

ATA-2

Automatic Transaxle System

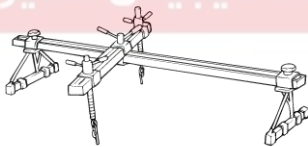
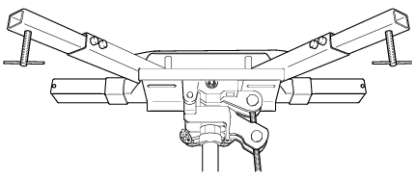
General Information

Specifications

Engine type		02.4
Transaxle type		A5GF1
Gear ratio	1ST	3.789
	2ND	2.064
	3RD	1.421
	4TH	1.034
	5TH	0.728
	REV.	3.808
Final gear ratio		3.311
Recommended transaxle oil		Diamond ATF SP III or SK ATF SP III
T/M oil capacity(l)※		9.5

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

Special Service Tools

Tool (Number and name)	Illustration	Use
09200-38001 Engine support fixture	 KKBF030A	Removal and installation of transaxle
09624-38000 Crossmember supporter	 EKBF005A	Removal and installation of cross member

Automatic Transaxle System

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Automatic Transaxle System

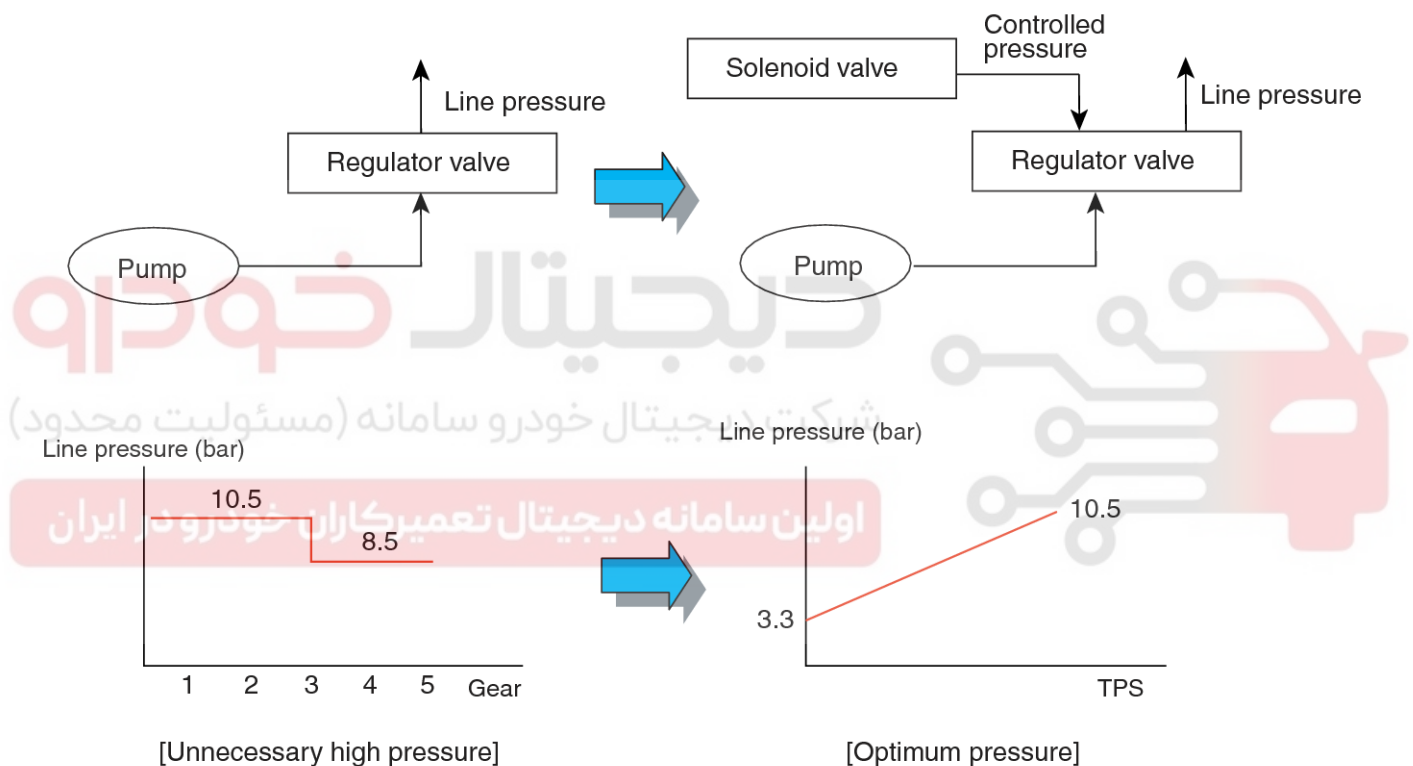
Description

1. Variable Line Pressure Control

- Description
 - Form the most suitable line pressure according to the vehicle driving condition
- Special Features
 - VFS (Variable Force Solenoid) valve(For varying line pressure)
 - Reducing valve added(Stabilize control pressure during shifting)

• Effects

- Improved power transmission efficiency and fuel consumption



EKBF002B

2. Case/Housing intensity reinforced

- Description
 - Case/Housing intensity reinforced
- Special Features
 - Converter housing intensity reinforced(Ribs added and thickness increased)
 - Most suitable stiff reinforcement through analysis

• Effects

- Intensity increased and banding vibration decreased
- NVH Performance improvement

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Automatic Transaxle System

3. Flat torque converter

- Description
 - Apply a flat type torque converter
- Special Features
 - Torque converter width decreased
 - Maximum torque increased
 - Blade design through three-dimensional flow analysis

• Effects

- Full length reduction
- Weight reduction

Mechanical System

Clutches And Brakes For Each Range

		UD Clutch	OD Clutch	2ND Brake	LR Brake	REV Clutch	RED Brake	DIR Clutch	OWC 1	OWC 2
	P	-	-	-	O	-	O	-	-	-
	R	-	-	-	O	O	O	-	-	-
	N	-	-	-	O	-	O	-	-	-
D	1st	O	-	-	O	-	O	-	●	●
	2nd	O	-	O	-	-	O	-	-	●
	3rd	O	O	-	-	-	O	-	-	●
	4th	-	O	O	-	-	O	-	-	●
	5th	-	O	O	-	-	-	O	-	-

(● : Locked when driving)

Functions Of Clutches And Brakes

Element	Sign	Function
Underdrive clutch	UD	Connect the input shaft with the underdrive sun gear
Reverse clautch	REV	Connect the input shaft with the reverse sun gear
Overdrive clutch	OD	Connect the input shaft with the overdrive carrier
Direct clutch	DIR	Connect the direct sun gear with the direct carrier
Low & Reverse brake	LR	Fix the planetary gear and the overdrive carrier
2nd brake	2ND	Fix the reverse sun gear
Reduction brake	RED	Fix the direct sun gear
One way clutch 1	OWC 1	Control the rotational direction of the low & reverse ring gear
One way clutch 2	OWC 2	Control the rotational driection of the direct sun gear

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Service Adjustment Procedure

Automatic Transaxle Fluid

Inspection

1. Drive the vehicle until the fluid reaches normal operating temperature [70~80°C].
2. Place the vehicle on a level surface.
3. Move the selector lever through all gear positions. This will fill the torque converter and the hydraulic system with fluid and move the selector lever to the "N" (Neutral) or "P" (Park) position.
4. Before removing the oil level gauge, wipe all contaminants from around the oil level gauge. Then take out the oil level gauge and check the condition of the fluid.

NOTICE

If the fluid smells as if it is burning, it means that the fluid has been contaminated by fine particles from the bushes and friction materials, a transaxle overhaul may be necessary.

5. Check that the fluid level is at the HOT mark on the oil level gauge. If the fluid level is low, add automatic transaxle fluid until the level reaches the "HOT" mark.

Auto transaxle fluid:

DIAMOND ATF SP-III, SK ATF SP-III

Quantity : 9.5ℓ

NOTICE

Low fluid level can cause a variety of a abnormal conditions because it allows the pump to take in air along with fluid. Air trapped in the hydraulic system forms bubbles, which are compressable. Therefore, pressures will be erratic, causing delayed shifting, slipping clutches and brakes, etc. Improper filling can also raise fluid level too high. When the transaxle has too much fluid, gears churn up foam and acuse the same conditions which occur with low fluid level, resulting in accelerated deterioration of automatic transaxle fluid. In either case, air bubbles can cause overheating, and fluid oxidation, which can interfere with normal valve, clutch, and brake operation. Foaming can also result in fluid escaping from the transaxle vent where it may be mistaken for a leak.

6. Insert the oil level gauge securely.

NOTICE

When new, automatic transmission fluid should be red. The red dye is added so the assembly plant can identify it as transmission fluid and distinguish it from engine oil or antifreeze. The red dye, which is not an indicator of fluid quality, is not permanent. As the vehicle is driven the transmission fluid will begin to look darker. The color may eventually appear light brown.

Replacement

If you have a fluid changer, use this changer to replace the fluid. If you do not, replace it using the following procedure.

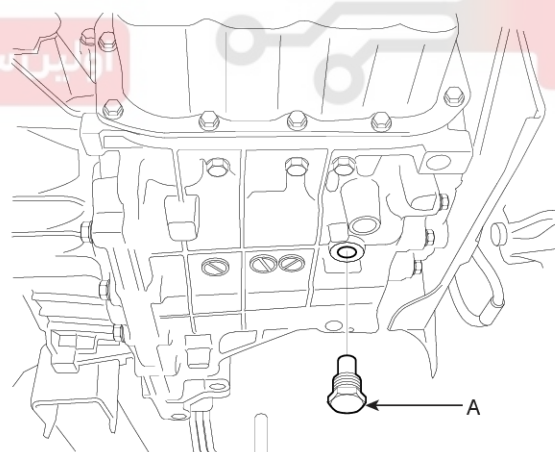
1. Disconnect the hose which connects the transmission and the oil cooler.
2. Start the engine and let the fluid drain out.

Running conditions : "N" range with engine idling.

CAUTION

The engine should be stopped within one minute after it is started. If the fluid has all drained out before then, the engine should be stopped at that point.

3. Remove the drain plug(A) from the bottom of the transmission case to drain the fluid.



KKRE004C

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Automatic Transaxle System

4. Install the drain plug using a new gasket, and tighten it to the specified torque.

Tightening torque :

40 ~ 50Nm (4 ~ 5 kgf.m, 29 ~ 36 lb-ft)

5. Pour the new fluid in through the oil filler tube.

⚠ CAUTION

Stop pouring if the full volume of fluid cannot be poured in.

6. Repeat the procedure in step (2).

📖 NOTICE

Check the old fluid for contamination. If it has been contaminated, repeat steps (5) and (6).

7. Pour the new fluid in through the oil filler tube.
8. Reconnect the hose which was disconnected in step (1) above and firmly replace the oil level gauge. (In case of this "replace", this means after wiping off any dirt around the oil level gauge, insert it into the filler tube.)
9. Start the engine and run it at idle for 1~2 minutes.
10. Move the select lever through all positions, and then move it to the "N" position.
11. Drive the vehicle until the fluid temperature rises to the normal temperature (70~80°C), and then check the fluid level again. The fluid level must be at the HOT mark.
12. Firmly insert the oil level gauge into the oil filler tube.

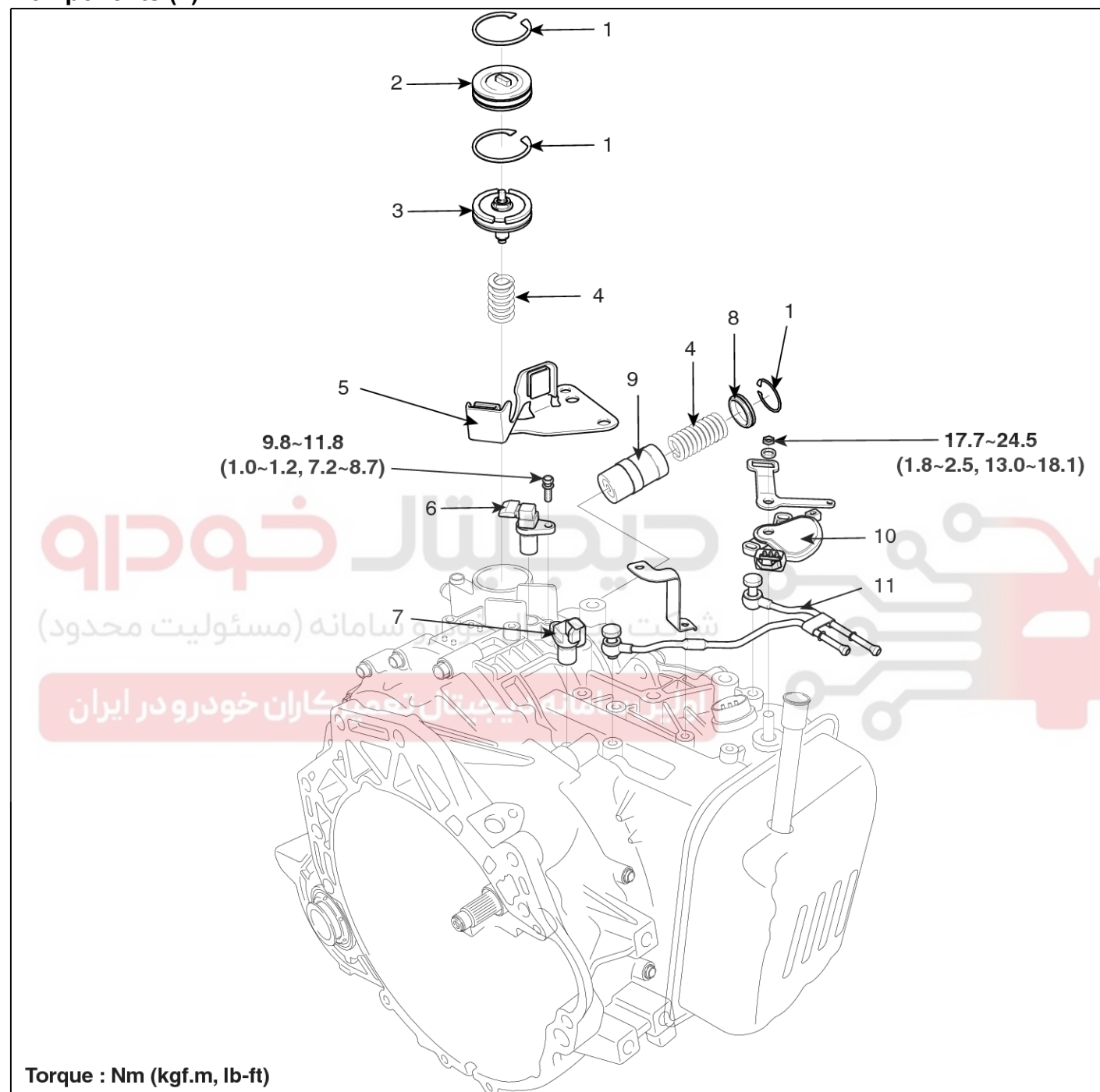


Automatic Transaxle System

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Automatic Transaxle

Components (1)



SNFAA8001L

- | | |
|---------------------------------|-----------------------|
| 1. Snap ring | 7. Input speed sensor |
| 2. Reduction brake piston cover | 8. Accumulator cover |
| 3. Reduction brake piston | 9. Accumulator piston |
| 4. Spring | 10. Inhibitor switch |
| 5. Shift cable bracket | 11. Oil feed tube |
| 6. Output speed sensor | |

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Automatic Transaxle System

Components (2)



SNFAA8051D

Automatic Transaxle System

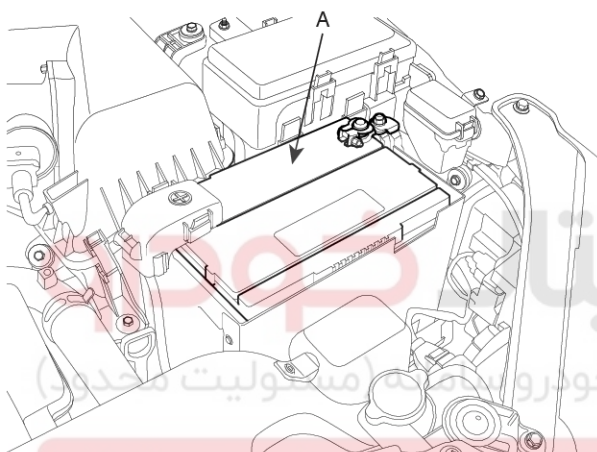
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1. Torque converter assembly
2. Valve body cover
3. Valve body assembly
4. Manual control shaft assembly
5. Converter housing
6. Differential assembly
7. Main oil filter
8. Oil pump
9. Input shaft
10. Underdrive clutch assembly
11. Underdrive clutch hub
12. Direct planetary carrier assembly

13. Direct clutch assembly
14. Reduction brake band
15. One way clutch
16. Transfer drive gear
17. Differential bearing case
18. Transaxle case
19. Snap ring
20. Parking roller support shaft
21. Parking roller support
22. Parking sprag shaft
23. Parking sprag spring
24. Parking sprag

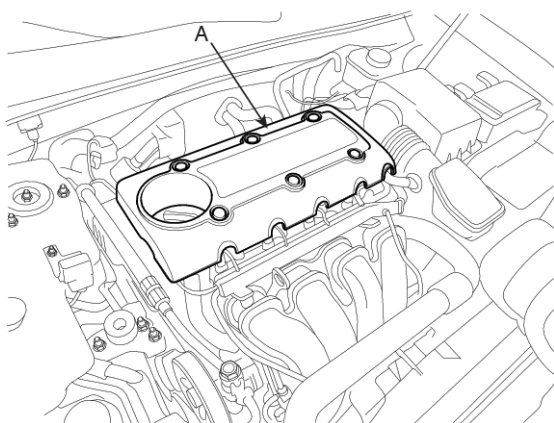
Removal

1. Remove the battery (A).



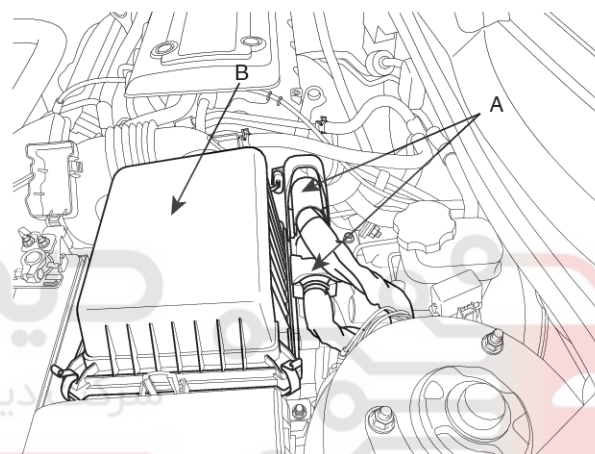
SMGAA9001D

2. Remove the engine cover (A).



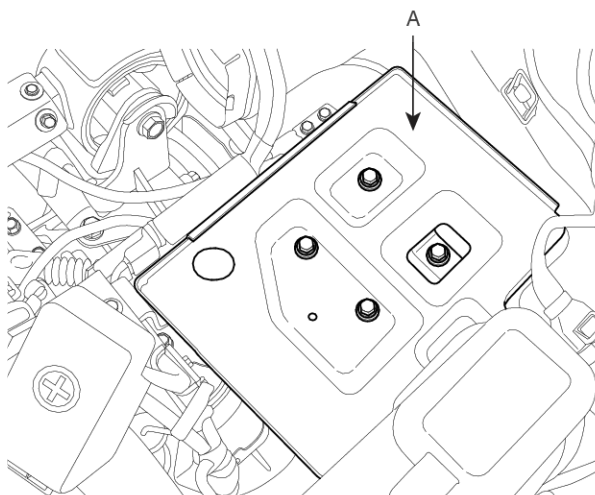
SMGMT9002D

3. After disconnecting the PCM connector (A), remove air cleaner (B).



SMGAT9050D

4. Remove the battery tray (A).

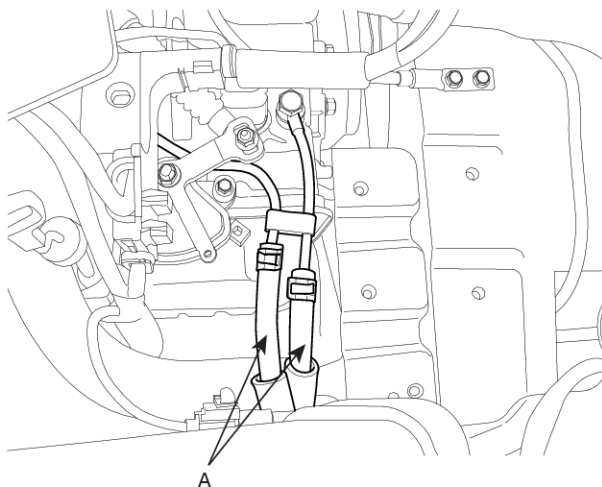


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ATA-10

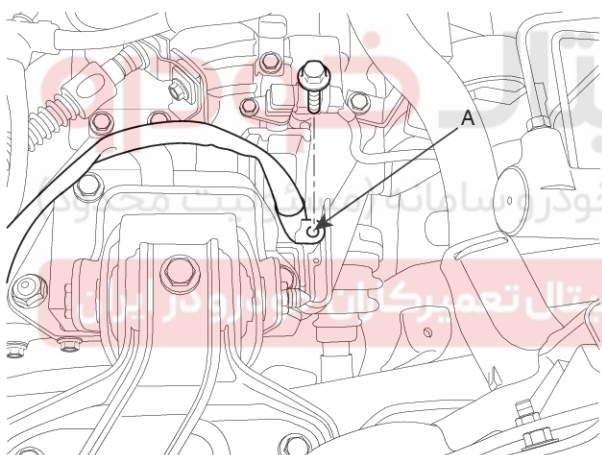
Automatic Transaxle System

5. Remove the transaxle oil cooler hoses (A) by releasing the clamps.



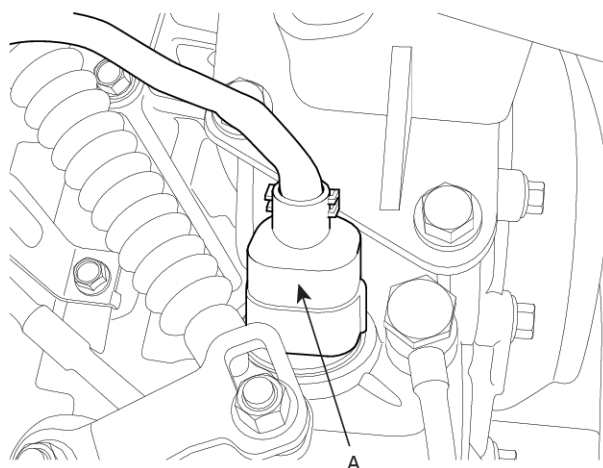
KKBF004A

6. Disconnect the ground wire (A).



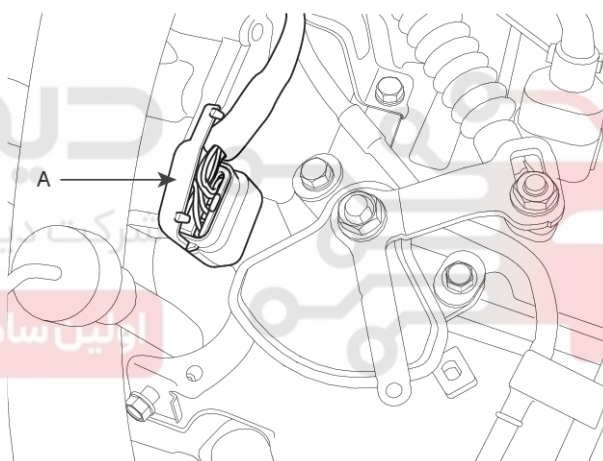
SMGAT9056D

7. Disconnect the solenoid valve connector (A).



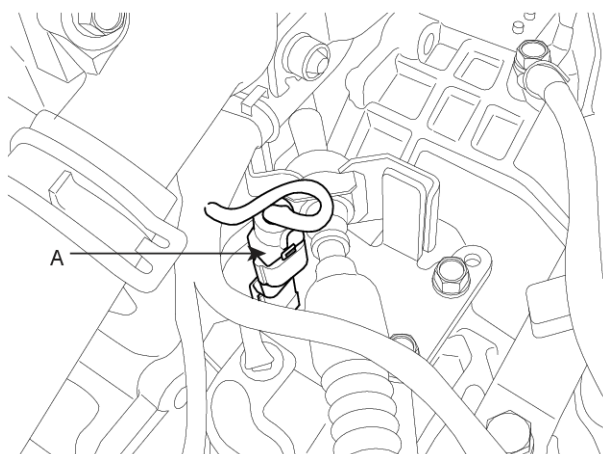
KKBF014A

8. Disconnect the inhibitor switch connector (A).



KKBF011A

9. Disconnect the input speed sensor connector (A).

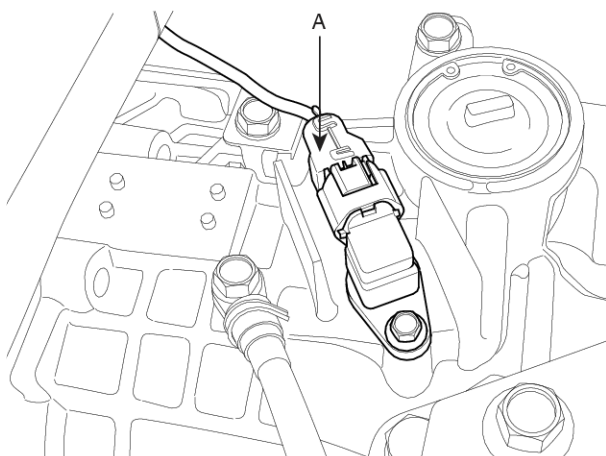


KKBF012A

Automatic Transaxle System

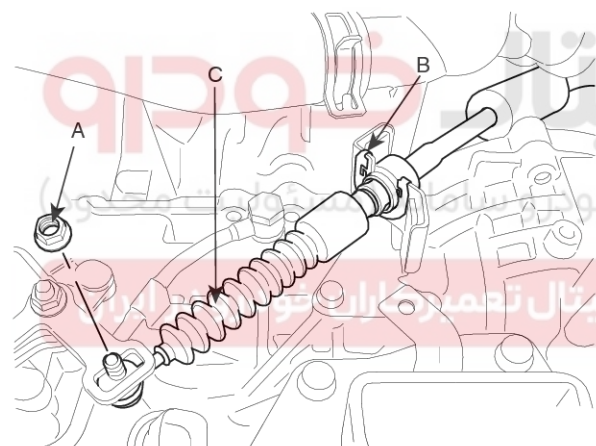
ATA-11

10. Disconnect the output speed sensor connector (A).



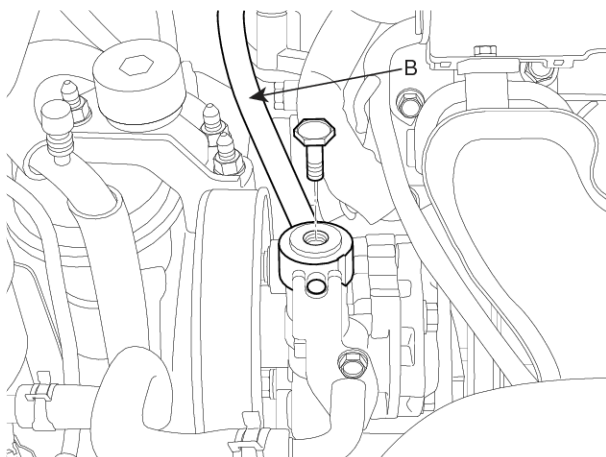
KKBF013A

11. Remove the control cable assembly (C) by removing the nut (A) and one-touch clip (B).



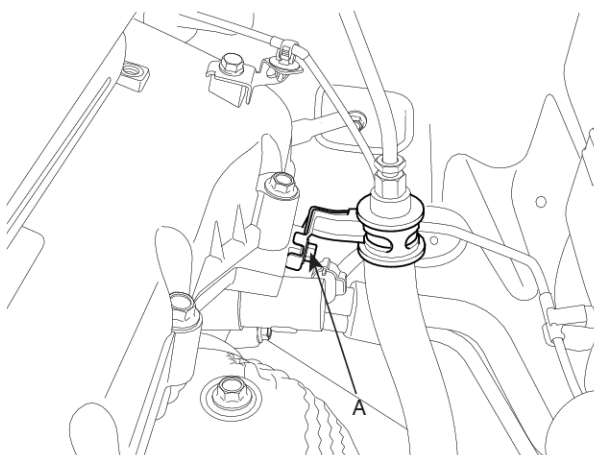
SNFAA6040D

12. Remove the power steering pressure tube bolt(A).



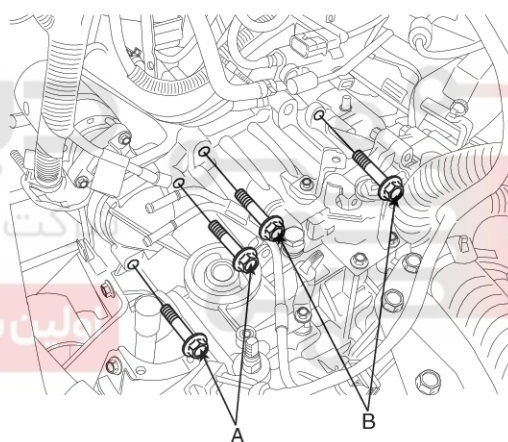
SNFAT8004D

13. Remove the power steering pressure tube bracket bolt(A).



SMGAT9051D

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

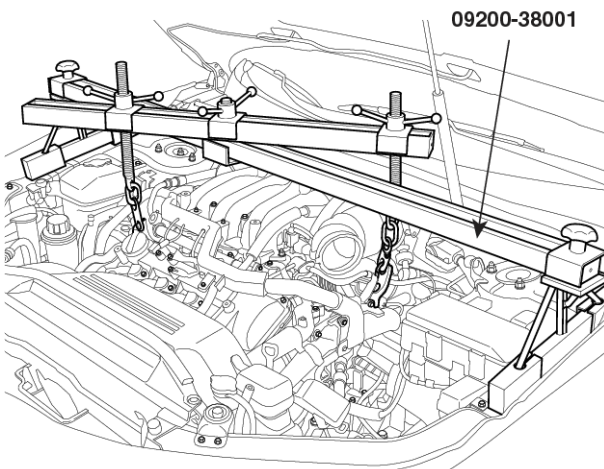


SMGAT9001D

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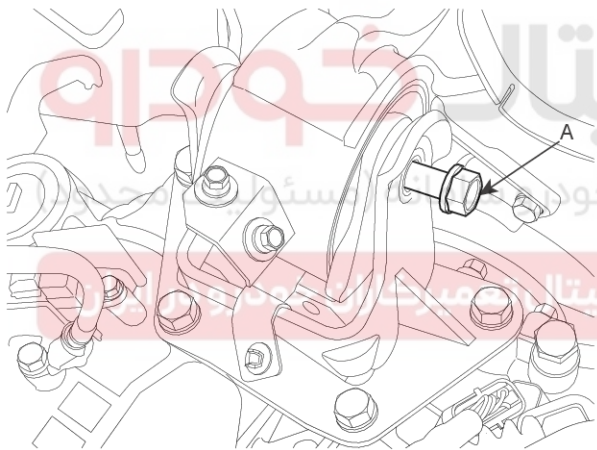
Automatic Transaxle System

15. Using the SST(09200-38001), support the engine and transaxle assembly safely.



KKBF006A

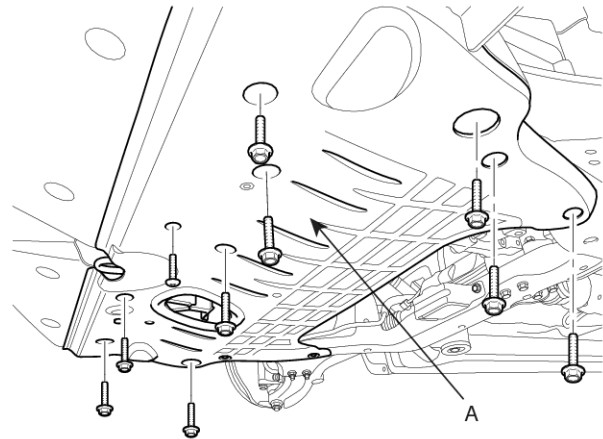
16. Remove the transaxle mounting bolt (A).



KKBF010A

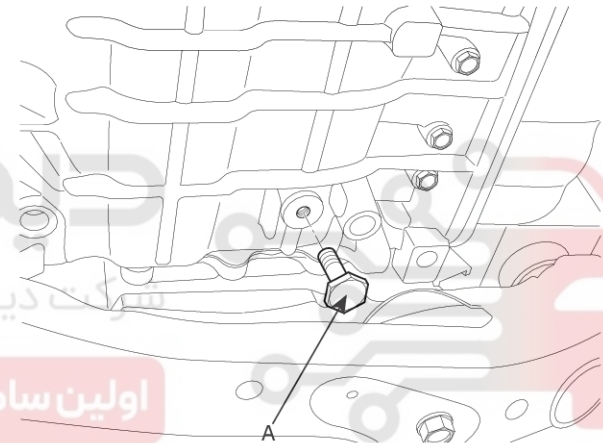
17. Remove the front wheels. (refer to SS group).

18. Remove the under cover (A).



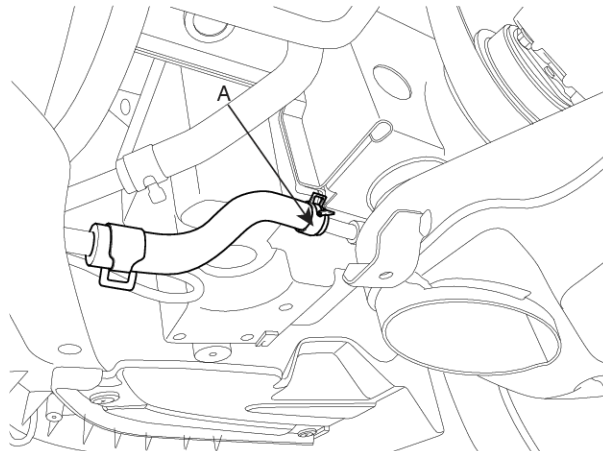
SNFAT8001D

19. After removing the oil drain plug (A), drain the fluid.



SNFAT8003D

20. Drain power steering fluid through the return tube by loosening the clamp (A).

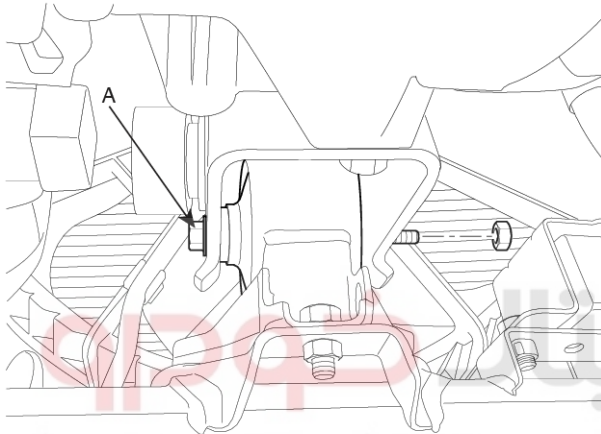


SMGAT9053D

Automatic Transaxle System

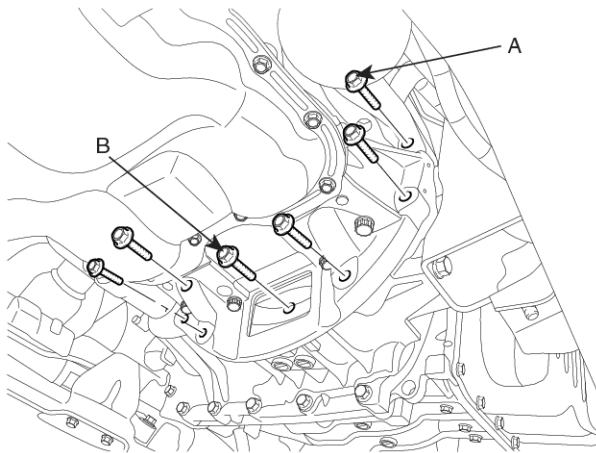
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21. Disconnect the lower arm, the tie rod end ball joint, and the stabilizer link from the front knuckle. (refer to SS group)
22. Remove the power steering column joint bolt (A). (refer to ST group).
23. Supporting the sub frame with a jack and the special tool (09624-38000), remove the mounting bolts. (refer to SS group).
24. After removing the inner shaft mounting bolts, remove the drive shafts from transaxle. (refer to DS group)
25. Remove the supporting bracket bolts(A)



SMGAT9052D

26. Remove the torque converter mounting bolts (B-6ea) by rotating the timing gear.
and the transaxle under mounting bolts (A-4ea)



SMGAT9054D

⚠ CAUTION

Lifting the vehicle up and lowering the jack slowly, remove the transaxle assembly.

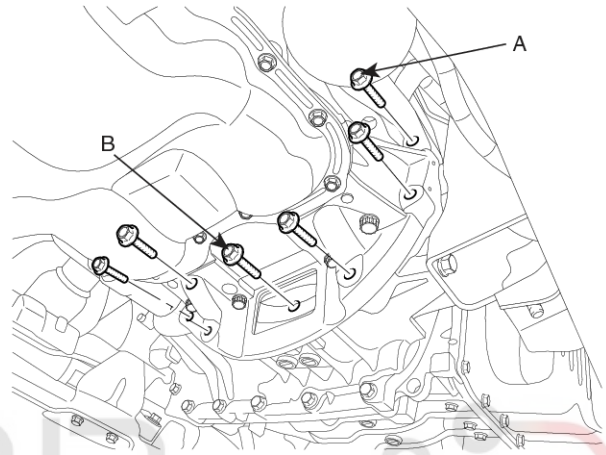
Installation

1. Install the transaxle lower mounting bolts(A-4ea) after fitting the transaxle assembly into the engine assembly.
and install the torque converter mounting bolts (B-6ea) by rotating the timing gear.

Tightening torque :

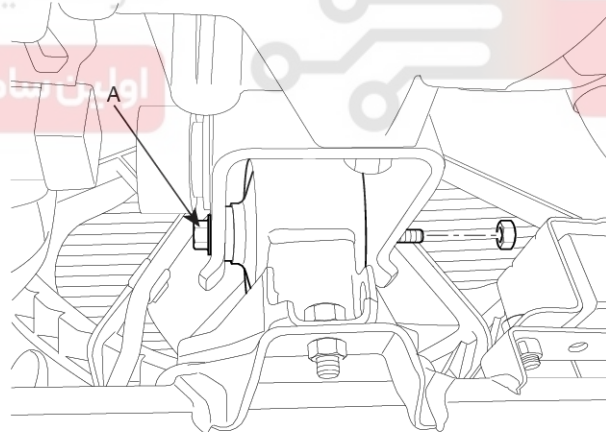
30 ~ 42Nm (3.0 ~ 4.2 kgf.m , 22.1 ~ 30.3 lb-ft)

46 ~ 53Nm (4.6 ~ 5.3 kgf.m , 33.2 ~ 38.3 lb-ft)



SMGAT9054D

2. Install the supporting bracket bolts(A).



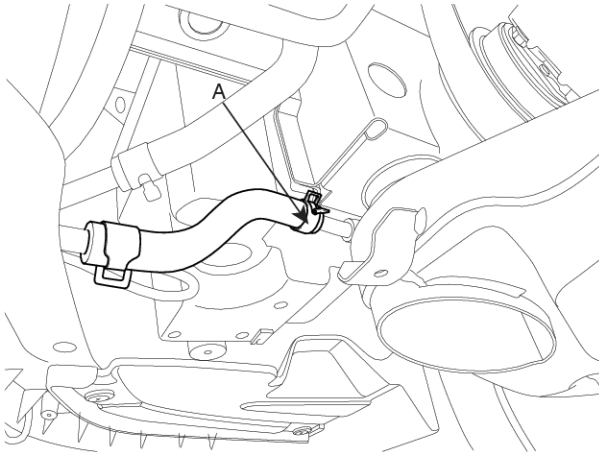
SMGAT9052D

3. Connect the driveshafts to the transaxle and install the inner shaft bracket with two bolts. (refer to DS group)
4. Remove the sub frame(refer to SS group).
5. Supporting the sub frame with a jack and the special tool (09624-38000), install the mounting bolts. (refer to SS group).

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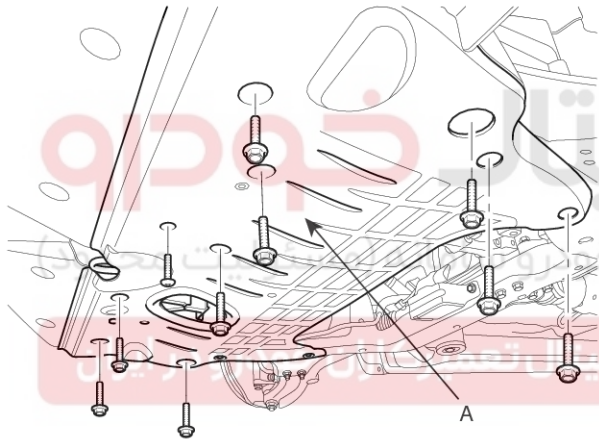
Automatic Transaxle System

6. Connect the the power steering return hose by tightening the clamp (A).



SMGAT9053D

7. Install the under cover (A).



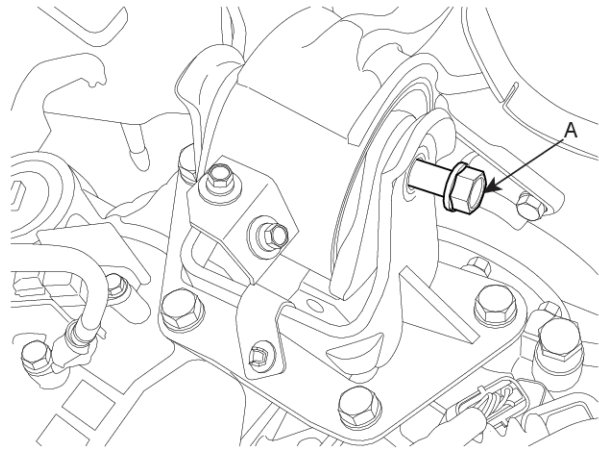
SNFAT8001D

8. Install the front wheels. (refer to SS group).

9. Install the transaxle mounting bolt (A).

Tightening torque :

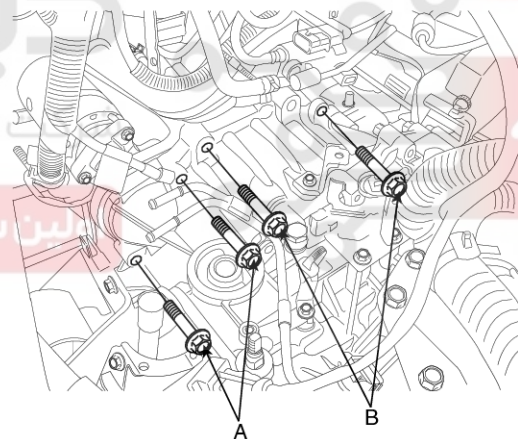
65~85Nm (6.5~8.5kgf.m, 47.0~61.4lb-ft)



KKBF010A

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

11. Install the starter motor bolts (A-2ea) or transaxle upper mounting bolts (B-2ea).

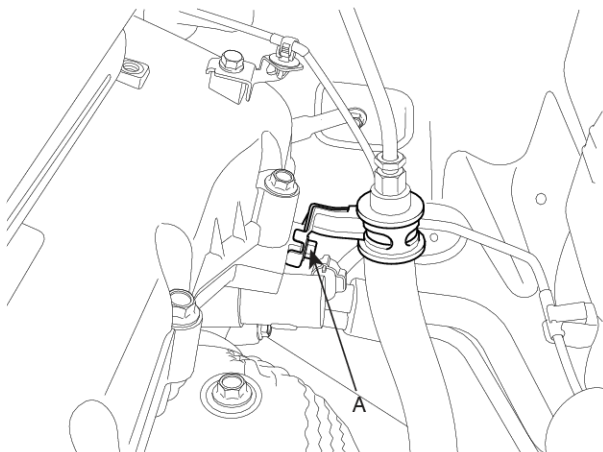


SMGAT9001D

Automatic Transaxle System

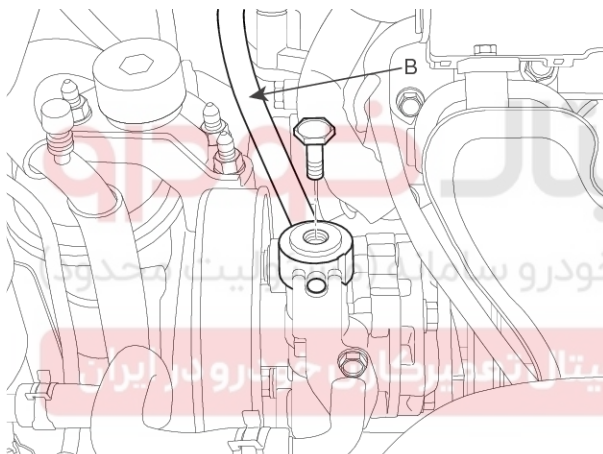
ATA-15

12. Install the power steering pressure tube bracket bolt(A).



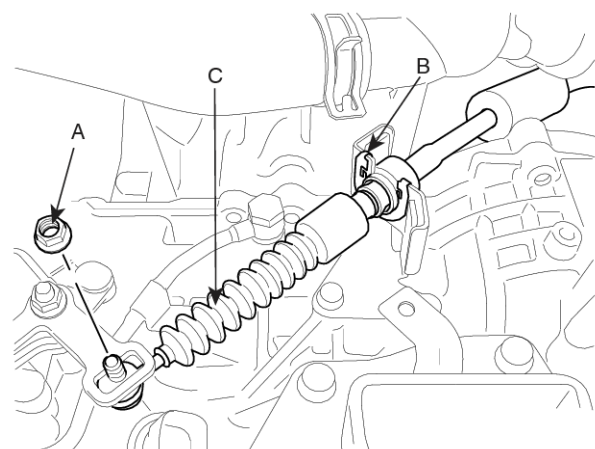
SMGAT9051D

13. Install the power steering pressure tube bolt(A).



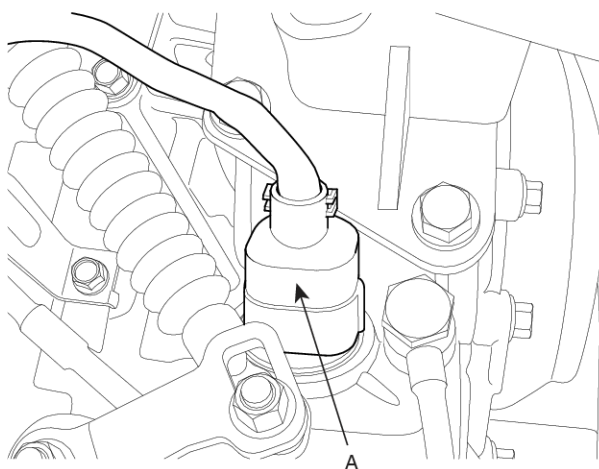
SNFAT8004D

14. Install the control cable assembly (C) by installing the nut (A) and one-touch clip (B).



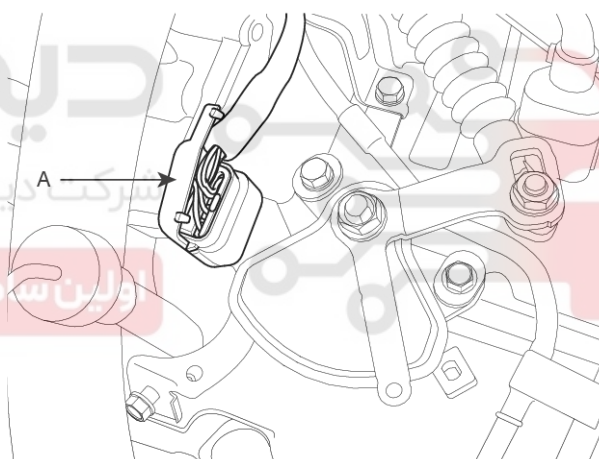
SNFAA6040D

15. Connect the solenoid valve connector (A).



KKBF014A

16. Connect the inhibitor switch connector (A).

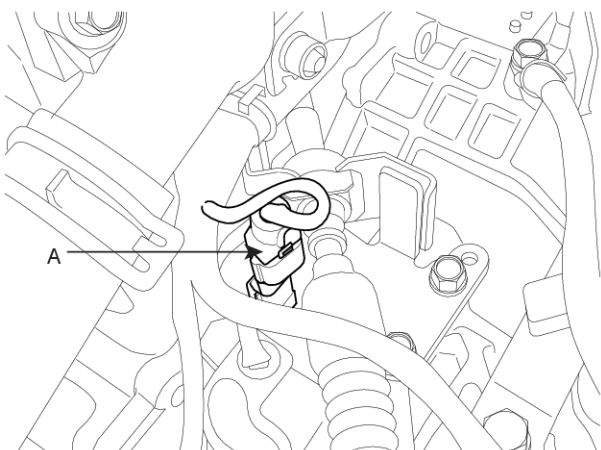


KKBF011A

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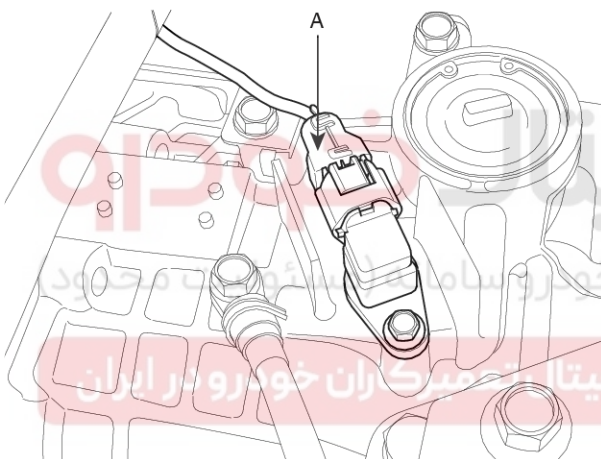
Automatic Transaxle System

17. Connect the input speed sensor connector (A).



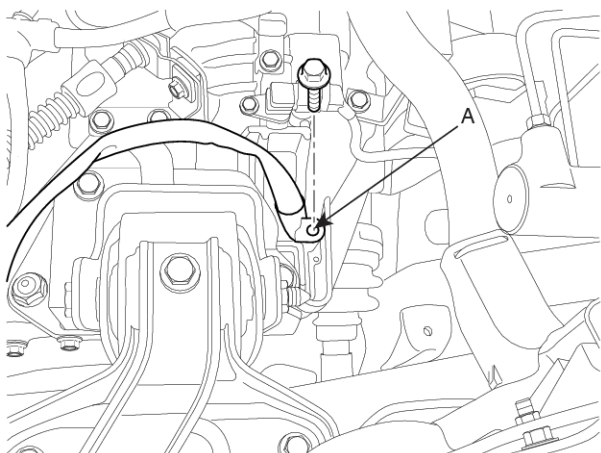
KKBF012A

18. Connect the output speed sensor connector (A).



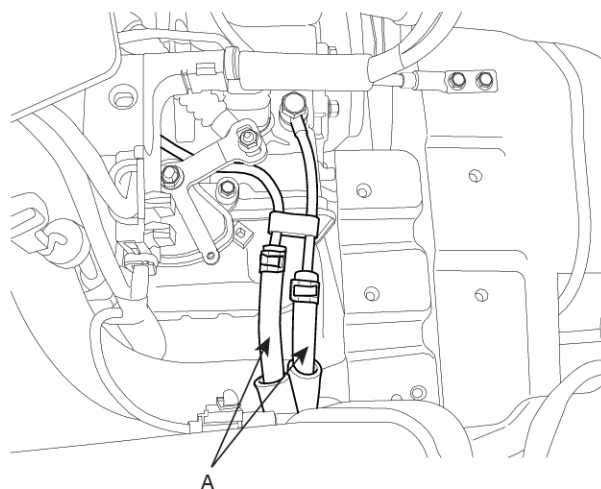
KKBF013A

19. Connect the ground cable (A).



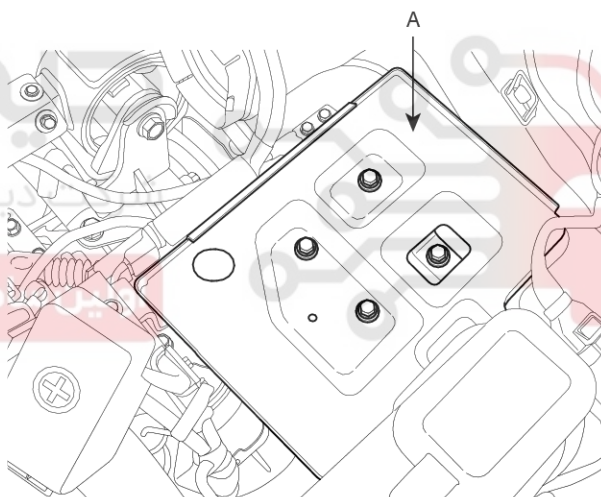
SMGAT9056D

20. Connect the transaxle oil cooler hoses (A) to the tubes by tightening the clamps.



KKBF004A

21. Install the battery tray (A)

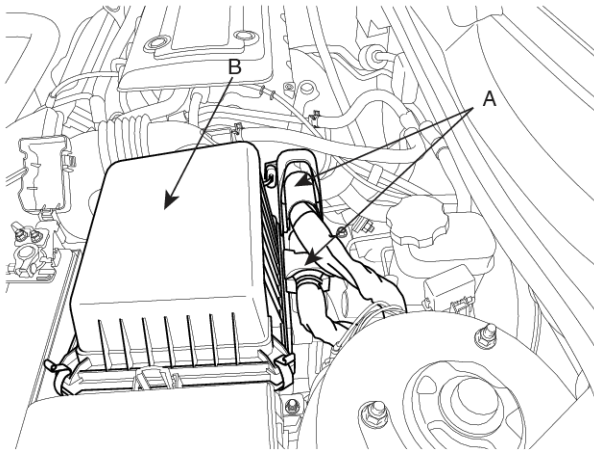


KKBF017A

Automatic Transaxle System

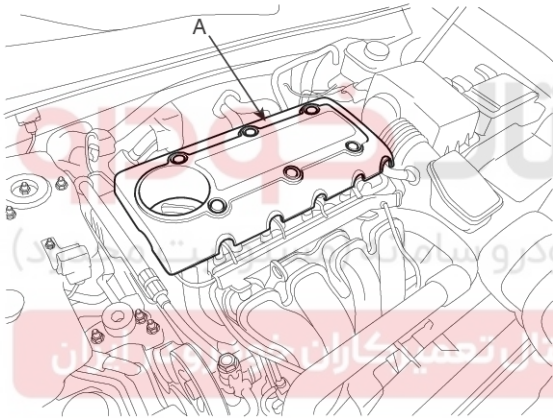
ATA-17

22. Install air cleaner assembly (A) and the PCM connector (B).



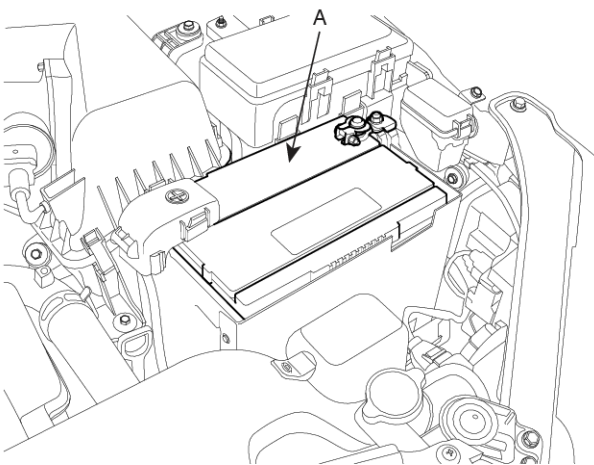
SMGAT9050D

23. Install the engine cover (A).



SMGMT9002D

24. Install the battery (A).



SMGAA9001D

25. Refill the automatic transaxle fluid. (refer to 'Service Adjustment Procedure')

NOTICE

When replacing the automatic transaxle, reset the automatic transaxle's values by using the High-Scan Pro.

1. Connect the Hi-Scan Pro connector to the data link connector under the crash pad and power cable to the cigar jack under the center facia.
2. Turn the ignition switch on and power on the Hi-Scan Pro.
3. Select the vehicle's name.
4. Select 'AUTOMATIC TRANSAXLE'.
5. Select 'RESETTING AUTO T/A VALUES' and perform the procedure.

1.7. RESETTING AUTO T/A VALUES

THIS FUNCTION IS FOR RESETTING THE ADAPTIVE VALUES FROM THE USED AUTO T/A WHEN REPLACING IT.

IF YOU ARE READY,
PRESS [ENTER] KEY!

SCMAT6512L

6. Perform the procedure by pressing F1 (REST).

1.7. RESETTING AUTO T/A VALUES

RESETTING AUTO T/A VALUES	
CONDITION	IG KEY ON TRANSAXLE RANGE : P VEHICLE SPEED : 0 ENGINE OFF
PRESS [REST], IF YOU ARE READY !	

REST

SCMAT6513L

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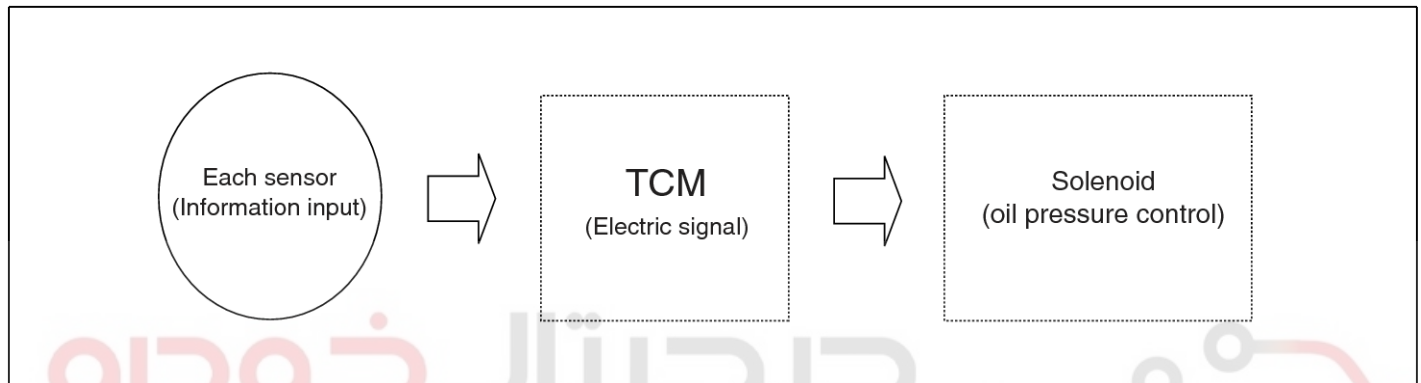
Automatic Transaxle System

Valve Body System

Solenoid valve

Description

TCM calculates the best condition using the information from all kinds of sensors. If the solenoid valve receives the information on the oil pressure, the solenoid valve actuates according to the driving signal. All kinds of regulators in the valve body are controlled to change the oil passage and also the line pressure is controlled by TCM.

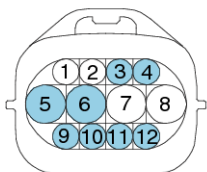


BKGF017A

● PWM (Pulse Width Modulation) Solenoid Valve

Structure and functions

PWM solenoid valve is composed of six solenoid valves and the oil capacity in the solenoid valve is changed by the electric duty value of TCM. The oil pressure of the valve body and the torque converter engages or disengages the damper clutch. The solenoid valves send the operating oil pressure to the clutches and brakes at the each range and also control the strength and weakness of oil pressure to reduce the shock when shifting the range.



- 1.Fluid temperature sensor
- 2.Fluid temperature sensor ground
- 3.UD Solenoid valve
- 4.2ND Solenoid valve
- 5.A/T battery (OD, DC, 2ND)
- 6.A/T battery (LR, UD, RED)
- 7.VFS Valve
- 8.VFS valve ground
- 9.DC Solenoid valve
- 10.RED Solenoid valve
- 11.LR Solenoid valve
- 12.OD Solenoid valve

SCMAA6002N

Valve Body System

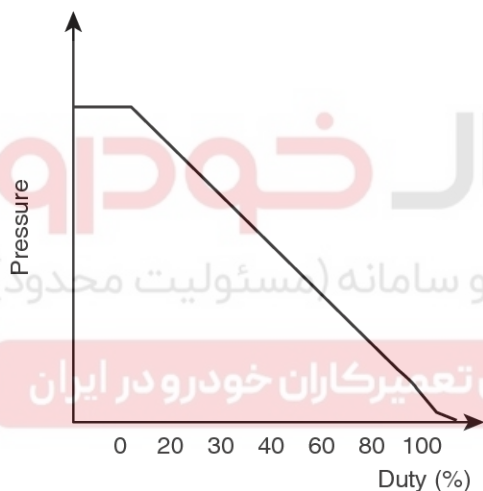
ATA-19

PWM (Pulse Width Modulation) solenoid

Range	PWM solenoid valve (0 : Duty 0%)				
	SCSV-A (LR)	SCSV-B (UD)	SCSV-C (2ND)	SCSV-D (OD)	SCSV-E (RED)
1st	O	O			O
2nd		O	O		O
3rd		O		O	O
4th			O	O	O
5th	O		O	O	
Reverse	O				O
N, P	O				O

PWM (Pulse Width Modulation) solenoid valve control feature

Performance Curve

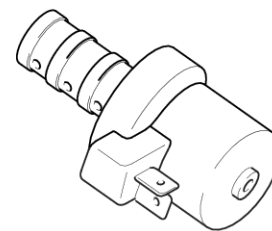


<PWM Solenoid valve performance curve>

BKGF017D

PWM solenoid valve is controlled linearly according to the duty ratio.

Item	Specitication
Type	3way & Normal High
Supply voltage	12V
Coil resistance	$2.6 \pm 0.2 \Omega$
Control frequency	61.27Hz (30.64Hz of Temp. $\leq -23^\circ\text{C}$)

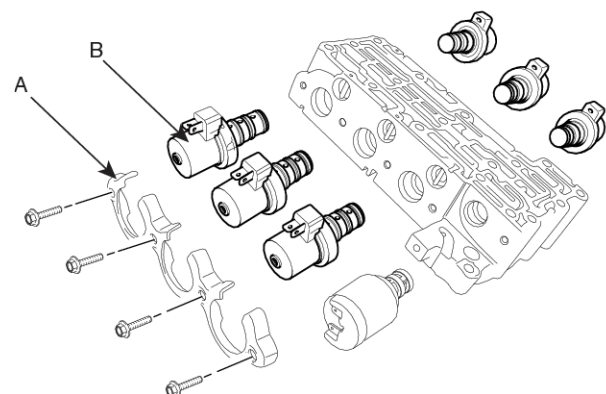


<PWM Solenoid valve form>

SCMAT6003L

Removal

1. Remove the battery terminal.
2. Lift the vehicle.
3. Remove the splash shield.
4. Loosen the drain plug and drain the transaxle oil.
5. Remove the oil pan. (Refer to automatic transaxle removal in A5GF1 overhaul manual)
6. Disconnect the solenoid valve connectors.
7. Remove the solenoid valve(B-6EA) by removing the supporting bracket(A).



SCMAT6033D

ATA-20

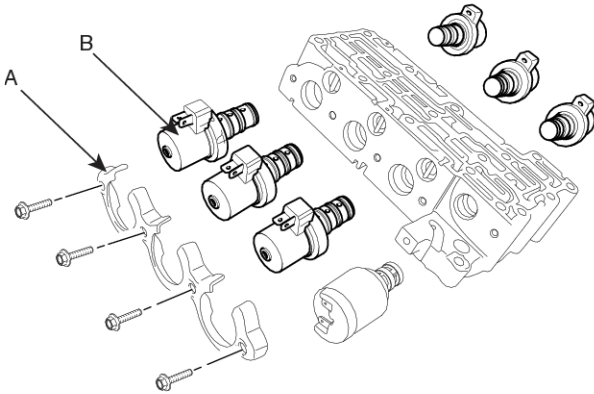
Automatic Transaxle System

Installation

1. Install the solenoid valve(B-6EA) and the supporting bracket(A).

CAUTION

Apply the ATF oil or White Vaseline to the O-ring, to prevent damage to the O-rings.



SCMAT6033D

2. Connect the solenoid valve connector.

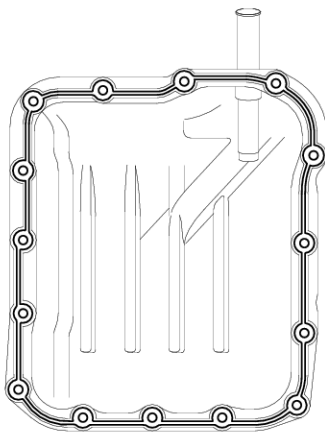
CAUTION

When connecting the solenoid valve connector, check the connector for rust, dirt, or oil, then reconnect it.

3. Continue to apply liquid gasket at application points at the oil pan with $\varnothing 2.5\text{mm}$ (0.098in) thickness.

Liquid gasket Part name :

Threebond 1281B or Loctite FMD-54



SCMAT6052D

4. Tighten the mounting bolt with the specified torque after installing the oil pan.

Tightening torque :

13~15Nm(1.3~1.5kgf.m, 9.4~10.8lb-ft)

5. Install the drain plug and refill the transaxle fluid.

Tightening torque :

40~50Nm(4.0~5.0kgf.m, 28.9~36.2lb-ft)

6. Install the splash shield.
7. Lower the vehicle and install the battery terminal.

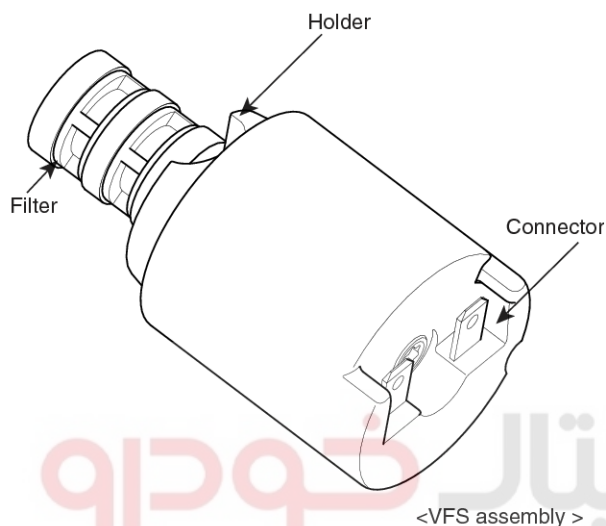
Valve Body System

ATA-21

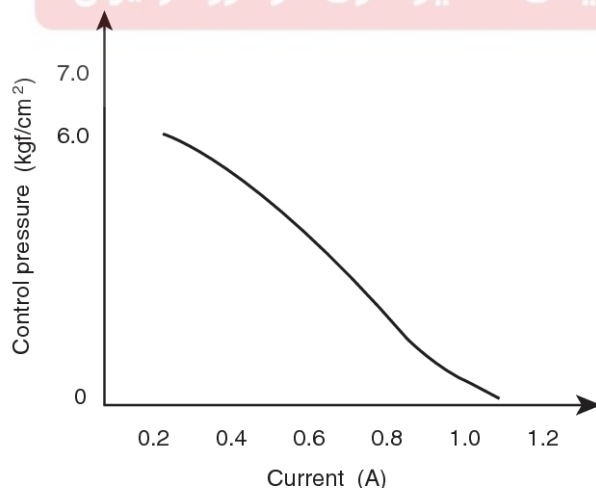
VFS(Variable Force Solenoid) Valve

Description

VFS valve controls the regulator valve and varies the line pressure from 4.5bar to 10.5bar according to the throttle open angle and the shift range. The holder is installed on the upper side of the case and the filter is installed on two places on the outside holder to prevent foreign materials from flowing in the VFS.



VFS (Variable Force Solenoid) Valve Control Feature



<VFS valve performance curve>

BKGF018B

VFS valve is controlled linearly according to the current value.

Item	Specification
type	3way & Normal High
Supply voltage	12V
Coil resistance	4.35 ± 0.35 Ω
Operating current	100 ~ 1100 mA
Control frequency	600Hz

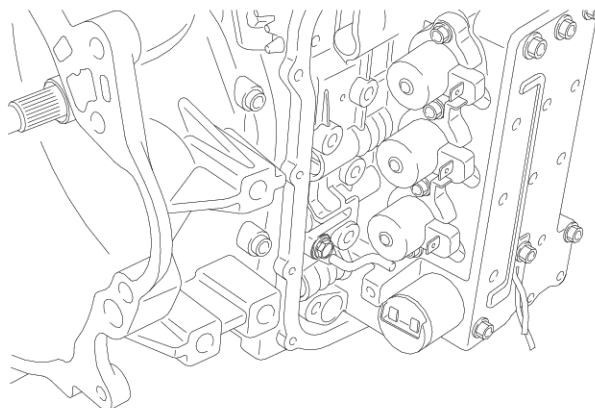


- 1.Fluid temperature sensor
- 2.Fluid temperature sensor ground
- 3.UD Solenoid valve
- 4.2ND Solenoid valve
- 5.A/T battery (UD, 2ND, OD)
- 6.A/T battery (LR/DIR, DC)
- 7.VFS**
- 8.VFS valve ground**
- 9.DC Solenoid valve
- 10.RED Solenoid valve
- 11.LR Solenoid valve
- 12.OD Solenoid valve

SCMAA6003N

Removal

1. Remove the battery terminal.
2. Lift the vehicle.
3. Remove the splash shield.
4. Loosen the drain plug and drain the transaxle oil.
5. Remove the oil pan. (Refer to automatic transaxle removal in A5GF1 overhaul manual)

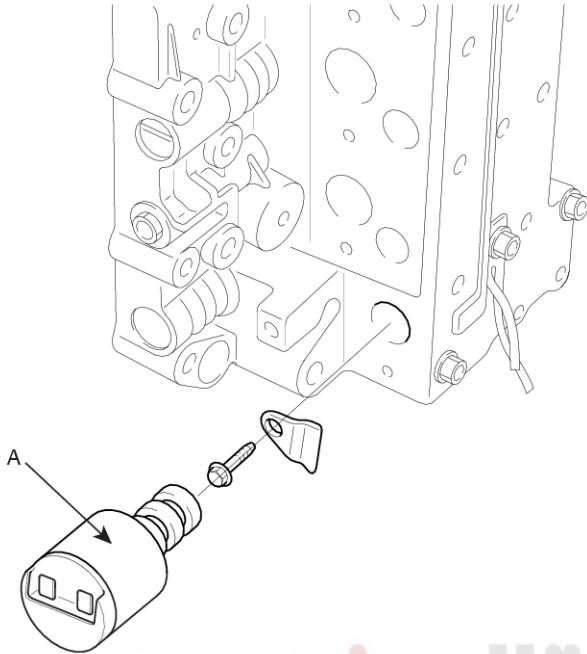


SCMAT6034D

ATA-22

Automatic Transaxle System

6. Disconnect the VFS solenoid valve connector.
7. Remove the solenoid valve assembly(A).



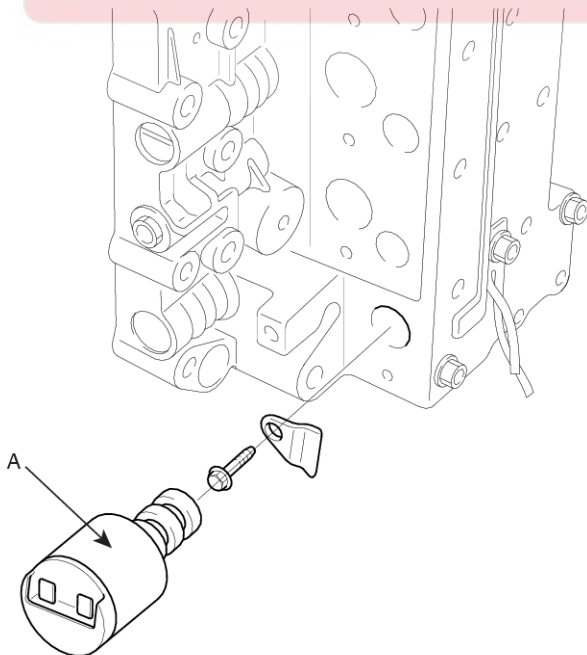
KKCF009D

Installation

1. Install the solenoid valve(A).

CAUTION

Apply the ATF oil or White Vaseline to the O-ring not to be damaged.

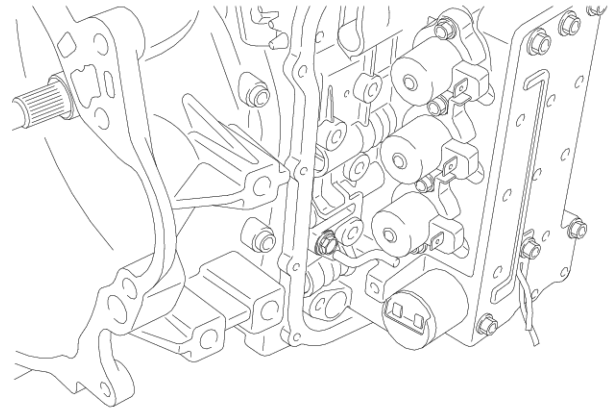


KKCF009D

2. Connect the solenoid valve connector to the valve body.

CAUTION

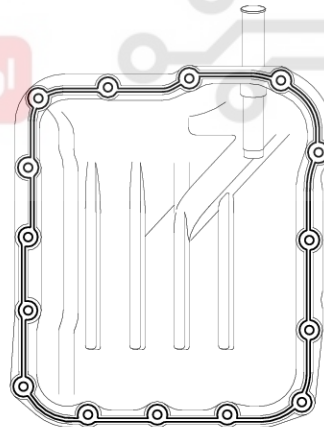
When connecting the solenoid valve connector, check the connector for rust, dirt, or oil, then reconnect it.



SCMAT6034D

3. Continue to apply liquid gasket at application points at the oil pan with Ø2.5mm (0.098in) thickness.

Liquid gasket Part name : Threebond 1281B or Loctite FMD-546



SCMAT6052D

Valve Body System

ATA-23

4. Tighten the mounting bolt with the specified torque after installing the oil pan.

Tightening torque :

13~15Nm(1.3~1.5kgf.m, 9.4~10.8lb-ft)

5. Install the drain plug and refill the transaxle fluid.

Tightening torque :

40~50Nm(4.0~5.0kgf.m, 28.9~36.2lb-ft)

6. Install the splash shield.
7. Lower the vehicle and install the battery terminal.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران




ATA-24

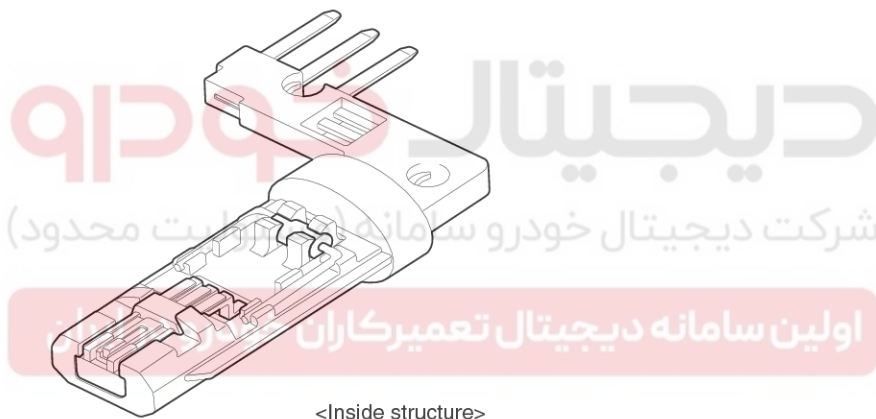
Automatic Transaxle System

Automatic Transaxle Control System

Input Speed Sensor

Description

Sensor type	1. Type : HALL SENSOR 2. Operating voltage : DC 12V 3. Current consumption : 22mA (Max)
Function	1. Input speed sensor: Detect the OD & REV retainer rotation to control oil pressure when shifting. 2. Feedback control, clutch-clutch control, damper clutch control, shift range control, incorrect ratio control and sensor trouble detection signal.
Connector	 <p>1. Ground 2. Input 3. Power source</p> <p>SCMAA6004N</p>



BKGf012B

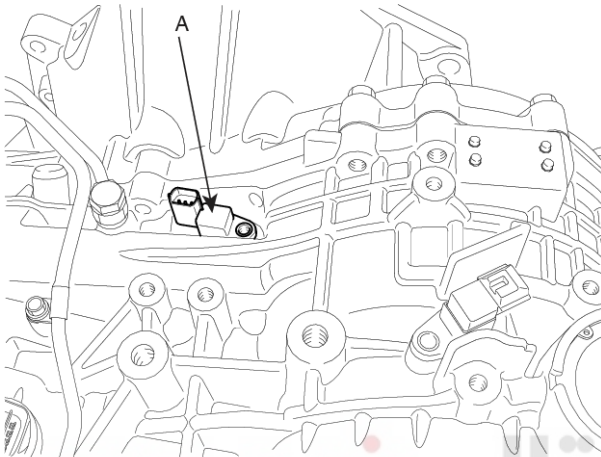
Item	Inspection item	Standard value
Air gap	Input speed sensor	0.05in(1.3mm)
Sensor resistance	Input speed sensor	Over 1 MΩ
Output voltage	HIGH	Over 4.8V
	LOW	Below 0.8V

Automatic Transaxle Control System

ATA-25

Removal

1. Remove the battery terminal.
2. Remove the battery and battery tray.
3. Remove the air cleaner assembly. (see the automatic transaxle-Removal/ installation procedures)
4. Remove the input speed sensor connector.
5. Remove the input speed sensor(A).



SCMAT6037D

Installation

1. Install the new O-ring to the input speed sensor.
2. Install the input speed sensor.

Tightening torque :

10~12Nm(1.0~1.2kgf.m, 7~8lb-ft)

⚠CAUTION

While installing the input speed sensor, do not allow dust or other foreign particles to enter the transaxle.

3. Check the connector for dust, dirt, or oil, and then connect the connector securely.
4. Installation is the reverse of removal.



دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)


اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

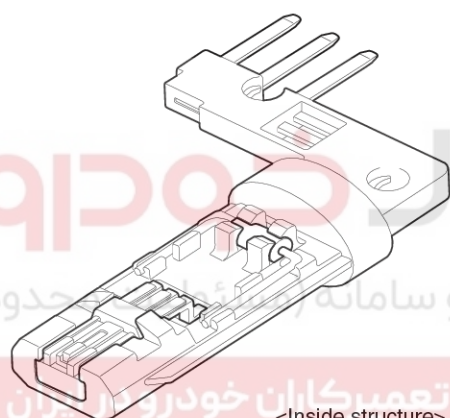
ATA-26

Automatic Transaxle System

Output Speed Sensor

Description

Sensor type	1. Type : HALL SENSOR 2. Output voltage : DC 12V 3. Current consumption : 22mA (Max)
Function	1. Output speed sensor : Detect the T/F drive gear rpm at the T/F drive gear 2. Feedback control, clutch-clutch control, damper clutch control, shift range control, incorrect ratio control and sensor trouble detection signal.
Connector	 1. Ground 2. Input 3. Power source SCMAA6005N



BKGf012B

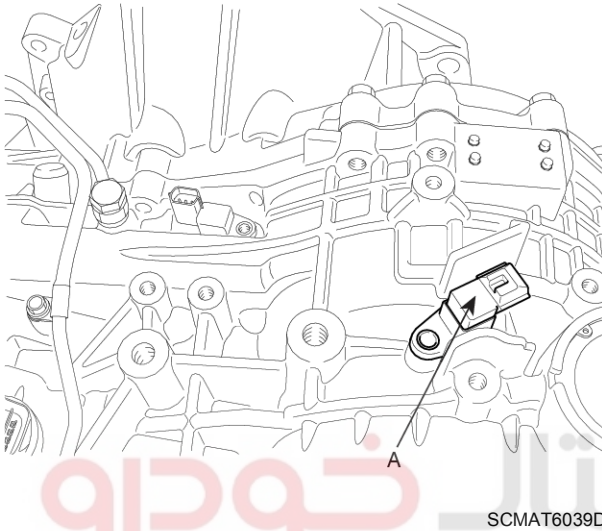
Item	Inspection item	Standard value
Air gap	Output speed sensor	0.0335in(0.85mm)
Sensor resistance	Output speed sensor	Over 1 MΩ
Output voltage	HIGH	Over 4.8V
	LOW	Below 0.8V

Automatic Transaxle Control System

ATA-27

Removal

1. Remove the battery terminal.
2. Remove the battery and battery tray.
3. Remove the air cleaner assembly. (see the automatic transaxle- Removal/ installation procedures)
4. Remove the output speed sensor connector.
5. Remove the output speed sensor(A).



Installation

1. Install the new O-ring to the output speed sensor.
2. Install the output speed sensor.

Tightening torque :

10~12Nm(1.0~1.2kgf.m, 7~8lb-ft)

⚠CAUTION

While installing the output speed sensor, do not allow dust or other foreign particles to enter the transaxle.

3. Check the connector for dust, dirt, or oil, then connect the connector securely.
4. Installation is the reverse of removal.




ATA-28

Automatic Transaxle System

Transaxle Oil Temperature Sensor

Description

Sensor type	1. Type : Thermister 2. Use available temperature : -40~160°C (-40~320°F)
Function and feature	1. Detect the temperature of ATF through the thermistor which is exposed outside. 2. When shifting the range, it is used as the oil pressure control information.
Connector	 <p> 1.Fluid temperature sensor 2.Fluid temperature sensor ground 3.UD Solenoid valve 4.2ND Solenoid valve 5.A/T battery (OD, DC, 2ND) 6.A/T battery (LR, UD, RED) 7.VFS 8.VFS valve ground 9.DC Solenoid valve 10.RED Solenoid valve 11.LR Solenoid valve 12.OD Solenoid valve </p> <p>SCMAA6006N</p>

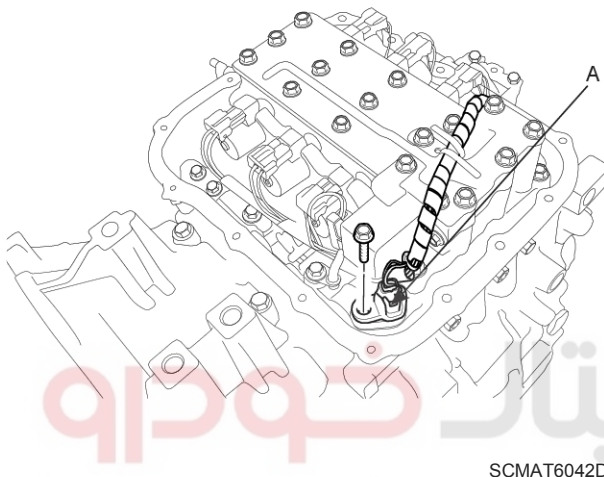
Temp.[°C(°F)]	Resistance (KΩ)	Temp.[°C(°F)]	Resistance (KΩ)
-40(-40)	139.5	80(176)	1.08
-20(-4)	47.7	100(212)	0.63±0.06
0(32)	18.6±1.86	120(248)	0.38
20(68)	8.1	140(284)	0.25
40(104)	3.8	160(320)	0.16
60(140)	1.98		

Automatic Transaxle Control System

ATA-29

Removal

1. Remove the battery terminal.
2. Lift the vehicle.
3. Remove the splash shield.
4. Loosen the drain plug and drain the transaxle oil.
5. Remove the oil pan. (Refer to automatic transaxle removal in A5GF1 overhaul manual)
6. Disconnect the oil temperature sensor connector and remove the sensor(A) from the valve body.

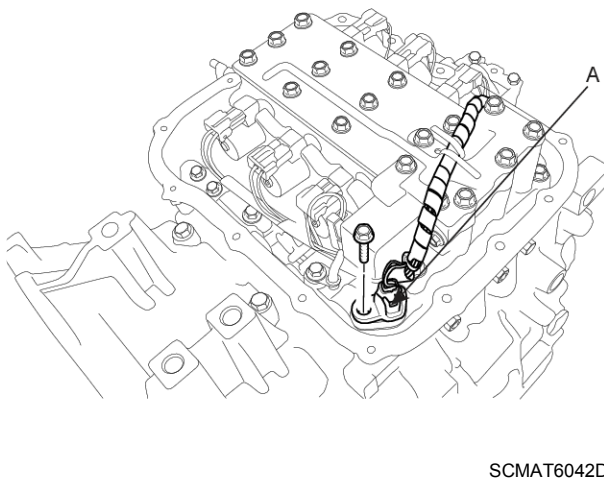


Installation

1. Install the oil temperature sensor(A) and connect the sensor connector.

⚠ CAUTION

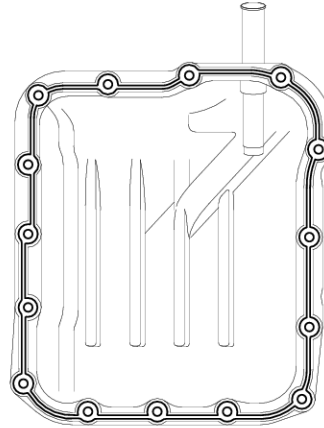
When connecting the oil temperature connector, check the connector for rust, dirt, or oil, then reconnect it.



2. Continue to apply liquid gasket at application points at the oil pan with Ø0.098in(2.5mm) thickness.

Liquid gasket Part name :

Threebond 1281B or Loctite FMD-546



SCMAT6052D

3. Tighten the mounting bolt with the specified torque after installing the oil pan.

Tightening torque :

13~15Nm(1.3~1.5kgf.m, 9.4~10.8lb-ft)

4. Install the drain plug.

Tightening torque :

40~50Nm(4.0~5.0kgf.m, 28.9~36.2lb-ft)

5. Installation is the reverse of the removal.

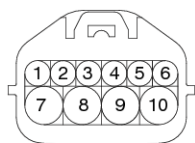
ATA-30

Automatic Transaxle System

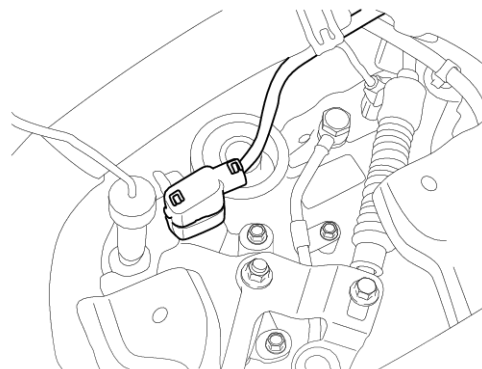
Inhibiter Switch

Description

Sensor type	1. Type : ROTARY 2. Available temperature range : -40~150°C(-40~320°F) 3. TORQUE : 10~12Nm(1.0~1.2kgf.m, 7~8lb-ft)
Function	Detect the position of select lever through the contact switch. It makes starting possible in "P" and "N".



1. D range
3. P range
4. N range
7. R range
8. Power supply IG1
9. Start circuit
10. Start circuit



SCMAA6007N

Shift lever Terminal No.	P	R	N	D
1				●
2				
3	●			
4			●	
5				
6				
7		●		
8	●	●	●	●
9	●		●	
10	●		●	

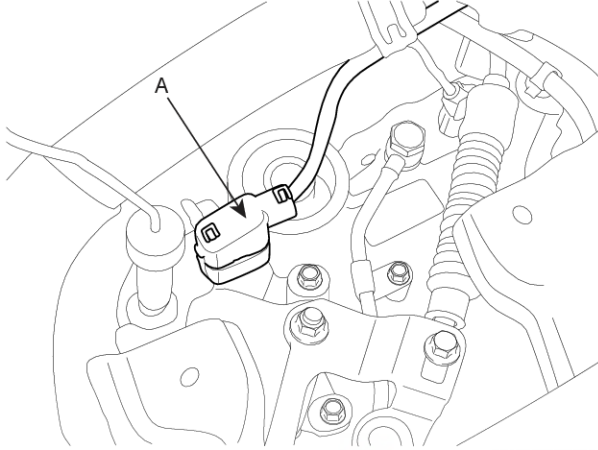
STGAT7002L

Automatic Transaxle Control System

ATA-31

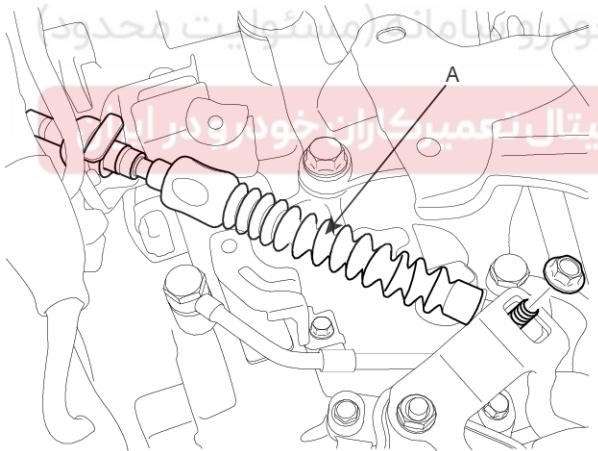
Removal

1. Remove the battery terminal.
2. Remove the battery and battery tray.
3. Remove the air cleaner assembly(Refer to the automatic transaxle-Removal/installation procedures).
4. Disconnect the inhibitor switch connector(A).



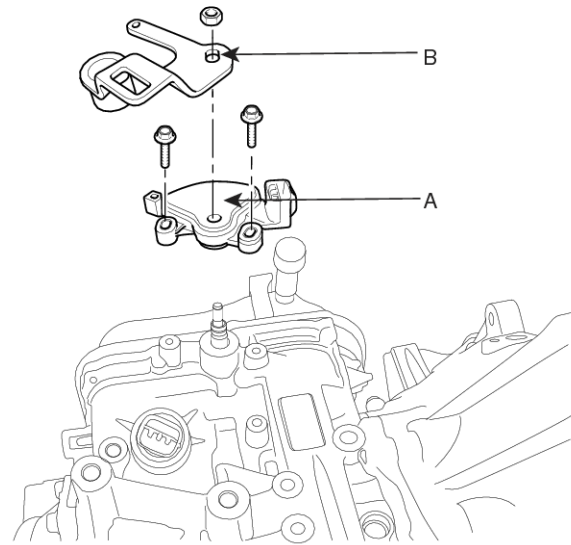
SCMAT6045D

5. Remove the control cable(A) from the manual control lever.



SCMAT6046D

6. Remove the inhibitor switch(A) and manual control lever(B).



SCMAT6047D

Installation

1. Set the inhibitor switch to the "N" position.
2. Set the inhibitor switch control shaft to the "N" position.
3. Install the inhibitor switch and manual control lever.

Tightening torque

Shaft nut: 18~25Nm(1.8~2.5kgf.m, 13.0~18.1lb-ft)

Bolt(2EA): 10~12Nm(1.0~1.2kgf.m, 7~8lb-ft)

4. Install the control cable to the manual control lever.
5. Connect the inhibitor switch connector.
6. Installation is the reverse of the removal.
7. Turn the ignition switch ON after installation.

Move the shift lever from "P" range to "L" range, and verify that the A/T gear position indicator follows the transaxle range switch.[Reference data]