



Restraint

General Information

Precautions

General Precautions

Please read the following precautions carefully before performing the airbag system service. Observe the instructions described in this manual, or the airbags could accidentally deploy and cause damage or injuries.

- Except when performing electrical inspections, always turn the ignition switch OFF and disconnect the negative cable from the battery, and wait at least three minutes before beginning work.

NOTICE

The contents in the memory are not erased even if the ignition switch is turned OFF or the battery cables are disconnected from the battery.

- Use the replacement parts which are manufactured to the same standards as the original parts and quality. Do not install used SRS parts from another vehicle. Use only new parts when making SRS repairs.
- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.



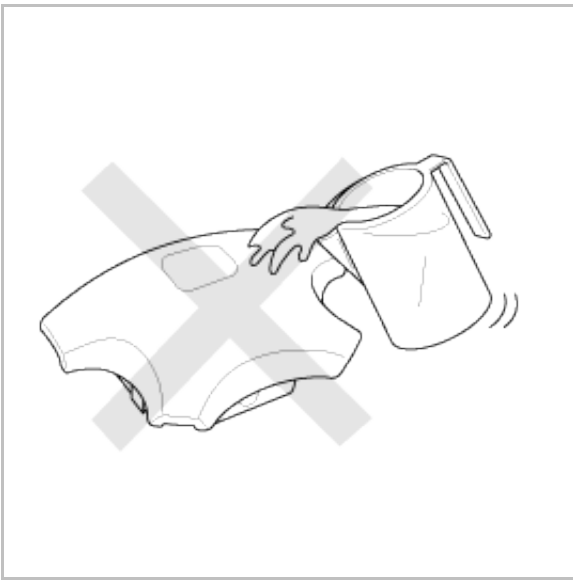
- Before removing any of the SRS parts (including the disconnection of the connectors), always disconnect the SRS connector.

Airbag Handling and Storage

Do not disassemble the airbags; it has no serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.

For temporary storage of the air bag during service, please observe the following precautions.

- Store the removed airbag with the pad surface up.
- Keep free from any oil, grease, detergent, or water to prevent damage to the airbag assembly.

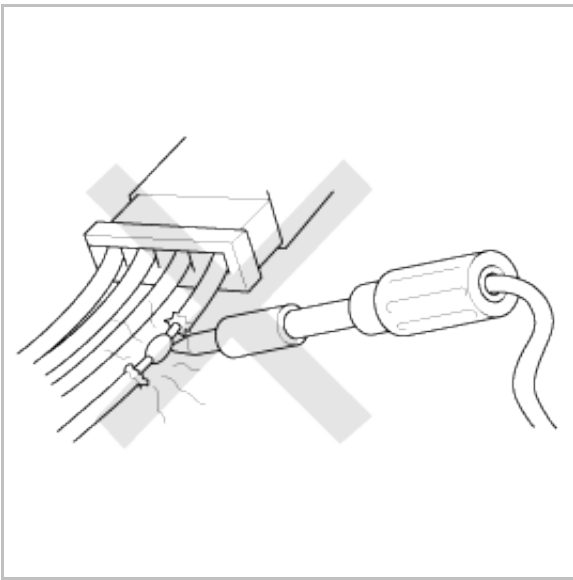


- Store the removed airbag on secure, flat surface away from any high heat source (exceeding 85°C/185°F).
- Never perform electrical inspections to the airbags, such as measuring resistance.
- Do not position yourself in front of the airbag assembly during removal, inspection, or replacement.
- Refer to the scrapping procedures for disposal of the damaged airbag.
- Be careful not to bump or impact the SRS unit or the side impact sensors whenever the ignition switch is ON, wait at least three minutes after the ignition switch is turned OFF before begin work.
- During installation or replacement, be careful not to bump (by impact wrench, hammer, etc.) the area around the SRS unit and the side impact sensor. The airbags could accidentally deploy and cause damage or injury.
- After a collision in which the airbags were deployed, replace the front airbags and the SRS unit. After a collision in which the side airbag was deployed, replace the side airbag, the front impact sensor and side impact sensor on the side where the side airbag deployed and the SRS unit. After a collision in which the airbags or the side air bags did not deploy, inspect for any damage or any deformation on the SRS unit and the side impact sensors. If there is any damage, replace the SRS unit, the front impact sensor and/or the side impact sensors.
- Do not disassemble the SRS unit, the front impact sensor or the side impact sensors
- Turn the ignition switch OFF, disconnect the battery negative cable and wait at least three minutes before beginning installation or replacement of the SRS unit.
- Be sure the SRS unit, the front impact sensor and side impact sensors are installed securely with the mounting bolts.
- Do not spill water or oil on the SRS unit, or the front impact sensor or the side impact sensors and keep them away from dust.
- Store the SRS unit, the front impact sensor and the side impact sensors in a cool (less than 40°C/104°F) and dry (less than 80% relative humidity, no moisture) area.

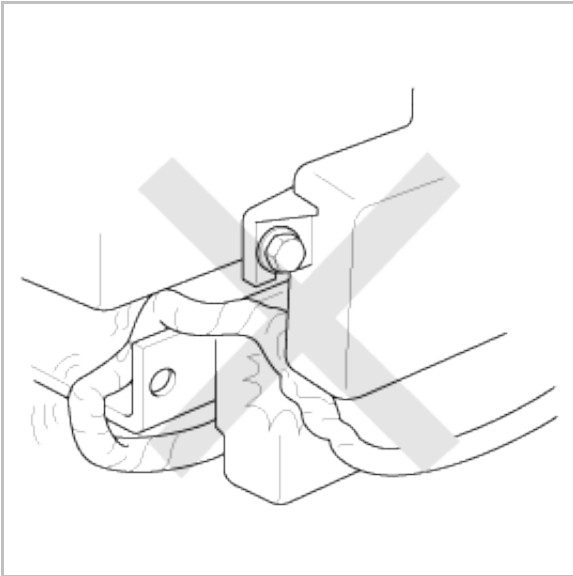
Wiring Precautions

SRS wiring can be identified by special yellow outer covering (except the SRS circuits under the front seats). Observe the instructions described in this section.

- Never attempt to modify, splice, or repair SRS wiring.
If there is an open or damage in SRS wiring, replace the harness.



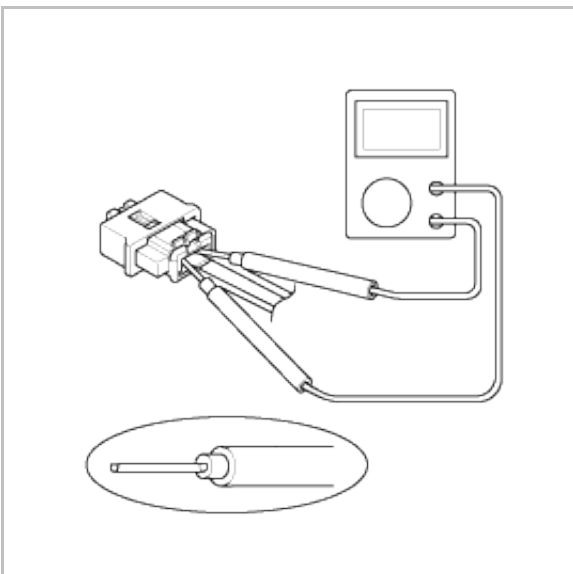
- Be sure to install the harness wires so that they are not pinched, or interfere with other parts.



- Make sure all SRS ground locations are clean, and grounds are securely fastened for optimum metal-to-metal contact. Poor grounding can cause intermittent problems that are difficult to diagnose.

Precautions for Electrical Inspections

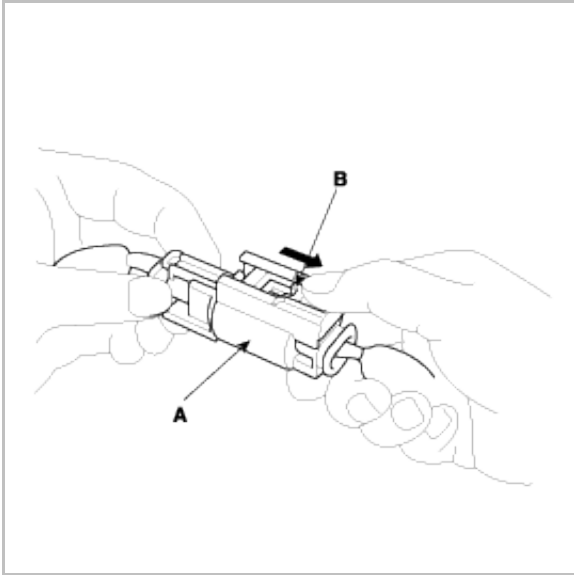
- When using electrical test equipment, insert the probe of the tester into the wire side of the connector. Do not insert the probe of the tester into the terminal side of the connector, and do not tamper with the connector.



- Use a u-shaped probe. Do not insert the probe forcibly.
- Use specified service connectors for troubleshooting.

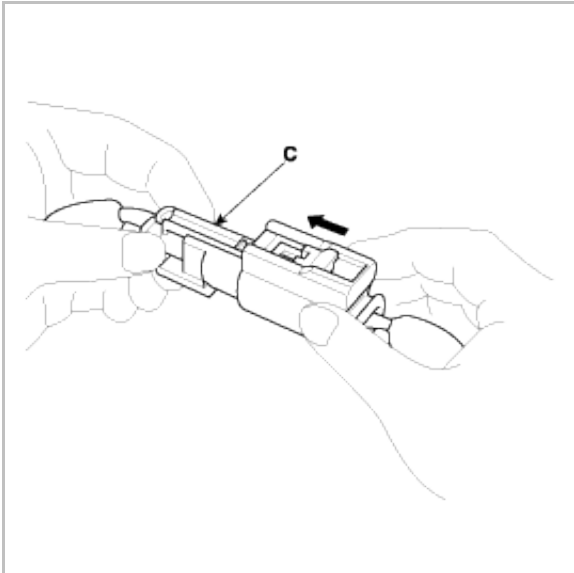
Using improper tools could cause an error in inspection due to poor metal contact.

Airbag Connector



Connecting

Hold both connector halves and press firmly until the projection (C) of the sleeve-side connector clicks to lock.





General

The supplemental restraint system (SRS) is designed to supplement the seat belt to help reduce the risk or severity of injury to the driver and passenger by activating and deploying the driver, passenger, side airbag and belt pretensioner in certain frontal or side collisions.

The SRS (Airbag) consists of : a driver side airbag module located in the center of the steering wheel, which contains the folded cushion and an inflator unit ; a passenger side airbag module located in the passenger side crash pad contains the folded cushion assembled with inflator unit ; side airbag modules located in the driver and passenger seat contain the folded cushion and an inflator unit ; curtain airbag modules located inside of the headliner which contains folded cushions and inflator units. The impact sensing function of the SRSCM is carried out by electronic accelerometer that continuously measure the vehicle's acceleration and delivers a corresponding signal through amplifying and filtering circuitry to the microprocessor.

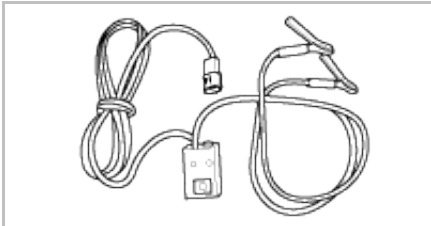
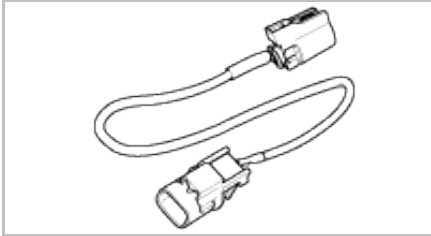
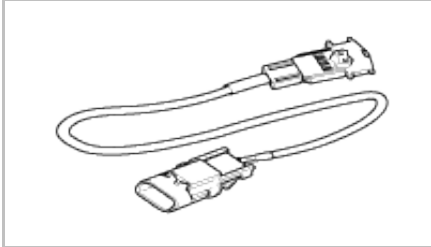
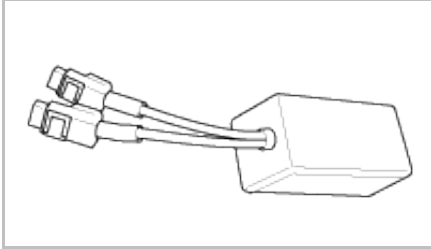
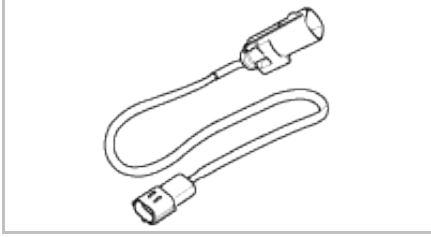
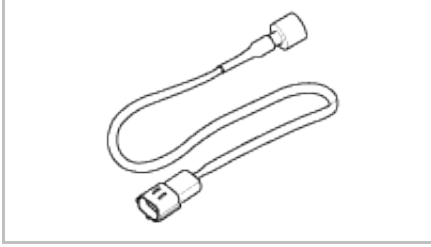
SRSCM (SRS Control Module)

SRSCM will detect front impact with front impact sensor, and side impact with side impact sensor, and determine airbag module deployment.

1. DC/DC converter: DC/DC converter in power supply unit includes up/down transformer converter, and provide ignition voltage for 2 front airbag ignition circuits and the internal operation voltage of the SRSCM. If the internal operation voltage is below critical value setting, it will perform resetting.
2. Safety sensor: Safety sensor is located in airbag ignition circuit. Safety sensor will operate airbag circuit at any deployment condition and release airbag circuit safely at normal driving condition. Safety sensor is a double contact electro-mechanical switch that will close detecting deceleration above certain criteria.
3. Back up power supply: SRSCM has separate back up power supply, that will supply deployment energy instantly in low voltage condition or upon power failure by front crash.
4. Self diagnosis: SRSCM will constantly monitor current SRS operation status and detect system failure while vehicle power supply is on, system failure may be checked with trouble codes using scan tool. (Hi-Scan)
5. Airbag warning lamp on: Upon detecting error, the module will transmit signal to SRSCM indicator lamp located at cluster. MIL lamp will indicate driver SRS error. Upon ignition key on, SRS lamp will turn on for about six seconds.
6. Trouble code registration: Upon error occurrence in system, SRSCM will store DTC corresponding to the error. DTC can be cleared only by Hi-Scan. However, if an internal fault code is logged or if a crash is recorded the fault clearing should not happen.
7. Self diagnostic connector: Data stored in SRSCM memory will be output to Hi-Scan or other external output devices through connector located below driver side crash pad.
8. Once airbag is deployed, SRSCM should not be used again but replaced.
9. SRSCM will determine whether passenger put on seat belt by the signal from built-in switch in seat belt buckle, and deploy front seat airbag at each set crash speed.
10. Side airbag deployment will be determined by SRSCM that will detect satellite sensor impact signal upon side crash, irrespective to seat belt condition.



SPECIAL SERVICE TOOLS

Tool(Number and Name)	Illustration	Use
Deployment tool 0957A-34100A		Airbag deployment tool
Deployment adapter 0957A-3F100		Use with deployment tool. (PAB, SAB)
Deployment adapter 0957A-38500		Use with deployment tool. (DAB, PAB, CAB, BPT)
Dummy 0957A-38200		Simulator to check the resistance of each wiring harness
Dummy adapter 0957A-3F000		Use with dummy (PAB, SAB)
Dummy adapter 0957A-1C000		Use with dummy (DAB, CAB, BPT)

DAB : Driver Airbag

PAB : Passenger Airbag

SAB : Side Airbag

CAB : Curtain Airbag

BPT : Belt Pretensioner



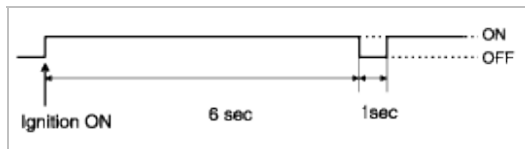
WARNING LAMP ACTIVATION

WARNING LAMP BEHAVIOR AFTER IGNITION ON

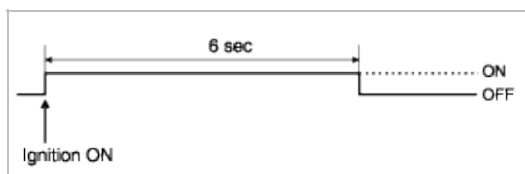
As soon as the operating voltage is applied to the SRSCM ignition input, the SRSCM activates the warning lamp for a bulb check.

The lamp shall turn on for 6 seconds during the initialization phase and be turned off afterward. However, in order to indicate the driver, the warning lamp shall turn on for 6 seconds and off for one second then on continuously after the operating voltage is applied if any active fault exists.

1. Active fault or historical fault counter is greater or equal to 10



2. Normal or historical fault counter is less than 10



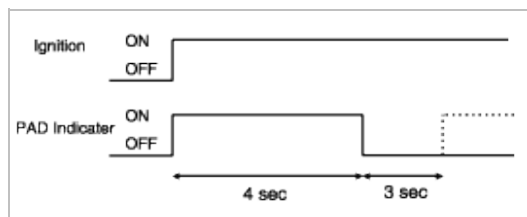
SRSCM INDEPENDENT WARNING LAMP ACTIVATION

There are certain fault conditions in which the SRSCM cannot function and thus cannot control the operation of the standard warning lamp. In these cases, the standard warning lamp is directly activated by appropriate circuitry that operates independently of the SRSCM. These cases are:

1. Loss of battery supply to the SRSCM : warning lamp turned on continuously.
2. Loss of internal operating voltage : warning lamp turned on continuously.
3. Loss of Microprocessor operation : warning lamp turned on continuously.
4. SRSCM not connected : warning lamp turned on continuously through the shorting bar.

PASSENGER AIRBAG DEACTIVATION (PAD) LAMP OPERATION

The SRSCM is designed with circuitry and software to drive a PAD lamp, which is used for depowered airbag system. For the PAD indicator circuitry to function properly, both the SRSCM and PAD indicator are sourced from the same ignition line. After ignition on, the PAD indicator will be turned on for 4 seconds and off for 3 seconds during the initialization phase. Thereafter the lamp will be turned on as long as the PAD switch is in the disabled position.



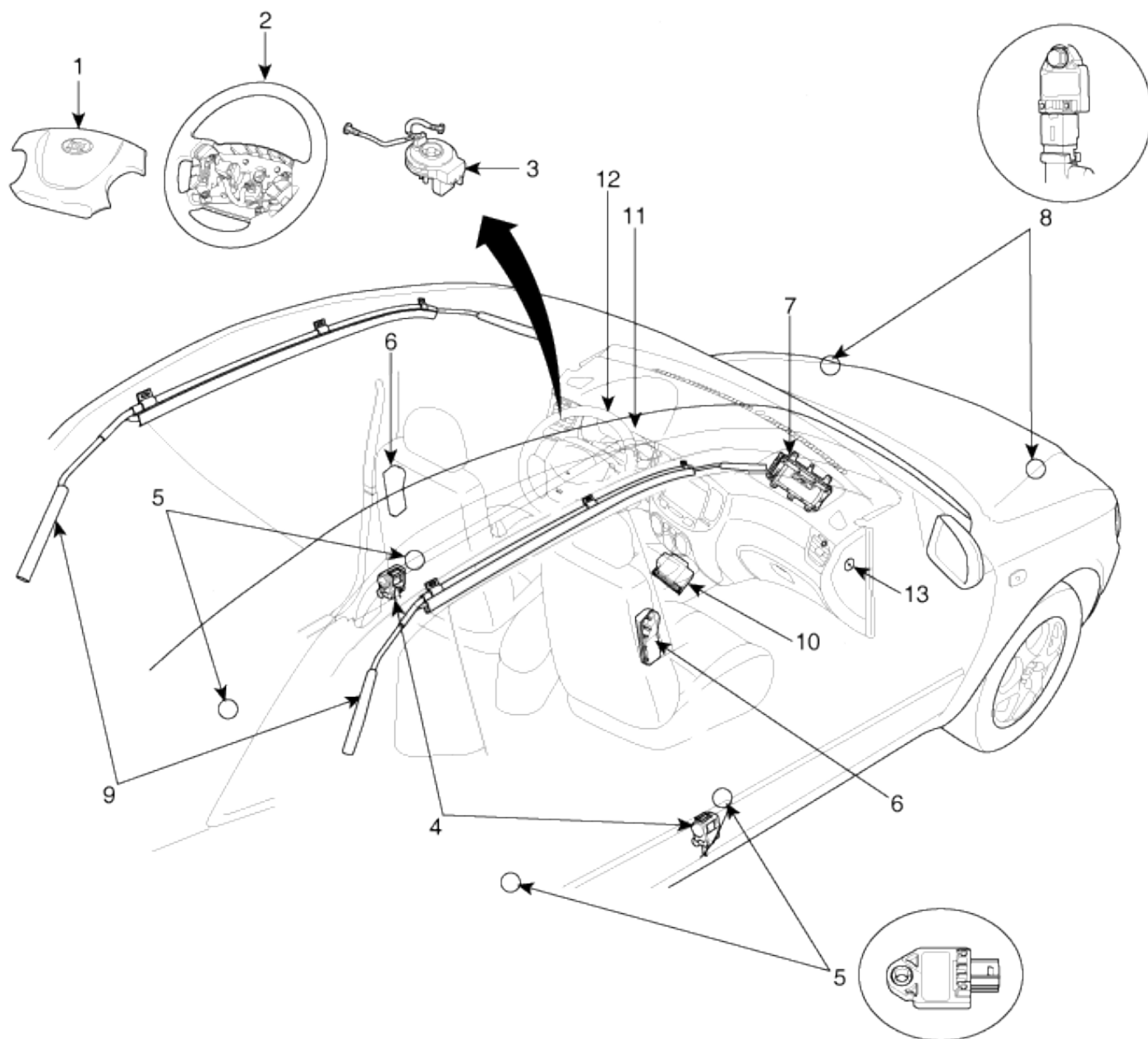
PASSENGER RESTRAINTS ACTIVATION WITH PAD SWITCH

The PAD switch affects the activation of the front passenger airbag only and the switch is controlled manually. The PAD switch will be functioned as follows:

PAD Switch status	PAD Lamp	PAB
Phase-up	ON → OFF	Enable
Enabled position	OFF	Enable
Disabled position	ON	Disable
Fault	Based on PAB	Enable

COMPONENTS

[LHD]



1. Driver Airbag (DAB)

2. Steering Wheel

3. Clock Spring

4. Seat Belt Pretensioner (BPT)

5. Side Impact Sensor (SIS)

6. Side Airbag (SAB)

7. Passenger Airbag (PAB)

8. Front Impact Sensor (FIS)

9. Curtain Airbag (CAB)

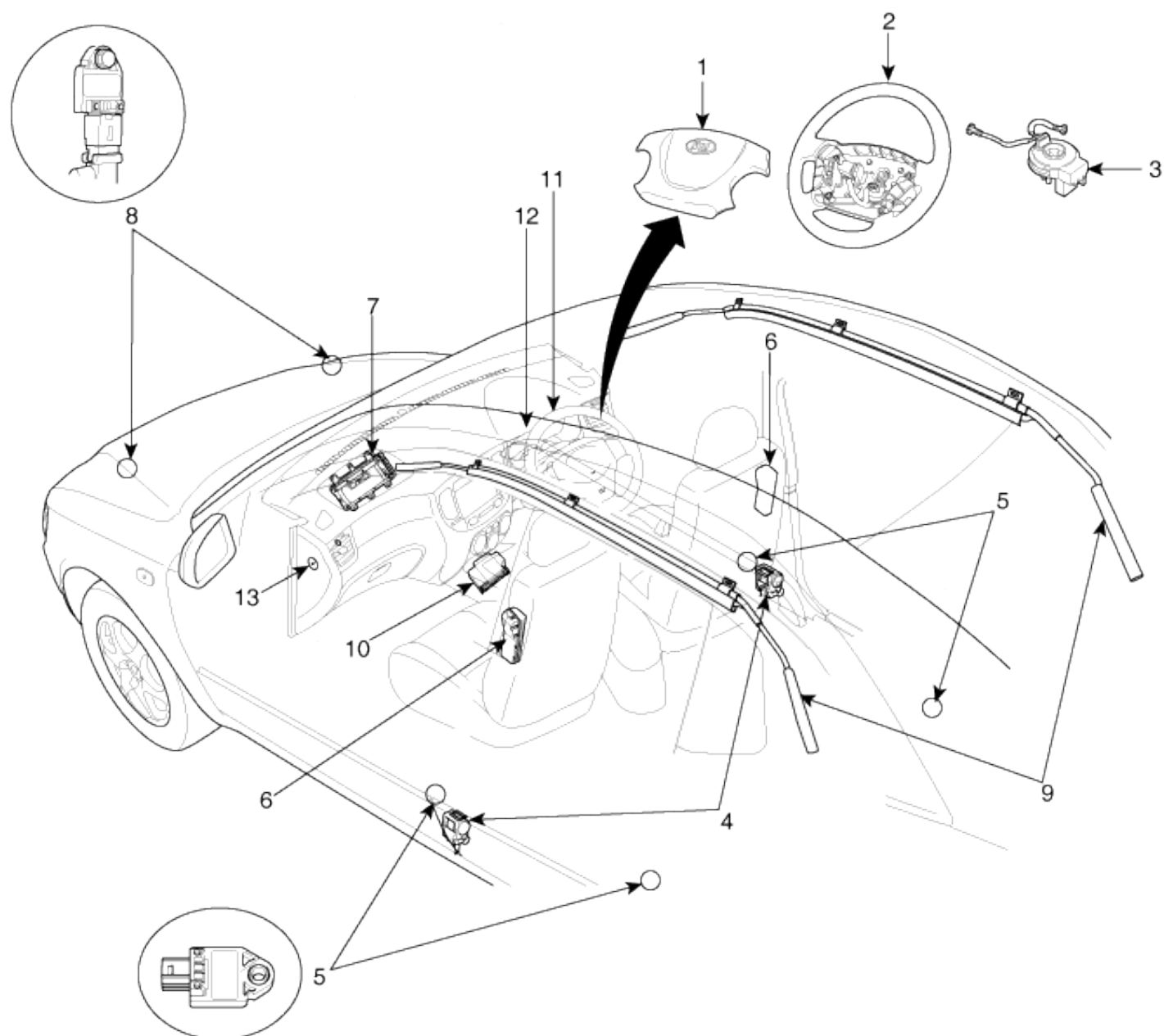
10. Supplemental Restraint System Control Module (SRSCM)

11. Airbag Warning Lamp

12. Passenger Airbag Deactivation (PAD) Lamp

13. PAD Switch

[RHD]



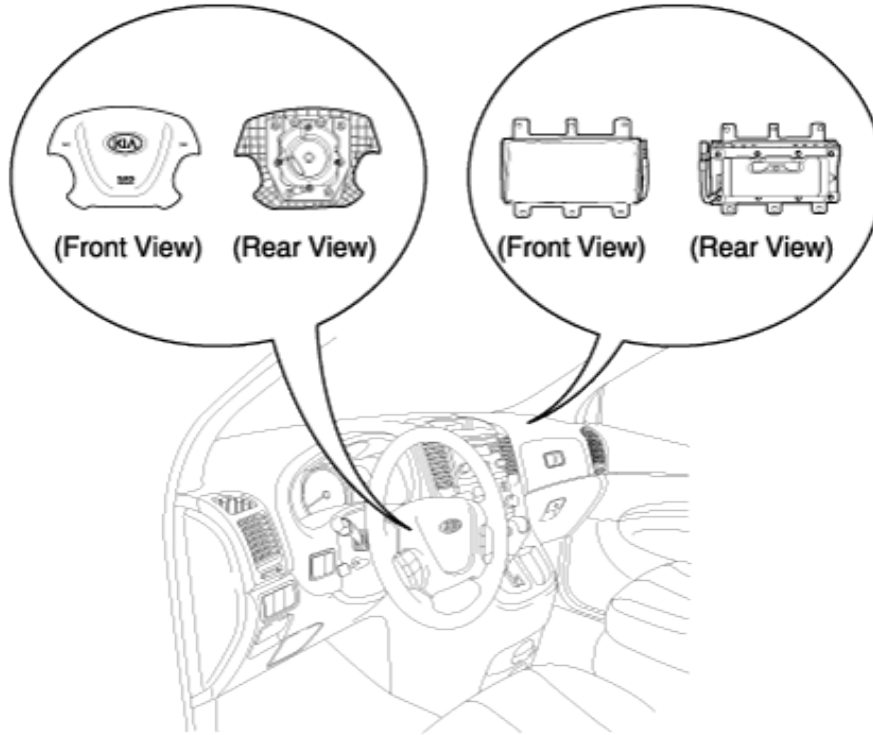
- | | |
|---------------------------------|--|
| 1. Driver Airbag (DAB) | 7. Passenger Airbag (PAB) |
| 2. Steering Wheel | 8. Front Impact Sensor (FIS) |
| 3. Clock Spring | 9. Curtain Airbag (CAB) |
| 4. Seat Belt Pretensioner (BPT) | 10. Supplemental Restraint System Control Module (SRSCM) |
| 5. Side Impact Sensor (SIS) | 11. Airbag Warning Lamp |
| 6. Side Airbag (SAB) | 12. Passenger Airbag Deactivation (PAD) Lamp |
| | 13. PAD Switch |

COMPONENTS LOCATION

DRIVER AIRBAG (DAB) / PASSENGER AIRBAG (PAB)

Driver Airbag(DAB)

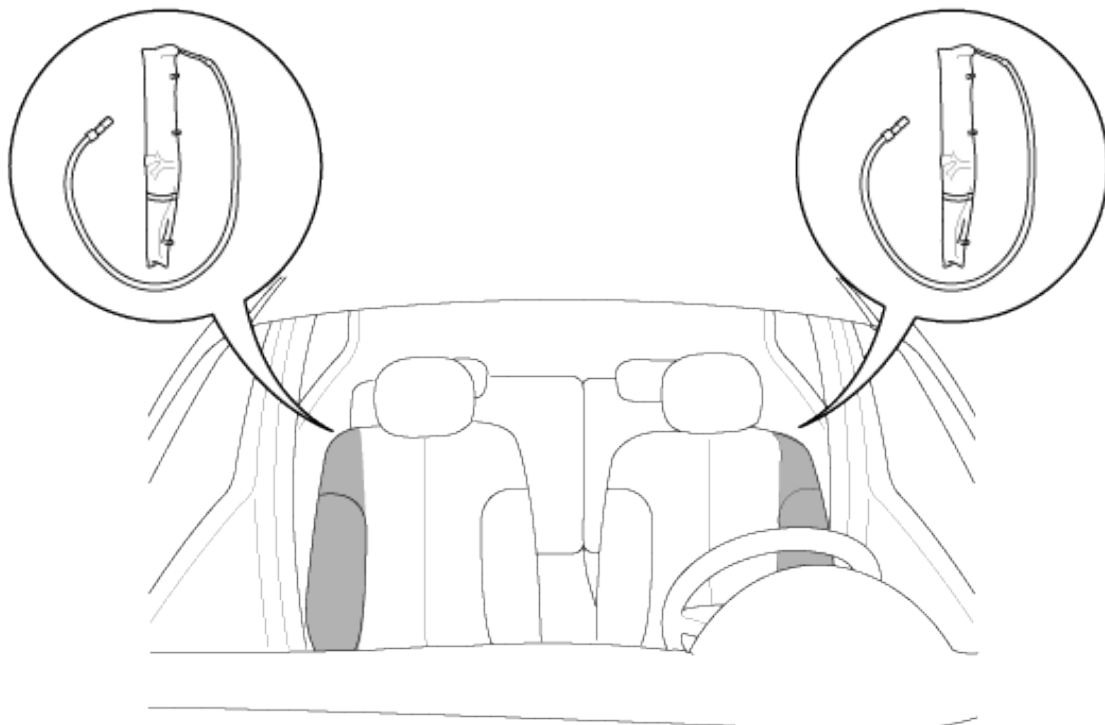
Passenger Airbag(PAB)



SIDE AIRBAG (SAB)

Side Airbag (SAB) [RH]

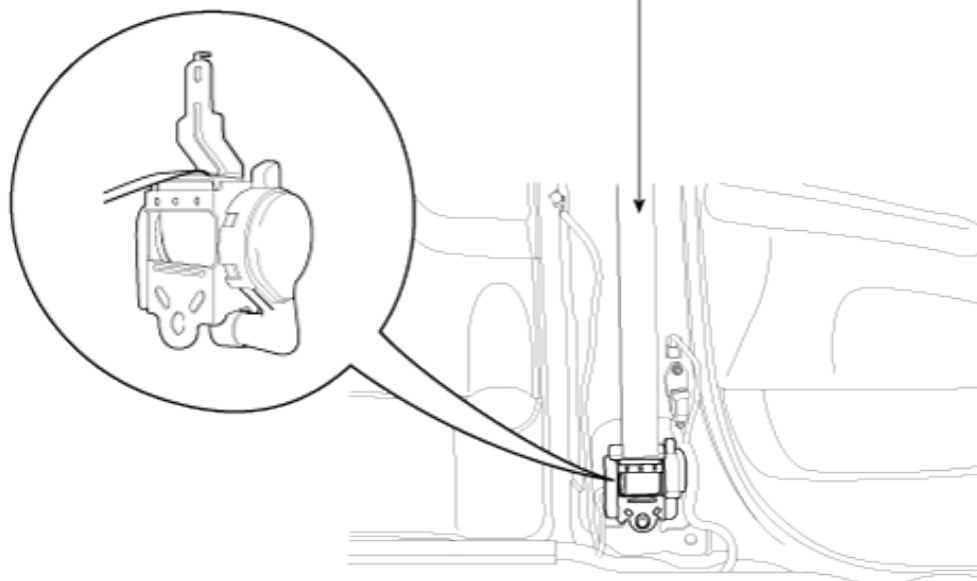
Side Airbag (SAB) [LH]



SEAT BELT PRETENSIONER (BPT)

Seat Belt Pretensioner (BPT)

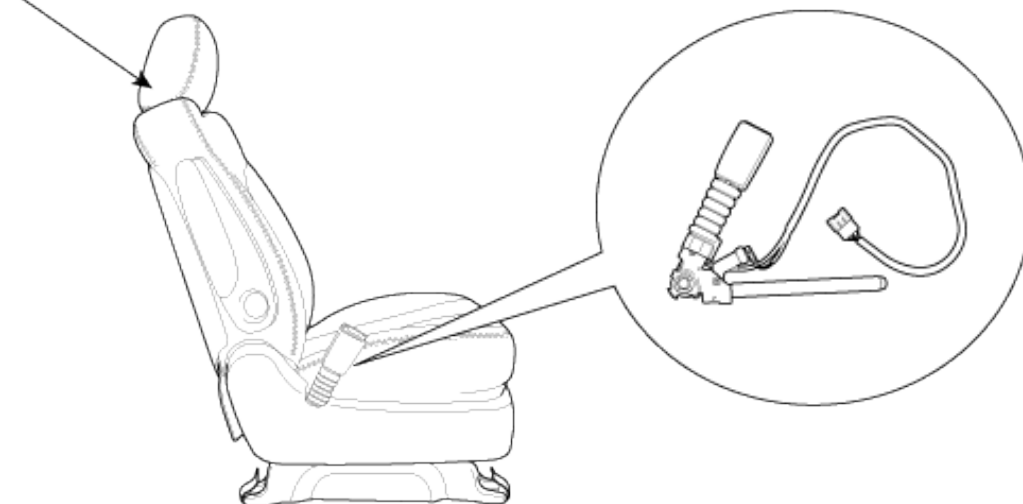
Center Pillar



SEAT BELT BUCKLE PRETENSIONER (BUPT)

Front seat

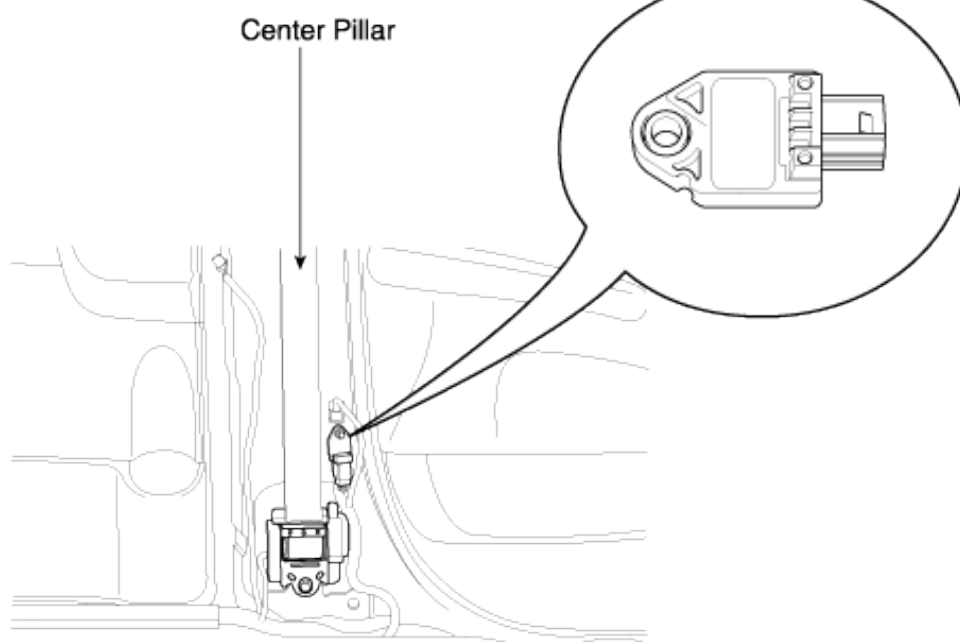
Seat Belt Buckle Pretensioner (BUPT)



SIDE IMPACT SENSOR (SIS)

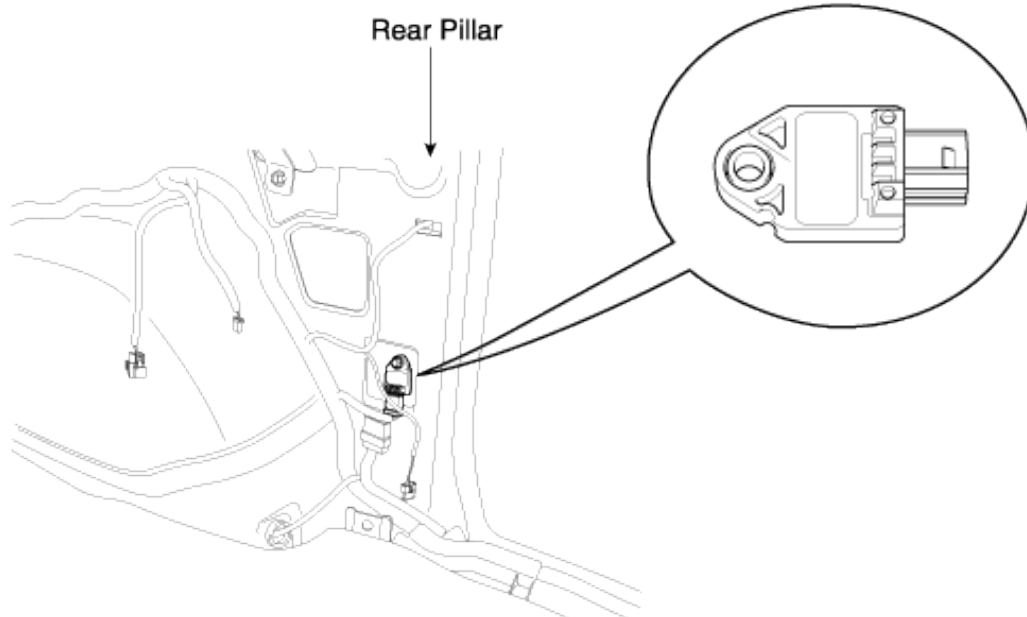
[Front]

Front Side Impact Sensor (FSIS)

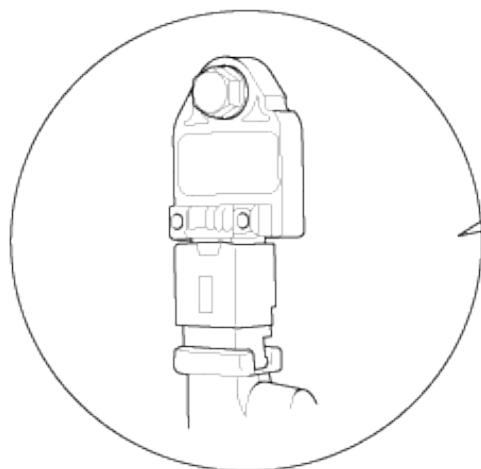


[Rear]

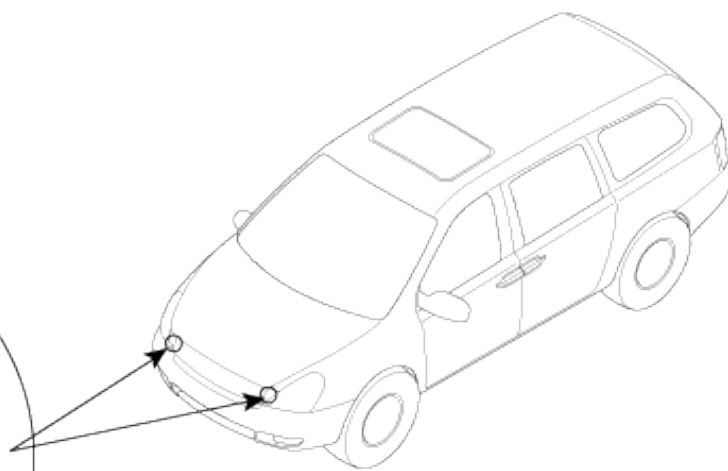
Rear Side Impact Sensor (RSIS)



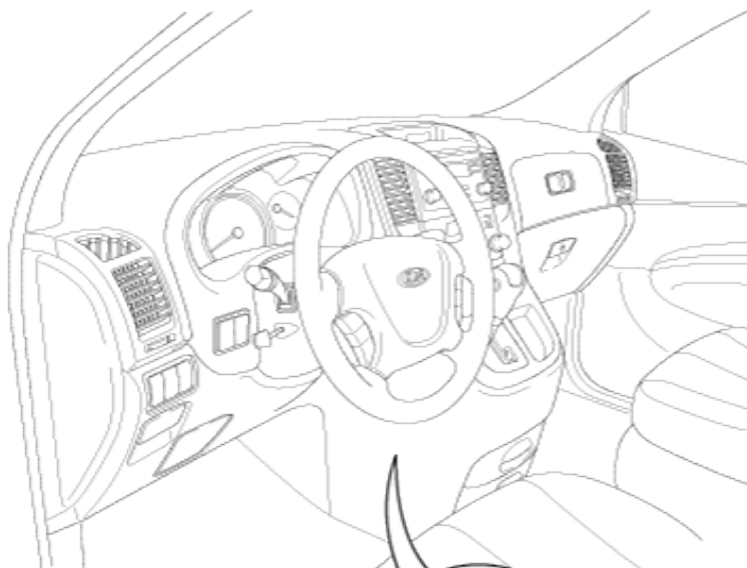
FRONT IMPACT SENSOR (FIS)



Front Impact Sensor(FIS)



SUPPLEMENTAL RESTRAINT SYSTEM CONTROL MODULE (SRSCM)





COMPONENT REPLACEMENT AFTER DEPLOYMENT

NOTICE

Before doing any SRS repairs, use the Hi-Scan Pro to check for DTCs. Refer to the Diagnostic Trouble Code list for repairing of the related DTCs.

When the front airbag(s) deployed after a collision, replace the following items.

- SRSCM
- Deployed airbag(s)
- Seat belt pretensioner(s)
- Front impact sensors
- SRS wiring harnesses
- Inspect the clock spring for heat damage.
If any damage found, replace the clock spring.

When the seat belt pretensioner(s) deployed after a collision, replace the following items.

- Seat belt pretensioner(s)
- SRSCM (if B1658 detected)
- Front impact sensors
- SRS wiring harnesses

When the side/curtain airbag(s) deployed after a collision, replace the following items.

- SRSCM
- Deployed airbag(s)
- Side impact sensor(s) for the deployed side(s)
- SRS wiring harnesses

After the vehicle is completely repaired, confirm the SRS airbag system is OK.

- Turn the ignition switch ON, the SRS indicator should come on for about 6 seconds and then go off.

**SPECIFICATION**

Item	Resistance (Ω)
Driver Airbag (DAB)	1.6 ~ 4.7
Passenger Airbag (PAB)	1.6 ~ 4.7
Side Airbag (SAB)	1.6 ~ 4.7
Curtain Airbag (CAB)	1.6 ~ 4.7
Seat Belt Pretensioner (BPT)	1.6 ~ 4.7
Seat Belt Buckle Pretensioner (BUPT)	1.6 ~ 4.7

TIGHTENING TORQUES

Item	kgf·m	Nm	lb·ft
Driver Airbag (DAB)	0.8 ~ 1.1	7.9 ~ 10.8	5.8 ~ 8.0
Passenger Airbag (PAB)	Bolt : 1.2 ~ 1.3 Nut : 0.7 ~ 0.8	12.0 ~ 13.0 7.0 ~ 8.0	8.9 ~ 9.6 5.2 ~ 5.9
Curtain Airbag (CAB)	1.9 ~ 2.7	18.6 ~ 26.5	13.7 ~ 19.5
Side Airbag (SAB)	1.9 ~ 2.7	18.6 ~ 26.5	13.7 ~ 19.5
Seat Belt Anchor Bolt (BPT)	4.0 ~ 5.5	39.2 ~ 53.9	28.9 ~ 39.8
Buckle Pretensioner (BUPT)	4.0 ~ 5.5	39.2 ~ 53.9	28.9 ~ 39.8
SRSCM Mounting Bolt	1.0 ~ 1.4	9.5 ~ 13.6	7.0 ~ 10.0
Front Impact Sensor (FIS) Mounting Bolt	1.0 ~ 1.4	9.5 ~ 13.6	7.0 ~ 10.0
Side Impact Sensor (SIS) Mounting Bolt	1.0 ~ 1.4	9.5 ~ 13.6	7.0 ~ 10.0

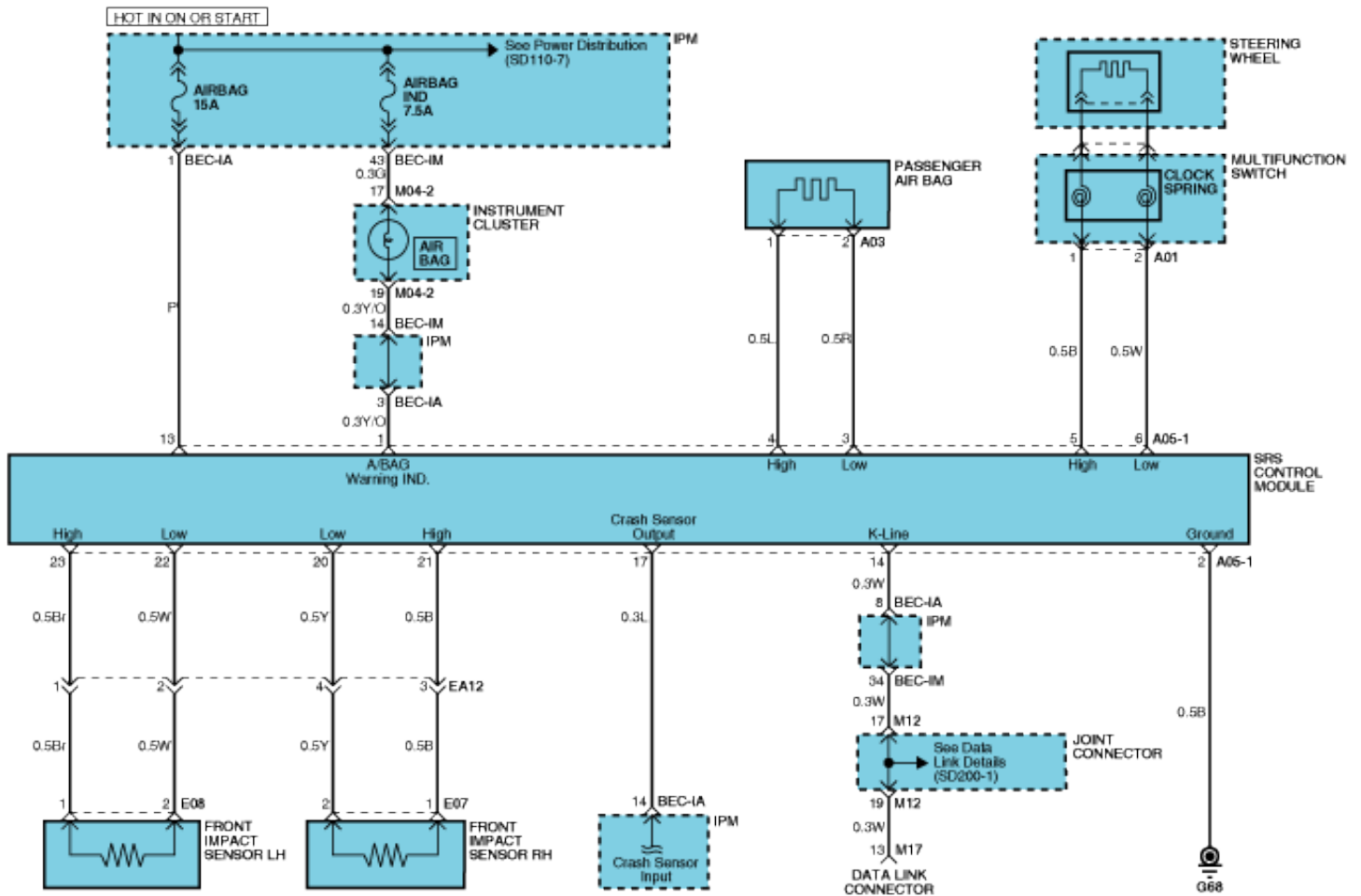


Restraint

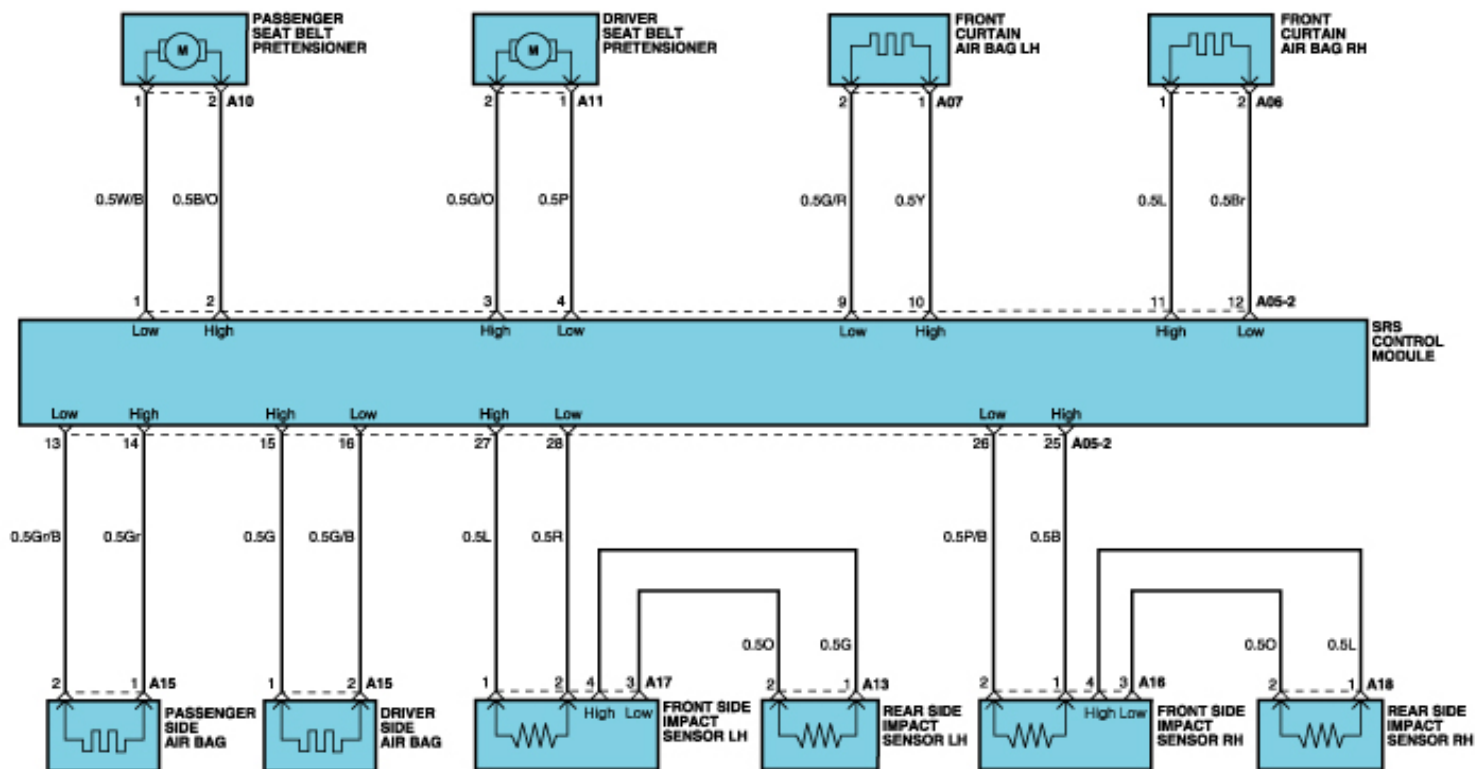
Supplemental Restraint System Control Module
(SRnodeM)



CIRCUIT DIAGRAM(1)



CIRCUIT DIAGRAM(2)



SRSCM CONNECTOR TERMINAL

SRSCM HARNESS CONNECTOR

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	12	11	10	9	8	7	6	5	4	3	2	1
																											
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	24	23	22	21	20	19	18	17	16	15	14	13

CONNECTOR B (A05-2)

CONNECTOR A (A05-1)

Shorting bar (): located between the upper side and lower side pins of SRSCM connector.

Note: For short circuit check, shorting bar must be opened. Use a plastic clip as a shorting bar opener for disconnecting shorting bar.

Pin	Function (Connector A)	Pin	Function (Connector B)
1	Airbag Warning Lamp	1	Seat Belt Pretensioner [Front-Passenger] Low
2	Ground	2	Seat Belt Pretensioner [Front-Passenger] High
3	Passenger Airbag Low	3	Seat Belt Pretensioner [Front-Driver] High
4	Passenger Airbag High	4	Seat Belt Pretensioner [Front-Driver] Low
5	Driver Airbag High	5	-
6	Driver Airbag Low	6	-
7	-	7	-
8	-	8	-
9	-	9	Curtain Airbag [Front-Driver] Low
10	-	10	Curtain Airbag [Front-Driver] High
11	-	11	Curtain Airbag [Front-Passenger] High
12	-	12	Curtain Airbag [Front-Passenger] Low
13	Ignition	13	Side Airbag [Front-Passenger] Low
14	K-Line Diagnostic	14	Side Airbag [Front-Passenger] High
15	-	15	Side Airbag [Front-Driver] High
16	-	16	Side Airbag [Front-Driver] Low
17	Crash Output	17	Buckle Pretensioner [Passenger] Low
18	PAD Lamp	18	Buckle Pretensioner [Passenger] High
19	-	19	Buckle Pretensioner [Driver] High
20	Front Impact Sensor [Passenger] Low	20	Buckle Pretensioner [Driver] Low
21	Front Impact Sensor [Passenger] High	21	-
22	Front Impact Sensor [Driver] Low	22	-
23	Front Impact Sensor [Driver] High	23	-
24	PAD Switch	24	-
		25	Side Impact Sensor [Passenger] High
		26	Side Impact Sensor [Passenger] Low
		27	Side Impact Sensor [Driver] High
		28	Side Impact Sensor [Driver] Low
		29	-
		30	-
		31	-
		32	-

DIAGNOSTIC TROUBLE CODES (DTC)

DTC	FAULT DESCRIPTION	PAGE
B1101	Battery Voltage too High	
B1102	Battery Voltage too Low	
B1328	Front Impact Sensor [Driver] Defect	
B1329	Front Impact Sensor [Driver] Communication Error	
B1333	Front Impact Sensor [Passenger] Defect	
B1334	Front Impact Sensor [Passenger] Communication Error	
B1346	Driver Airbag Resistance too High	
B1347	Driver Airbag Resistance too Low	

B1348	Driver Airbag Circuit Short to Ground	
B1349	Driver Airbag Circuit Short to Battery	
B1352	Passenger Airbag Resistance too High	
B1353	Passenger Airbag Resistance too Low	
B1354	Passenger Airbag Circuit Short to Ground	
B1355	Passenger Airbag Circuit Short to Battery	
B1361	Seat Belt Pretensioner [Front-Driver] Resistance too High	
B1362	Seat Belt Pretensioner [Front-Driver] Resistance too Low	
B1363	Seat Belt Pretensioner [Front-Driver] Circuit Short to Ground	
B1364	Seat Belt Pretensioner [Front-Driver] Circuit Short to Battery	
B1367	Seat Belt Pretensioner [Front-Passenger] Resistance too High	
B1368	Seat Belt Pretensioner [Front-Passenger] Resistance too Low	
B1369	Seat Belt Pretensioner [Front-Passenger] Circuit Short to Ground	
B1370	Seat Belt Pretensioner [Front-Passenger] Circuit Short to Battery	
B1378	Side Airbag [Front-Driver] Resistance too High	
B1379	Side Airbag [Front-Driver] Resistance too Low	
B1380	Side Airbag [Front-Driver] Circuit Short to Ground	
B1381	Side Airbag [Front-Driver] Circuit Short to Battery	
B1382	Side Airbag [Front-Passenger] Resistance too High	
B1383	Side Airbag [Front-Passenger] Resistance too Low	
B1384	Side Airbag [Front-Passenger] Circuit Short to Ground	
B1385	Side Airbag [Front-Passenger] Circuit Short to Battery	
B1395	Squib Interconnection Fault	
B1400	Side Impact Sensor [Front-Driver] Defect	
B1403	Side Impact Sensor [Front-Passenger] Defect	
B1409	Side Impact Sensor [Front-Driver] Communication Error	
B1410	Side Impact Sensor [Front-Passenger] Communication Error	
B1412	Side Impact Sensor [Rear-Driver] Communication Error	
B1413	Side Impact Sensor [Rear-Passenger] Communication Error	
B1418	Side Impact Sensor [Rear-Driver] Defect	
B1419	Side Impact Sensor [Rear-Passenger] Defect	
B1473	Curtain Airbag [Driver] Resistance too High	
B1474	Curtain Airbag [Driver] Resistance too Low	
B1475	Curtain Airbag [Driver] Circuit Short to Ground	
B1476	Curtain Airbag [Driver] Circuit Short to Battery	
B1477	Curtain Airbag [Passenger] Resistance too High	
B1478	Curtain Airbag [Passenger] Resistance too Low	
B1479	Curtain Airbag [Passenger] Circuit Short to Ground	
B1480	Curtain Airbag [Passenger] Circuit Short to Battery	
B1527	Passenger Airbag Deactivation Switch Open or Short to Battery	
B1528	Passenger Airbag Deactivation Switch Short or Short to Ground	

B1529	Passenger Airbag Deactivation Switch Defect	
B1530	Passenger Airbag Deactivation Switch Instability	
B1620	Supplemental Restraint System Control Module Internal Fault (Replace SRSCM)	
B1650	Crash Recorded - Frontal (Replace SRSCM)	
B1651	Crash Recorded - Driver Side (Replace SRSCM)	
B1652	Crash Recorded - Passenger Side (Replace SRSCM)	
B1655	Crash Recorded - Passenger Side with PAB inhibited (Replace SRSCM)	
B1657	Crash Recorded - Belt Pretensioner Only	
B1658	Belt Pretensioner 6 times Deployment (Replace SRSCM)	
B1701	Buckle Pretensioner [Front-Driver] Resistance Too High	
B1702	Buckle Pretensioner [Front-Driver] Resistance Too Low	
B1703	Buckle Pretensioner [Front-Driver] Resistance Circuit Short to Ground	
B1704	Buckle Pretensioner [Front-Driver] Resistance Circuit Short to Battery	
B1706	Buckle Pretensioner [Front-Passenger] Resistance Too High	
B1707	Buckle Pretensioner [Front-Passenger] Resistance Too Low	
B1708	Buckle Pretensioner [Front-Passenger] Resistance Circuit Short to Ground	
B1709	Buckle Pretensioner [Front-Passenger] Resistance Circuit Short to Battery	
B2500	SRS Warning Lamp Fault	
B2505	Passenger Airbag Deactivation Lamp Fault	



DESCRIPTION

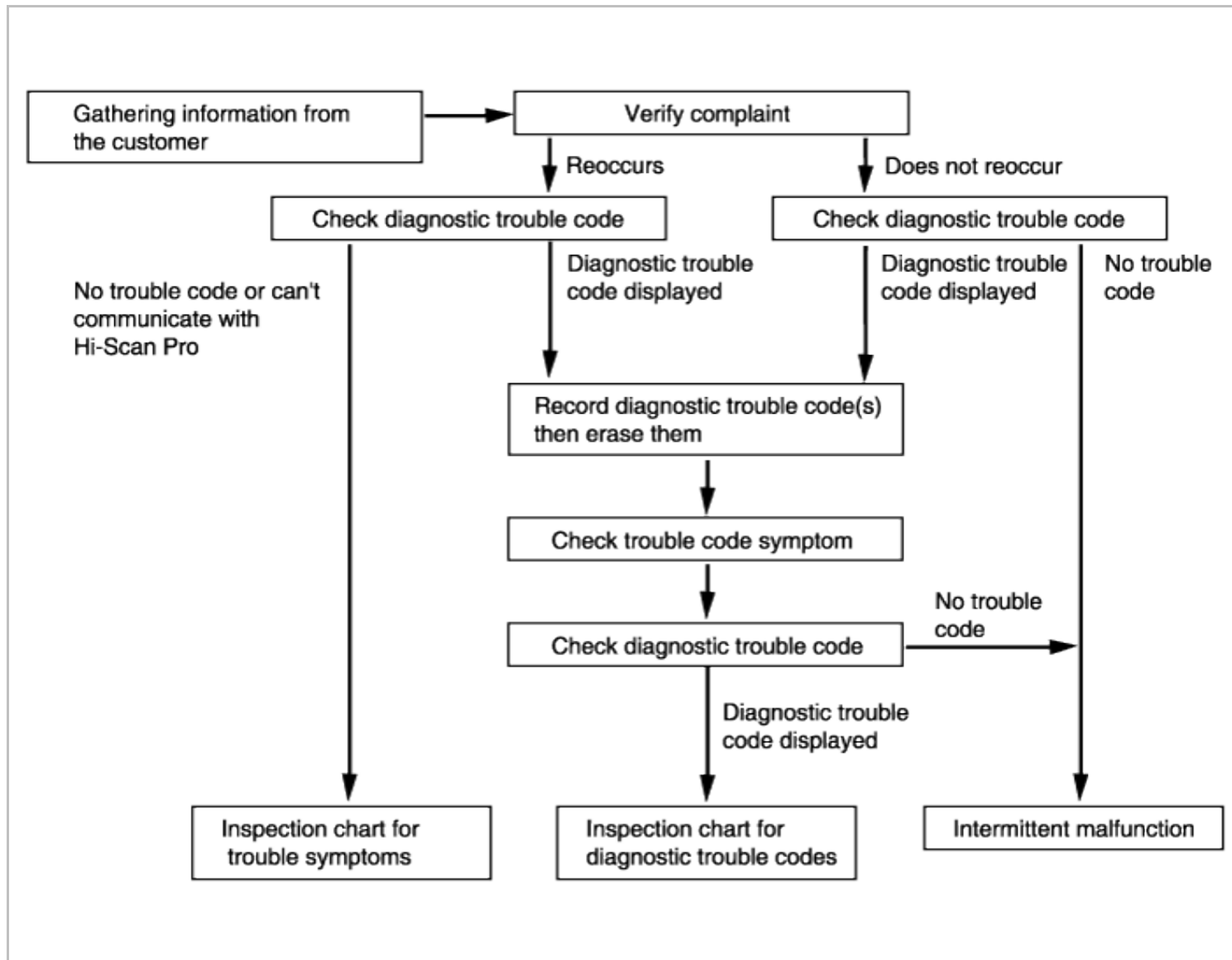
HI-SCAN CHECK

1. Turn the ignition switch off.
2. Connect the Hi-Scan Pro connector to the data link connector located under the crash pad.



3. Turn the ignition switch on and power on the Hi-Scan Pro.
4. Read DTCs.
5. Find and repair the trouble, and clear the DTCs using Hi-Scan Pro.
6. Disconnect the Hi-Scan Pro.

DIAGNOSTIC TROUBLESHOOTING FLOW



TERMINAL & CONNECTOR INSPECTION

Be sure to perform "TERMINAL & CONNECTOR INSPECTION" before doing "INSPECTION PROCEDURE" for troubleshooting of each DTC.

1. Visually inspect all connectors related to the affected circuit for damage and secure connection.
2. Inspect terminals for damage and corrosion.

CAUTION

Avoid damaging connectors during the inspection process.

3. Are any problems found?

NO

- ▶ Go to next step (INSPECTION PROCEDURE).

YES

- ▶ After repairing the trouble part, check whether DTC occurs or not.

PREPARATION OF INSPECTION

Refer to the following steps while doing "INSPECTION PROCEDURE" which is described in the DTC troubleshooting section

1. Turn the ignition switch to LOCK.
2. Disconnect the battery negative cable from the battery and wait for at least 3 minutes.
3. Remove the DAB module and disconnect the DAB connector.
4. Disconnect the connectors of the PAB, SAB, CAB, BPT, BUPT, FIS and SIS.

5. Disconnect the SRSCM connector.

CHECKING OF SHORT OR OPEN CIRCUIT

Refer to the following tips for checking of short or open circuit.

1. Shorting bar is located between the upper and lower side pins of SRSCM connector.
2. When checking the short circuit shorting bar must be opened. Use a plastic clip to put into as a shorting bar opener for disconnecting shorting bar.
3. Use SST Dummy adapter (0957A-1C000) to measure resistance or voltage for checking of short or open circuit. Plug it into DAB (CAB, BPT) connector to avoid enlarging or damaging the connector pins.

CLEAR THE DTC AND CHECK THE VEHICLE AGAIN

1. Install the DAB module and connect the DAB connector.
2. Connect the connector of the PAB, SAB, CAB, BPT, BUPT, FIS and SIS.
3. Connect the SRSCM connector.
4. Connect the battery negative cable to the battery.
5. Connect a Hi-Scan(Pro) to the data link connector.
6. Turn the ignition switch to ON.
7. Clear the DTC stored in the SRSCM memory with the Hi-Scan(Pro)
8. Turn the ignition switch to LOCK and wait for at least 30 seconds.
9. Turn the ignition switch to ON and wait for at least 30 seconds.
10. Check the vehicle again with the Hi-Scan(Pro).

Does the above DTC(s) go off?

YES

- Problem is intermittent or was repaired and SRSCM memory was not cleared.

NO

- Replace the SRSCM with a new one and then check the vehicle again. At this time, if the vehicle normally operates with a new one, the fault may be the SRSCM. Replace the SRSCM.



Restraint

Supplemental Restraint System Control Module
(SRnodeM)- SRS Control Module (SRnodeM)

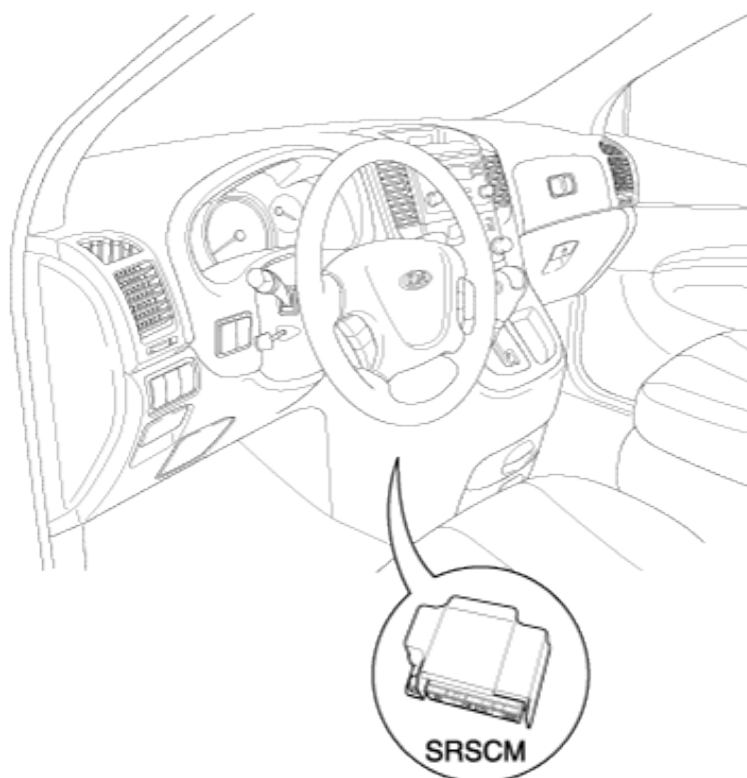


DESCRIPTION

The primary purpose of the SRSCM (Supplemental Restraints System Control Module) is to discriminate between an event that warrants restraint system deployment and an event that does not. The SRSCM must decide whether to deploy the restraint system or not. After determining that pretensioners and/or airbag deployment is required, the SRSCM must supply sufficient power to the pretensioners and airbag igniters to initiate deployment. The SRSCM determines that an impact may require deployment of the pretensioners and airbags from data obtained from impact sensors and other components in conjunction with a safing function.

The SRSCM will not be ready to detect a crash or to activate the restraint system devices until the signals in the SRSCM circuitry stabilize. It is possible that the SRSCM could activate the safety restraint devices in approximately 2 seconds but is guaranteed to fully function after prove-out is completed. The SRSCM must perform a diagnostic routine and light a system readiness indicator at key-on. The system must perform a continuous diagnostic routine and provide fault annunciation through a warning lamp indicator in the event of fault detection. A serial diagnostic communication interface will be used to facilitate servicing of the restraint control system.

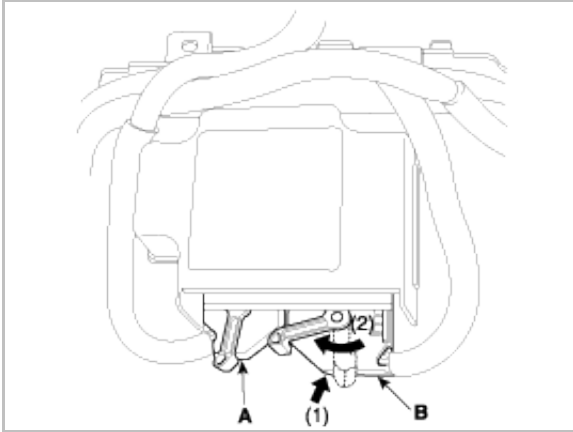
COMPONENTS



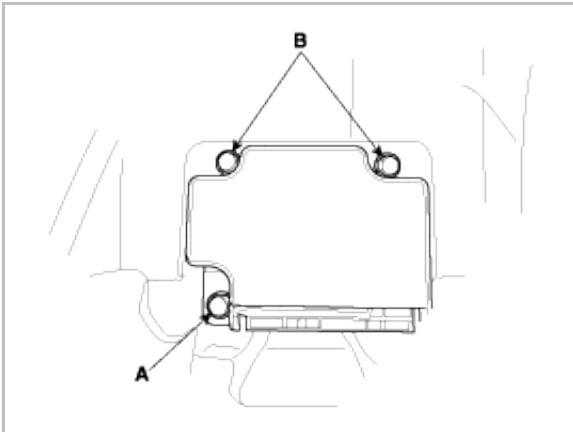


REMOVAL

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Disconnect the DAB, PAB, SAB, CAB and BPT connectors.
4. Remove the floor console and heater ducts. (Refer to BD group)
5. Press the lock(1), then pull back the connector lever(2) until it clicks.



6. Disconnect the SRSCM harness connector(A) and (B) from the SRSCM.
7. Remove the SRSCM mounting bolt (A) and nuts (B) from the SRSCM, then remove the SRSCM.



INSTALLATION

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Install the SRSCM with the SRSCM mounting bolt and nuts.

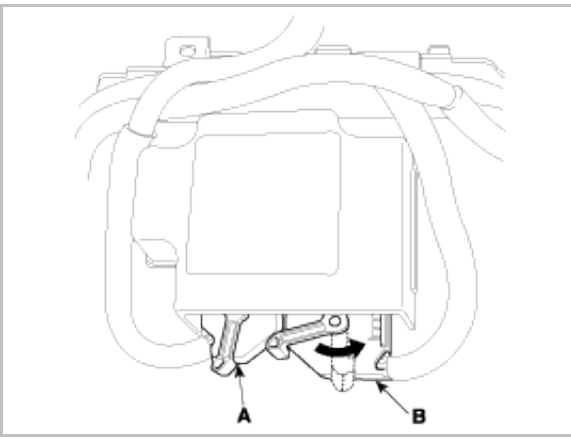
Tightening Torque

: 1.0 ~ 1.4 kgf.m (9.5 ~ 13.6 Nm, 7.0 ~ 10.0 lb.ft)

NOTICE

Use new mounting bolts when replacing the SRSCM after a collision.

4. Connect the SRSCM harness connector.



5. Install the heater ducts and floor console. (Refer to BD group)
6. Connect the DAB, PAB, SAB, CAB and BPT connectors.
7. Reconnect the battery negative cable.
8. After installing the SRSCM, confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

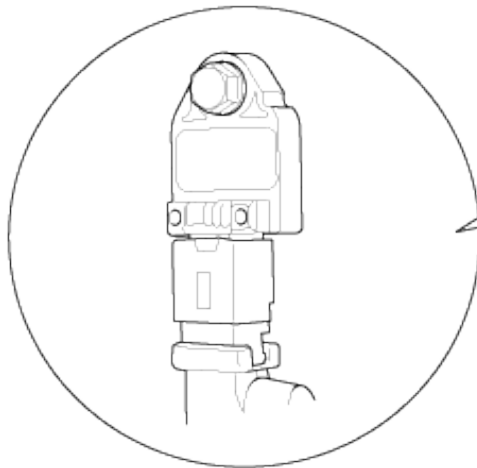
SRSCM - Front Impact Sensor (FIS)



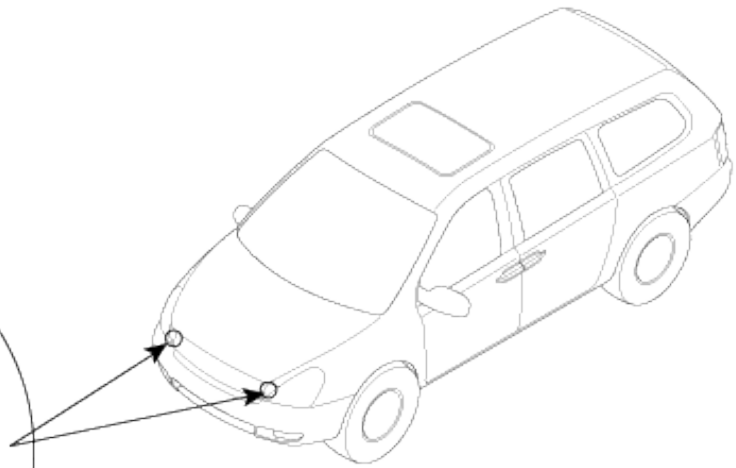
DESCRIPTION

The front impact sensors (FIS) are installed in the side member. They are remote sensors that detect acceleration due to a collision at their mounting locations. The primary purpose of the Front Impact Sensor (FIS) is to provide an indication of a collision. The Front Impact Sensor(FIS) sends acceleration data to the SRSCM.

COMPONENTS



Front Impact Sensor(FIS)





removal

CAUTION

- Removal of the airbag must be performed according to the precautions/ procedures described previously.
- Before disconnecting the front impact sensor connector, disconnect the front airbag connector(s).
- Do not turn the ignition switch ON and do not connect the battery cable while replacing the front impact sensor.

1. Disconnect the battery negative cable, and wait for at least three minutes before beginning work.
2. Disconnect Front Impact Sensor connector.
3. Remove the FIS mounting bolt then remove the Front Impact Sensor.



INSTALLATION

CAUTION

- Ensure that the harness is installed and routed properly to prevent damage to the wiring.
- Do not turn the ignition switch ON and do not connect the battery cable while replacing the front impact sensor.

1. Install the new Front Impact Sensor with bolt then connect the SRS harness connector to the Front Impact Sensor.

Tightening torque

: 1.0 ~ 1.4 kgf.m (9.5 ~ 13.6 Nm, 7.0 ~ 10.0 lb.ft)

2. Reconnect the negative battery cable.
3. After installing the Front Impact Sensor, confirm proper system operation: Turn the ignition switch ON the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Supplemental Restraint System Control Module
(SRnodeM)- Side Impact Sensor (SIS)



DESCRIPTION

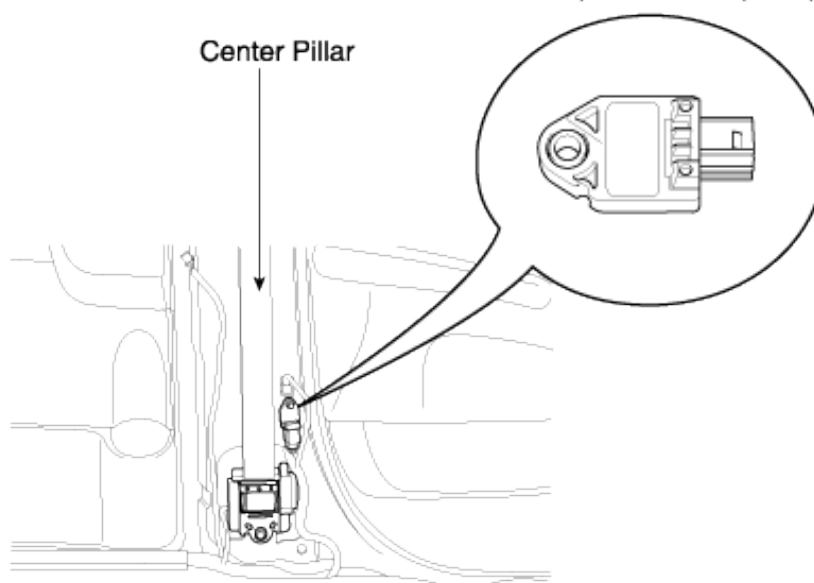
The Side Impact Sensor (SIS) system consists of two front SIS which are installed inside the Center Pillar (LH and RH) and two rear SIS which are installed in the rear pillar (LH and RH).

They are remote sensors that detect acceleration due to collision at their mounting locations. The primary purpose of the Side Impact Sensor (SIS) is to provide an indication of a collision. The Side Impact Sensor (SIS) sends acceleration data to the SRSCM.

COMPONENTS

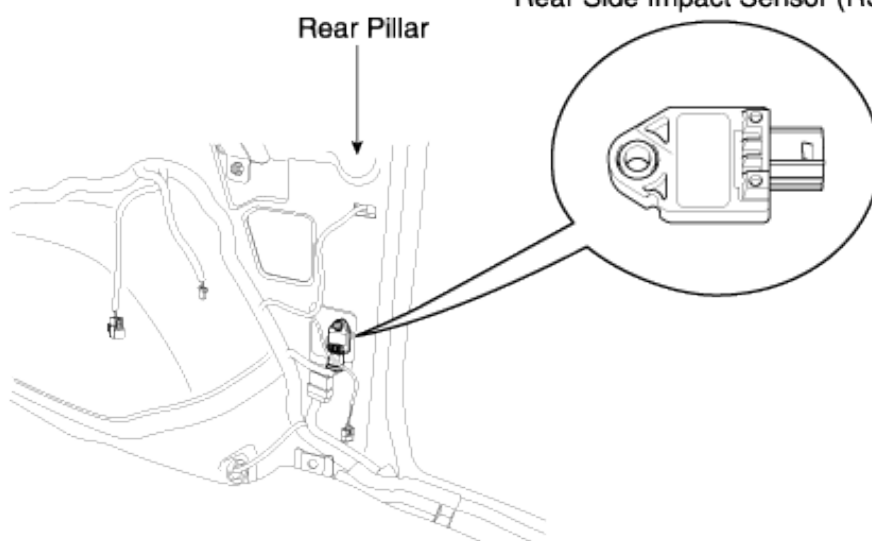
[Front]

Front Side Impact Sensor (FSIS)



[Rear]

Rear Side Impact Sensor (RSIS)





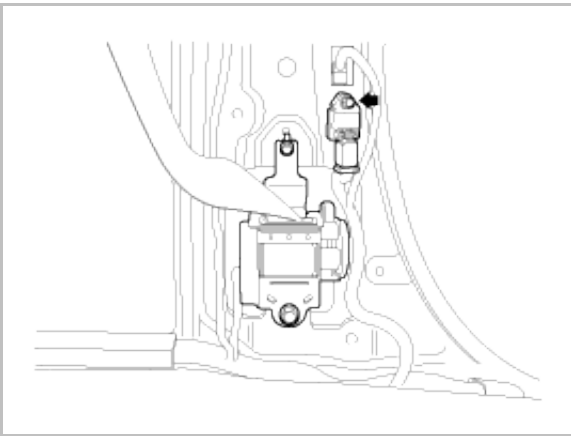
REMOVAL

FRONT SIDE IMPACT SENSOR

CAUTION

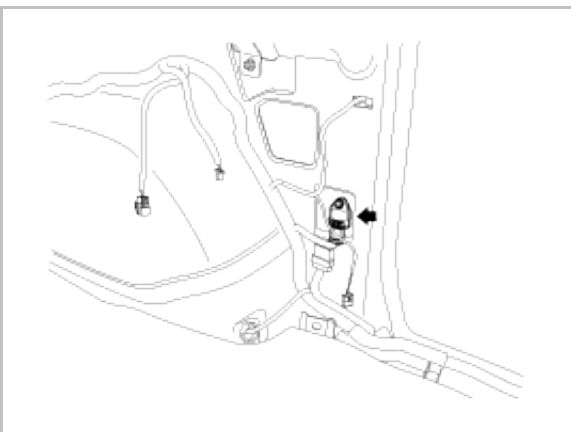
- Removal of the airbag must be performed according to the precautions/procedures described previously.
- Before disconnecting the side impact sensor connector(s), disconnect the side airbag connector(s).
- Do not turn the ignition switch ON and do not connect the battery cable while replacing the side impact sensor.

1. Disconnect the battery negative cable, and wait for at least three minutes before beginning work.
2. Remove the door scuff trim. (Refer to BD group)
3. Remove the center pillar trim. (Refer to BD group)
4. Disconnect the Side Impact Sensor connector.
5. Remove the SIS mounting bolt then remove the Side Impact Sensor.



REAR SIDE IMPACT SENSOR

1. Disconnect the battery negative cable, and wait for at least three minutes before beginning work.
2. Remove the rear pillar trim. (Refer to BD group)
3. Disconnect the Side Impact Sensor connector.
4. Remove the SIS mounting bolt then remove the Side Impact Sensor.



INSTALLATION

FRONT SIDE IMPACT SENSOR

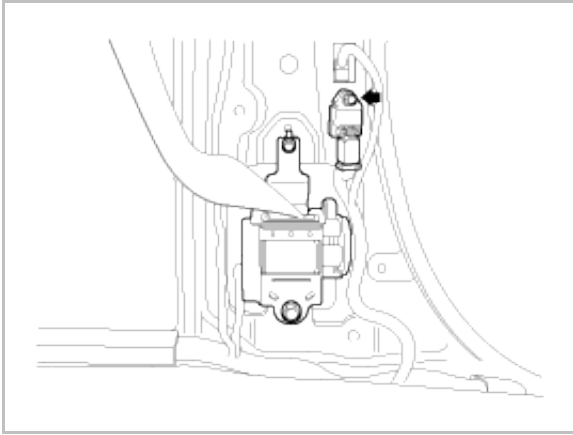
CAUTION

- Ensure that the harness is installed and routed properly to prevent damage to the wiring.
- Do not turn the ignition switch ON and do not connect the battery cable while replacing the side impact sensor.

1. Install the new Side Impact Sensor with the bolt then connect the SRS harness connector to the Side Impact Sensor.

Tightening torque

: 1.0 ~ 1.4 kgf.m (9.5 ~ 13.6 Nm, 7.0 ~ 10.0 lb.ft)



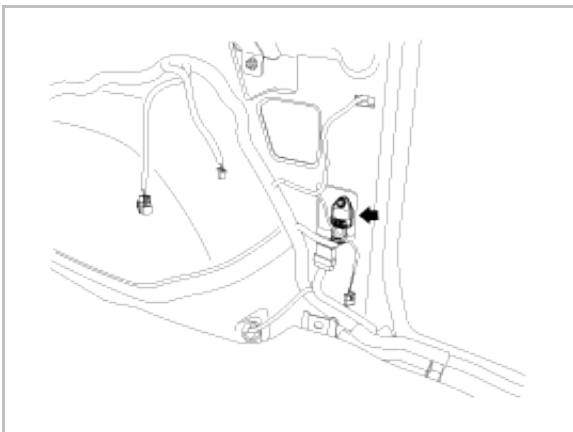
2. Install the center pillar trim. (Refer to BD group)
3. Install the door scuff trim. (Refer to BD group)
4. Reconnect the battery negative cable.
5. After installing the Side Impact Sensor, confirm proper system operation: Turn the ignition switch ON, the SRS indicator light should be turned on for about six seconds and then go off.

REAR SIDE IMPACT SENSOR

1. Be sure that the battery negative cable is disconnected.
2. Install the new Side Impact Sensor with the bolt then connect the SRS harness connector to the Side Impact Sensor.

Tightening torque

: 1.0 ~ 1.4 kgf.m (9.5 ~ 13.6 Nm, 7.0 ~ 10.0 lb.ft)



3. Install the rear pillar trim. (Refer to BD group)
4. Reconnect the battery negative cable.
5. After installing the Side Impact Sensor, confirm proper system operation: Turn the ignition switch ON, the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Airbag Module



AIRBAG DISPOSAL

SPECIAL TOOL REQUIRED

Before scrapping any airbags or side airbags (including those in a whole vehicle to be scrapped), the airbags or side airbags must be deployed. If the vehicle is still within the warranty period, before deploying the airbags or side airbags, the Technical Manager must give approval and/or special instruction. Only after the airbags or side airbags have been deployed (as the result of vehicle collision, for example), can they be scrapped.

If the airbags or side airbags appear intact (not deployed), treat them with extreme caution. Follow this procedure.

DEPLOYING AIRBAGS IN THE VEHICLE

If an SRS equipped vehicle is to be entirely scrapped, its airbags or side airbags should be deployed while still in the vehicle. The airbags or side airbags should not be considered as salvageable parts and should never be installed in another vehicle.

1. Turn the ignition switch OFF, and disconnect the battery negative cable and wait at least three minutes.
2. Confirm that each airbag or side airbag is securely mounted.
3. Confirm that the special tool is functioning properly by following the check procedure.

DRIVER'S AIRBAG :

1. Remove the driver's airbag and install the SST(0957A-38500).
2. Install the driver's airbag on the steering wheel.

FRONT PASSENGER'S AIRBAG :

1. Remove the glove box, then disconnect the 2P connector between the front passenger's airbag and SRS main harness.
2. Install the SST(0957A-3F100).

SIDE AIRBAG :

1. Disconnect the 2P connector between the side airbag and side wire harness.
2. Install the SST (0957A-3F100).

CURTAIN AIRBAG :

1. Disconnect the 2P connector between the curtain airbag and wire harness.
2. Install the SST(0957A-38500).

SEAT BELT PRETENSIONER :

1. Disconnect the 2P connector from the seat belt pretensioner.
2. Install the SST(0957A-38500).
3. Place the deployment tool at least thirty feet (10 meters) away from the airbag.
4. Connect a 12 volt battery to the tool.
5. Push the tool's deployment switch. The airbag should deploy (deployment is both highly audible and visible: a loud noise and rapid inflation of the bag, followed by slow deflection)
6. Dispose of the complete airbag. No part of it can be reused. Place it in a sturdy plastic bag and seal it securely.



DEPLOYING THE AIRBAG OUT OF THE VEHICLE

If an intact airbag has been removed from a scrapped vehicle, or has been found defective or damage during transit, storage or service, it should be deployed as follows :

1. Position the airbag face up, outdoors on flat ground at least thirty feet (10meters) from any obstacles or people.

DISPOSAL OF DAMAGED AIRBAG

1. If installed in a vehicle, follow the removal procedure of driver's airbag front passenger's and side airbag.
2. In all cases, make a short circuit by twisting together the two airbag inflator wires.
3. Package the airbag in exactly the same packing that the new replacement part come in.



Restraint

Airbag Module - Driver Airbag (DAB) Module and
Clock Spring



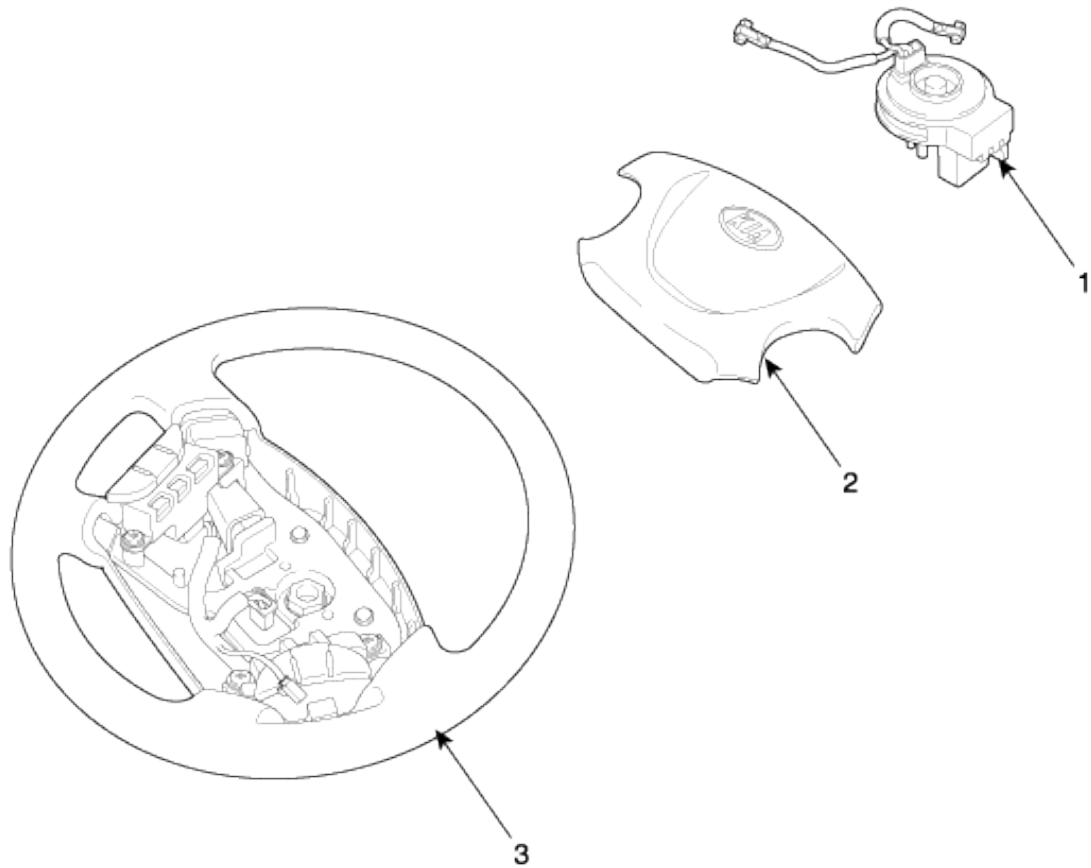
DESCRIPTION

Driver Airbag (DAB) is installed in steering wheel and electrically connected to SRSCM via clockspring. It protects the driver from danger by deploying a bag when frontal crash occurs. The SRSCM determines deployment of Driver Airbag (DAB).

CAUTION

Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment will result in serious personal injury.

COMPONENTS



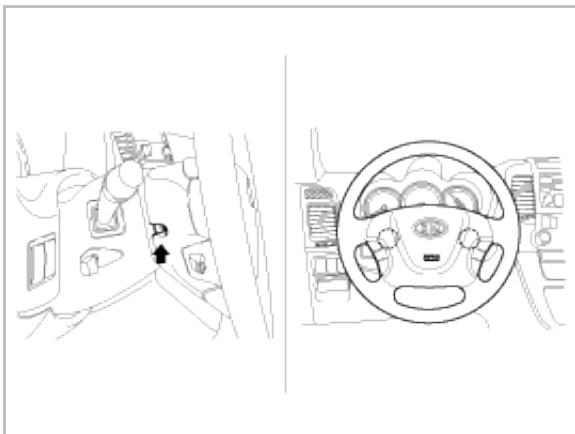
- 1. Clock Spring
- 2. Driver Airbag (DAB)

- 3. Steering Wheel

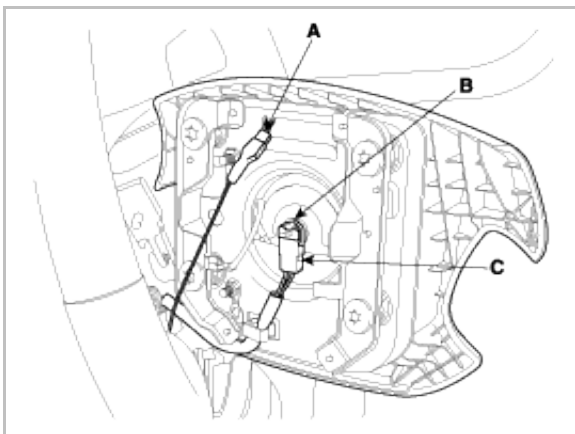


REMOVAL

1. Disconnect the battery negative cable and wait at least three minutes before beginning work.
2. Remove the airbag module mounting bolts.



3. Disconnect the horn connector(A).

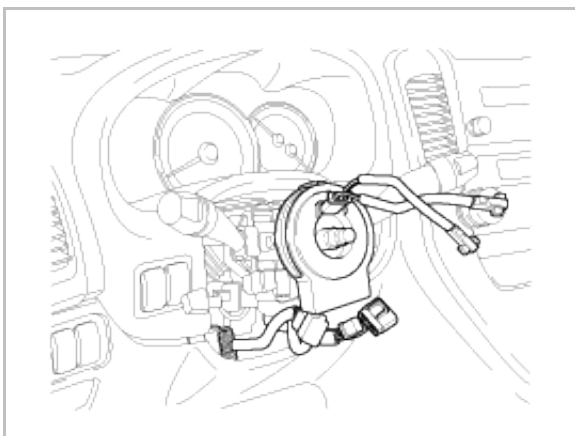


4. Release the connector locking pin(B), then disconnect the driver airbag module connector(C).

CAUTION

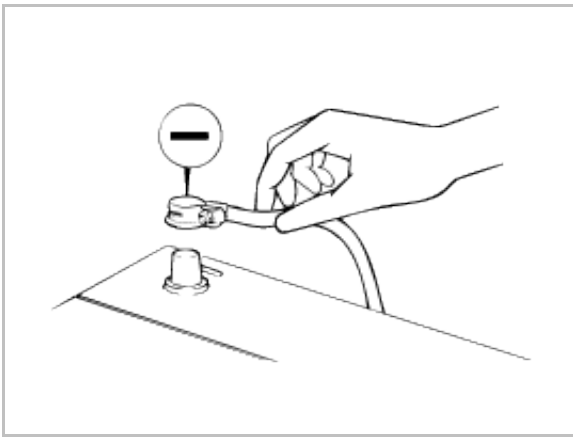
The removed airbag module should be stored in a clean, dry place with the pad cover face up.

5. Remove the steering wheel and steering wheel column cover(Refer to ST group in the Workshop Manual).
6. Disconnect the clock spring and horn connector, then remove the clock spring.



INSTALLATION

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.



2. Remove ignition key from the vehicle.
3. Connect the clock spring harness connector and horn harness connector to the clock spring.
4. Set the clock spring on neutral position and after turning the front wheels to the straight-ahead position, install the clock spring.

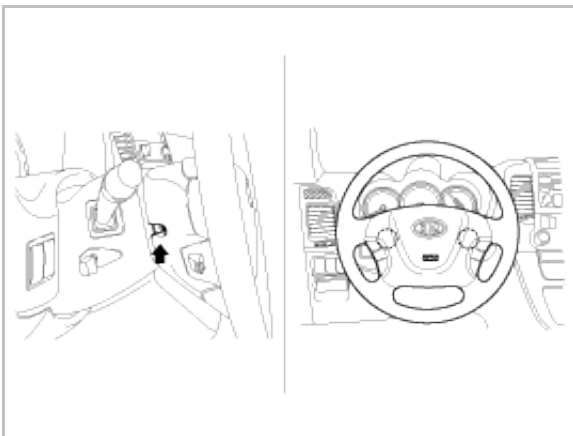
NOTICE

As described direction on the clock spring warning label, align the centerline with adjusting the setting mark(▶◀) when installing the clock spring.

5. Install the steering wheel column cover and the steering wheel. (Refer to ST group)
6. Connect the Driver Airbag (DAB) module connector and horn connector, then install the Driver Airbag (DAB) module on the steering wheel.
7. Secure the Driver Airbag (DAB) with the new mounting bolts.

Tightening Torque (DAB Mounting Bolt)

: 0.8 ~ 1.1 kgf.m (7.9 ~ 10.8 Nm, 5.8 ~ 8.0 lb.ft)



8. Connect the battery negative cable.
9. After installing the airbag, confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.
 - B. Make sure horn button works.

INSPECTION

Driver Airbag (DAB)

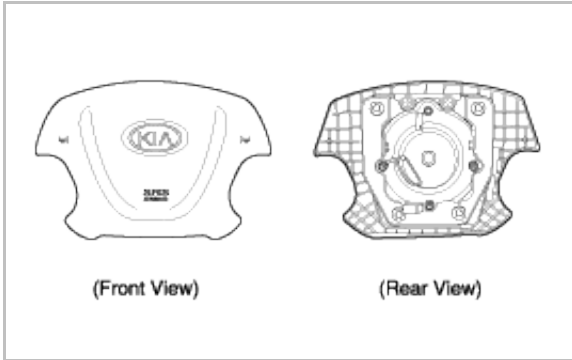
If any improper parts are found during the following inspection, replace the airbag module with a new one.

CAUTION

Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment will result in serious

personal injury.

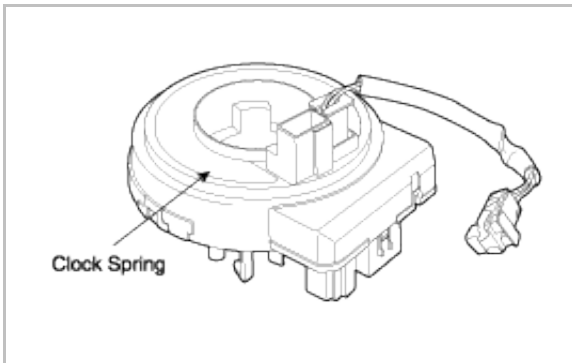
1. Check pad cover for dents, cracks or deformities.
2. Check the airbag module for denting, cracking or deformation.
3. Check hooks and connectors for damage, terminals for deformities, and harness for binds.
4. Check airbag inflator case for dents, cracks or deformities.



5. Install the airbag module to the steering wheel to check for fit or alignment with the wheel.

Clockspring

1. If, as a result of the following checks, even one abnormal point is discovered, replace the clock spring with a new one.
2. Check connectors and protective tube for damage, and terminals for deformities.





Restraint

Airbag Module - Passenger Airbag (PAB) Module



DESCRIPTION

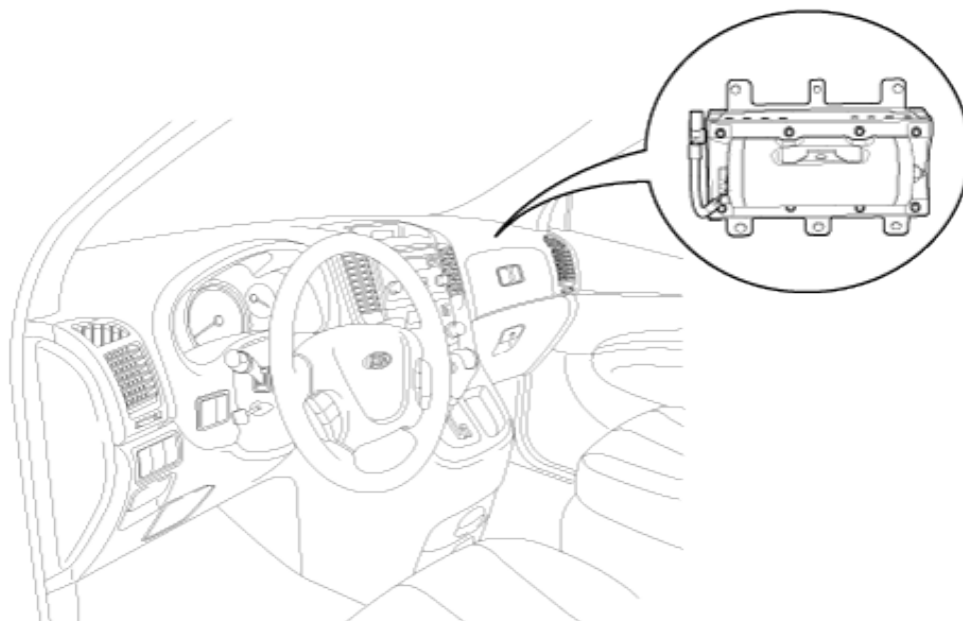
The passenger Airbag (PAB) is installed inside the crash pad and protects the front passenger in the event of a frontal crash. The SRSCM determines if and when to deploy the PAB.

CAUTION

Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment will result in serious personal injury.

components

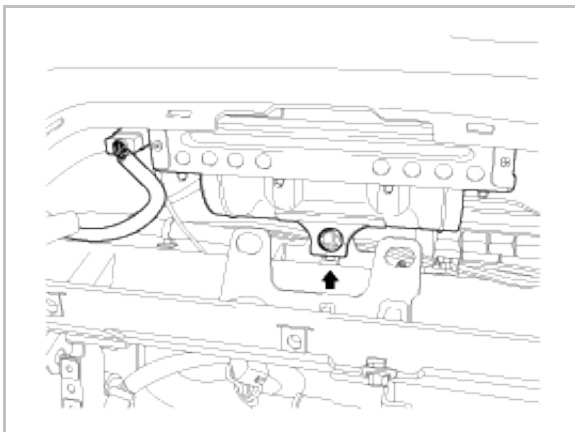
Passenger Airbag (PAB)





REMOVAL

1. Disconnect the battery negative cable and wait for at least three minutes before beginning work.
2. Remove the glove box. (Refer to BD group)
3. Disconnect the PAB connector and remove the PAB mounting bolts. (Refer to BD group)

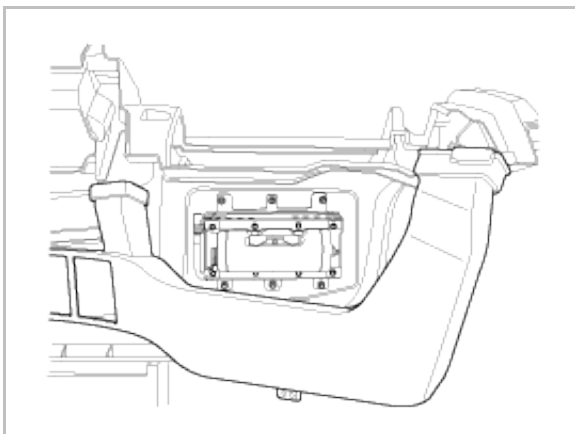


4. Remove the crash pad. (Refer to BD group)

NOTICE

Replace the crash pad which is damaged while PAB is deployed.

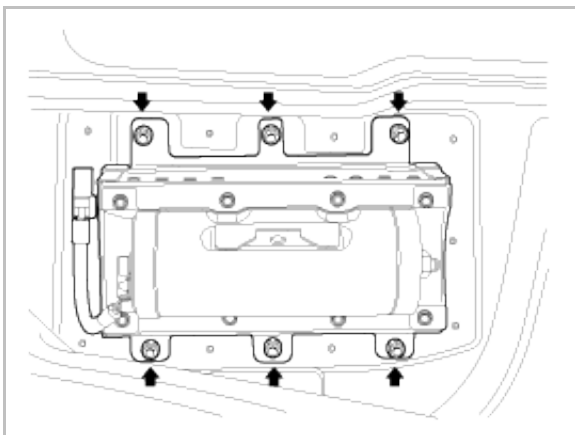
5. Remove the heater duct from the crash pad.



6. Remove the mounting nuts from the crash pad. Then remove the passenger airbag.

CAUTION

The removed airbag module should be stored in a clean, dry place with the airbag cushion up.



INSTALLATION

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Place a Passenger Airbag (PAB) on the crash pad and tighten the Passenger Airbag (PAB) mounting nuts.

Tightening Torque

: 0.7 ~ 0.8 kgf.m (7.0 ~ 8.0 N.m, 5.2 ~ 5.9 lb.ft)

4. Install the heater duct to the crash pad.
5. Install the crash pad. (Refer to BD group)
6. Tighten the PAB mounting bolts.

Tightening Torque

: 1.2 ~ 1.3 kgf.m (12.0 ~ 13.0 N.m, 8.9 ~ 9.6 lb.ft)

7. Connect the Passenger Airbag (PAB) harness connector to the SRS main harness connector.
8. Reinstall the bolve box. (Refer to BD group)
9. Reconnect the battery negative cable.
10. After installing the Passenger Airbag (PAB), confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Airbag Module - Side Airbag (SAB) Module



DESCRIPTION

The two Side Airbags (SAB) are installed inside the driver and passenger seat and protects the driver and front passenger from danger when side crash occurs. The SRSCM determines deployment of side airbag by using Side Impact Sensor (SIS) signal.

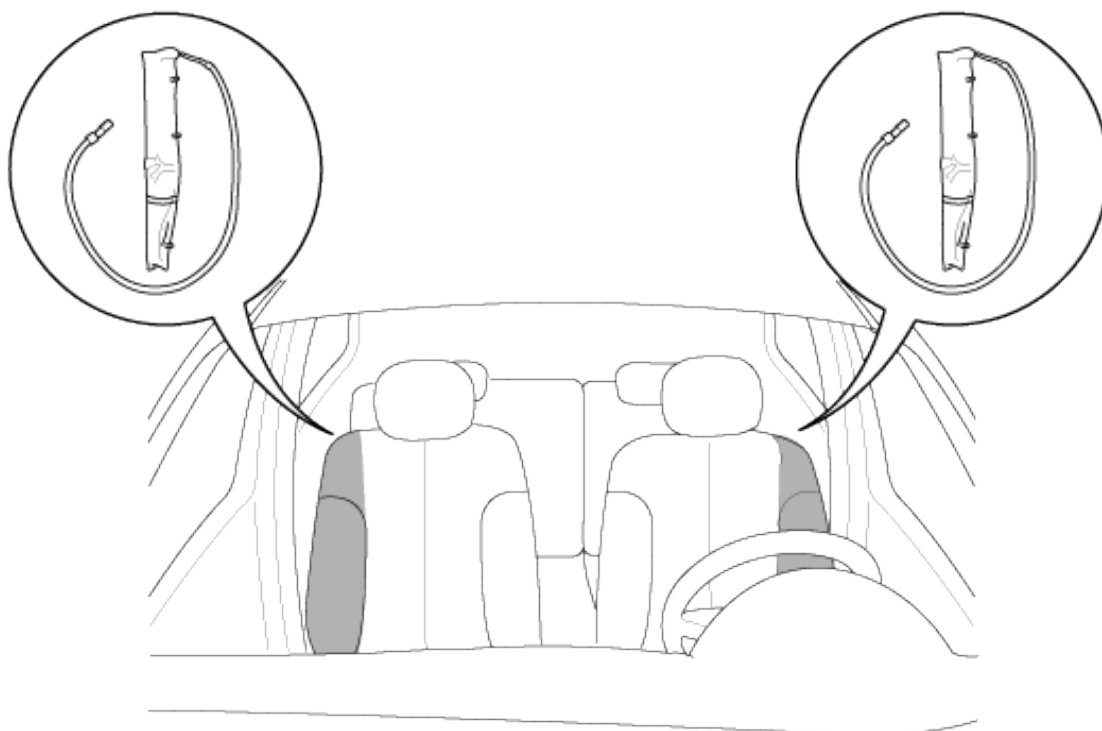
CAUTION

Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment will result in serious personal injury.

components

Side Airbag (SAB) [RH]

Side Airbag (SAB) [LH]





REMOVAL

1. Disconnect the battery negative cable and wait at least 3 minutes before beginning work.
2. Remove the front seat assembly.(Refer to BD group)
3. Remove the seatback cover.(Refer to BD group)

NOTICE

When the side airbag deployed after a collision, replace the seatback as an assembly.

4. Loosen the SAB mounting nuts and remove the SAB module.



INSTALLATION

CAUTION

Ensure that the harness is installed and routed properly to prevent damage to the wiring.

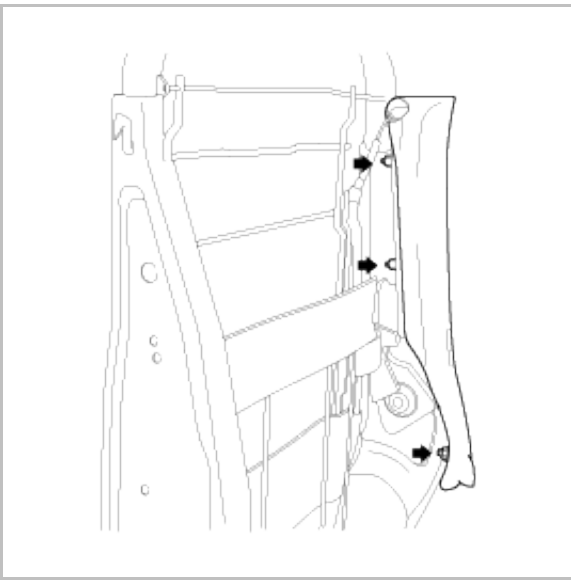
NOTICE

- Do not open the lid of the side airbag cover.
- Use a new mounting nuts when you replace a side airbag.
- Make sure that the seatback cover is installed properly. Improper installation may prevent the proper deployment.

1. Disconnect the battery negative cable and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Place a Side Airbag (SAB) on the seatback frame and tighten the side airbag mounting nuts.

Tightening torque

: 1.9 ~ 2.7 kgf.m (18.6 ~ 26.5 Nm, 13.7 ~ 19.5 lb.ft)



4. Install the new seatback cover.(Refer to BD group)
5. Install the seat assembly, then connect the Side Airbag (SAB) harness connector.
6. Recline and slide the front seat forward fully, make sure the harness wires are not pinched or interfering with other parts.
7. Reconnect the battery negative cable.
8. After installing the Side Airbag (SAB), confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Airbag Module - Curtain Airbag (CAB) Module



DESCRIPTION

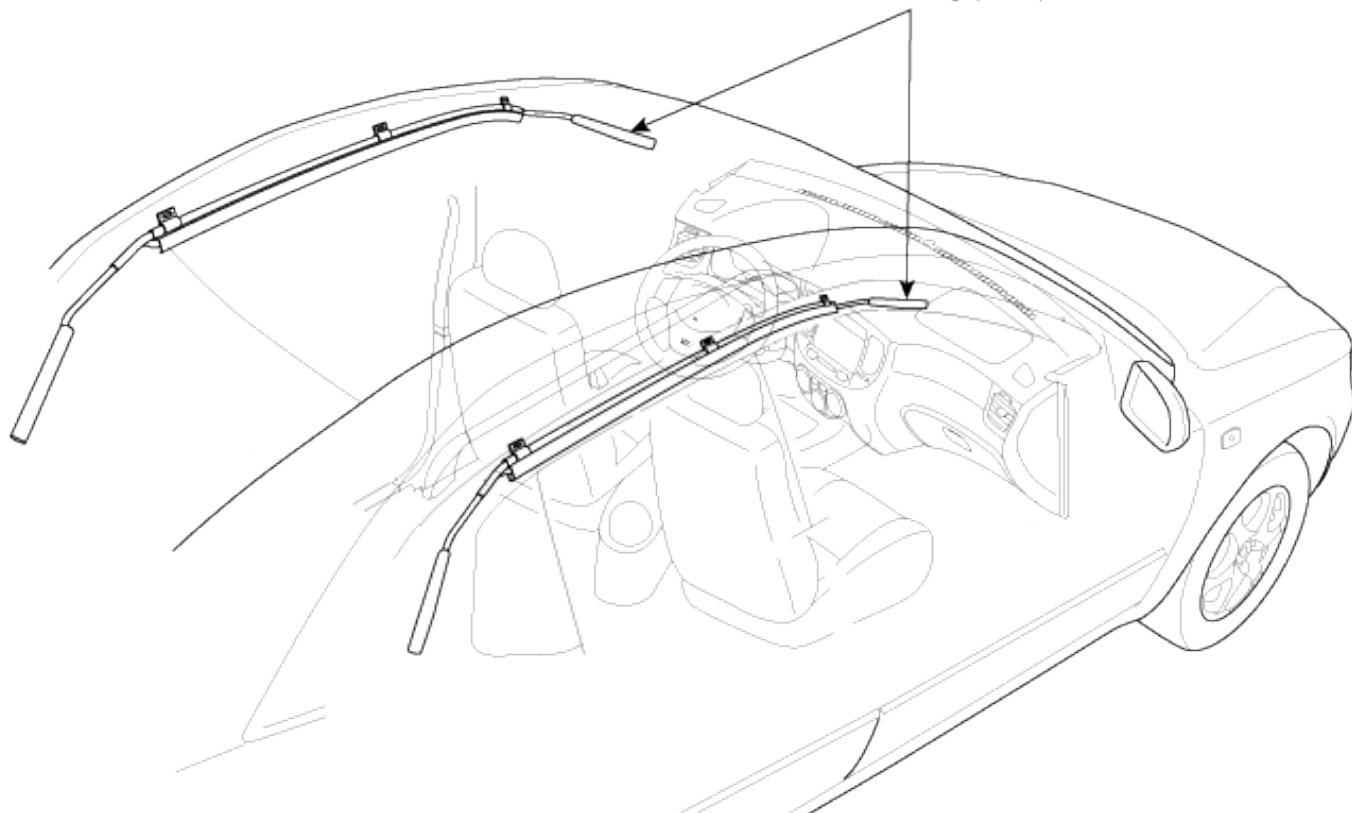
Curtain airbags are installed inside the headliner (LH and RH) and protect the driver and passenger from danger when side crash occurs. The SRSCM determines deployment of curtain airbag by using side impact sensor (SIS) signal.

CAUTION

Never attempt to measure the circuit resistance of the airbag module even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment will result in serious personal injury.

components

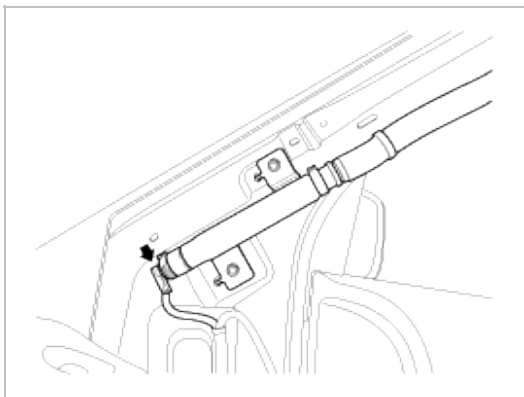
Curtain Airbag (CAB)



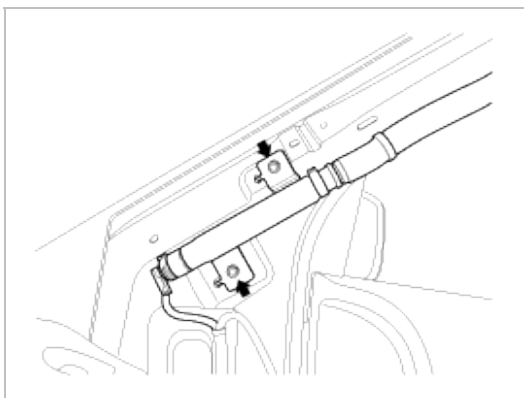


removal

1. Disconnect the battery negative cable and wait for at least 3 minutes before beginning work.
2. Remove the following parts. (Refer to BD group)
 - A. Interior trim
 - B. Headlining
3. Disconnect the Curtain Airbag harness connector.



4. After loosening the mounting bolts (13EA), remove the curtain airbag.



INSTALLATION

CAUTION

- Be sure to install the harness wires not to be pinched or interfered with other parts.

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Install a Curtain Airbag (CAB) on the mounting bracket.
4. Tighten the CAB mounting bolts (13EA).

Tightening Torque (CAB Mounting Bolt)

: 1.9 ~ 2.7 kgf.m(18.6 ~ 26.5 Nm, 13.7 ~ 19.5 lb.ft)

CAUTION

- Never twist the airbag module when installing it. If the module is twisted, airbag module may operate abnormally.

5. Connect the CAB connector.
6. Reconnect the battery negative cable.
7. After installing the Curtain Airbag (CAB), confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Seat Belt Pretensioner - Seat Belt Retractor Pretensioner (BPT)



DESCRIPTION

The Seat Belt Pretensioners (BPT) are installed inside Center Pillar (LH & RH). When a vehicle crashes with a certain degree of frontal impact, the pretensioner seat belt helps to reduce the severity of injury to the front seat occupants by retracting the seat belt webbing. This prevents the front occupants from thrusting forward and hitting the steering wheel or the instrument panel when the vehicle crashes.

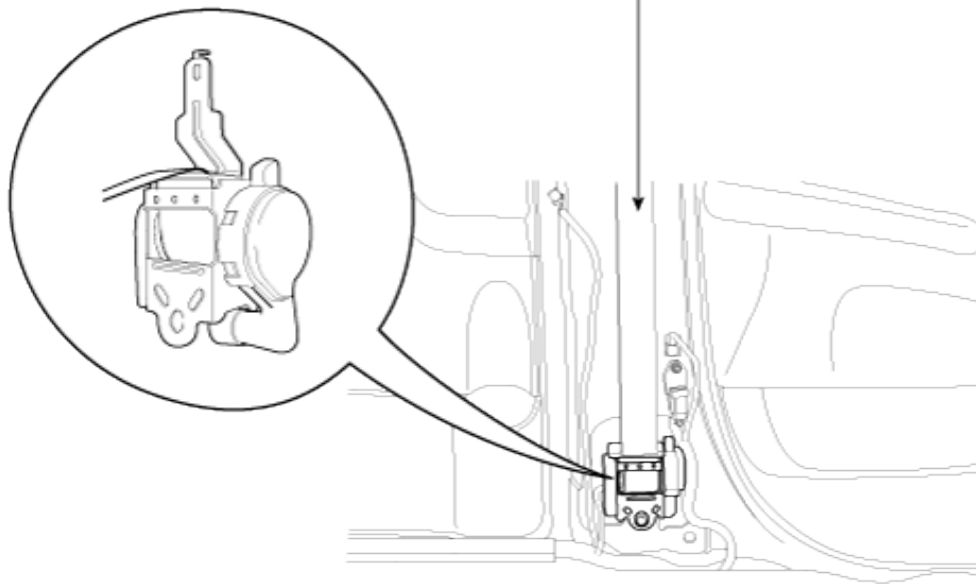
CAUTION

Never attempt to measure the circuit resistance of the Seat Belt Pretensioner (BPT) even if you are using the specified tester. If the circuit resistance is measured with a tester, the pretensioner will be ignited accidentally. This will result in serious personal injury.

components

Seat Belt Pretensioner (BPT)

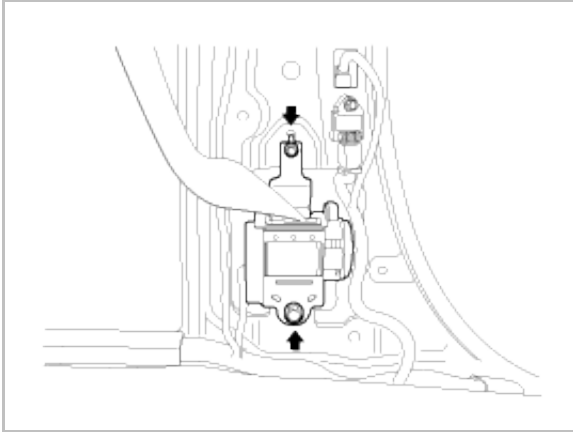
Center Pillar





REMOVAL

1. Disconnect the battery negative cable, and wait for at least three minutes before beginning work.
2. Remove the door scuff trim. (Refer to BD group)
3. Remove the center pillar trim. (Refer to BD group)
4. Remove the lower anchor bolt.
5. Remove the upper anchor bolt.
6. Loosen the Seat Belt Pretensioner mounting bolts and remove the Seat Belt Pretensioner.



7. Disconnect the Seat Belt Pretensioner connector.

INSTALLATION

1. Disconnect the negative (-) cable from battery and wait for at least three minutes.
2. Remove ignition key from the vehicle.
3. Connect the Seat Belt Pretensioner connector.
4. Install the Seat Belt Pretensioner (BPT) with bolts.

Tightening Torque (Seat Belt Anchor Bolt)
: 4.0 ~ 5.5 kgf.m (39.2 ~ 53.9 Nm, 28.9 ~ 39.8 lb.ft)

5. Install the upper and lower anchor bolts.

Tightening Torque (Seat Belt Anchor Bolt)
: 4.0 ~ 5.5 kgf.m (39.2 ~ 53.9 Nm, 28.9 ~ 39.8 lb.ft)

6. Install the center pillar trim and door scuff trim.
7. Reconnect the negative battery cable.
8. After installing the Seat Belt Pretensioner (BPT), confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.



Restraint

Seat Belt Pretensioner - Seat Belt Buckle
Pretensioner (BUPT)



DESCRIPTION

The Seat Belt Buckle Pretensioners (BUPT) are installed in the right side of the driver seat and the left side of the passenger seat. When a vehicle crashes with a certain degree of frontal impact, the seat belt buckle pretensioner helps to reduce the severity of injury to the front seat occupants by retracting the seat belt buckle. This prevents the front occupants from thrusting forward and hitting the steering wheel or the instrument panel when the vehicle crashes.

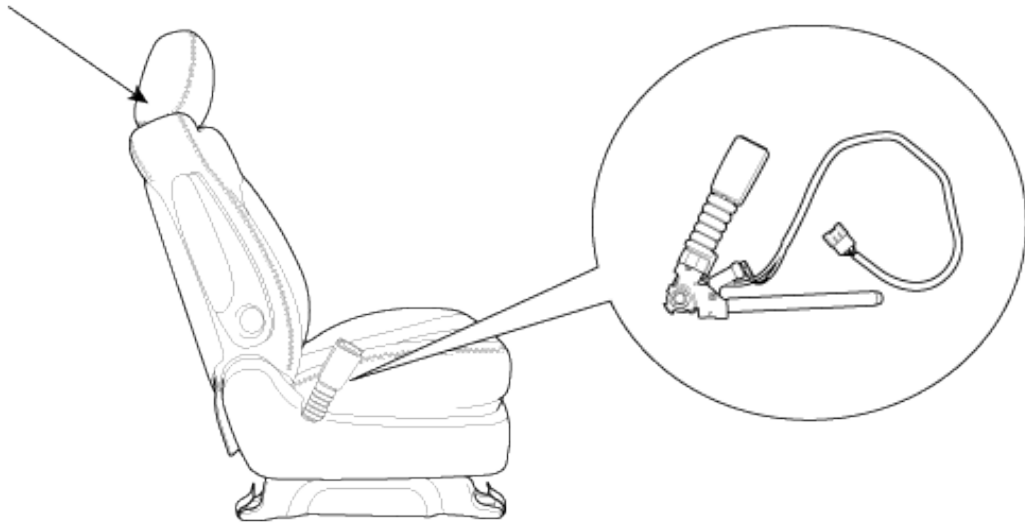
CAUTION

Never attempt to measure the circuit resistance of the Seat Belt Buckle Pretensioner (BUPT) even if you are using the specified tester. If the circuit resistance is measured with a tester, the pretensioner will be ignited accidentally. This will result in serious personal injury.

components

Front seat

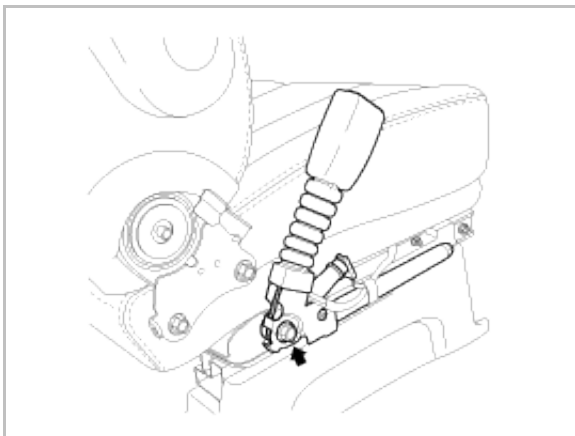
Seat Belt Buckle Pretensioner (BUPT)





REMOVAL

1. Disconnect the battery negative cable, and wait for at least three minutes before beginning work.
2. Remove the front seat assembly. (Refer to BD group)
3. Loosen the Seat Belt Buckle Pretensioner mounting bolt and remove the Seat Belt Buckle Pretensioner.



INSTALLATION

1. Disconnect the battery negative cable and wait for at least three minutes.
2. Remove the ignition key from the vehicle.
3. Install the Seat Belt Buckle Pretensioner (BUPT) with the bolt.

Tightening torque

: 4.0 ~ 5.5 kgf.m (39.2 ~ 53.9 Nm, 28.9 ~ 39.8 lb.ft)

4. Install the front seat assembly.

CAUTION

- Ensure that the harness is installed and routed properly to prevent damage to the wiring.

5. Reconnect the battery negative cable.
6. After installing the Seat Belt Buckle Pretensioner (BUPT), confirm proper system operation:
 - A. Turn the ignition switch ON; the SRS indicator light should be turned on for about six seconds and then go off.