

Restraints

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GENERAL

GENERAL ERHA0010

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

The SRS AIRBAG consists of : a driver side airbag module located in the center of the steering wheel, which contains a folded cushion and an inflator unit ; a passenger side airbag module located in the passenger side crash pad which contains a folded cushion assembled with an inflator unit ; driver and passenger belt pretensioner, PPD (Passenger Presence Detection) sensor located in the passenger seat : SRSCM located on the floor under the audio which monitors the system: a spring interconnection (clock spring) located within the steering column ; system wiring and wiring connector. The impact sensing function of the SRSCM is carried out by an electronic accelerometer that continuously measures the vehicle's acceleration and delivers a corresponding signal through an amplifying and filtering circuitry to the microprocessor.

Only authorized service personnel should work on or around the SRS components. Those service personnel should read this manual carefully before doing any such work. Extreme caution must be used when servicing the SRS to avoid injury to the service personnel (by inadvertent deployment of the air bag) or the driver (by render the SRS inoperative).

CUSTOMER CAUTIONS ERHA0050

Failure to carry out service procedure in the correct sequence could cause the airbag system to unexpectedly deploy during service, possibly leading to serious injury.

Further more, if a mistake is made in servicing the airbag system, it is possible that the airbag may fail to operate when required.

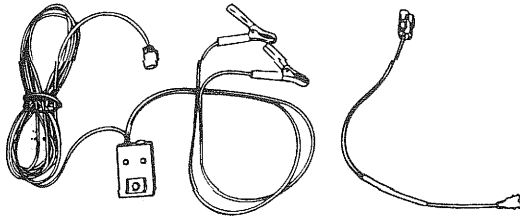
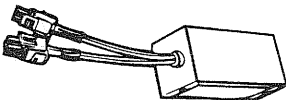
Before performing service (including removal or installation of parts, inspection or replacement), be sure to read the following items carefully.

1. Be sure to proceed with airbag related service only after approx. 30 seconds or more from the time the ignition switch is turned to the LOCK position and the negative (-) battery terminal cable is disconnected from the battery. The airbag system is equipped with a back-up power source to assure the deployment of the airbag if the battery cable is disconnected due to an accident. The back-up power is available for approx. 150 ms.

2. When the negative (-) terminal cable is disconnected from the battery, the memory of the clock and audio systems will be canceled. So before starting work, record the contents in the memory of these systems. When the work is finished, reset the audio system and adjust the clock.
3. Malfunction symptoms of the airbag system are difficult to confirm, so the diagnostic trouble codes become the most important source of information when troubleshooting.
4. When troubleshooting the airbag system, always inspect the diagnostic trouble codes before disconnecting the battery.
5. Never use airbag component from another vehicle. When replacing parts, replace them with new parts.
6. Never attempt to disassemble and repair the airbag modules (DAB,PAB, BPT), clock spring and wiring in order to reuse them.
7. If any components of the SRS have been dropped, or if there are cracks, dents or other defects in the case, bracket or connector, replace them with new ones.
8. After work on the airbag system is completed, perform the SRS SRI check. The airbag indicator lamp can be interrupted by other circuit faults in some cases. Therefore, if the airbag indicator lamp is turned on, be sure to erase the DTC codes using the Hi-Scan just after repairing or replacing components, including the fuse.
9. Especially when welding the body, never fail to disconnect the negative (-) battery terminal.

SPECIAL SERVICE TOOL

ERHA0100

Tool (Number and name)	Illustration	Use
DAB, PAB : 0957A-38100 BPT : 0957A-34200 Deployment adaptor	 ERHA010A	Deployment inside the vehicle (when vehicle will no longer be driven)
0957A-38000 Diagnosis checker	 ERHA010B	Wring harness checker of each module
0957A-38200 Dummy and dummy adapter	 ERHA010C	Simulator to check the resistance of each wiring harness

* DAB : Driver side air bag

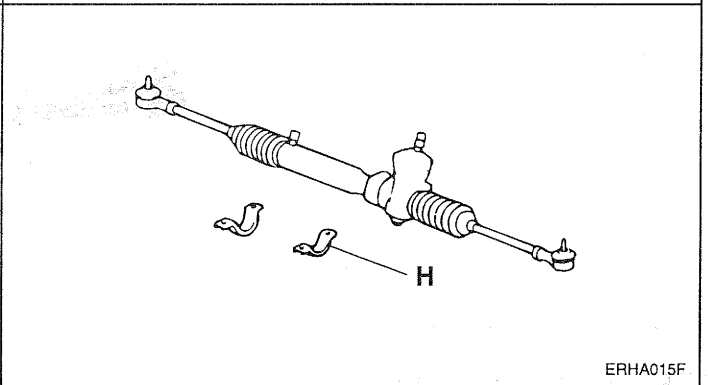
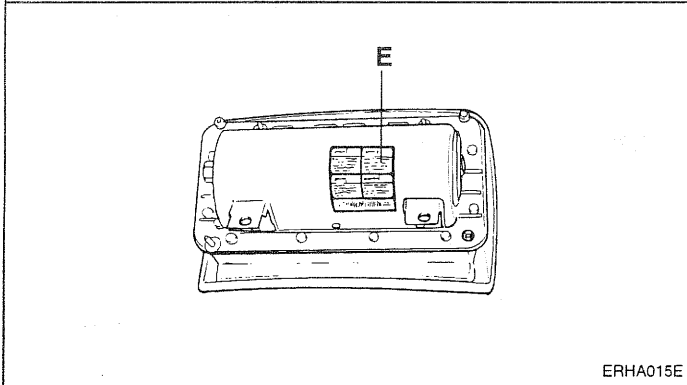
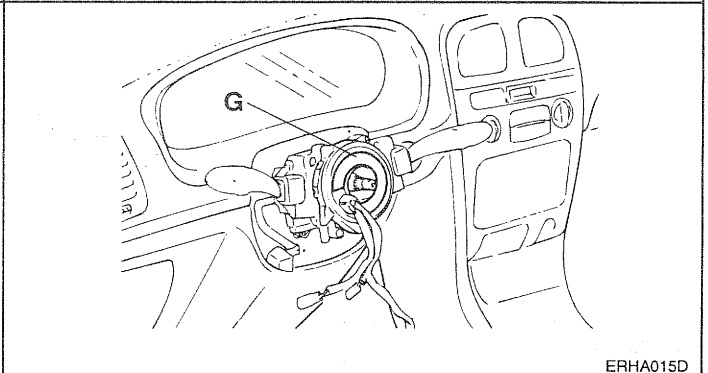
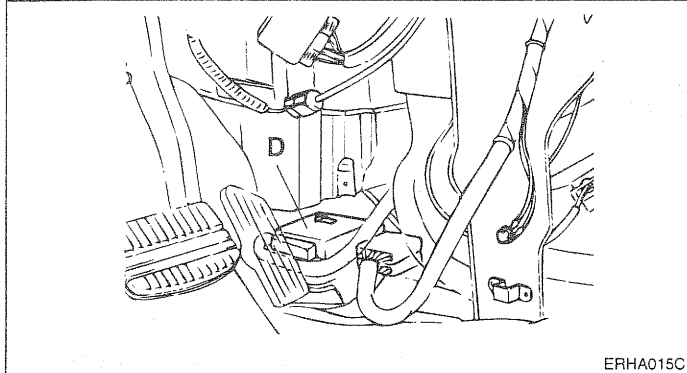
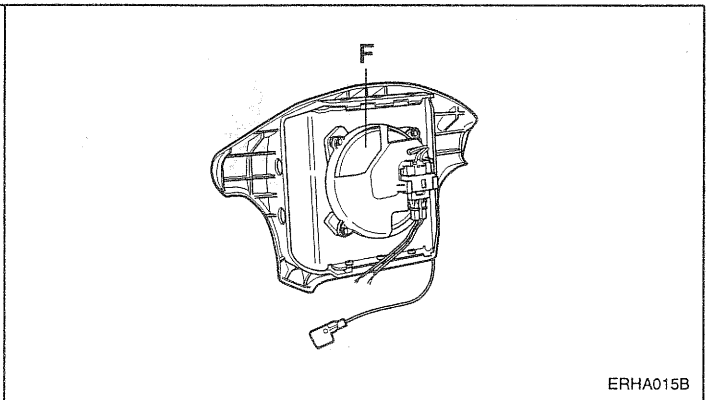
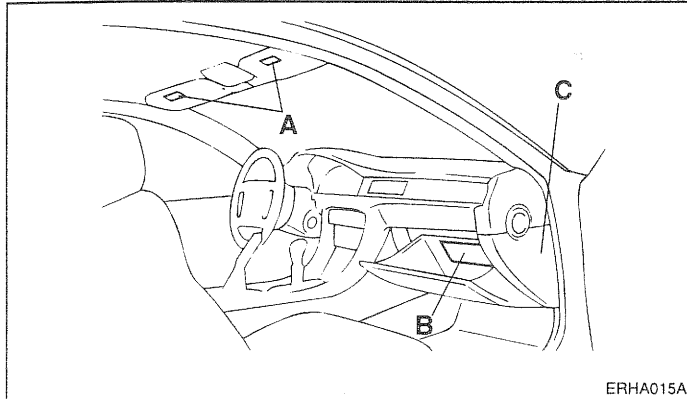
* PAB : Passenger side air bag

* BPT : Belt Pretensioner

WARNING/CAUTION LABELS ERHA0150

If labels are dirty or damaged, replace them with new ones.

A number of caution labels relating to the SRS are found in the vehicle, as shown in the following illustration. Follow label instructions when servicing the SRS.



ERHA0200

A. DAB + PAB CAUTION TO AVOID SERIOUS INJURY : • For maximum safety protection in all types of crashes, you must always wear your safety belt. • Do not sit child or infant in front passenger seat. • Do not sit or lean unnecessarily close to the airbag. • Do not place any objects over the airbag or between the airbag and yourself. • See the owner's manual for further information and explanation.	B. SUPPLEMENTAL RESTRAINT SYSTEM (AIRBAG) INFORMATION The airbag is a supplemental restraint system (SRS). You must always wear the seat belts. The airbag system condition is normal when "SRS" lamp in cluster flashes approximately 6 times after the ignition key is turned on and then goes off. If any of the following conditions occur, the system must be serviced. 1. "SRS" lamp does not light up when key is turned on. 2. "SRS" lamp stays lit or flashes continuously. 3. The airbag has inflated. The airbag system must be inspected by an authorized dealer ten years after vehicle manufacture date shown on certification label, located on left front door opening area. WARNING Failure to follow above instructions may result in injury to you or other occupants in the vehicle. See "SRS" section in Owner's Manual for more information about airbag.
C.  ERHA020A Do not install a child seat in the front passenger seat. The infant or child could be severely injured by an airbag deployment in case of an accident	D. CAUTION : AIRBAG ESPS UNIT Detach connector before unmounting. Assemble strictly according to manual instructions.
E. CAUTION : SUPPLEMENTAL RESTRAINT SYSTEM MODULE To help avoid personal injury due to unwanted inflation do not service or dispose of this unit without following instructions in the service manual. Failure to do so may render the SRS system inoperative, risking serious driver injury.	F. WARNING Contents are poisonous and extremely flammable. Do not probe with electrical devices or otherwise tamper with in any way. Servicing of this unit should be performed only by authorized personnel.

ELECTRICAL SYSTEM ERHA0250

The SRS airbag system has sophisticated electrical and electronic components, therefore the airbag operating components should be handled with care.

SRSCM (Supplement Restraint System Control Module)

SRSCM will deploy the airbag module by sensing the frontal impact sensed by the sensor built in to the SRSCM.

1. DC/DC convertor : The DC/DC convertors of the power supply includes a step up and a step down converter, which provides the firing voltage for four firing circuits and the internal operating voltage. If the internal operating voltage falls below a defined threshold, a reset is executed.
2. Arming sensor/safing sensor : The arming/safing sensor built in to the airbag firing circuit has the function of arming the airbag circuit under all required deployment conditions and maintaining the airbag firing circuits unarmed under normal driving conditions. The safing sensor is a dual-contact electromechanical switch which closes if it experiences a deceleration exceeding a specified threshold.
3. Back-up power : The SRSCM reserves an energy supply to provide deployment energy for a short second when the vehicle voltage is low or if lost in a vehicle frontal crash.
4. Malfunction detection : The SRSCM continuously monitors the current SRS operation status while the ignition key is turned on and detects possible malfunction of the system. The malfunction can be displayed in the form of a diagnostic trouble code using Scan tool.
5. MIL (Malfunction Indication Lamp) notification : If any fault is detected, the SRSCM sends a signal to the indicator lamp on the cluster to warn the vehicle driver.

The MIL indicator is the key item in notifying the driver of SRS faults. Verify lamp and SRSCM operation by flashing 6 times when the ignition switch is first turned on.
6. Malfunction recording : Once a fault occurs in the system, the SRSCM records the fault in the memory in the form of DTC and the DTC can only be erased by the Scan tool.
7. Data link connector : Data stored in the SRSCM memory is read by Scan tool through the data link connector.

8. After firing the airbags once, the SRSCM cannot be used again and must be replaced.

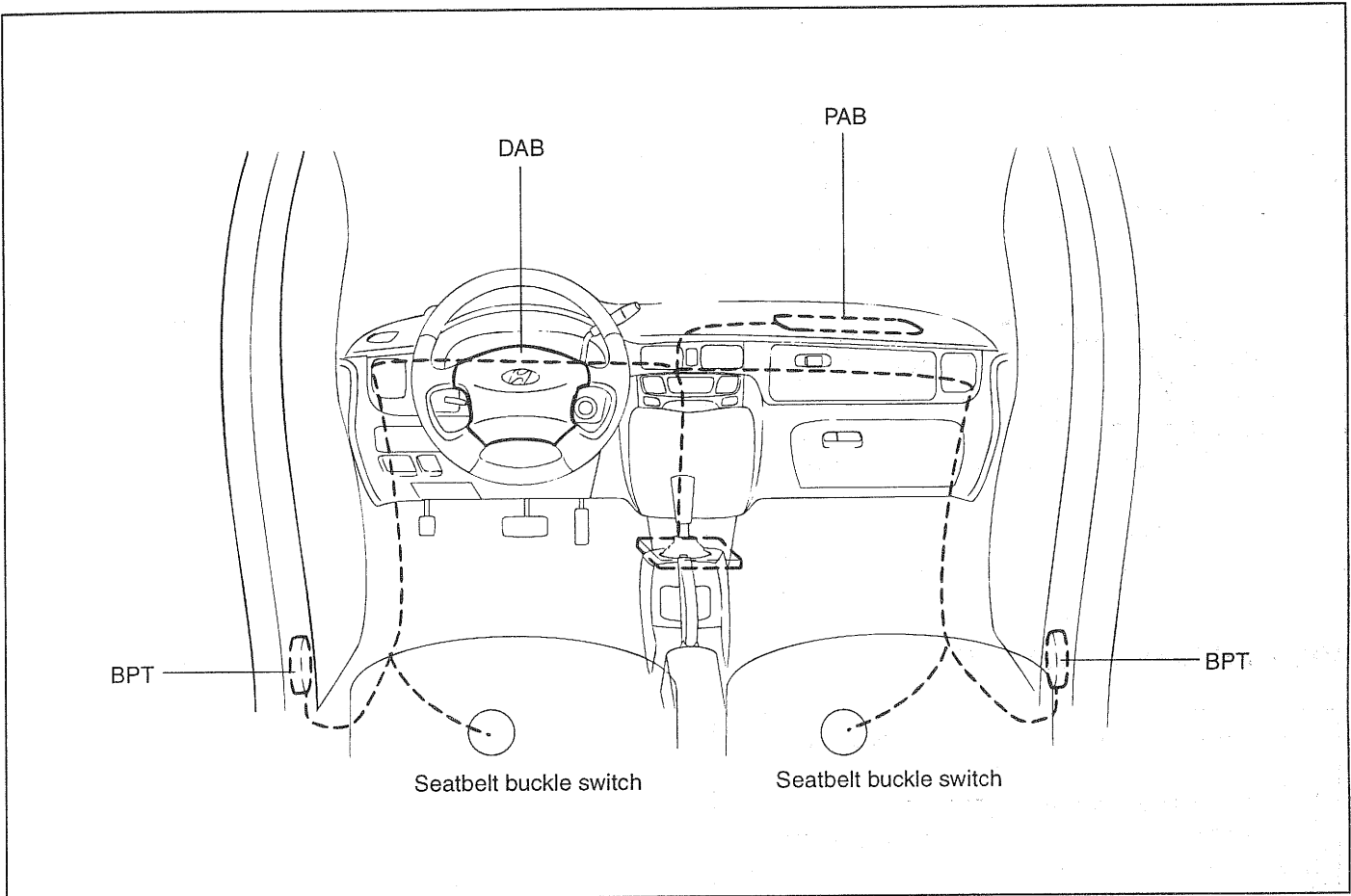
9. Crash output

The crash output is used to control an external device which will unlock the doors in case of a crash event. The crash output is specified as follows : 0-200 μ A in OFF mode and 200mA in ON mode. In case of the unlock command, the switch is closed for 200 mS.

INFLATOR MODULE (DAB, PAB) ERHA0300

The DAB (Driver airbag), PAB (Passenger airbag) module and BPT (Belt pretensioner) are comprised of an inflator and cushion. The initiator (A gas generator ignit-

ing device) is positioned in the inflator. When the vehicle crashes from the front with sufficient force, closing the sensor of the SRSCM, current develops through the deployment loop. Current passing through the initiator ignites the material in the DAB and PAB module and inflates the airbag.



ERHA001A

1. When removing the air-bag module or handling a new airbag module, it should be placed with the pad top surface facing up. This way the twin-lock type connector lock lever should be in a locked state and care should be taken to place it so that the connector will not be damaged. Do not store a steering wheel pad on top of another one. (Storing the pad with its metallic surface facing up may lead to a serious accident if the airbag should inflate.)
2. Never measure the resistance of the airbag squib. (This may cause the airbag to deploy.)
3. Store the airbag module where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
4. When using electric welding, disconnect the battery(—) terminal before starting work.

SRS HARNESS ERHA0350

The SRS harness is wrapped in a yellow tube to enable it to be discriminated from other system harnesses. And the shorting bar is contained inside the wiring connectors of the DAB, PAB and BPT inflator side. The shorting bar shorts the current flow of the DAB, PAB and BPT module circuits when the connectors are disconnected. The circuits to the inflator module are shorted in this way to help prevent unwanted deployment of the airbag when serving the airbag module.

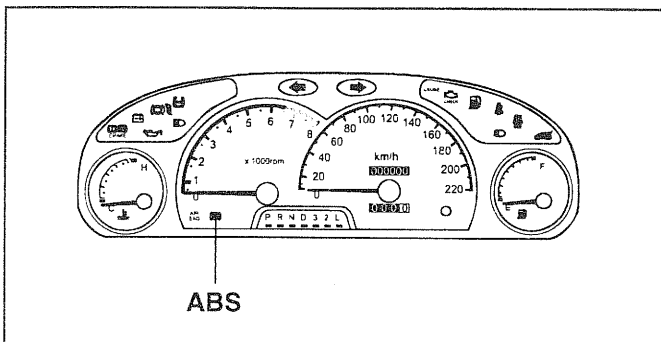
SRSCM INDEPENDENT LAMP ACTIVATION

The SRS malfunction indicator lamp (MIL) is located on the cluster giving information about SRS operating conditions by the control signals from SRSCM.

There are certain faulty conditions in which the SRSCM (SRS Control Module) cannot function and thus cannot control the operation of the lamp. In these cases, the

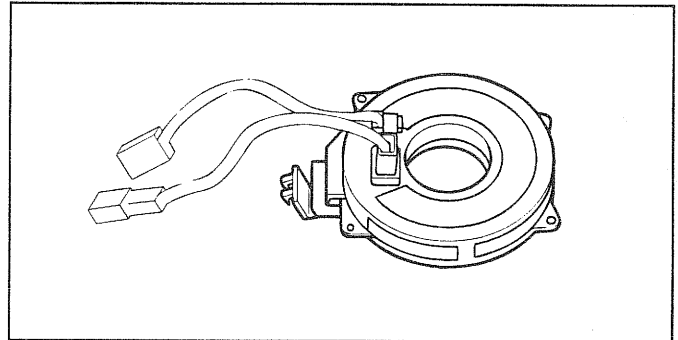
lamp is directly activated by appropriate circuitry that operates independently of the SRSCM, as follow :

1. Loss of ignition voltage supply to the SRSCM : lamp turned on continuously.
2. Loss of internal operating voltage to the SRSCM : lamp turned on continuously.
3. SRSCM faults : lamp turned on continuously
4. SRSCM not connected : lamp turned on through shorting bar in wiring harness connector.



ERHA003A

The steering wheel must be fitted correctly to the steering column with the clock spring at the neutral position, otherwise cable disconnection and other troubles may result.



ERHA003B

MIL OPERATING METHOD

ERHA0400

	Operating situation	Operating method
R U N N I N G	o Return to normal from temporary fault	ON → OFF
	o Σ Faults frequency ≥ 5 o Active fault	Turn it on continuously
S T A R T I N G	o Normal	Blink 6 times
	o Σ Faults frequency ≤ 4	On to off after 6 seconds
	o Σ Faults frequency ≥ 5 o Active fault	Turn it on continuously

ERDA009A

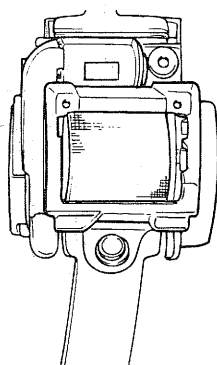
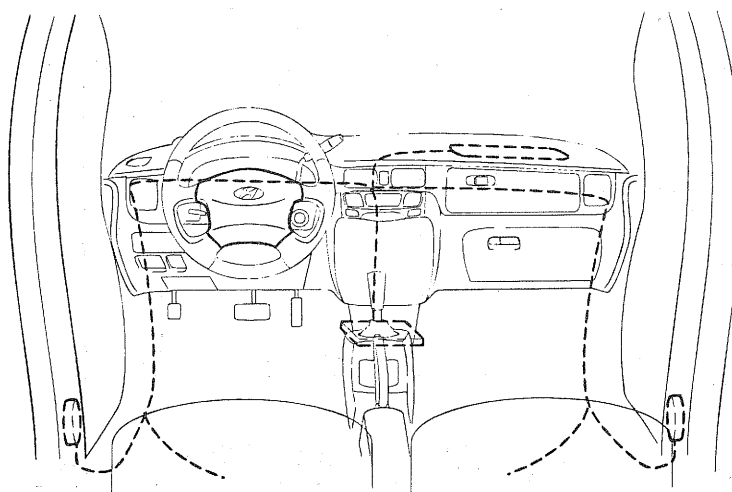
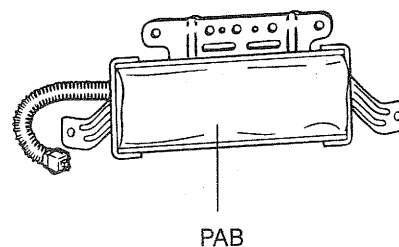
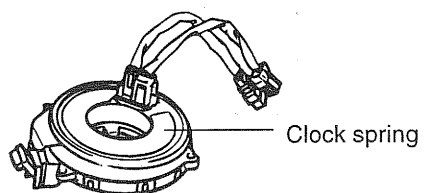
CLOCK SPRING

ERHA0450

The clock spring (coil spring) consists of two current carrying coils. It is attached between the steering column and the steering wheel. It allows rotation of the steering wheel while maintaining continuous contact with the deployment loop through the inflator module.

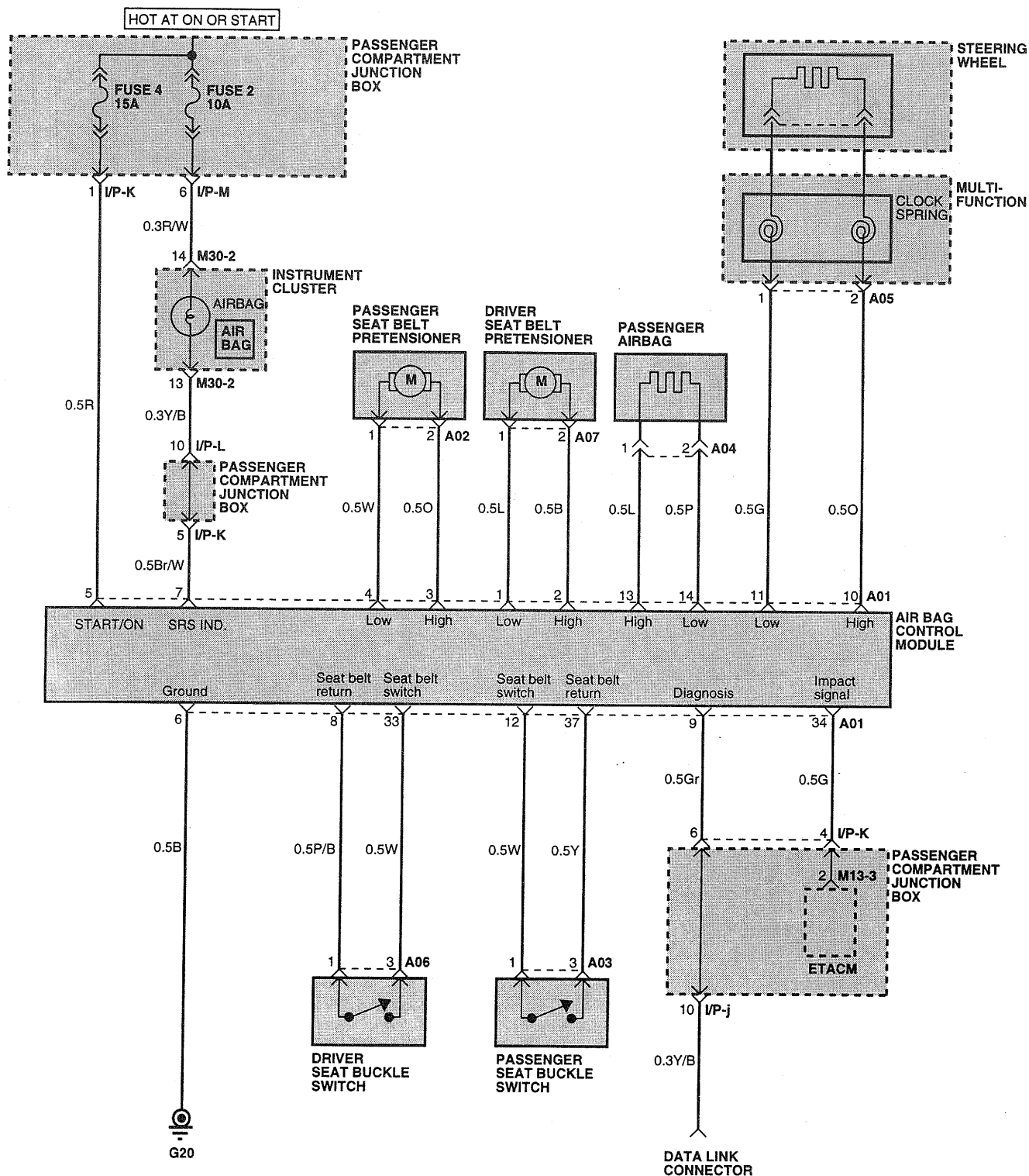
SYSTEM COMPONENT AND LAYOUT

ERHA0500



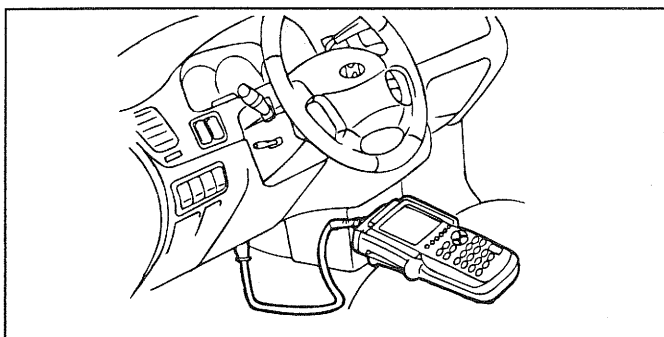
AIRBAG

ERHA0550



DIAGNOSIS WITH SCAN TOOL ERHA1000**CHECK PROCEDURES**

1. Turn the ignition key to "OFF" position.
2. Connect the Scan tool DLC to the vehicle data link connector in the lower dash panel.
3. Turn the ignition key to "ON" position and turn on Scan tool.
4. Perform the SRS diagnosis according to the vehicle's model configuration.
5. If a fault code is shown, replace the component. Never attempt to repair the component.
6. If the Scan tool finds that a component in the system is faulty, there is a possibility that the fault is not in the components but in the SRS wiring or connector.



ERHA006A

ERHA1050

INSPECTION CHART FOR DIAGNOSTIC TROUBLE CODE

DTC No.	Fault description	Remedy
B1111	Battery voltage too high	Erasible
B1112	Battery voltage too low	Erasible
B1346	DAB, Resistance too high	Erasible
B1347	DAB, Resistance too low	Erasible
B1348	DAB, Short to GND	Erasible
B1349	DAB, Short to Battery	Erasible
B1352	PAB, Resistance too high	Erasible
B1353	PAB, Resistance too low	Erasible
B1354	PAB, Short to GND	Erasible
B1355	PAB, Short to Battery	Erasible
B1361	Driver seat belt pretensioner, Resistance too high	Erasible
B1362	Driver seat belt pretensioner, Resistance too low	Erasible
B1363	Driver seat belt pretensioner, Short to GND	Erasible
B1364	Driver seat belt pretensioner, Short to Battery	Erasible
B1367	Passenger seat belt pretensioner, Resistance too high	Erasible
B1368	Passenger seat belt pretensioner, Resistance too low	Erasible
B1369	Passenger seat belt pretensioner, Short to GND	Erasible
B1370	Passenger seat belt pretensioner, Short to Battery	Erasible
B1511	Driver seat buckle switch, short to battery	Erasible
B1512	Driver seat buckle switch, short to battery	Erasible
B1513	Passenger seat buckle switch, short to battery	Erasible
B1514	Passenger seat buckle switch, short to ground	Erasible
B1620	Internal fault	Replace SRSCM
B1650	Crash recorded	Replace SRSCM
B1661	ECU mismatching	Erasible
B2500	Warning lamp failure	Erasible

ERHA1100

CIRCUIT INSPECTION

DTC	B1348	DAB Short to ground
	B1354	PAB Short to ground
	B1363	Driver BPT Short to ground
	B1369	Passenger BPT Short to ground

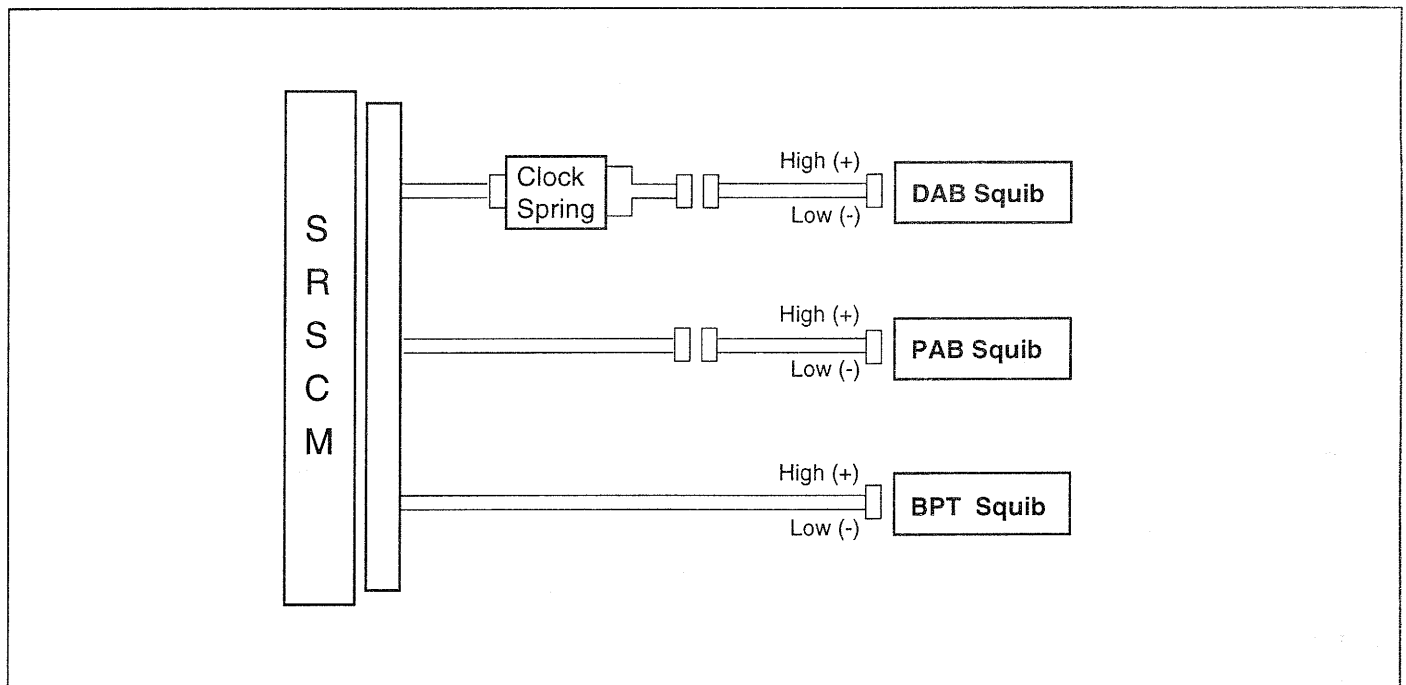
CIRCUIT DESCRIPTION

The squib circuit consists of the SRSCM, clock spring, DAB, PAB and BPT. It causes the SRS to deploy when

the SRS deployment conditions are satisfied. The above DTCs are recorded when short to ground is detected in the squib circuit.

DTC Detecting Condition	Trouble Area
• Short circuit in squib wire harness (to ground) • Squib malfunction • Clock spring malfunction • SRSCM malfunction	• DAB squib • PAB squib • BPT squib • Clock spring • SRSCM • Wire harness

WIRING DIAGRAM



ERDA027A

INSPECTION PROCEDURE

1. Preparation

- 1) Disconnect the battery negative terminal and wait for 30 seconds.
- 2) Disconnect the DAB module connector.
- 3) Disconnect the PAB and BPT connectors.

- 4) Disconnect the SRSCM connector.

NOTE

Place the DAB module facing upward.

2. Check DAB squib circuit.

[CHECK]

For the connector (on the clock spring side) between clock spring and DAB, measure the resistance between DAB high and body ground.

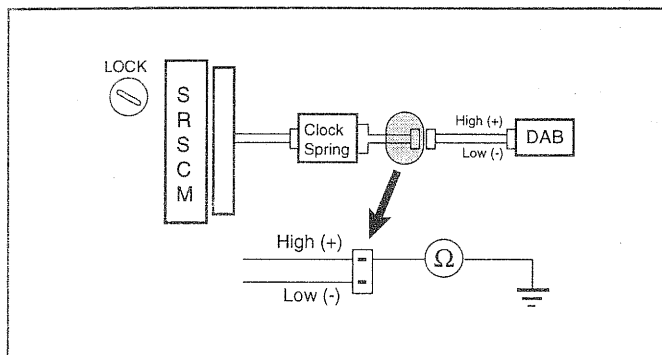
Resistance : ∞

NG → Go to step "9".

OK

↓
Go to step "6".

ERDA027F



ERDA027J

3. Check PAB squib circuit.

[CHECK]

For the connector (on the SRSCM side) between SRSCM and PAB, measure the resistance between PAB high and body ground.

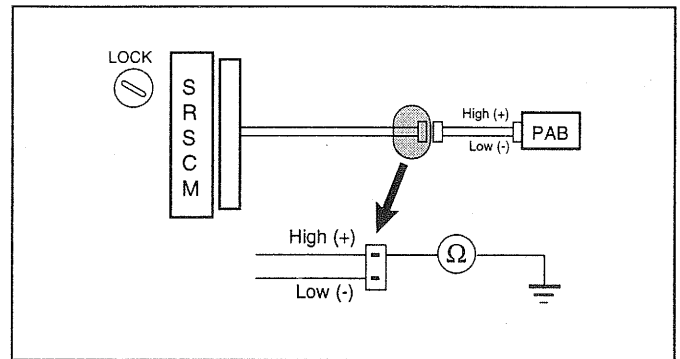
Resistance : ∞

NG → Repair or replace harness or connector between SRSCM and PAB.

OK

↓
Go to step "7".

ERDA027G



ERDA027K

4. Check BPT squib circuit.

[CHECK]

For the connector (on the SRSCM side) between SRSCM and BPT, measure the resistance between BPT high and body ground.

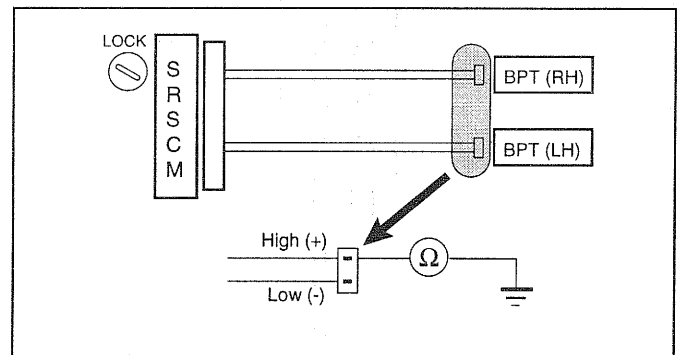
Resistance : ∞

NG → Repair or replace harness between SRSCM and BPT.

OK

↓
Go to step "8".

ERDA027H



ERDA027L

5. Check SRSCM.

[PREPARATION]

1. Connector to SRSCM.
2. Using a service wire, connect DAB high and DAB low on the clock spring side of connector between clock spring and DAB.
3. Using a service wire, connect PAB high and low on SRSCM side of connector between SRSCM and PAB.
4. Connect BPT using the same method.

5. Connect negative (-) terminal cable to battery, and wait for 30 seconds.

[CHECK]

1. Turn ignition switch to "ON", and wait for at least 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.

DTC has no output.

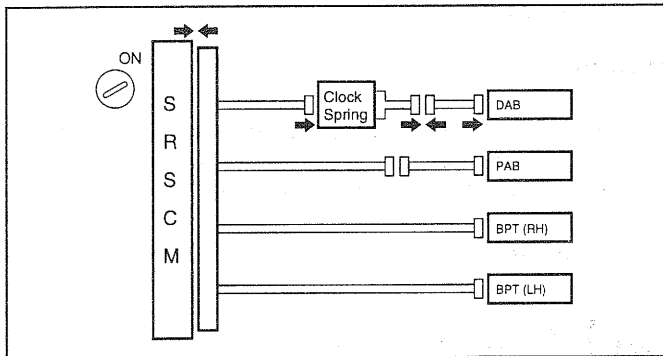
[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace SRSCM.

OK

From the results of the above inspection, the part can now be considered to be normal.



ERDA027M

ERDA027C

6. Check DAB squib.

[PREPARATION]

1. Turn ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the DAB connector.
4. Connect the negative (-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch "ON", and wait for at least 30 seconds.
2. Clear malfunction code stored in the memory of the Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.

DTC has not output.

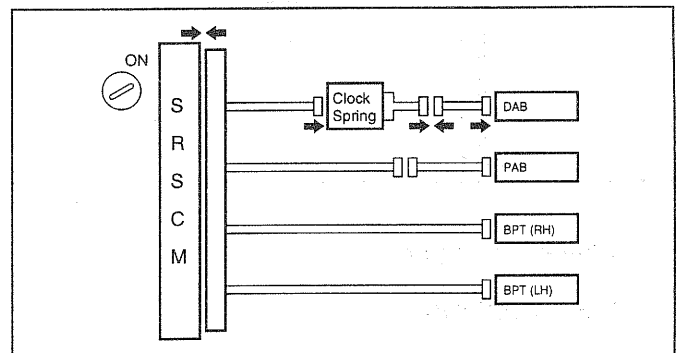
[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace DAB.

OK

From the results of the above inspection, the part can now be considered to be normal.



ERDA027N

ERDA027C

7. Check PAB squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the PAB connector.
4. Connect the negative (-) terminal cable from the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for at least 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.

3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC has no output.

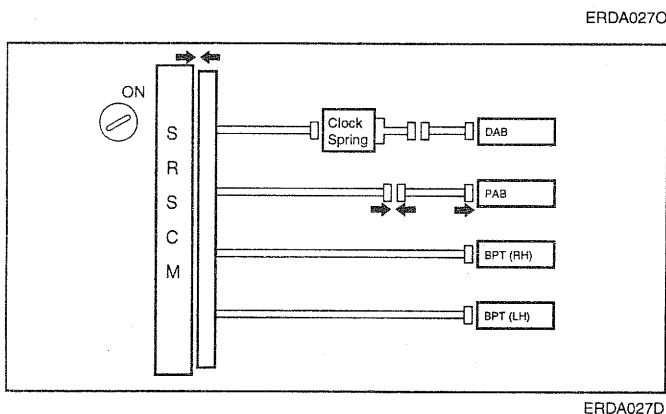
[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace PAB.

OK

↓
From the results of the above inspection, the part can now be considered to be normal.



8. Check BPT squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the BPT connector.
4. Connect the negative (-) terminal cable from the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with the Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is not the output.

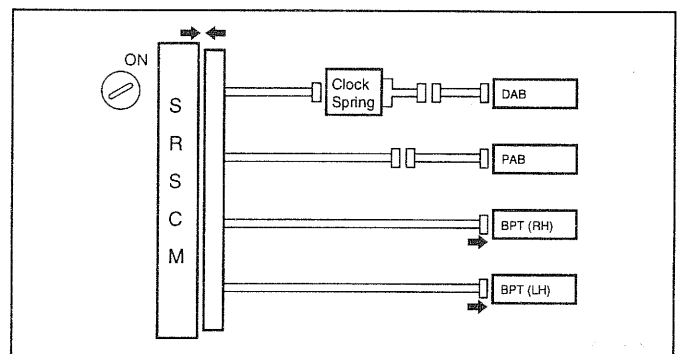
[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace BPT.

OK

↓
From the results of the above inspection, the part can now be considered to be normal.



9. Check clock spring circuit.

[PREPARATION]

Disconnect the connector between the SRSCM and clock spring.

[CHECK]

Measure the resistance between the DAB high on clock spring side of the connector between the clock spring and DAB and body ground.

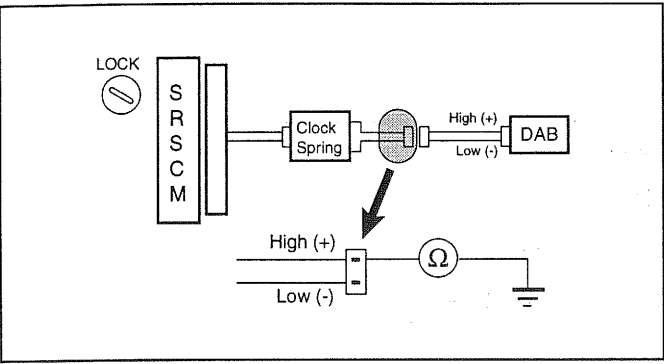
Resistance : ∞

NG → Replace clock spring.

OK

↓
Repair or replace harness or connector between the SRSCM and clock spring.

ERDA027R



ERDA027Q

ERHA1150

CIRCUIT INSPECTION

DTC	B1349	DAB Short to battery
	B1355	PAB Short to battery
	B1364	BPT (Driver) Short to battery
	B1370	BPT (Passenger) Short to battery

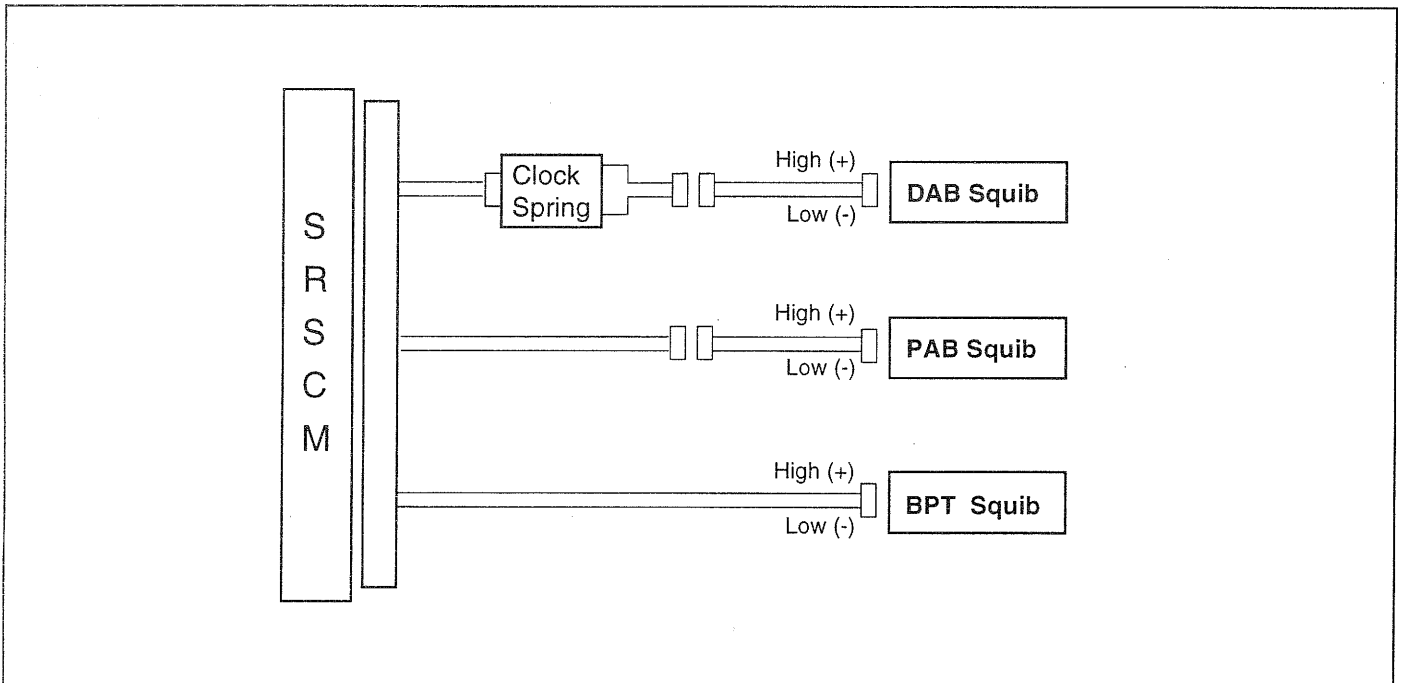
CIRCUIT DESCRIPTION

The squib circuit consists of the SRSCM, clock spring, DAB, PAB, and BPT. It causes the SRS to deploy when

the SRS deployment conditions are satisfied. The above DTCs are recorded when a B+ short is detected in the squib circuit.

DTC Detecting Condition	Trouble Area
• Short circuit in squib wire harness (to B+) • Squib malfunction • Spiral cable malfunction • SRSCM malfunction	• DAB squib • PAB squib • BPT squib • Wire harness

WIRING DIAGRAM



ERDA027A

INSPECTION PROCEDURE

1. Preparation.

- 1) Disconnect the battery negative terminal and wait for 30 seconds.
- 2) Disconnect the DAB module connector.
- 3) Disconnect the PAB and BPT connectors.
- 4) Disconnect the SRSCM connector.

NOTE

Place the DAB module facing upward.

2. Check the DAB squib circuit.

[CHECK]

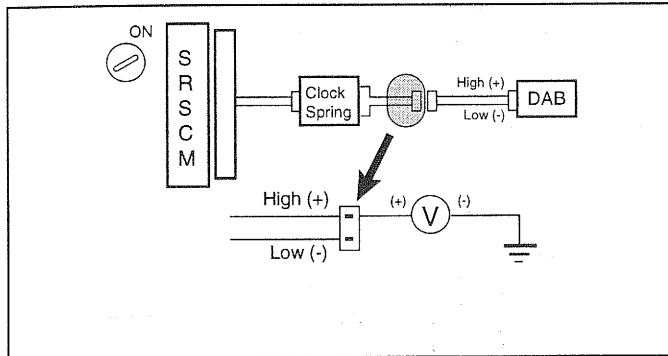
For the connector (on the clock spring side) between clock spring and DAB, measure the voltage between DAB high and body ground.

Voltage : 0 V

NG → Go to step "9".

OK

↓
Go to step "6".



ERDA027F

ERDA028B

3. Check PAB squib circuit.

[CHECK]

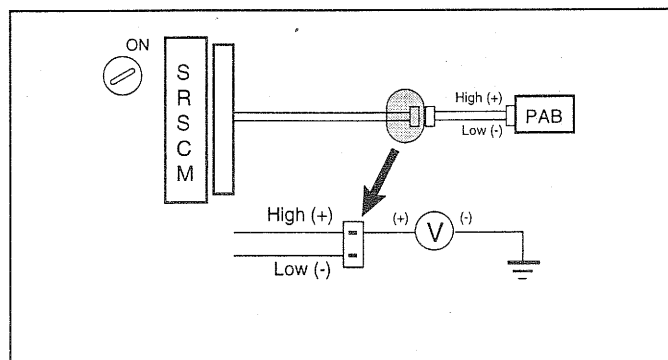
For the connector (on the SRSCM side) between SRSCM and PAB, measure the voltage between PAB high and body ground.

Voltage : 0 V

NG → Repair or replace harness or connector between SRSCM and PAB.

OK

↓
Go to step "7".



ERDA027G

ERDA028C

4. Check BPT squib circuit.

[CHECK]

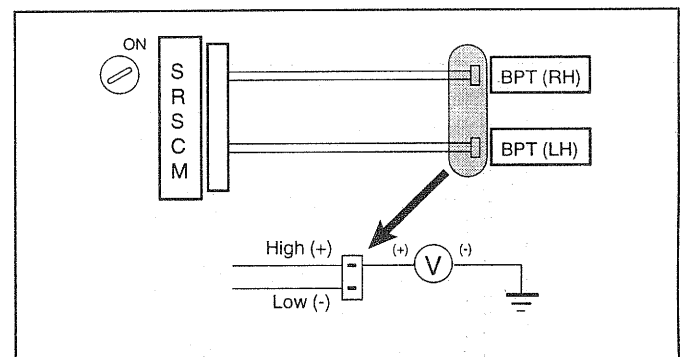
For the connector (on the SRSCM side) between SRSCM and BPT, measure the voltage between BPT high and body ground.

Voltage : 0 V

NG → Repair or replace harness between SRSCM and BPT.

OK

↓
Go to step "8".



ERDA027H

ERDA028D

5. Check SRSCM.

[PREPARATION]

1. Connect the connector to the SRSCM.
2. Using a service wire, connect DAB high and low on the clock spring side of the connector between the clock spring and DAB.
3. Using a service wire, connect PAB high and low on the SRSCM side of the connector between the SRSCM and PAB.
4. Using a service wire, connect BPT high and low on the SRSCM side of the connector between SRSCM and BPT.
5. Connect the negative (-) terminal cable to battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch "ON", and wait for at least 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.

4. Turn the ignition switch to "ON", and wait for at least 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

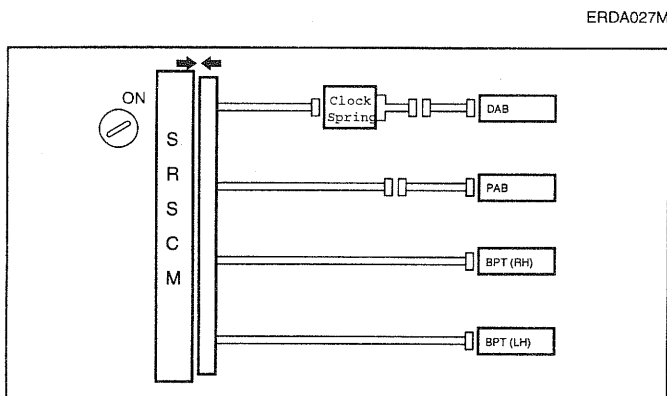
Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace SRSCM.

OK



From the results of the above inspection, the part can now be considered to be normal.



ERDA027M

ERFA028A

6. Check DAB squib..

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the DAB connector.
4. Connect the negative (-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

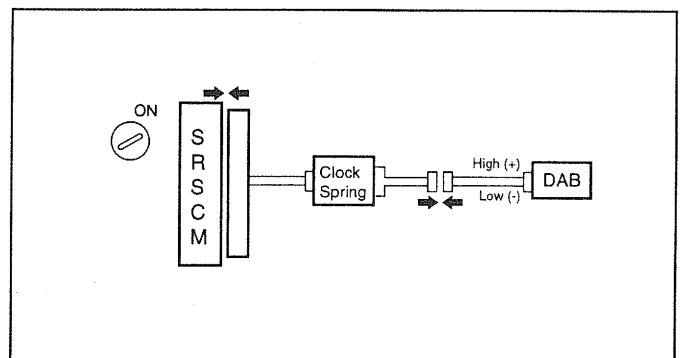
Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace DAB.

OK



From the results of the above inspection, the part can now be considered to be normal.



ERDA027N

ERDA028E

7. Check PAB squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for at least 30 seconds.
3. Connect the PAB connector.
4. Connect the negative (-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

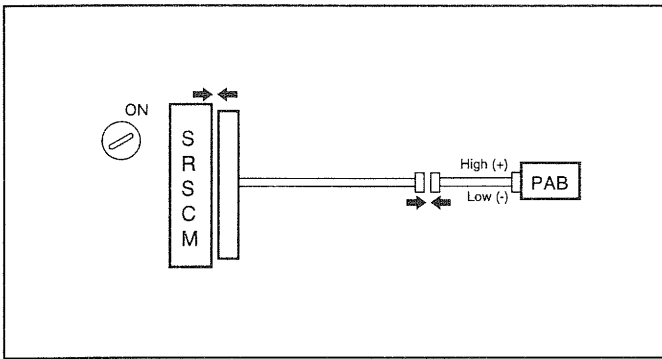
NG → Replace PAB.

OK



From the results of the above inspection, the part can now be considered to be normal.

ERDA0270



ERDA028F

8. Check BPT squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the BPT connector.
4. Connect the negative (-) terminal cable from the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for at least 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

Codes other than these ones may be the output at this time, but they are not relevant to this checking procedure.

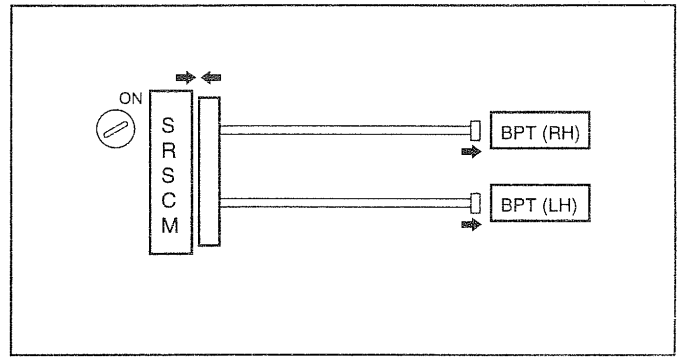
NG → Replace BPT.

OK



From the results of the above inspection, the part can now be considered to be normal.

ERDA027P



ERDA028G

9. Check Clock spring.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the connector between the SRSCM and clock spring.

[CHECK]

Turn the ignition switch to "ON", and measure voltage between DAB high on the side and body ground.

Voltage : 0 V

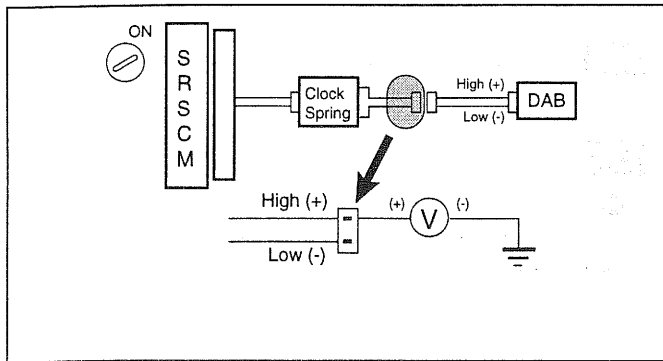
NG → Replace clock spring.

OK



Repair or replace harness or connector between the SRSCM and clock spring.

ERDA027R



ERDA028B

ERHA1200

CIRCUIT INSPECTION

DTC	B1346	DAB resistance too high ($R \geq 6.7 \Omega$)
	B1347	DAB resistance too low ($R \leq 1.06 \Omega$)

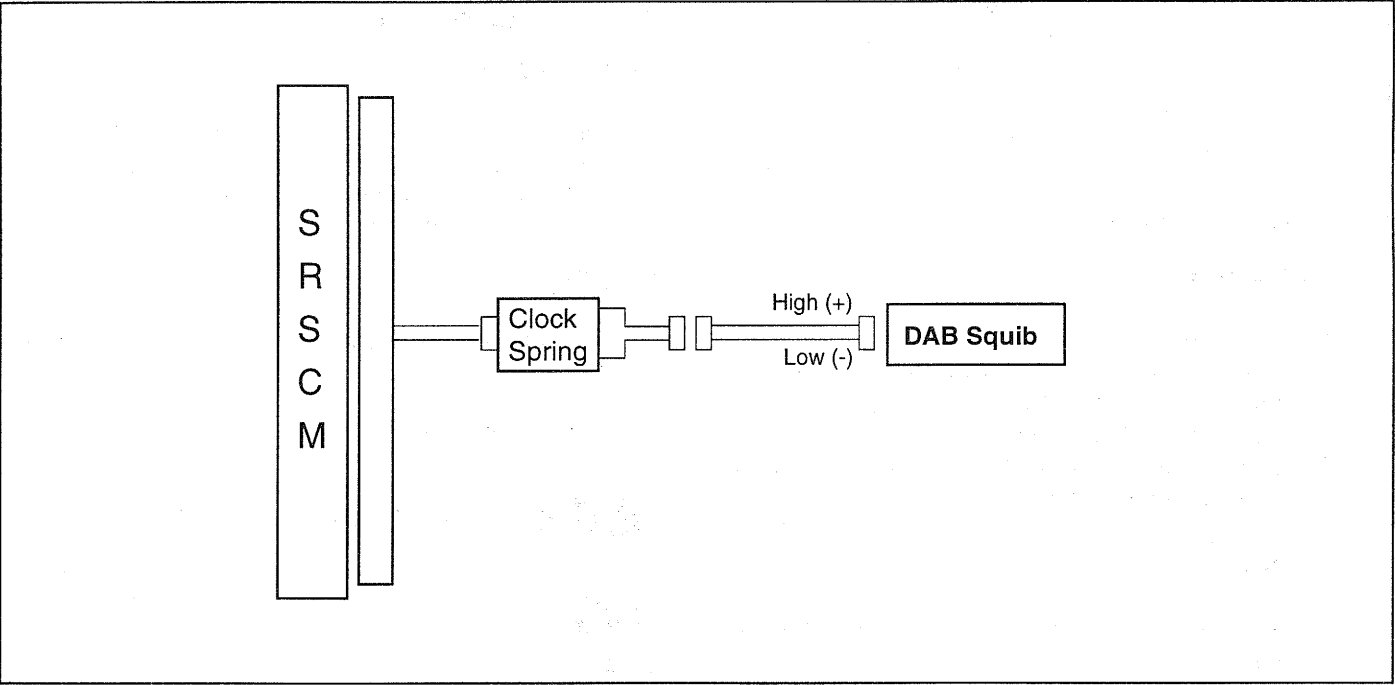
CIRCUIT DESCRIPTION

The DAB squib circuit consists of the SRSCM, clock spring and DAB. It causes the airbag to deploy when the

airbag deployment conditions are satisfied. The above DTCs are recorded when DAB resistance too high or low is detected in the DAB squib circuit.

DTC Detecting Condition	Trouble Area
• Too high or low resistance between DAB high (+) wiring harness and DAB low (-) wiring harness of squib. • DAB malfunction • Clock spring malfunction • SRSCM malfunction	• DAB squib • Clock spring • SRSCM • Wire harness

WIRING DIAGRAM



ERDA029A

INSPECTION PROCEDURE

1. Preparation.
 - 1) Disconnect the battery negative terminal and wait for 30 seconds.
 - 2) Disconnect the DAB module connector.
 - 3) Disconnect the PAB and BPT connectors.
 - 4) Disconnect the SRSCM connector.

NOTE

Place the DAB module facing upward.

2. Check the DAB resistance.

[PREPARATION]

Release the airbag activation prevention mechanism on the SRSCM side of airbag squib. Connect the dummy (0957A-38200) to the clock spring side connector.

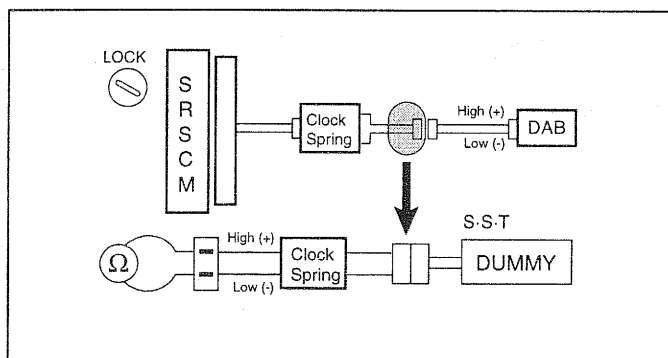
[CHECK]

Measure the resistance between DAB high (+) and low (-).

$$1.8 \, \Omega < R < 3.4 \, \Omega$$

NG → Go to step "4".

OK
↓



ERDA029B

3. Check DAB squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the DAB connector.
4. Connect the negative (-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

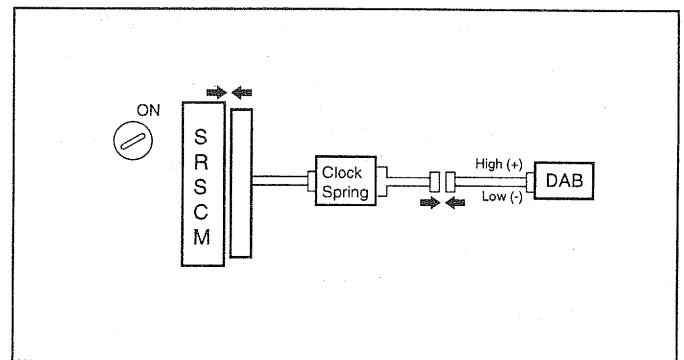
Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace DAB.

OK
↓

From the results of the above inspection, the part can now be considered to be normal.

ERDA027N



ERDA028E

4. Check Clock spring.

[PREPARATION]

Disconnect the connector between the SRSCM clock spring, and connect the dummy connector (0957A-38200) to the clock spring side of the connector as illustrated.

[CHECK]

Measure the resistance between DAB high (+) and low (-).

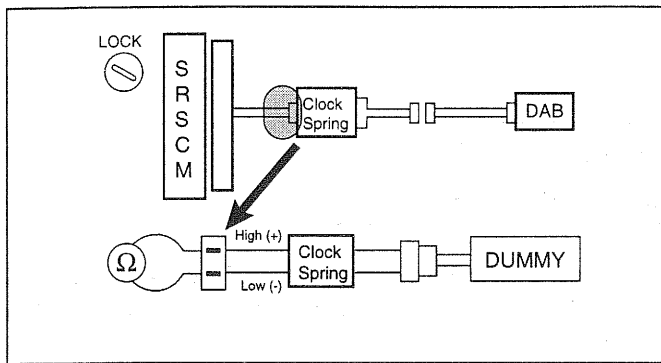
$$1.8 \, \Omega < R < 3.4 \, \Omega$$

NG → Replace clock spring.

OK
↓

Repair or replace harness or connector between the SRSCM and clock spring.

ERDA027R



ERDA029D

ERHA1250

CIRCUIT INSPECTION

DTC	B1352	PAB resistance too high ($R \geq 5.4 \Omega$)
	B1347	PAB resistance too low ($R \leq 0.4 \Omega$)

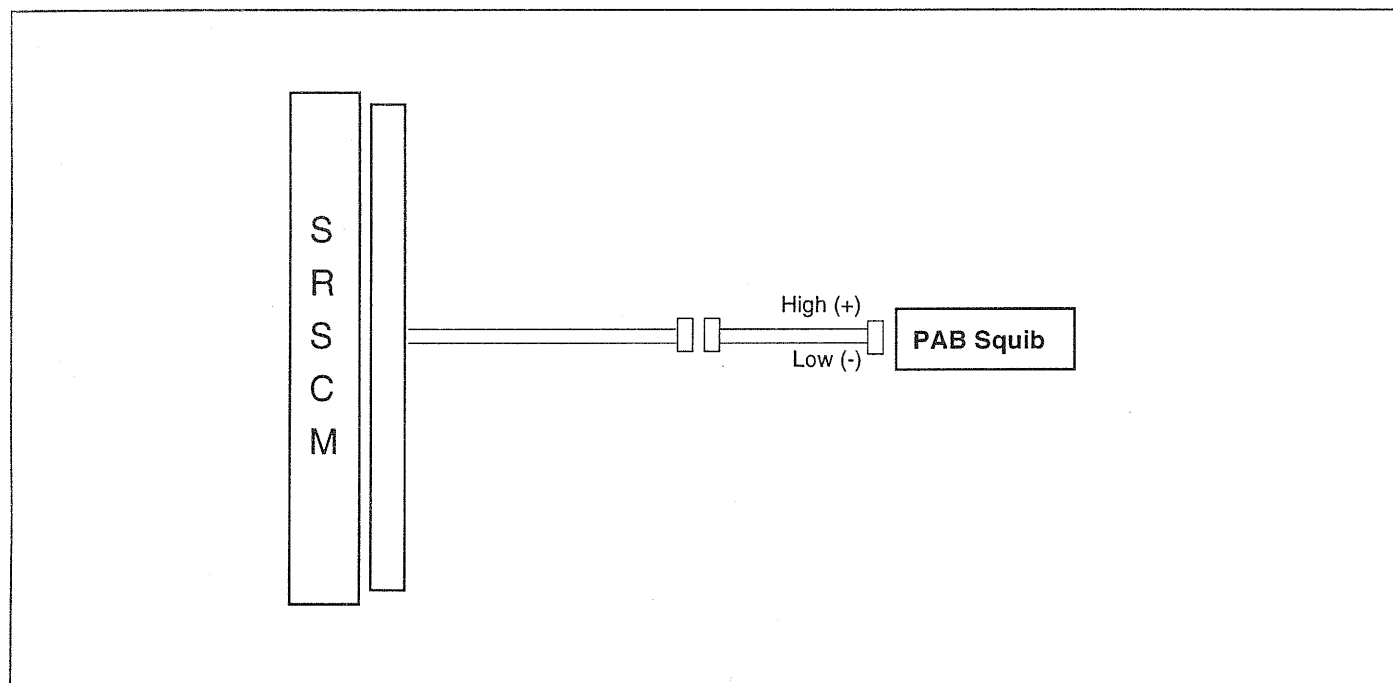
CIRCUIT DESCRIPTION

The PAB squib circuit consists of the SRSCM and PAB. It causes the airbag to deploy when the airbag deployment

conditions are satisfied. The above DTCs are recorded when PAB resistance too high or low is detected in the PAB squib circuit.

DTC Detecting Condition	Trouble Area
- Too high or low resistance between PAB high (+) wiring harness and PAB low (-) wiring harness of squib. - PAB malfunction - SRSCM malfunction	- PAB squib - SRSCM - Wire harness

WIRING DIAGRAM



ERDA030A

INSPECTION PROCEDURE

1. Preparation.
 - 1) Disconnect the battery negative terminal and wait for 30 seconds.
 - 2) Disconnect the DAB module connector.
 - 3) Disconnect the PAB and BPT connectors.
 - 4) Disconnect the SRSCM connector.

NOTE

Place the DAB module facing upward.

2. Check the PAB resistance.

[PREPARATION]

Release the airbag activation prevention mechanism on the SRSCM side of the airbag squib. Connect the dummy connector (0957A-38200) to the PAB connector of the SRSCM connector side.

[CHECK]

Measure the resistance between PAB high (+) and PAB low (-).

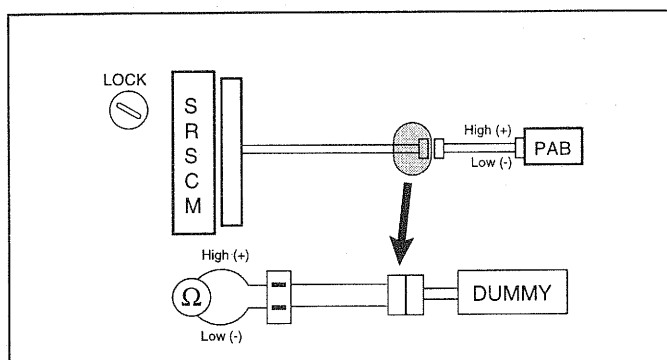
$$1.6 \, \Omega < R < 2.8 \, \Omega$$

NG → Repair or replace harness or connector between the SRSCM and PAB.

OK

Go to step "3".

ERHA125A



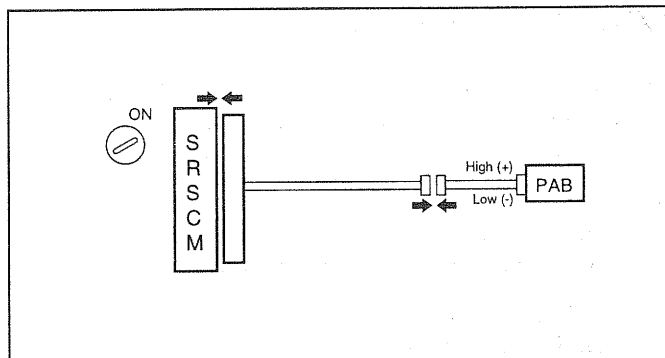
ERDA030B

NG → Replace PAB.

OK

From the results of the above inspection, the part can now be considered to be normal.

ERDA0270



ERDA028F

3. Check PAB squib.

[PREPARATION]

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative (-) terminal cable from the battery, and wait for at least 30 seconds.
3. Connect the PAB connector.
4. Connect the negative (-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is no output.

[HINT]

Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

ERHA1260

CIRCUIT INSPECTION

DTC	B1361	Driver seat belt pretensioner, resistance too high ($R\geq5.4\Omega$)
	B1362	Driver seat belt pretensioner, resistance too low ($R\leq0.4\Omega$)
	B1367	Passenger seat belt pretensioner, resistance too high ($R\geq5.4\Omega$)
	B1368	Passenger seat belt pretensioner, resistance too low ($R\leq0.4\Omega$)

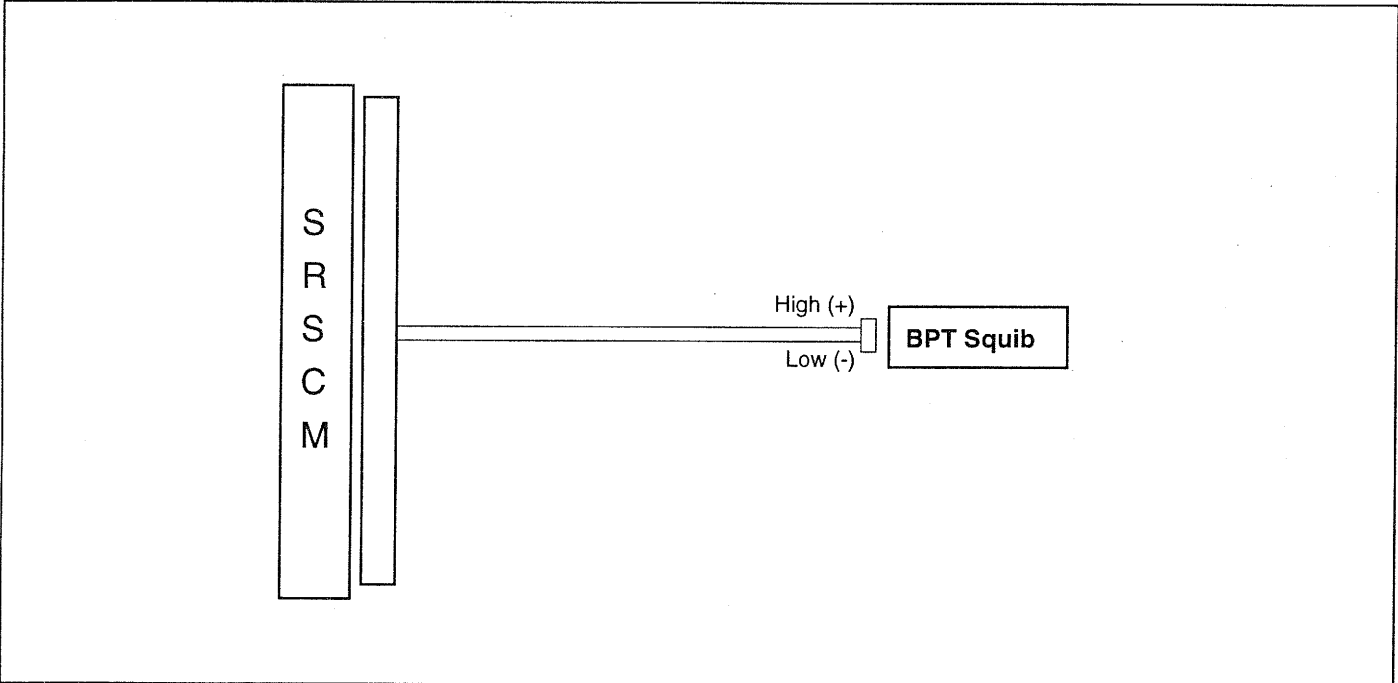
CIRCUIT DESCRIPTION

The BPT squib circuit consists of the SRSCM and BPT. It causes the airbag to deploy when the airbag deployment

conditions are satisfied. The above DTCs are recorded when BPT resistance too high or low is detected in the BPT squib circuit.

DTC Detecting Condition	Trouble Area
• Too high or low resistance between BPT high(+) and BPT low(-) wiring harness of squib • SRSCM malfunction • BPT malfunction	• BPT squib • SRSCM • Wire harness

WIRING DIAGRAM



ERHA126A

INSPECTION PROCEDURE

1. Preparation

- 1) Disconnect the negative(-) terminal cable from the battery, and wait for 30 seconds.
- 2) Disconnect the BPT connector.
- 3) Disconnect the SRSCM connector.

2. Check DAB squib circuit..

[PREPARATION]

Release the airbag activation prevention mechanism on the SRSCM side of the airbag squib side. Connect the dummy connector(0957A-38200) to the BPT connector of the SRSCM connector side.

[NOTE]

Before checking the resistance, you have to insert the shorting bar with the insert plastic attached diagnosis checker into the SRSCM connector.

[CHECK]

Measure the resistance between BPT high(+) and BPT low(-).

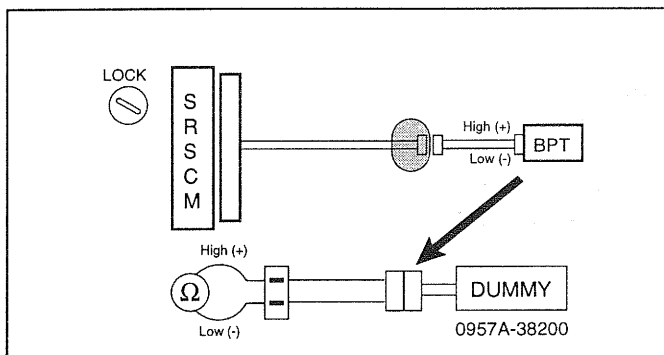
$$1.8\Omega < R < 2.5\Omega$$

NG → Repair or replace harness or connector between the SRSCM and BPT.

OK

↓
Go to step "3"

ERHA126B



ERHA126C

[HINT]

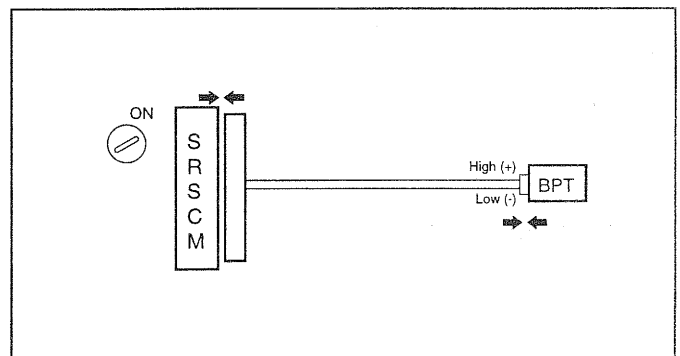
Codes other than these ones may be output at this time, but they are not relevant to this checking procedure.

NG → Replace BPT

OK

↓
From the results of the above inspection, the part can now be considered to be normal.

ERHA126D



ERHA126E

3. Check BPT squibt.**[PREPARATION]**

1. Turn the ignition switch to "LOCK".
2. Disconnect the negative(-) terminal cable from the battery, and wait for 30 seconds.
3. Connect the BPT connector.
4. Connect the negative(-) terminal cable to the battery, and wait for 30 seconds.

[CHECK]

1. Turn the ignition switch to "ON", and wait for 30 seconds.
2. Clear the malfunction code stored in the memory with Scan tool.
3. Turn the ignition switch to "LOCK", and wait for 30 seconds.
4. Turn the ignition switch to "ON", and wait for 30 seconds.
5. Using the Scan tool, check the DTC.
DTC is not output.

ERHA1300

CIRCUIT INSPECTION

DTC	B2500	Warning lamp failure
-----	-------	----------------------

CIRCUIT DESCRIPTION

The SRS warning lamp is located on the cluster. When the airbag system is normal, the SRI flashes for approx. 6 seconds after the ignition switch is turned “ON”, and then turns off automatically. If there is a malfunction in the airbag system, the SRI stays on to inform the driver of the abnormality. The SRSCM measures the voltage at the airbag SRI (Service Reminder Indicator) output pin, both when the lamp is on and when the lamp is off, to detect whether the requested state matches the actual state.

INSPECTION PROCEDURE

1. Check the fuse.

[PREPARATION]

1. Remove fuse No. 2 and 4 from the junction block.
 2. Inspect the state of the fuses.
 3. Replace if necessary.
2. Check SRS warning lamp circuit.

[PREPARATION]

1. Connect the negative (-) terminal cable to the battery.
2. Turn the ignition switch to “ON”.

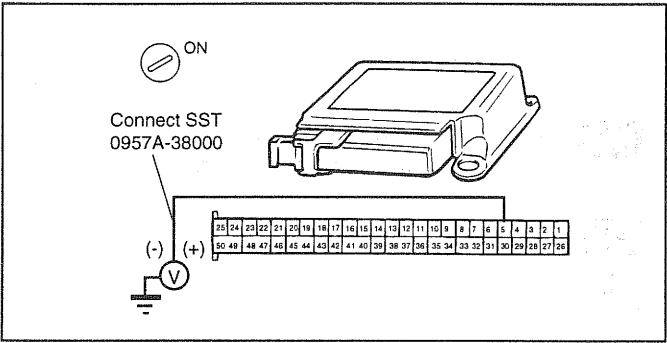
[CHECK]

1. Measure voltage of the harness side connector of the SRSCM.
Voltage : 10-16.5 V

NG → Check the SRS warning light bulb/repair the SRS warning light circuit.

OK
↓

2. Check the SRS SRI (Service Reminder Indicator).
OK : SRS SRI ON



ERHA130A

NG → If no fault is found in wiring or connector, replace the SRSCM.

OK
↓

From the results of the above inspection, the part can now be considered to be normal.

ERDA032B

ERHA1350

CIRCUIT INSPECTION

DTC	B1620	Internal fault
	B1650	Crash recorded
	B1661	ECU mismatching

CIRCUIT DESCRIPTION**SRSCM MALFUNCTION**

The SRSCM shall also cyclically monitor the following :

1. Functional readiness of the firing circuit activation transistors.
2. Adequacy of deployment energy reserves.
3. Safety sensor integrity : detection of faulty closure.
4. Plausibility of accelerometer signal.
5. Operation of SRSCM components.

The timely completion of all tests is monitored by a separate hardware watchdog. During normal operation, the watchdog is triggered periodically by the SRSCM ; If the SRSCM fails to trigger the watchdog, the watchdog will reset the SRSCM and activate the SRI (Service Reminder Indicator). The SRSCM must be replaced, once the fault codes mentioned above are confirmed.

FIELD DEPLOYMENT
PROCEDURES

ERHA1400

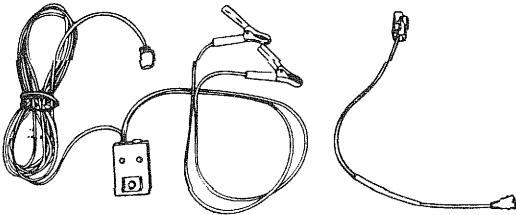
CAUTION

When handling the deployed airbag, be careful not to allow by-product dust to enter the eyes and always wear gloves to avoid direct contact with by-product material.

AIRBAG MODULE DISPOSAL PROCEDURES

Before either disposing of a vehicle equipped with an airbag, or prior to disposing of the airbag module, be sure to first follow the procedures described below to deploy the airbag.

AIRBAG REMOTE DEPLOYMENT DEVICES

Tool, Number, Name	Use
Deployment tool (0957A-34100-A) SRS DEPLOYMENT ADAPTER HARNESS DAB : 0957A-38000 PAB : 0957A-34200  ERDA034A	Deployment inside the vehicle (when vehicle will no longer be driven)

DISPOSAL PLAN

When the problem occurs, take the following disposal steps.

CASE		DISPOSAL PLAN
Car scrapping	DAB, PAB, BPT	Deploy the airbag module in the scrapper yard with SST
Crash (Deployed)		Service station disposes of the airbag module

UNDEPLOYED AIRBAG MODULE DISPOSAL

CAUTION

- If the vehicle is to be scrapped, junked, or otherwise disposed of, deploy the airbag inside the vehicle.
- Since there is a loud noise when the airbag is deployed, avoid residential areas whenever possible. If anyone is nearby, give out a warning.
- Since a large amount of smoke is produced when the airbag is deployed, select a well-ventilated site. Moreover, never attempt the test near a fire or smoke sensor.

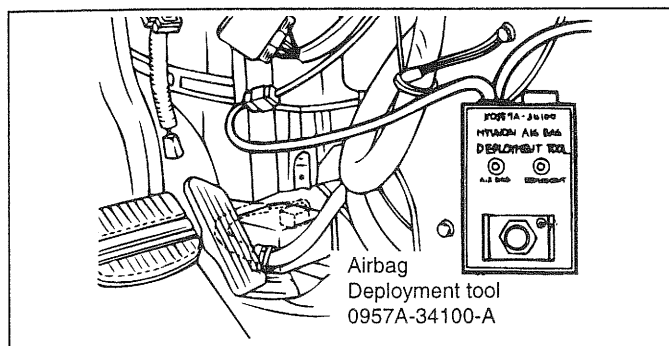
DEPLOYMENT INSIDE THE VEHICLE

WHEN VEHICLE WILL NO LONGER BE DRIVEN

- Open all windows and doors of the vehicle. Move the vehicle to an isolated spot.
- Disconnect the negative (-) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle.

CAUTION

Wait for at least 30 seconds after disconnecting the battery cable before doing any further work.



ERDA034B

3. Remove the airbag SRSCM connector.
4. Connect the deployment tool to the connector of each module.
5. As far away from the vehicle as possible, press the push button (removed from the vehicle) to deploy the airbag.

CAUTION

1. Before deploying the airbag in this manner, first check to be sure that there is no one in or near the vehicle. Wear safety glasses.
2. The inflator will be quite hot immediately following the deployment, so wait for 30 minutes to allow it to cool before attempting to handle it. Although not poisonous, do not inhale gas from the airbag deployment. See the Deployed Airbag Module Disposal Procedures for the post-deployment handling instructions.
3. If the airbag fails to deploy when the procedures above are followed, do not go near the module. Contact your local distributor.

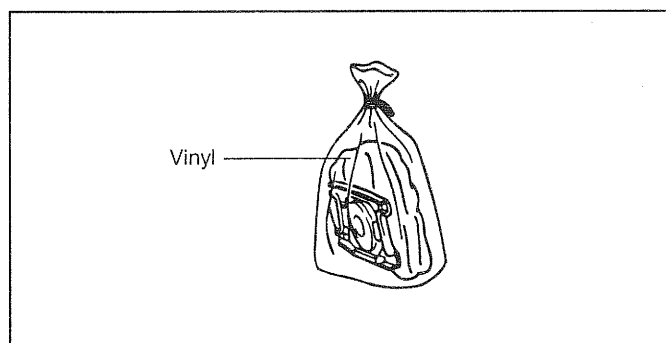
DEPLOYED AIRBAG MODULE DISPOSAL PROCEDURES

After deployment, the airbag module should be disposed of in the same manner as any other scrap parts, except that the following points should be carefully noted during disposal.

1. The inflator will be quite hot immediately following deployment, so wait for 30 minutes to allow it to cool before attempting to handle it.
2. Do not put water or oil on the airbag after deployment.
3. There may be, adhered to the deployed airbag module, material that could irritate the eyes and/or skin, so wear gloves and safety glasses when handling a deployed airbag module. IF, DESPITE THESE PRECAUTIONS, THE MATERIAL DOES GET INTO THE EYES OR ON THE SKIN, IMMEDIATELY RINSE THE AFFECTED AREA WITH A LARGE AMOUNT

OF CLEAN WATER. IF ANY IRRITATION DEVELOPS, SEEK MEDICAL ATTENTION.

4. Tightly seal the airbag module in a strong vinyl bag for disposal.
5. Be sure to always wash your hands after completing this operation.

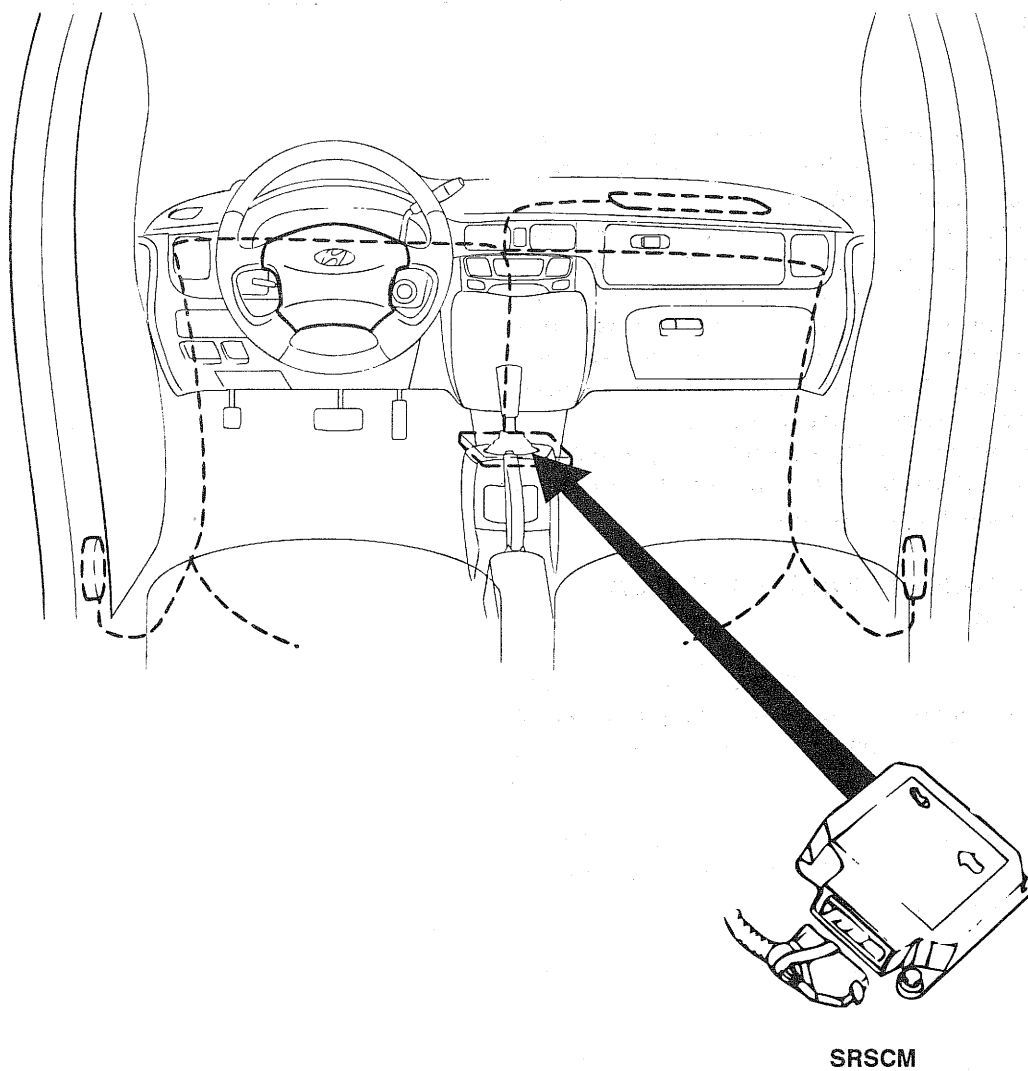


ERDA034D

SRSCM (SUPPLEMENTAL RESTRAINTS SYSTEM CONTROL MODULE)

SRSCM (SRS CONTROL MODULE)

COMPONENT ERHA0600



SRSCM CONNECTOR**(DAB+PAB+BPT)** ERHA0650

25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
											●	●	●	●	●	●	●	●	●	●	●	●	●	●

50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
													●			●	●							

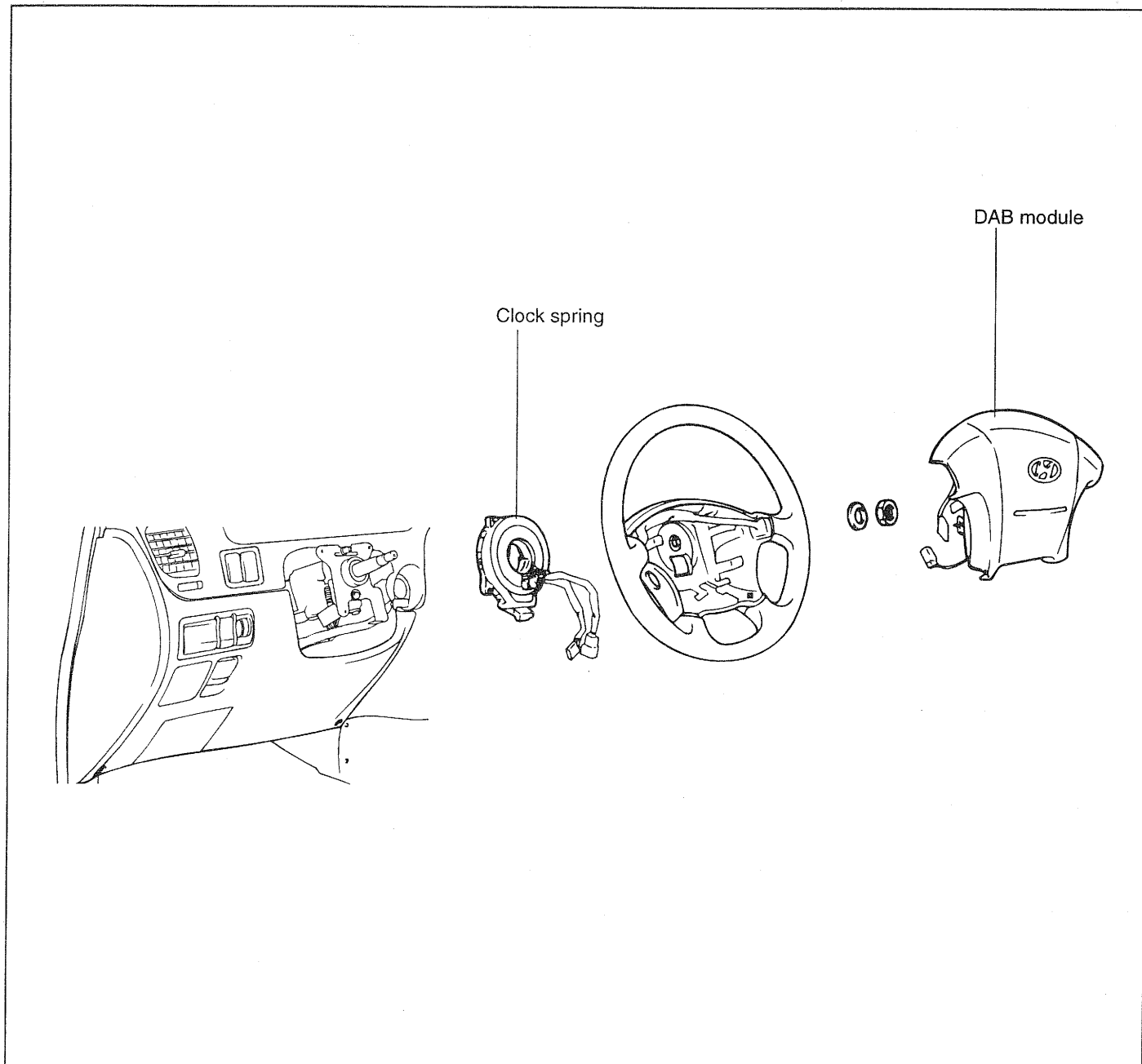
ERHA065A

PIN NO	Description	Input/output
1	Driver seat BPT	Output
2	Driver seat BPT	Output
3	Passenger seat BPT	Output
4	Passenger seat BPT	Output
5	Battery (+)	Input
6	Ground	Input
7	Indicator	Output
8	Driver seat belt switch	Output
9	Diagnosis	Input/output
10	DAB high	Output
11	DAB low	Output
12	Passenger seat belt switch	Output
13	PAB high	Output
14	PAB low	Output
15-25	-	-
26-29	Shorting bar	-
30-32	-	-
33	Driver seat belt switch	Output
34	Crash output	Output
35-36	Shorting bar	-
37	-	-
38-39	Shorting bar	-
40-45	-	-

AIR BAG MODULE (DRIVE SIDE) AND CLOCK SPRING

AIR BAG MODULE (DRIVER) AND CLOCK SPRING

COMPONENTS ERHA0700



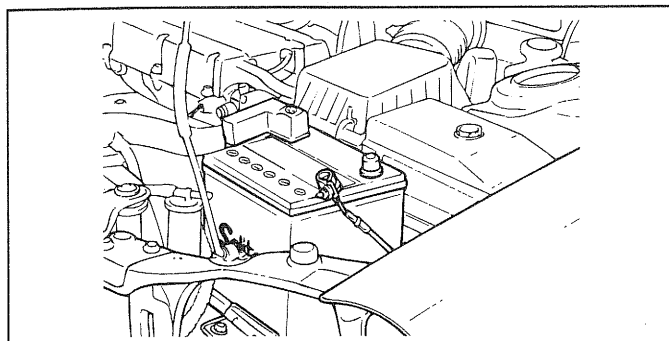
ERHA070A

REMOVAL ERHA0750

1. Disconnect the negative battery cable and keep it secure away from battery.

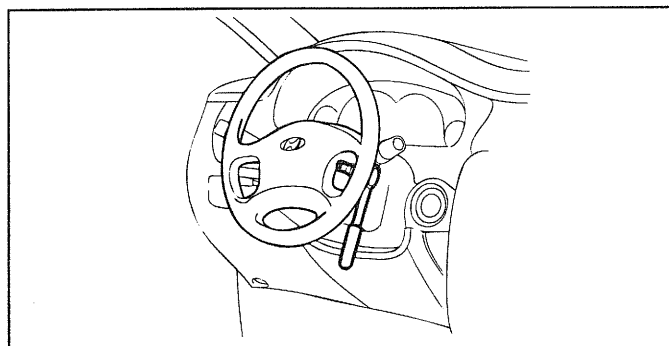
CAUTION

Wait for 30 seconds after disconnecting the battery cable before doing any further work.



ERA9007A

2. Remove the side protect cover of the steering wheel and the airbag module mounting bolts using a hexagonal wrench.

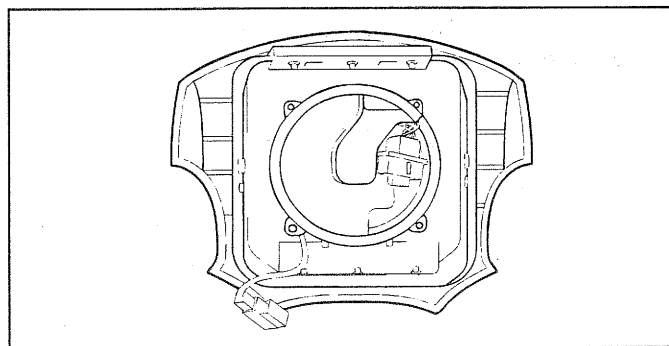


EPHA002A

3. When disconnecting the connector of the clock spring from the airbag module, pull the airbag's lock toward the outer side to spread it open.
4. Remove the driver's airbag module.

CAUTION

1. When disconnecting the airbag module-clock spring connector, take care not to apply excessive force to it.
2. The removed airbag module should be stored in a clean, dry place with the pad cover facing up.

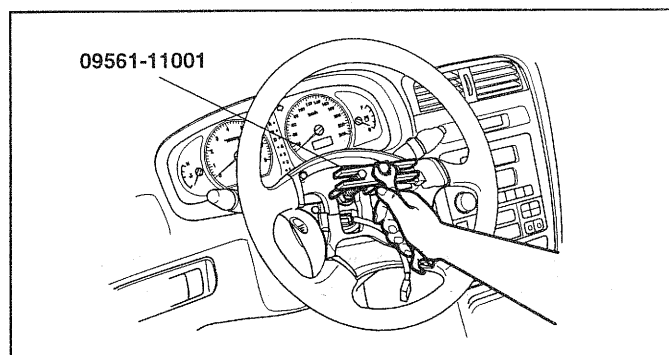


ERHA004A

5. Remove the steering wheel using the SST (09561-11002).

CAUTION

Do not hammer on the steering wheel. Doing so may damage the collapsible column mechanism.



KFWC003A

INSPECTION ERHA0800**AIRBAG MODULE**

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

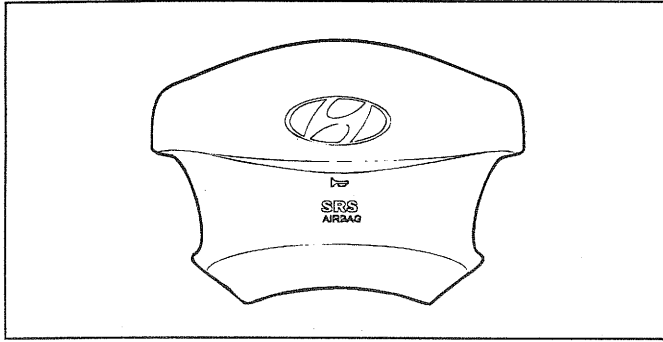
Dispose the old one according to the specified procedure.

CAUTION

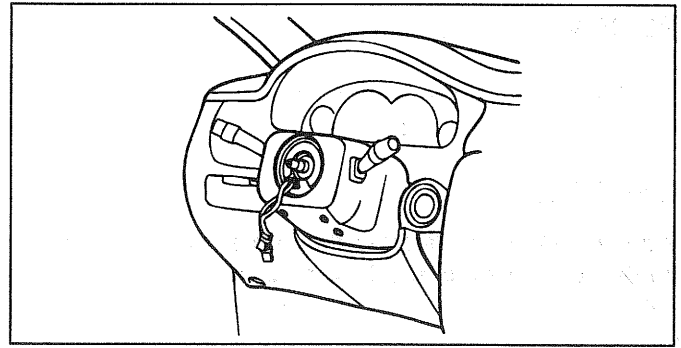
Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental airbag deployment could result in serious personal injury.

1. Check the 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 harnesses for binds.

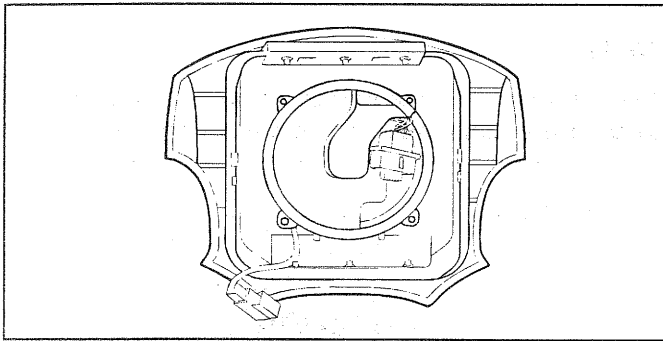
4. Check the airbag inflator case for dents, cracks or deformities.



ERHA005A

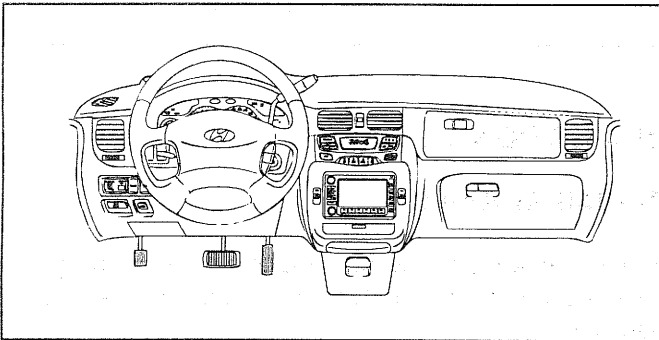


ERHA004C



ERHA004A

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



ERHA004B

CLOCK SPRING

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 the connectors and protective tube for damage, and terminals for deformities.

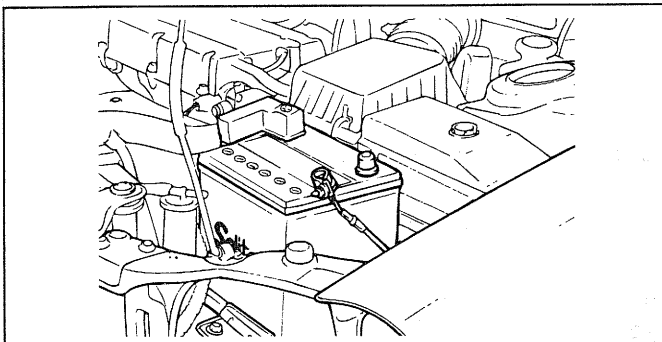
AIR BAG MODULE (PASSENGER SIDE)**AIR BAG MODULE (PASSENGER)****REMOVAL** ERHA0850**CAUTION**

1. Never attempt to disassemble or repair the airbag module.
2. Do not drop the airbag module or allow contact with water, grease or oil. Replace it if a dent, crack, deformation or rust are detected.
3. The airbag module should be stored on a flat surface and placed so that the pad surface is facing upward. Do not place anything on top of it.
4. An undeployed airbag module should only be disposed of in accordance with the procedures.
5. 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 could result in serious personal injury.
6. Whenever the PAB is deployed it should be replaced with a new one assembled with an extension wire, because the squib is a melt down if the PAB is deployed making the extension wire useless.

1. Disconnect the battery negative (-) terminal cable.

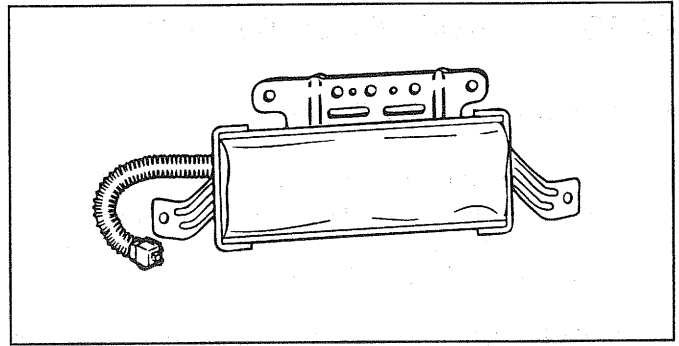
CAUTION

Wait at least 30 seconds.



ERA9007A

2. Remove the glove box.
3. Disconnect the PAB module connector.
4. Remove the crash pad assembly and then undo the PAB module.



HEW56A-1

PASSIVE SEAT BELT SYSTEM

FUNCTION OF PRETENSIONER

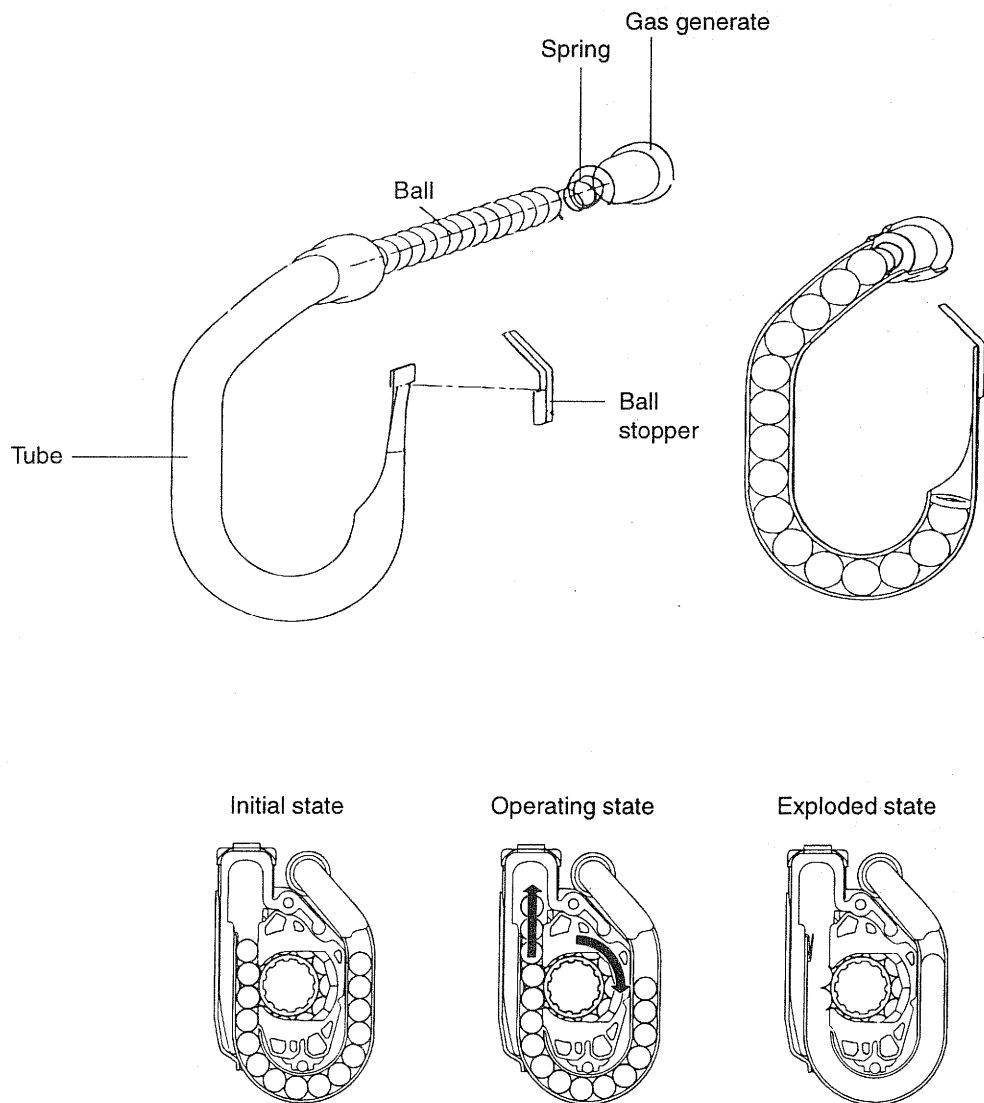
ERHA0900

When a vehicle crashes with a certain degree of impact from the front, the gas generator is made to ignite by the electrical firing signal from the SRSCM (Supplemental Restraint System Control Module).

Gas from the gas generator causes movement of the piston in the manifold case (cylinder), which operates the rack gear.

The rack gear rotates a piston gear and a pinion rotates the planet gears.

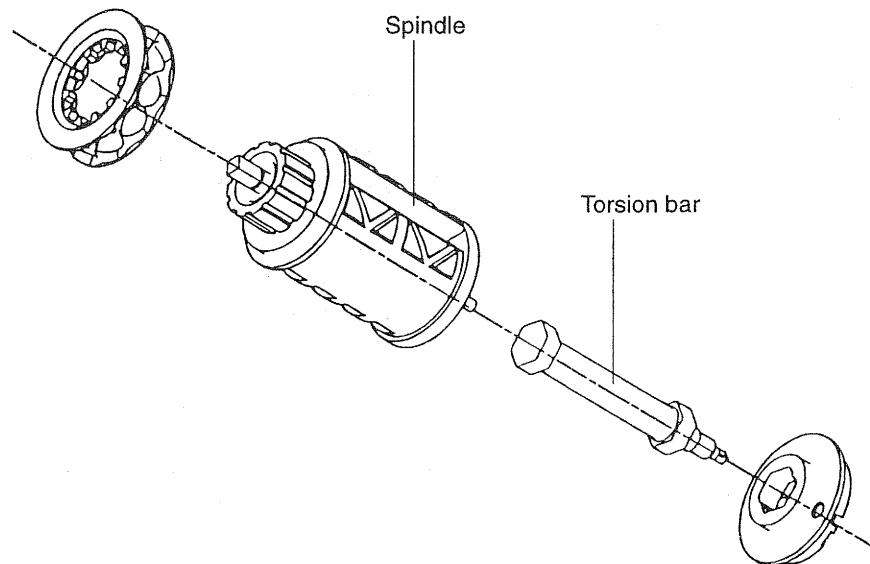
Finally the webbing is retracted by the rotation of the spool. Therefore the pretensioner seat belt helps to reduce the severity of injury to the front seat occupant by retracting the seat belt webbing to prevent the occupant from thrusting forward and hitting the steering wheel or instrument panel when the vehicle crashes.



LOAD LIMITER

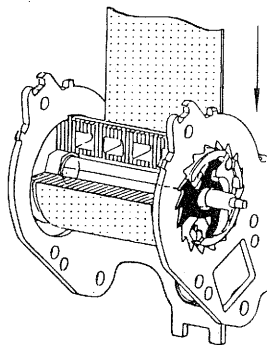
The load limiter is designed to relieve the impact force to an occupant chest's of the seat belt webbing when the occupant is restrained by the seat belt during a crash.

If the crash force reaches a certain value, the torsion bar in the pretensioned seat belt is deformed and this causes the webbing to be extracted from the seat belt thus relieving the impact force.

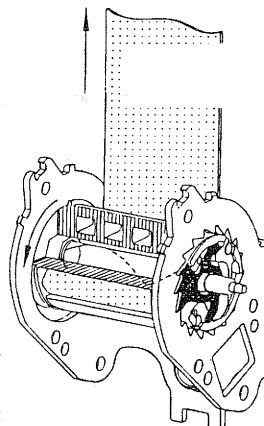


Load = 5.5 kN

Load < 5.5 kN



Webbing retracted



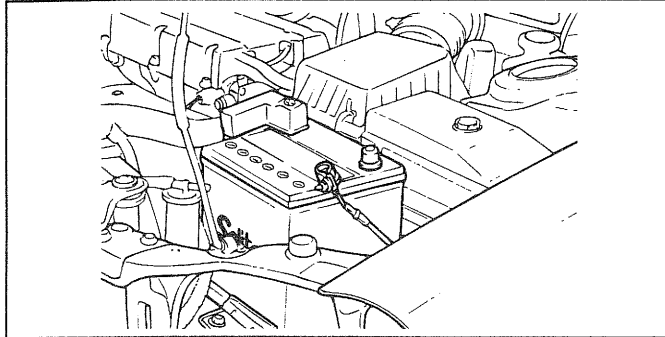
Torsion bar deformed

REMOVAL ERHA0950

1. Disconnect the battery negative (-) terminal.

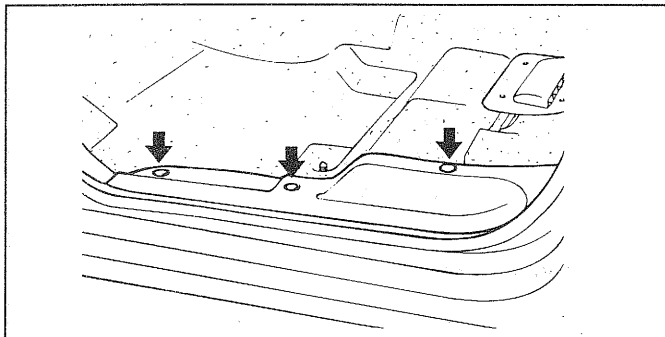
CAUTION

Wait at least 30 seconds.



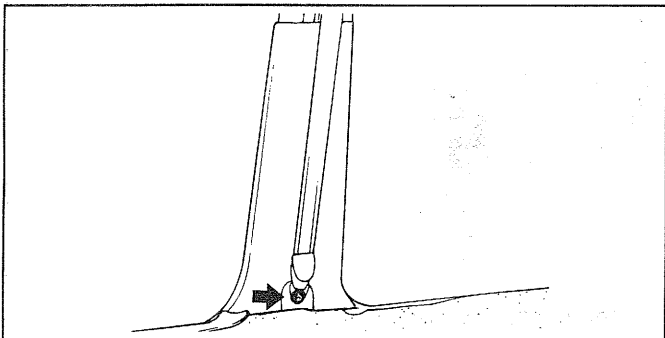
ERA9007A

2. Remove the door scuff trim.



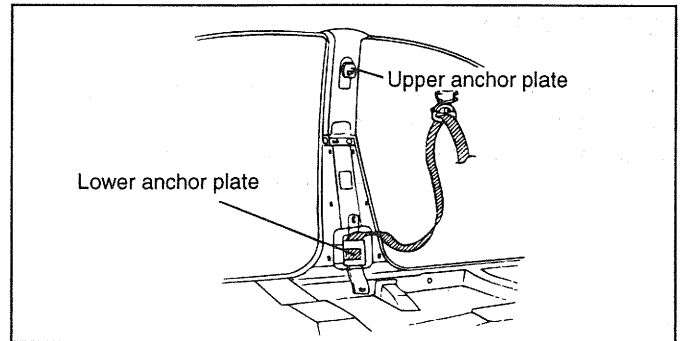
ESHA040H

3. Remove the center pillar lower trim after removing seat belt lower anchor bolt.



ESHA040I

4. Remove the upper anchor plate cover and upper anchor plate.
5. Remove the lower anchor plate and front seat belt.



HEW6015A

CAUTION

1. Never attempt to disassemble or repair the BPT.
2. Do not drop the BPT or allow contact with water, grease, oil.
Replace it if a dent, crack, deformation or rust are detected.
3. Do not place anything on the BPT.
4. Do not expose the BPT to temperature over 93°C(200°F).
5. BPT functions one time only. Be sure to replace the BPT after it is deployed.
6. Be sure to wear gloves and safety goggles when handling the deployed BPT.