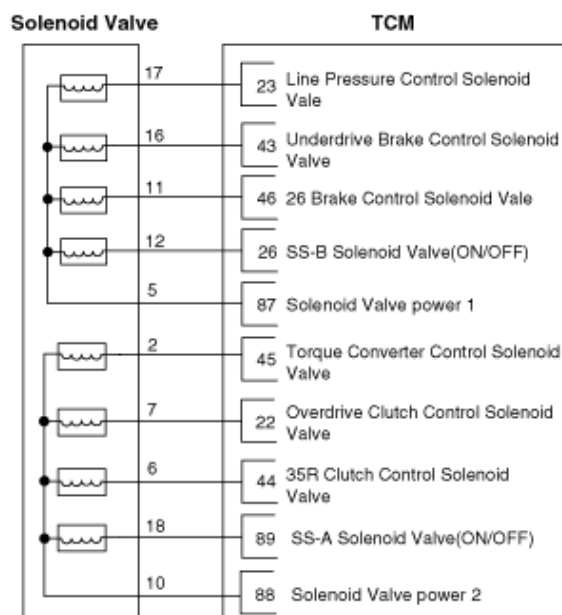
Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Automatic Transaxle System



Circuit Diagram

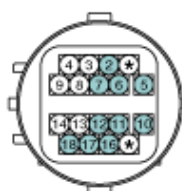
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

NOTICE

Replacing an on/off solenoid valve (SS-A, SS-B) does not require additional hydraulic pressure adjustment; however, the hydraulic pressure will need to be adjusted after replacing the VFS solenoid valve. If replacing the VFS solenoid valve; also replace the valve body assembly.

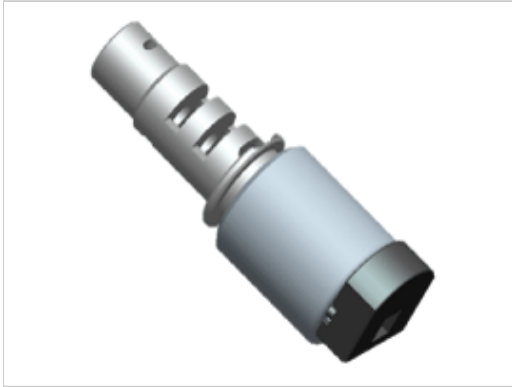
(Refer to Hydraulic System - "Valve Body")

Automatic Transaxle System



Description

Underdrive brake control solenoid valve(UD/B) is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the underdrive brake.



Automatic Transaxle System



Specifications

Direct control VFS[UD/B]

▷ Control type : Normal high type

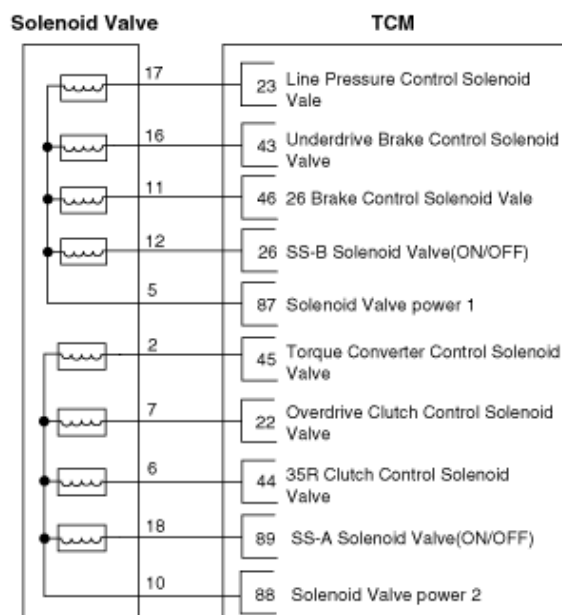
Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Automatic Transaxle System



Circuit Diagram

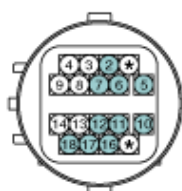
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

NOTICE

Replacing an on/off solenoid valve (SS-A, SS-B) does not require additional hydraulic pressure adjustment; however, the hydraulic pressure will need to be adjusted after replacing the VFS solenoid valve. If replacing the VFS solenoid valve; also replace the valve body assembly.

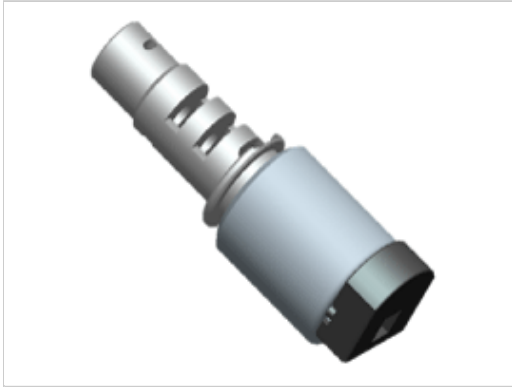
(Refer to Hydraulic System - "Valve Body")

Automatic Transaxle System



Description

Overdrive clutch control solenoid valve(OD/C) is attached to the valve body. This variable force solenoid valve directly controls the hydraulic pressure inside the overdrive clutch.



Automatic Transaxle System



Specifications

Direct control VFS[OD/C]

▷ Control type : Normal high type

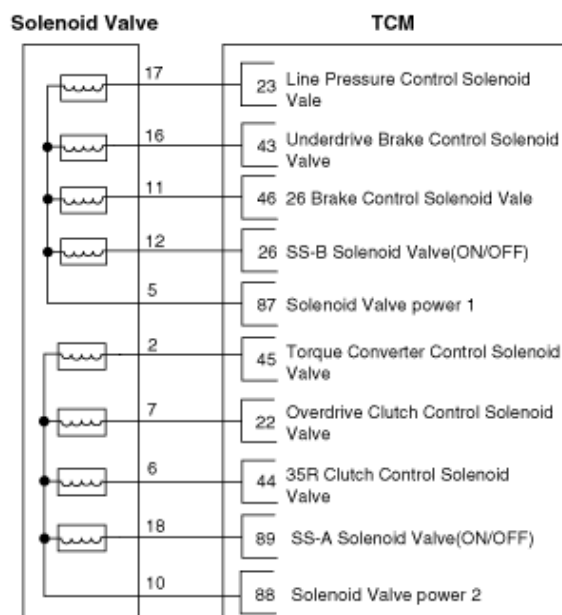
Control Pressure kpa (kgf/cm ² , psi)	500.14 ~ 9.81 (5.1 ~ 0.1, 72.54 ~ 1.42)
Current value(mA)	50 ~ 850
Internal resistance(Ω)	5.1

Automatic Transaxle System



Circuit Diagram

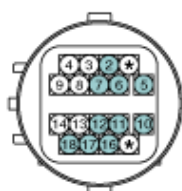
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Vale
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Vale
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

NOTICE

Replacing an on/off solenoid valve (SS-A, SS-B) does not require additional hydraulic pressure adjustment; however, the hydraulic pressure will need to be adjusted after replacing the VFS solenoid valve. If replacing the VFS solenoid valve; also replace the valve body assembly.
(Refer to Hydraulic System - "Valve Body")



Automatic Transaxle System

Description

SS-A solenoid valve is attached to the valve body and is an on/off solenoid valve that is used to change gears.
SS-A Solenoid valve(ON/OFF) is installed at valve body.



Automatic Transaxle System

Specifications

ON/OFF Solenoid Valve(SS-A)

▷ Control type : Normal low type

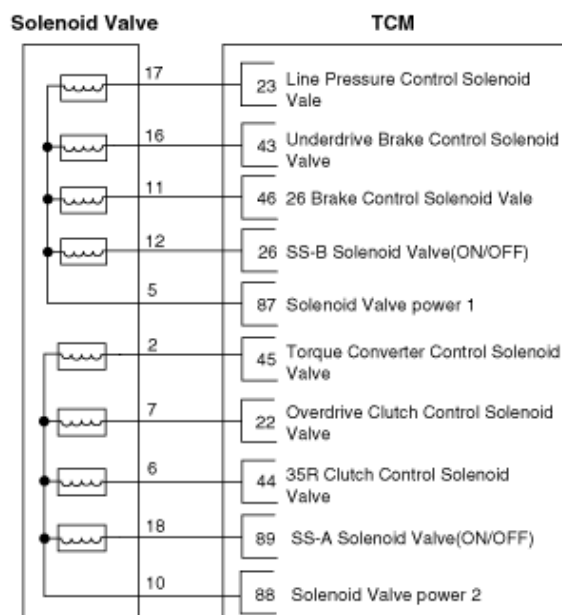
Control pressure kpa (kgf/cm ² , psi)	490.33(5.0, 71.12)
Internal resistance(Ω)	10 ~ 11



Automatic Transaxle System

Circuit Diagram

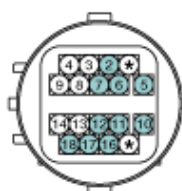
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



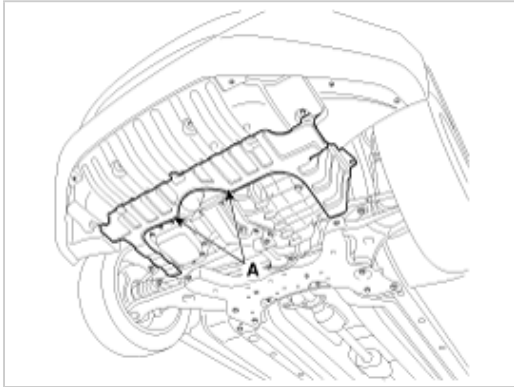
3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

1. Remove the air cleaner assembly.

(Refer to Engine Mechanical System - "Air cleaner")

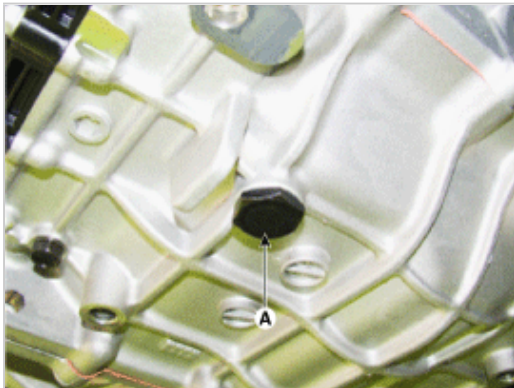
2. Remove the under cover (A).



3. Remove the drain plug (A) and reinstall the drain plug after draining ATF totally.

Drain plug tightening torque:

33.3 ~ 43.1 N.m (3.4 ~ 4.4 kgf.m, 24.6 ~ 31.8 lb-ft)



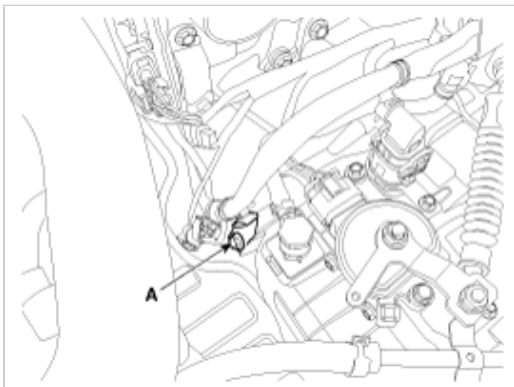
NOTICE

The gasket of the drain plug use new one.

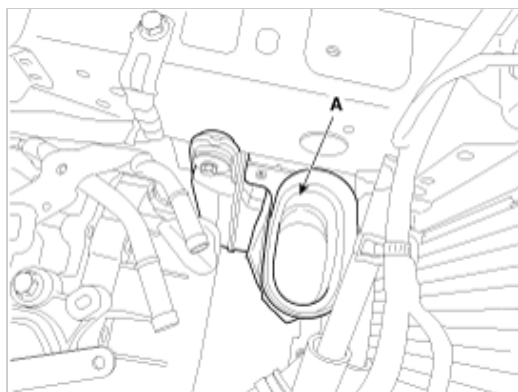
4. Remove the wiring mounting bolt (A).

Tightening torque:

(A) 9.8~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



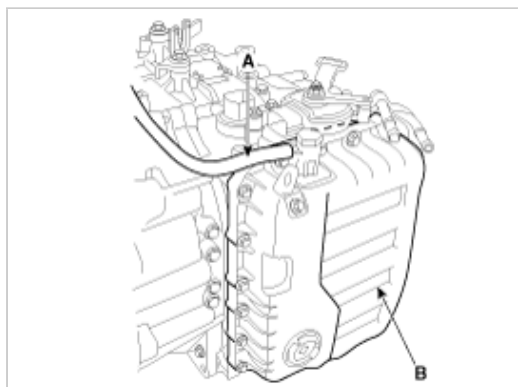
5. Remove the resonator (A).



6. Remove the valve body cover (B) after removing a air breather hose (A) from the valve body cover.

Tightening torque:

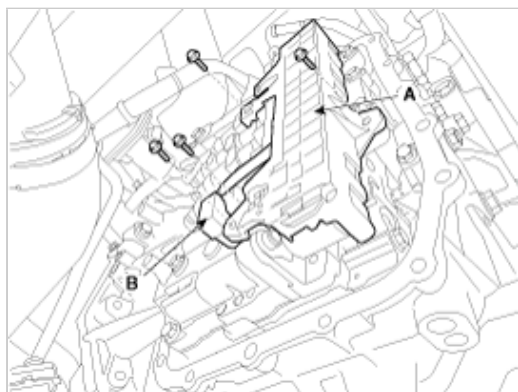
11.8 ~ 13.7 N.m (1.2 ~ 1.4 kgf.m, 8.7 ~ 10.1 lb-ft)



7. Remove the solenoid valve main connector (A) and oil temperature sensor (B) after removing the bolts.

Tightening torque:

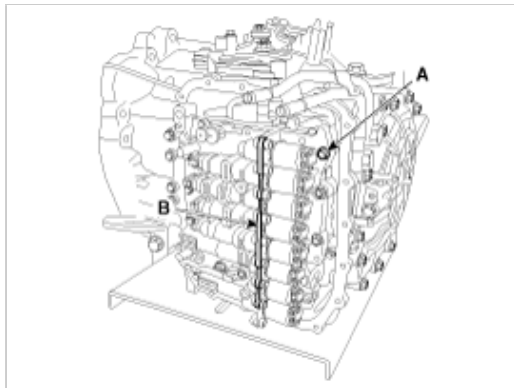
9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



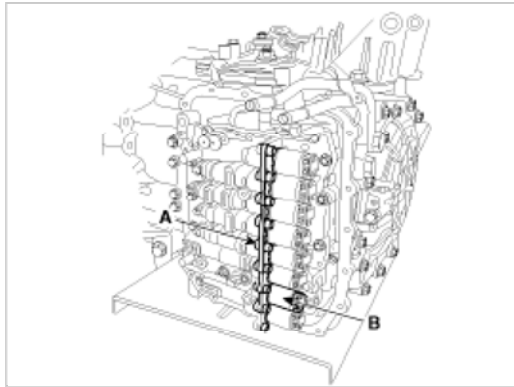
8. Remove the solenoid valve support bracket (B) and the valve body mounting bolt (A-1ea).

Tightening torque :

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



9. Remove the solenoid valve (B) after removing the solenoid support (A).

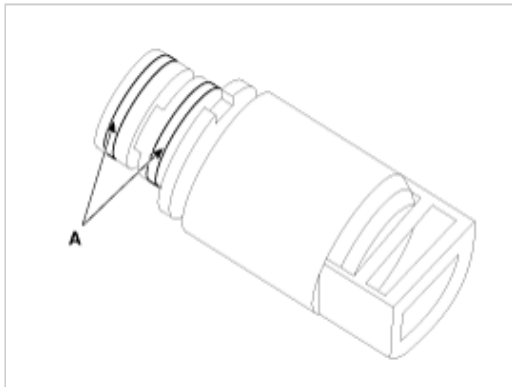


Installation

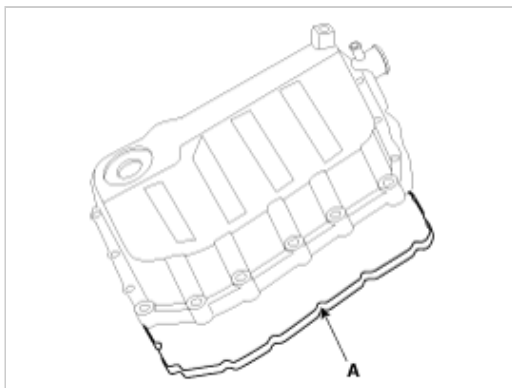
1. Install in the reverse order of removal.

NOTICE

- When installing, apply the ATF oil or white vaseline to the O-ring (A) not to be damaged.



- The gasket of the valve body gasket (A) use new one.



Automatic Transaxle System

**Description**

SS-B solenoid valve is attached to the valve body and is an on/off solenoid valve that is used to change gears.
SS-B Solenoid valve(ON/OFF) is installed at valve body.



Automatic Transaxle System

**Specifications**

ON/OFF Solenoid Valve(SS-B)

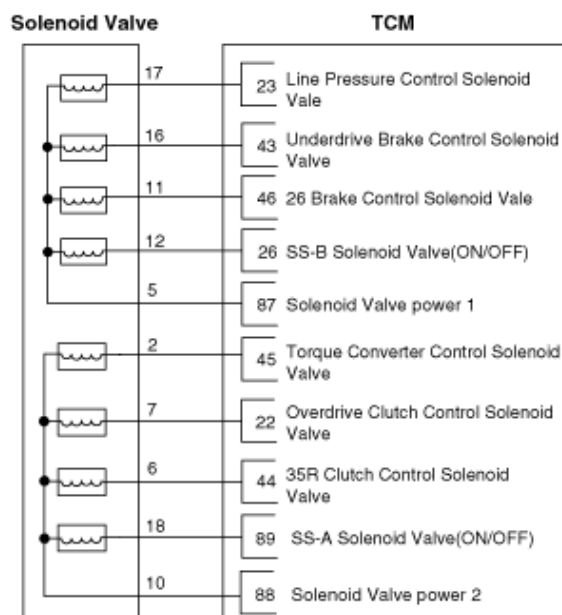
▷ Control type : Normal low type

Control pressure kpa (kgf/cm ² , psi)	490.33(5.0, 71.12)
Internal resistance(Ω)	10 ~ 11

Automatic Transaxle System

**Circuit Diagram**

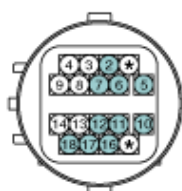
[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
17	TCM(23)	Line Pressure Control Solenoid Valve
16	TCM(43)	Underdrive Brake Control Solenoid Valve
11	TCM(46)	26 Brake Control Solenoid Valve
12	TCM(26)	SS-B Solenoid Valve (ON/OFF)
5	TCM(87)	Solenoid Valve power 1
2	TCM(45)	Torque Converter Control Solenoid Valve
7	TCM(22)	Overdrive Clutch Control Solenoid Valve
6	TCM(44)	35R Clutch Control Solenoid Valve
18	TCM(89)	SS-A Solenoid Valve (ON/OFF)
10	TCM(88)	Solenoid Valve power 2

[Harness Connector]



Solenoid Valve Connector



TCM Connector

Automatic Transaxle System



Inspection

1. Turn ignition switch OFF.
2. Disconnect the solenoid valve connector (A).



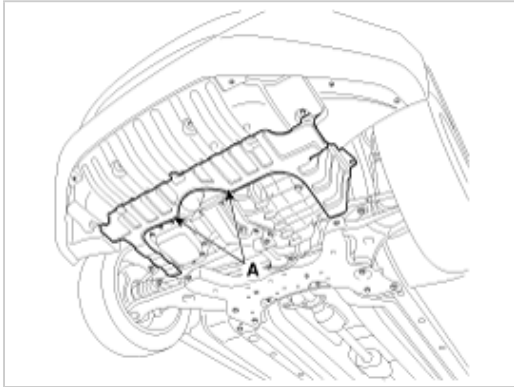
3. Measure resistance between sensor signal terminal and sensor ground terminal.
4. Check that the resistance is within the specification.

Removal

1. Remove the air cleaner assembly.

(Refer to Engine Mechanical System - "Air cleaner")

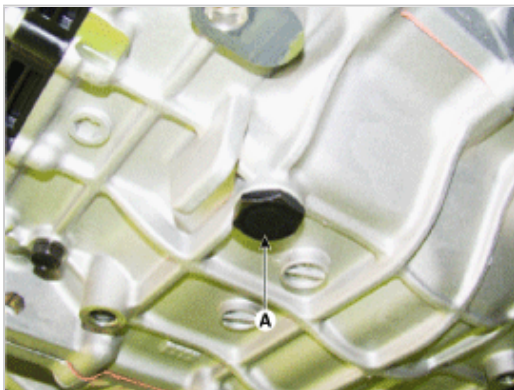
2. Remove the under cover (A).



3. Remove the drain plug (A) and reinstall the drain plug after draining ATF totally.

Drain plug tightening torque:

33.3 ~ 43.1 N.m (3.4 ~ 4.4 kgf.m, 24.6 ~ 31.8 lb-ft)



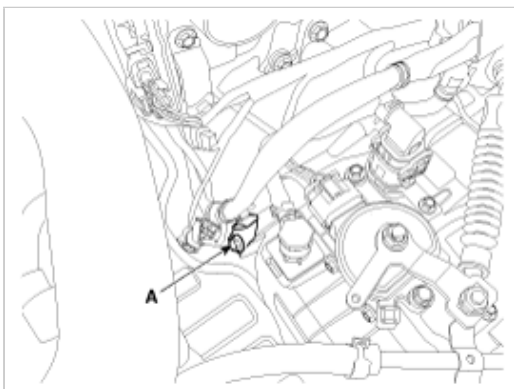
NOTICE

The gasket of the drain plug use new one.

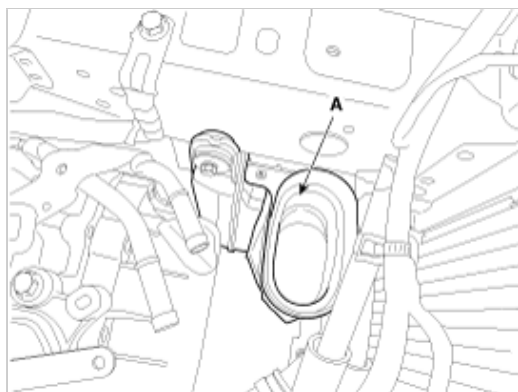
4. Remove the wiring mounting bolt (A).

Tightening torque:

(A) 9.8~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



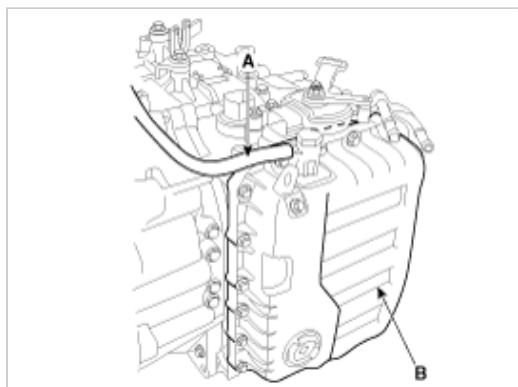
5. Remove the resonator (A).



6. Remove the valve body cover (B) after removing a air breather hose (A) from the valve body cover.

Tightening torque:

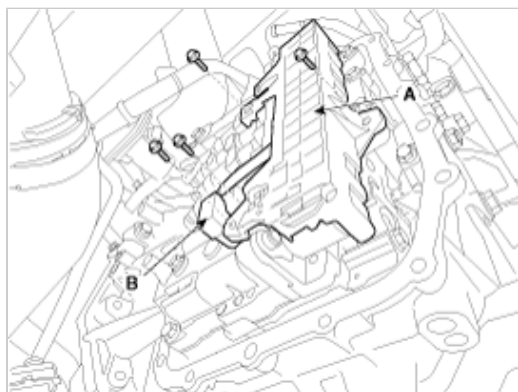
11.8 ~ 13.7 N.m (1.2 ~ 1.4 kgf.m, 8.7 ~ 10.1 lb-ft)



7. Remove the solenoid valve main connector (A) and oil temperature sensor (B) after removing the bolts.

Tightening torque:

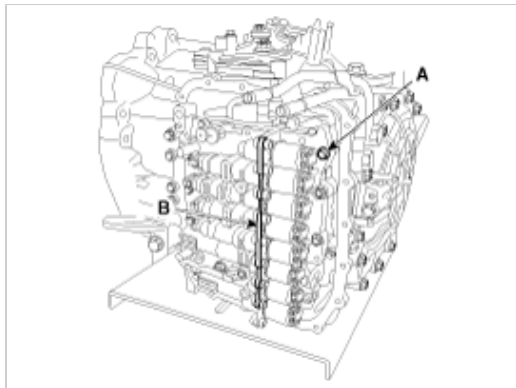
9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



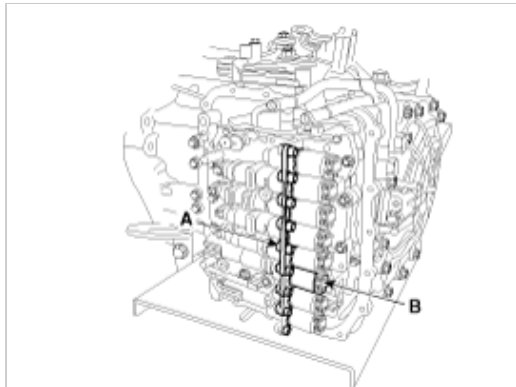
8. Remove the solenoid valve support bracket (B) and the valve body mounting bolt (A-1ea).

Tightening torque :

9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



9. Remove the solenoid valve (B) after removing the solenoid support (A).

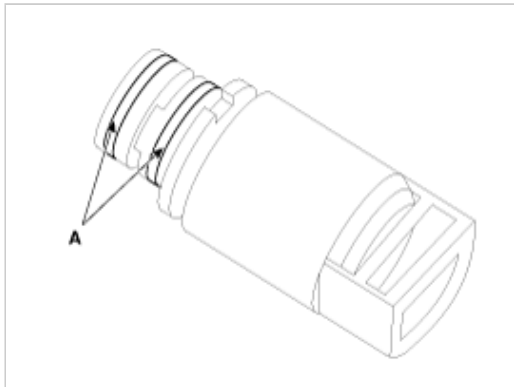


Installation

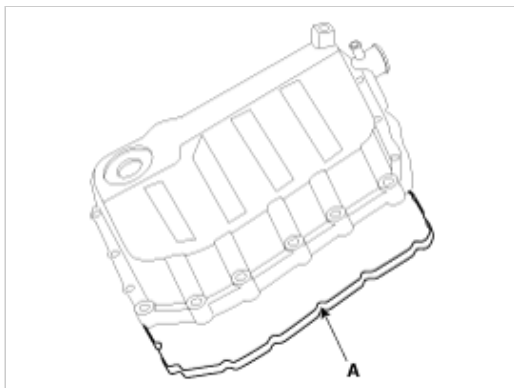
1. Install in the reverse order of removal.

NOTICE

- When installing, apply the ATF oil or white vaseline to the O-ring (A) not to be damaged.



- The gasket of the valve body gasket (A) use new one.

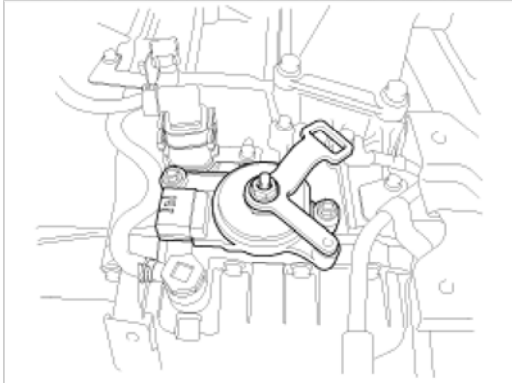


Automatic Transaxle System



Description

Inhibitor Switch monitors the lever's position(P, R, N, D) and is used to control gear setting signals.



Automatic Transaxle System



Specifications

▷ Type: Combination of output signals from 4 terminals

Power supply (V)	12
Output type	Combination of output signals

Signal Code Table

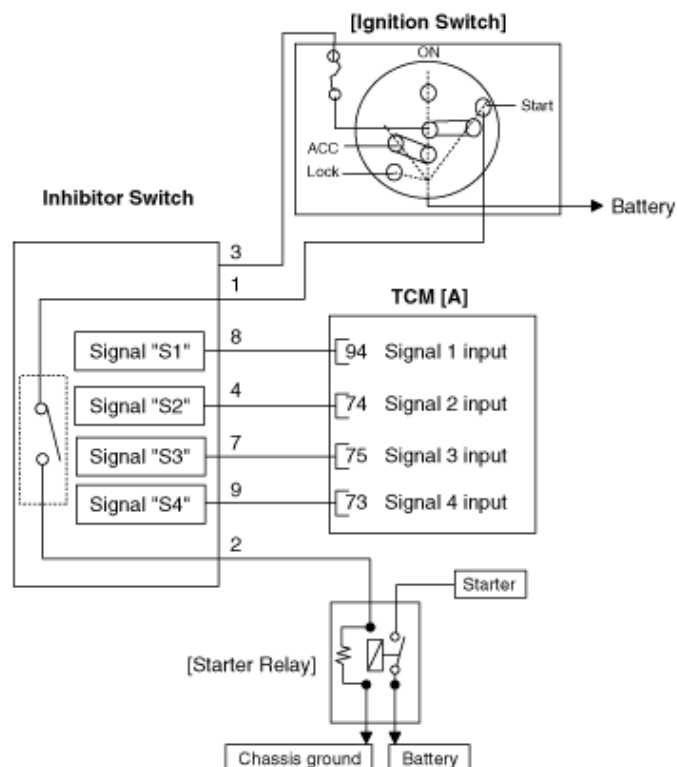
	P	P-R	R	R-N	N	N-D	D
S1	12V	12V	0	0	0	0	0
S2	0	12V	12V	12V	0	0	0
S3	0	0	0	12V	12V	12V	0
S4	0	0	0	0	0	12V	12V

Automatic Transaxle System



Circuit Diagram

[Circuit Diagram]



[Connection Information]

Terminal	Connected to	Function
4	TCM (74)	Signal 2 input
8	TCM (94)	Signal 1 input
7	TCM (75)	Signal 3 input
9	TCM (73)	Signal 4 input
3	Ignition switch	Ignition ON
1	Ignition switch	Starter power(ON)
2	Starter relay	Starter relay

[Harness Connector]



108	104	93	102	101	92	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84
83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62
61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1					

TCM Connector [A]

91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70
69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
3	2	1																			

TCM Connector [B]

Automatic Transaxle System



Inspection

NOTICE

- Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage.

Power Circuit Inspection

- Disconnect the Inhibitor switch connector.
- Ignition KEY "ON" & Engine "OFF".
- Measure voltage between supplied power and ground at inhibitor circuit.

Specification :Approx. 12V

Signal Circuit Inspection

1. Connect the Inhibitor switch connector.
2. Ignition KEY "ON" & Engine "OFF".
3. Measure voltages between each terminal and chassis ground during shift lever changed "P, R, N, D".

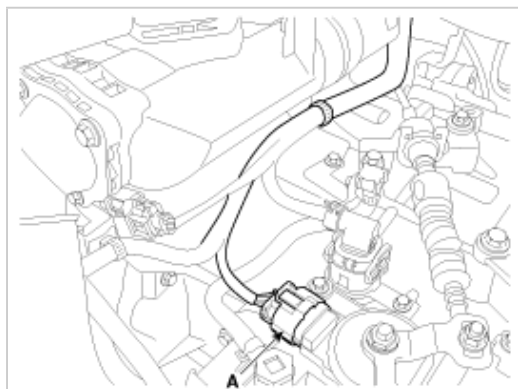
Specification :See below "Signal Code Table"

Signal Code Table

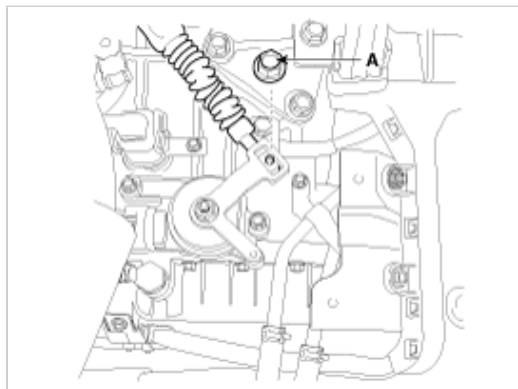
	P	P-R	R	R-N	N	N-D	D
Signal "1"	12V	12V	0	0	0	0	0
Signal "2"	0	12V	12V	12V	0	0	0
Signal "3"	0	0	0	12V	12V	12V	0
Signal "4"	0	0	0	0	0	12V	12V

Removal

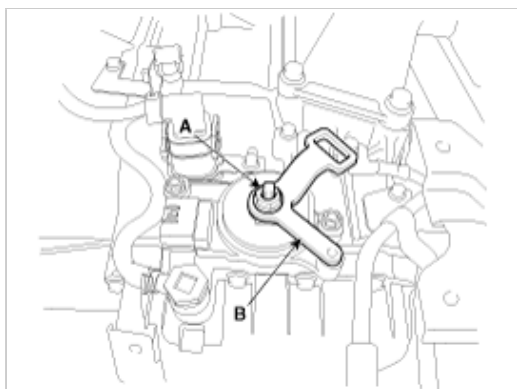
1. Place the shift lever into the "N" position.
2. Remove the air cleaner assembly.
(Refer to Engine Mechanical System - "Air cleaner")
3. Remove the battery and the battery tray.
(Refer to Engine Electrical System - "Battery")
4. Disconnect the inhibitor switch connector (A).



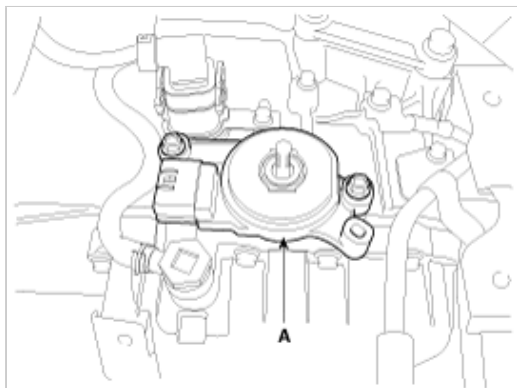
5. Remove the shift cable mounting nut (A).



6. Remove the manual control lever (B) and the washer after removing a nut (A).



7. Remove the inhibitor switch (A) after removing the bolts (2ea).

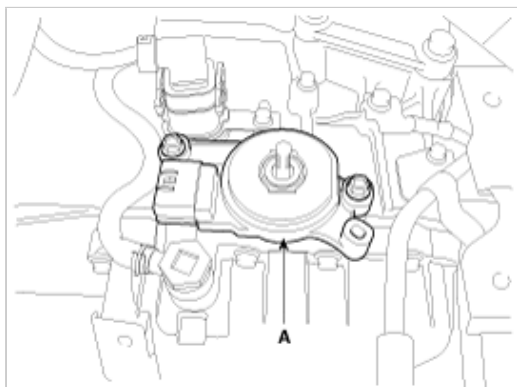


Installation

1. Check that the shift lever is placed in the "N" position
2. Install the inhibitor switch (A).

NOTICE

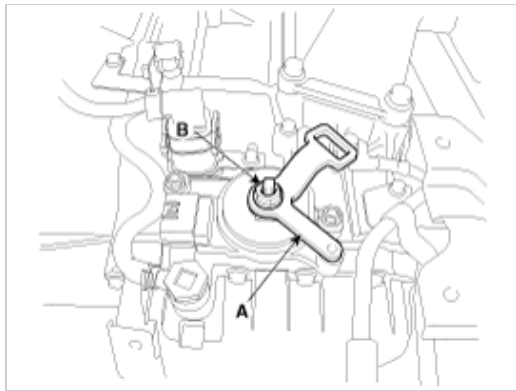
Lightly tighten the inhibitor switch mounting bolts so that necessary adjustments can be made.



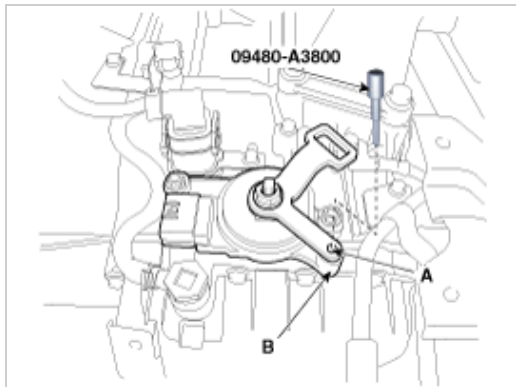
3. Install the manual control lever (A).

NOTICE

Lightly tighten the manual control lever nut (B) so that necessary adjustments can be made.



4. Align the hole (A) in the manual control lever with the "N" position hole (B) of the inhibitor switch and then insert the SST inhibitor switch guide pin (09480-A3800).

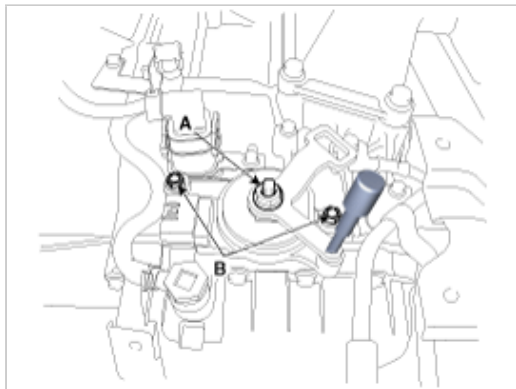


5. Tighten the nut (A) and bolts (B) with the specified torque.

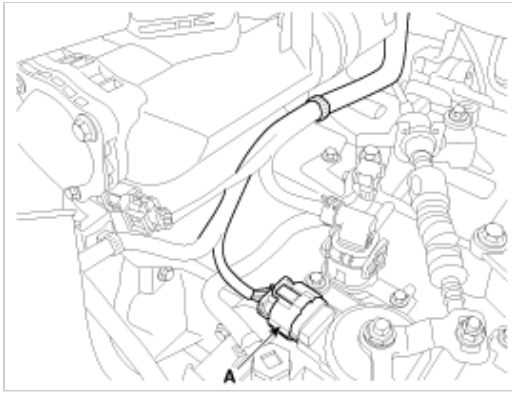
Tightening torque:

A : 17.7~24.5 N.m (1.8~ 2.5 kgf.m, 13.0 ~ 18.1 lb-ft)

B : 9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)



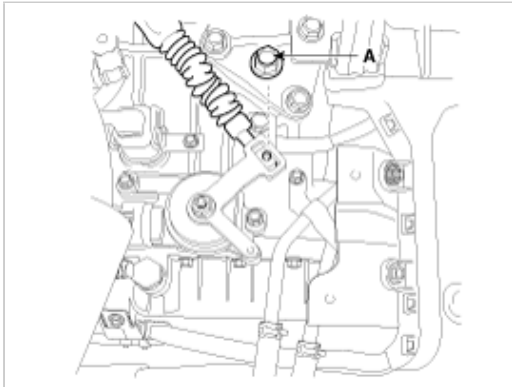
6. Remove the SST (09480-A3800) from the hole.
7. Connect the inhibitor switch connector (A).



8. Install the shift cable by tightening nut (A).

NOTICE

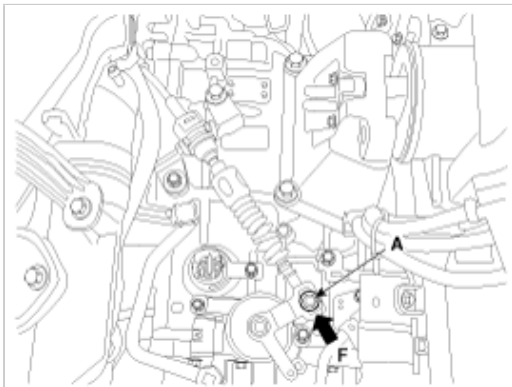
Lightly tighten the shift cable mounting nut (A) so that necessary adjustments can be made.



9. Push the shift cable to the arrow "F" to eliminate free play and then tighten the nut (A) with the specified torque.

Tightening torque:

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

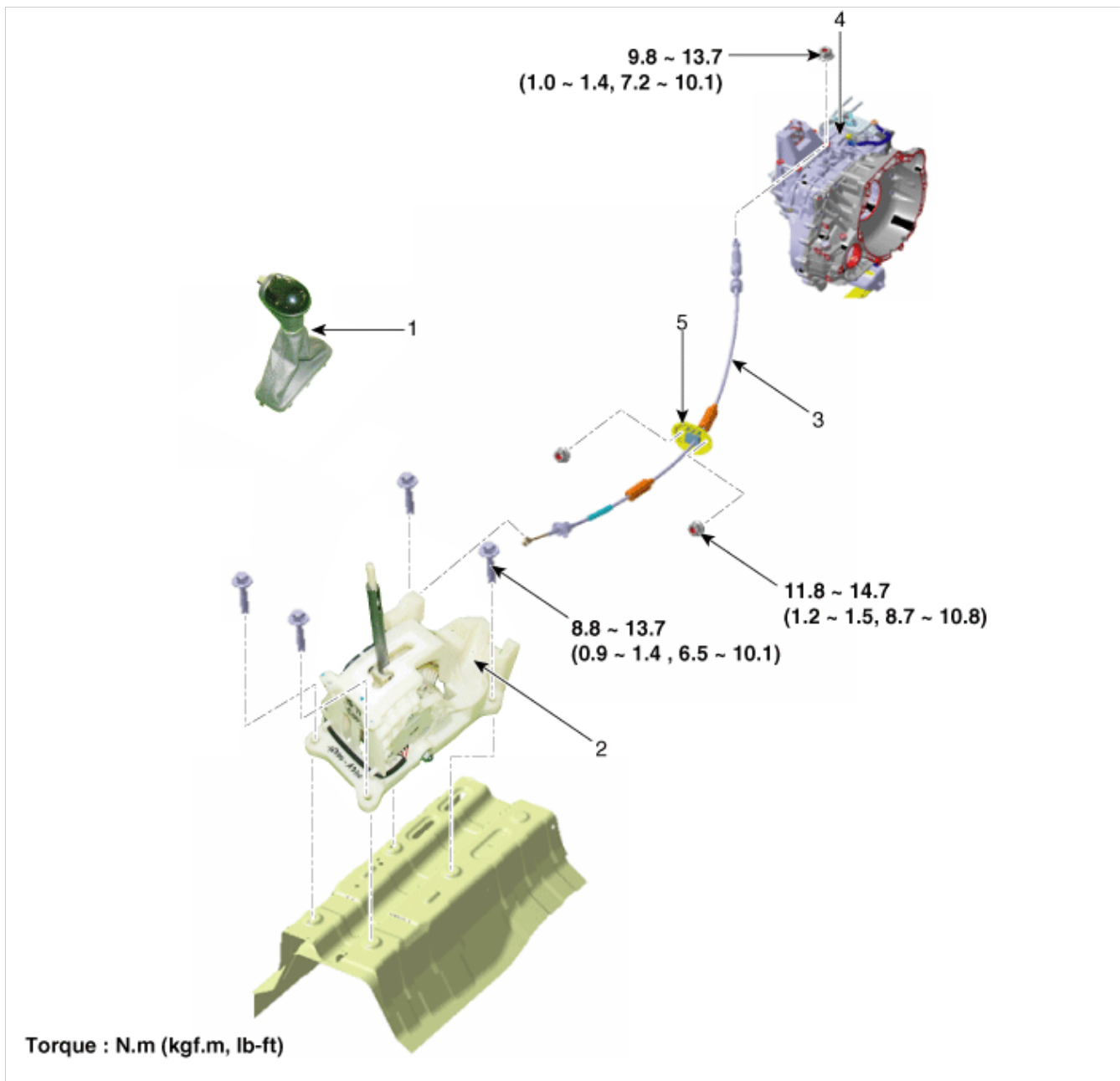


10. Install the battery and battery tray.
(Refer to Engine Electrical System - "Battery")
11. Install the air cleaner assembly.
(Refer to Engine Mechanical System - "Air cleaner")

Automatic Transaxle System



Components



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

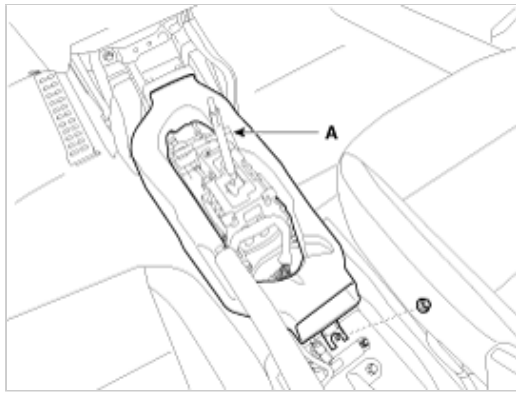
4. Manual control lever
5. Retainer

Automatic Transaxle System

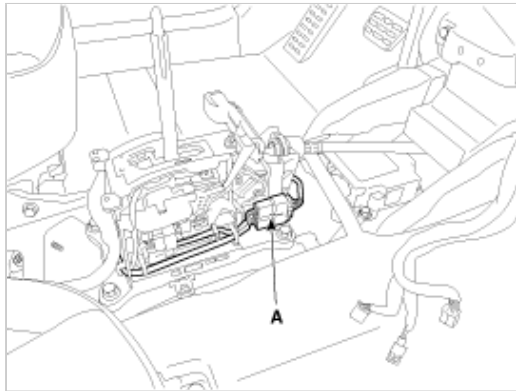


Removal

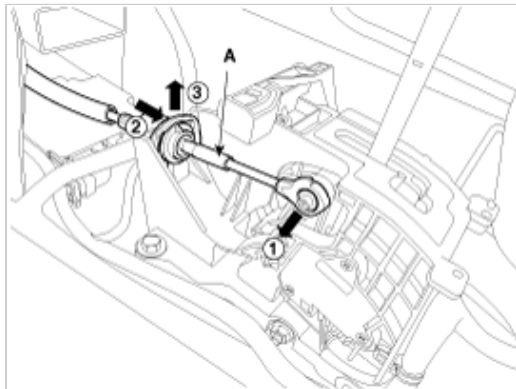
1. Remove the floor console assembly.
(Refer to Body - "Floor Console")
2. Remove the rear heating joint duct (A).



3. Disconnect the connector (A).



4. Disconnect the shift cable (A).



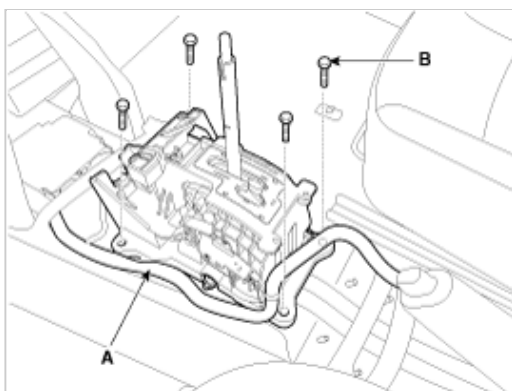
5. Remove the Shift lever assembly.

(1) Disconnect the wiring (A) from the shift lever assembly.

(2) Loosen the mounting bolts (B).

Tightening torque :

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



Installation

1. Install in the reverse order of removal.

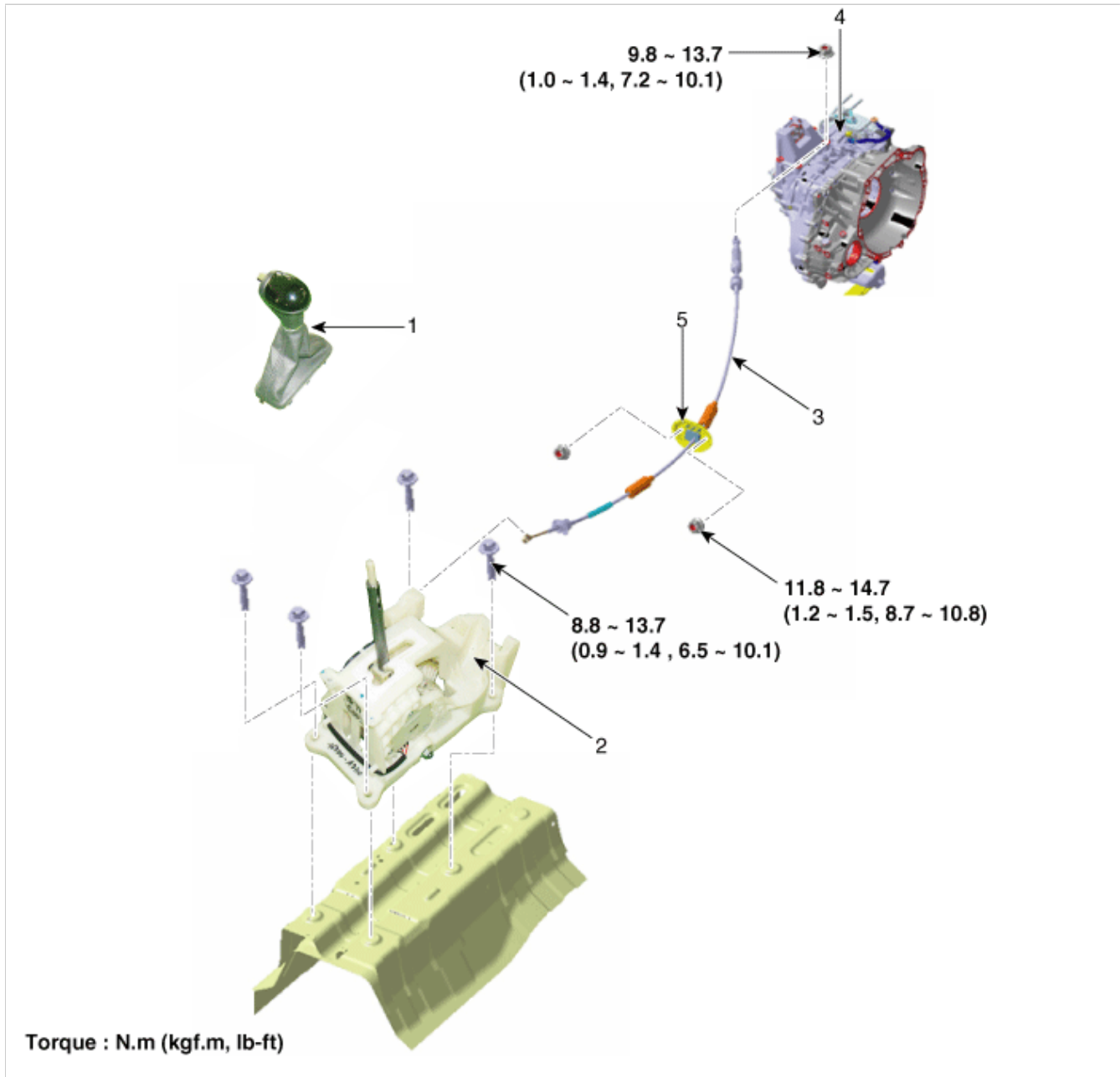
NOTICE

Install the cable after placing the shift lever and the transaxle manual control lever in the N position.

Automatic Transaxle System



Components



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

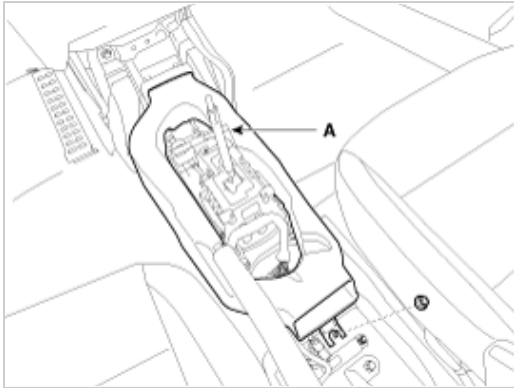
4. Manual control lever
5. Retainer

Automatic Transaxle System

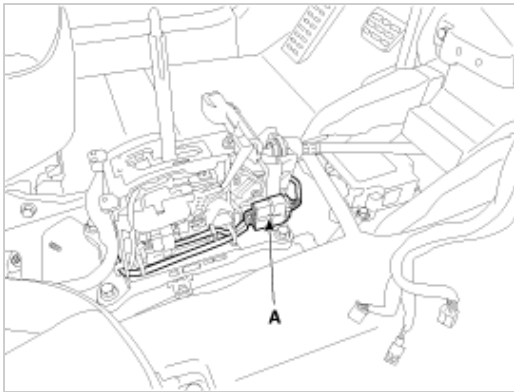


Removal

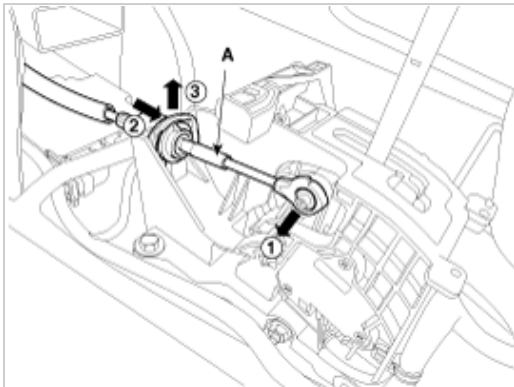
1. Remove the floor console assembly.
(Refer to Body - "Floor Console")
2. Remove the rear heating joint duct (A).



3. Disconnect the connector (A).



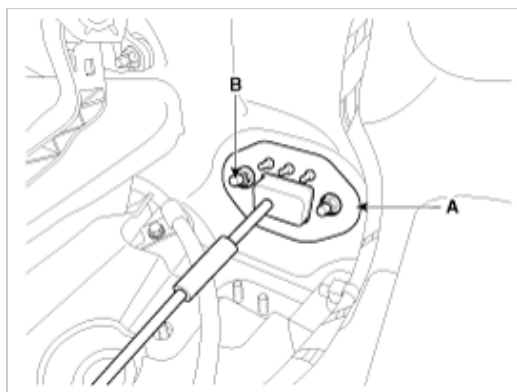
4. Disconnect the shift cable (A).



5. Remove the shift cable retainer (A) by loosening the nut (B).

Tightening torque:

11.8 ~ 14.7 N.m (1.2 ~ 1.5 kgf.m, 8.7 ~ 10.8 lb-ft)

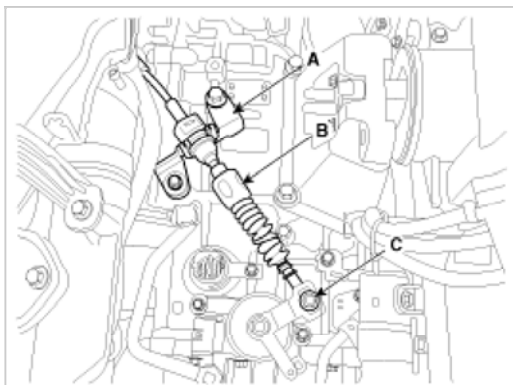


6. Remove the air cleaner assembly.
(Refer to Engine Mechanical System - "Air cleaner")
7. Remove the battery and battery tray.
(Refer to Engine Electrical System - "Battery")
8. Remove the shift cable.
 - (1) Loosen the nut (C)

Tightening torque:

9.8 ~ 13.7 N.m (1.0 ~ 1.4 kgf.m, 7.2 ~ 10.8 lb-ft)

- (2) Remove the shift cable (B) from the bracket (A).



9. Remove the shift cable by pulling it toward the interior.

Installation

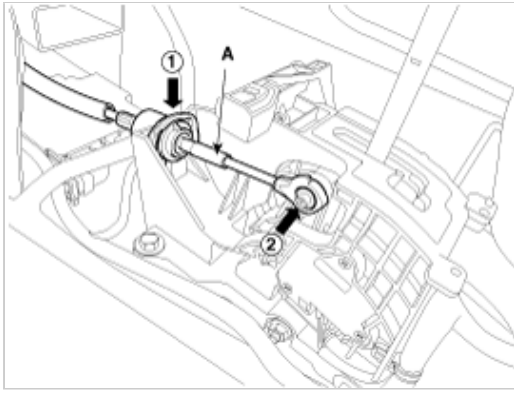
1. Install in the reverse order of removal.

NOTICE

- Install the cable after placing the shift lever and the transaxle manual control lever in the N position.
- Adjust the control cable.

Adjustment

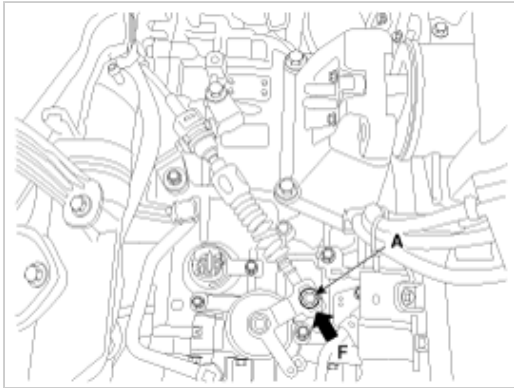
1. Place the shift lever in the interior and the transmission manual control lever to the N position.
2. Install the shift cable (A).



3. Lightly push the shift cable towards "F" to tighten the cable.
4. Tighten the nut (A) to the specified torque.

Tightening torque:

9.8 ~ 13.7 N.m (1.0 ~ 1.4 kgf.m, 7.2 ~ 10.1 lb-ft)



5. After adjusting, check to be sure that this part operates as designed at each range of T/M side corresponding to each position of room lever.