Restraints

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RT -2 RESTRAINTS

GENERAL

GENERAL FRUCO100

The Supplemental Restraint System (SRS AIRBAG) is designed to supplement the seat belts to help reduce the risk or severity of injury to the driver and passenger by activating and deploying the driver and passenger in certain frontal collision.

The SRS (Airbag) consists of: a driver airbag module located in the center of the steering wheel, which contains a folded cushion and an inflator unit; a passenger airbag module located in the passenger side crash pad which contains a folded cushion together with an inflator unit; side airbag modules located in the driver and passenger seat which contain folded cushions and inflator units: SRSCM located on the floor center console core which monitors the system,; an accelerometer which senses vehicle deceleration,; a spring interconnection (clock spring) located within the steering column; system wiring and wiring connectors; and a knee bolster located under the steering column. The impact sensing function of the SRSCM is carried out by the electronic accelerometer that continuously measures the vehicle's acceleration and delivers a corresponding signal through an amplifying and filtering circuit to the microprocessor. Deployment of the airbag is designed to occur in frontal or near-frontal side impacts of moderate to severe force.

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

CUSTOMER CAUTIONS ERUC0200

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

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

Before servicing (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 longer from the time the ignition switch is turned to the LOCK position and the negative (-) battery cable is disconnected from the battery. The airbag system is equipped with a back-up power source to assure the deployment of airbags when the battery cable is disconneted during an accident. The back-up power is available for approx. 150ms.

- When the negative (-) battery cable is disconnected from the battery, the clock and audio system's memory will be wiped out. So before starting work, make a record of the contents of the audio system's memory. When the work is finished, reset the audio system and adjust the clock.
- 3. Symptoms of malfunction of the airbag system are difficult to detect, so the diagnostic codes become the most important source of information when troubleshooting.
- When troubleshooting the airbag system, always inspect the diagnostic codes before disconnecting the battery.
- 5. Never use airbag parts from another vehicle. When replacing parts, replace them with new parts.
- 6. Never attempt to disassemble and repair the airbag modules (DAB, PAB), clock spring and wiring in order to reuse them.
- 7. If any component of the SRS has 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 an SRS SRI check. The airbag indicator lamp can be triggered by faults in other circuit in some cases. Therefore if the airbag indicator lamp goes on, be sure to erase the DTC codes using the Hi-Scan Pro just after repairing or replacing the troubled parts, including the fuse.
- 9. Especially when carring out body welding, never fail to disconnect the battery's negative (-) terminal.

SPECIAL SERVICE TOOLS ERUC0300

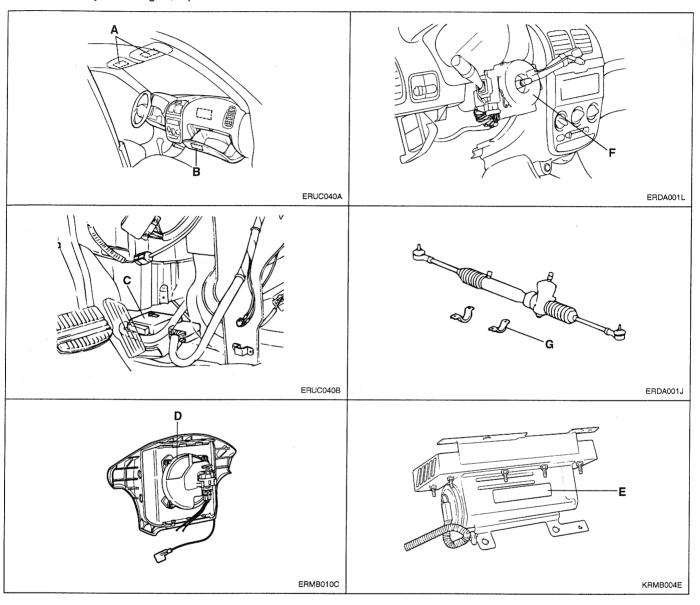
Tool (Number and Name)	Illustration	Use
0957A-38200 Dummy		Simulator to check the resistance of each wiring harness (Use with 0957A-38000, 0957A-38300, 0957A-38400) Adapter connect DAB, PAB
4.	ERDA001E	
0957A-38300 Dummy adapter		
	ERDA001F	
0957A-38000 Diagnosis checker		Wiring harness checker of each module (Use with 0957A-38200, 0957A-38300, 0957A-38400)
	ERDA001H	

* DAB : Driver Airbag * PAB : Passenger Airbag

WARNING/CAUTION LABELS ERUC0400

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.

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



ERUC0500

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 install rearward-facing child seats in any front passenger seat position.
- 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 the "SRS" lamp in the 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.

- "SRS" lamp does not light up when the key is turned on.
- "SRS" lamp stays lit or flashes continuously. 2.
- 3. The airbag has inflated.

The airbag system must be inspected by an authorized dealer ten years after the vehicle manufacture date shown on the certification label, located on left front door opening area.



WARNING

Failure to follow the above instructions may result in injury to you or other occupants in the vehicle. See the "SRS" section in Owner's Manual for more information about airbags.

C. CAUTION: AIRBAG ESPS UNIT

Detach connector before unmounting. Assemble strictly according to manual instructions.

D, E. CAUTION

This item contains an explosive igniter, 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. CAUTION: SRS clock spring

This is not a repairable part. Do not disassemble or tamper. If defective, replace entire unit as per service manual instructions.

To re-center, rotate clockwise until tight. Then rotate in opposite direction approximately 3 turns and align →← Failure to follow instructions may render SRS system inoperative possibly resulting in serious driver injury.

G. CAUTION: SRS

Before removal of steering gearbox, read service manual. center the front wheels and remove the ignition key. Failure to do so may damage the SRS clock spring and render SRS system inoperative, possibly resulting in serious the injury to the driver.

ELECTRICAL SYSTEM FRHA0250

The SRS airbag system has sophisticated electrical and electronic components. Therefore the airbag operating components should be handled very carefully.

SRSCM (Supplement Restraint System Control Module)

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

- DC/DC convertor: The DC/DC converter in 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 that closes if it experiences a deceleration exceeding a specified threshold.
- Back-up power: The SRSCM reserves an energy reserve to provide deployment energy for a short period when the vehicle voltage is low or if lost in a vehicle frontal crash.
- 4. Malfunction detection: The SRSCM continuously monitors SRS operating status while the ignition key is turned on and detects possible malfunctions in the system. The malfunction can be displayed in the form of a diagnostic trouble codes using the Hi-Scan Pro.
- MIL (Malfunction Indication Lamp) notification: If any fault is detected, the SRSCM sends a signal to the indicator lamp on the instrument cluster to warn the vehicle driver.
 - The MIL indicator is the key item in notifying the driver of SRS faults. It verifies lamp and SRSCM operation by flashing 6 times when the ignition switch is first turned on.
- Malfunction recording: Once a fault occurs in the system, the SRSCM records the fault in memory in the form of a DTC, which can only be erased by the Hi-Scan Pro.
- Data link connector: SRSCM memory stored is linked through this connector located underneath the driver side crash pad to an external output device such as the Hi-Scan Pro.
- After firing the airbags once, the SRSCM cannot be used again and must be replaced.

9. Crash output

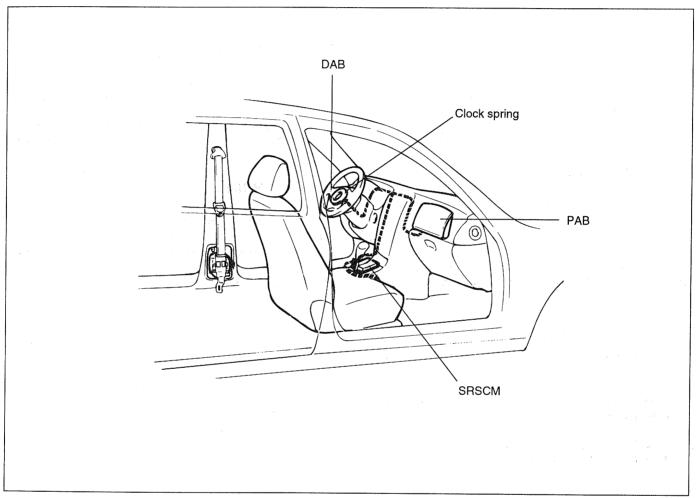
The crash output is used to unlock the doors in case of a crash. The crash output is : 0-200 μA in OFF mode and 200mA in ON mode. During the unlock command, the switch is closed for 200 mS.

SRSCM (SUPPLEMENTAL RESTRAINTS SYSTEM CONTROL MODULE)

the sensor of the SRSCM, current flows through the deployment loop. This current ignites the material and inflates the airbag.

INFLATOR MODULE (DAB, PAB) ERUCO700

DAB (Driver airbag), PAB (Passenger airbag) module all consist of an inflator and cushion. The initiator (a gas generator igniting device) is port of the inflator. When the vehicle is in a frontal or side crash of sufficient force to close



ERUC070A

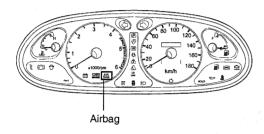
- 1. When removing the airbag module or handling a new airbag module, it should be placed with the pad top surface facing up. In this case, the twin-lock type connector lock lever should be in the locked state and care should be taken to place it so the conector will not be damaged. Do not store a steering wheel pad on top of another one. (Storing the pad with its metallic surface up may lead to a serious accident if the airbag should inflate accidentally.)
- Never measure the resistance of the airbag squib. (This may cause the airbag to deploy, which is very dangerous.)
- 3. Store the airbag module where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
- 4. During electric welding, disconnect the airbag under the steering column near the MULTI-FUNCTION SWITCH connector before starting work.

SRS HARNESS FRUCOROG

The SRS harness is wrapped in a yellow tube to be discriminated from other system harnesses. A shorting bar is included inside the wiring connectors of DAB and PAB inflator side. The shorting bar shorts the current flow the DAB and PAB 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 servicing the airbag module.

SRSCM INDEPENDENT LAMP ACTIVATION

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



ERLB002B

There are certain fault 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: lamp turned on continuously.
- 3. SRSCM not connected: lamp turned on through shorting bar in wiring harness connector.

MIL OPERATING METHOD

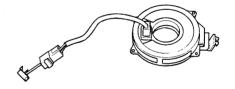
ERJB0080

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

ERJB008A

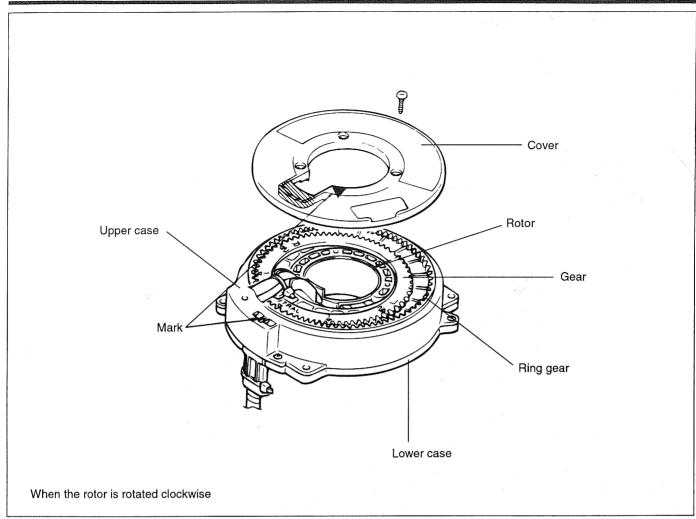
CLOCK SPRING ERJB0090

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 of the deployment loop through the inflator module.



ERJA010E

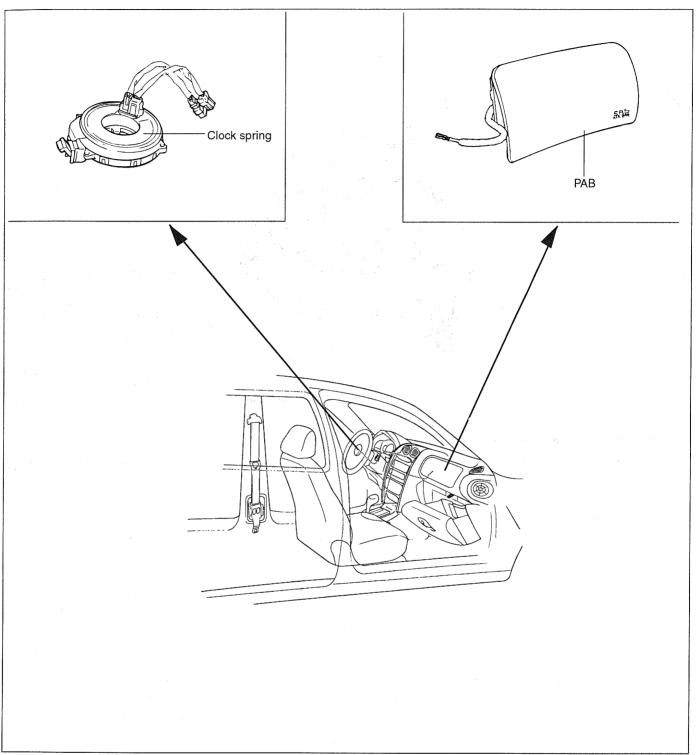
The steering wheel must be fitted correctly to the steering column with the clock spring at the neutral position, otherwise cable disconnection and other troubles may result.



ERLB002C

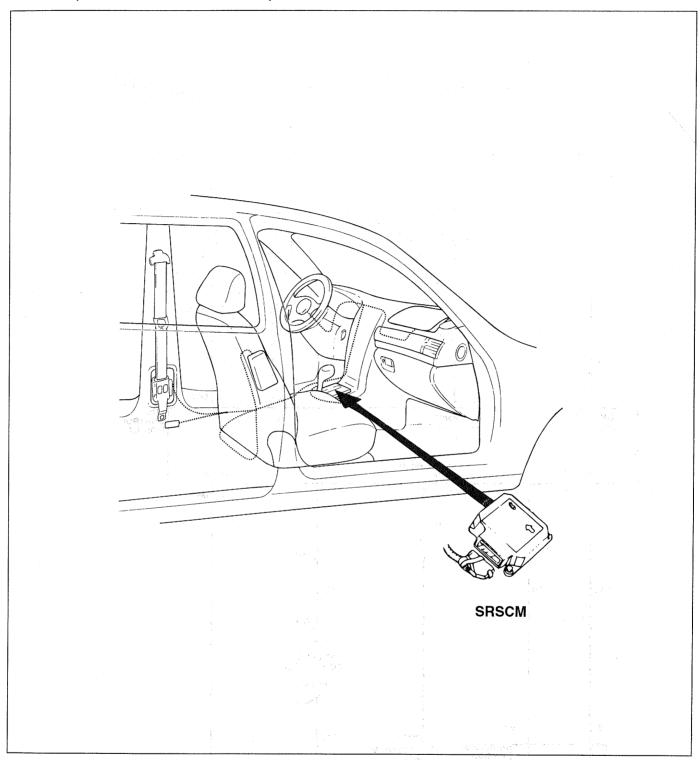
SYSTEM COMPONENT AND

LAYOUT ERUC1200



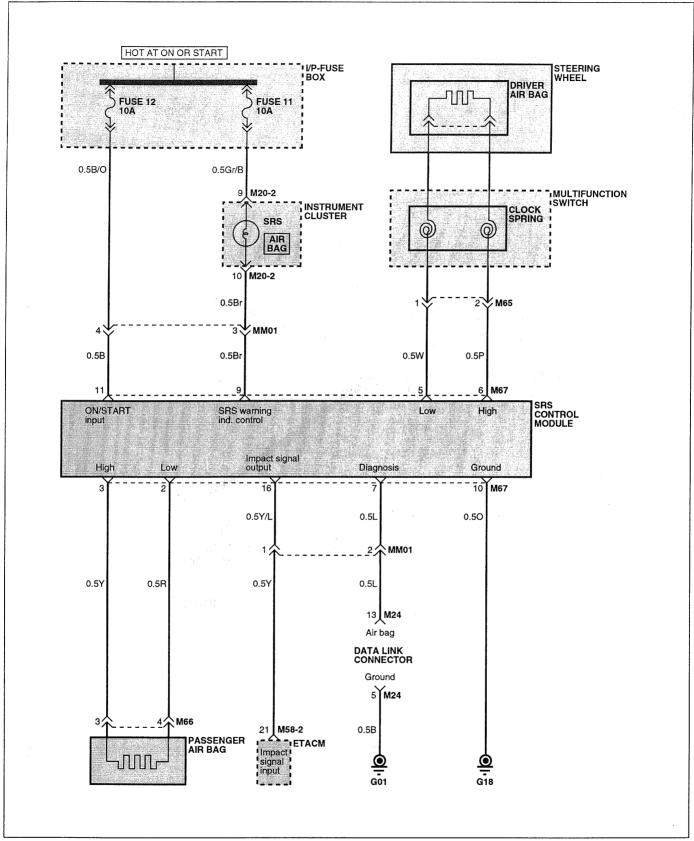
ERUC120A

SRSCM (SRS CONTROL MODULE) ERJB0130



ERB9004A

AIRBAG SYSTEM (SRS) ERUC1400



ERUC140A

SRSCM CONNECTOR ERTC0150

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

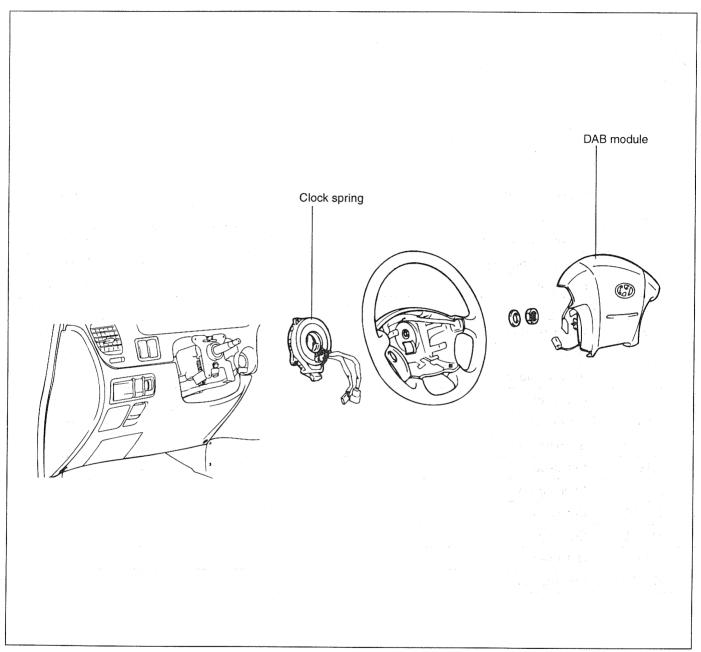
Shorting bar

ERTC015A

PIN NO.	Function	Input/output
1	Not used	-
2	Passenger airbag, Low	Output
3 .	Passenger airbag, High	Output
4	Not used	-
5	Driver airbag, Low	Output
6	Driver airbag, High	Output
7	K-diagnostic line	Input/Output
8	Not used	
9	Warning lamp	Input
10	GND	Input
11	Battery supply	Input
12 - 15	Not used	- :
16	Crash output	Output
17 - 18	Shorting bar	-
19	Not used	- 6
20 - 21	Shorting bar	
22 - 23	Not used	-
24 - 25	Shorting bar	-
26	Not used	-
27 - 30	Shorting bar	<u>-</u>

AIR BAG MODULE (DRIVE SIDE) AND CLOCK SPRING

COMPONENTS ERHA0700



ERHA070A

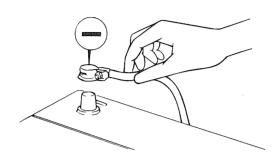
REMOVAL ERUC2100

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



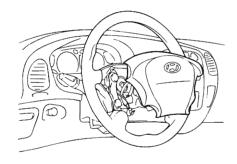
/!\ CAUTION

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



EADA011A

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



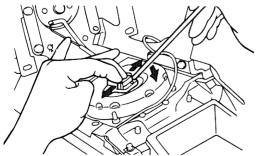
KPLA011A

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.



🔼 CAUTION

When disconnecting the airbag module-clock spring connector, take care not to apply excessive force to it.



ERA9007C

Remove the drive airbag module.



${/!}{\setminus}$ CAUTION

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



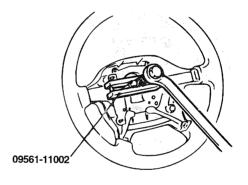
KRKB017A

Remove steering wheel using SST (09561-11002).



(CAUTION

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



H7ST019A

INSPECTION ERUC2200

AIRBAG MODULE

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

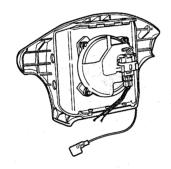
Dispose the old one according to the specified procedure.



/!\ 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 will result in serious personal injury.

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



KFWE001A

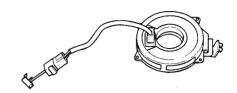
Install the airbag module to the steering wheel to check for fit or alignment with the wheel.



KPKA012A

CLOCK SPRING

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



ERJA010E

AIR BAG MODULE (PASSENGER SIDE)

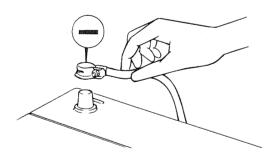
REMOVAL ERUC2500

NOTE

- 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.
- 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.
- Do not expose the airbag module to temperature over 93°C (200°F)
- An undeployed airbag module should only be disposed in accordance with the procedures.
- 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.
- 7. Whenever the PAB is deployed it should be replaced with a new one assembled with an extension wire. The squib is melt down if the PAB is deployed making the extension wire useless.
- Disconnect the battery negative (-) terminal cable.

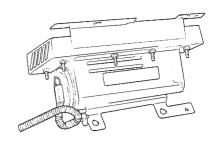
/!\ CAUTION

Wait at least 30 seconds.



EADA011A

- 2. Remove the glove box.
- 3. Disconnect the PAB module connector.
- 4. Remove the crash pad assembly and then undo the PAB module. (Refer to the BD section)



KRMB001A

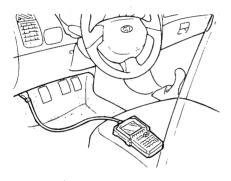
The skin of the passenger airbag module is integrated with the crash pad, therefore, the crash pad must be replaced if the PAB deploys.

TROUBLESHOOTING

DIAGNOSIS WITH SCAN TOOL ERFB010

CHECK PROCEDURES

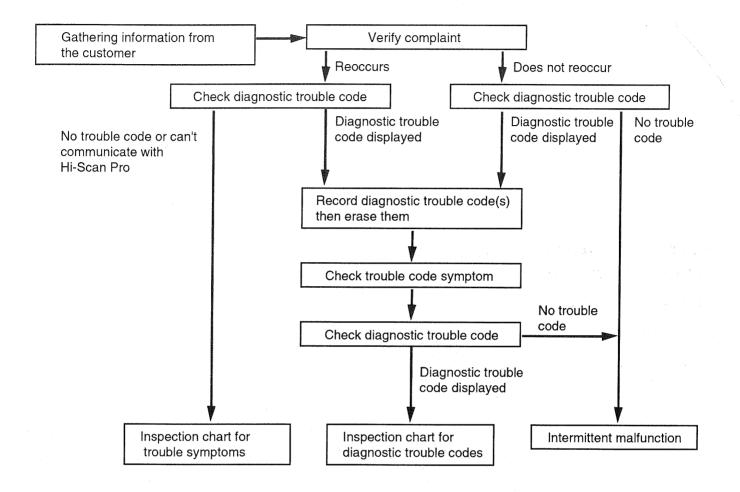
- 1. Connect the Hi-Scan Pro DLC to the vehicle's data link connector located underneath the dash panel.
- 2. Turn the ignition key to the "ON" position and turn the Hi-Scan Pro ON.
- 3. Perform the SRS diagnosis according to the vehicle model configuration.
- 4. If a fault code is assured, then replace the component. Never attempt to repair the component.
- 5. If the Hi-Scan Pro finds that a component of the system is faulty, there is a possibility that the fault is not in the component, but in SRS wiring or connector.



ERDA010A

DIAGNOSTIC TROUBLESHOOTING

FLOW ERUC3600



ERA9035A

AIRBAG SQUIB RESISTANCE LIMITS

DAB

R ≤ 1.06Ω	Resistance too low	Fault definitely detected	
$1.8\Omega \le R \le 3.4\Omega$	Resistance whithin tolerance	Definitely no fault detected	
$R \ge 6.7\Omega$	Resistance too high	po high Fault definitely detected	
$1.06\Omega < R < 1.8\Omega$ $3.4\Omega < R < 6.7\Omega$	Tolerance band Fault may or may not be detected		

PAB

$R \leq 0.4\Omega$	Resistance too low	Fault definitely detected
$1.6\Omega \le R \le 2.8\Omega$	Resistance whithin tolerance	Definitely no fault detected
R ≥ 5.4Ω	Resistance too high	Fault definitely detected
$0.4\Omega < R < 1.6\Omega$ $2.8\Omega < R < 5.4\Omega$	Tolerance band	Fault may or may not be detected

INSPECTION CHART FOR DIAGNOSTIC TROUBLE CODE (HAE-2) ERTC0370

OPTIONS : DAB + PAB

DTC No.	Fault description
B1111	Battery voltage too high
B1112	Battery voltage too low
B1346	Driver airbag (DAB), Resistance too high
B1347	Driver airbag (DAB), Resistance too low
B1348	Driver airbag (DAB), Short to ground
B1349	Driver airbag (DAB), Short to Battery
B1352	Passenger airbag (PAB), Resistance too high
B1353	Passenger airbag (PAB), Resistance too low
B1354	Passenger airbag (PAB), Short to ground
B1355	Passenger airbag(PAB), Short to Battery
B1620	Internal fault
B1650	Crash recorded
B1661	ECU mismatching
B2500	Warning lamp failure

MOTE

- The DAB is located in the steering wheel.
- The PAB is located in the crash pad.

ERUC4000

CIRCUIT INSPECTION

DTC	B1111	Battery voltage too high
ЫС	B1112	Battery voltage too low

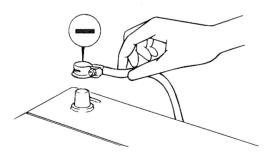
CIRCUIT DESCRIPTION

The SRS is equipped with a voltage-increase or decrease circuit (DC-DC converter) in the SRSCM in case the source voltage goes down or up. When the battery voltage is down or up the voltage-increase or decrease circuit (DC-DC converter) function will increase or decrease the voltage of the SRS to normal voltage. The diagnosis system malfunction display for this circuit is different to other circuits. When the SRS warning lamp remains lit up and the DTC is a B1111 or B1112 code, battery voltage too high or low is indicated. When voltage returns to normal, the SRS warning light automatically goes off and a malfunction is no longer indicated.

INSPECTION PROCEDURE

1. Preparation

- 1) Disconnect the negative (-) terminal cable from the battery, and wait at least 30 seconds.
- 2) Remove the DAB module.
- Disconnect the connectors of the PAB, left and right side airbags, belt pretensioners and satellite sensors.
- 4) Disconnect the SRSCM connector.



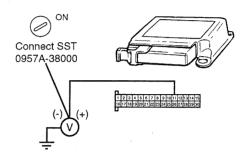
EADA011A

CAUTION

Place the DAB with the front surface facing upward.

- Check source voltage.
 - Connect the negative (-) terminal cable to the battery.

2) Turn the ignition switch ON.



ERTC040A

[CHECK]

Measure voltage between the battery supply terminal 11 of the SRS connector and body ground.

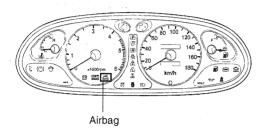
LIMIT: 9-16.5V

Check the harness between the battery and the SRSCM. Check the battery and charging system



ERJB040A

- Does the SRS warning light turn off ? [PREPARATION]
 - 1) Turn the ignition switch to LOCK.
 - 2) Connect the DAB module.
 - 3) Connect the PAB connector, left and right side airbag, belt pretensioner and satellite connectors.
 - 4) Connect the SRSCM connector.
 - 5) Turn the ignition switch ON.



ERLB002B

[CHECK]

Check that the SRS warning light goes off.



Check for DTCs. If a DTC is output, perform troubleshooting for the DTC. If B1111 or B1112 is output, replace the SRSCM.



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

ERJB040B

ERTC0410

CIRCUIT INSPECTION

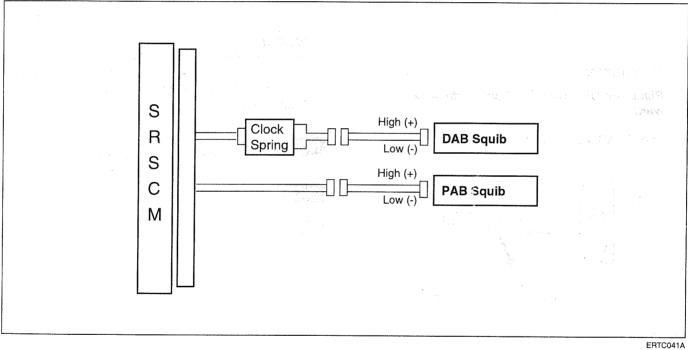
DTC	B1348	DAB Short to ground
D10	B1354	PAB Short to ground

CIRCUIT DESCRIPTION

The squib circuit consists of the SRSCM, clock spring, DAB and PAB. It causes the SRS to deploy when the SRS deployment conditions are satisfied. The above DTCs are recorded when a short to ground is detected in the squib circuit.

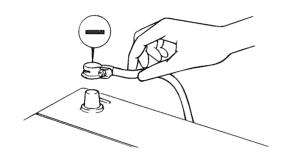
DTC Detecting Condition	Trouble Area	
 Short circuit in squib wire harness (to ground) Squib malfunction Clock spring malfunction SRSCM malfunction 	DAB squibPAB squibClock springSRSCMWire harness	

WIRING DIAGRAM



INSPECTION PROCEDURE

- 1. Preparation
 - 1) Disconnect the negative (-) terminal cable from the battery, and wait at least 30 seconds.
 - 2) Remove the DAB module.
 - Disconnect the connectors of the PAB, left and right side airbags, belt pretensioners and satellite sensors.
 - 4) Disconnect the SRSCM connector.

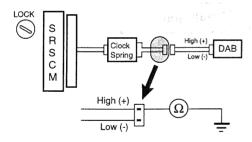


EADA011A



Place the DAB with the front surface facing upward.

2. Check DAB squib circuit.

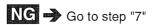


ERA9011B

[CHECK]

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

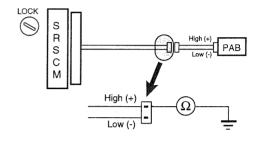
Resistance : ∞





ERTC041B

3. Check the PAB squib circuit.



ERA9011C

[CHECK]

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

Resistance : ∞

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

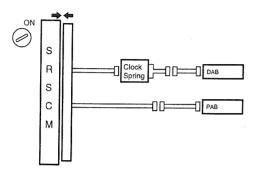


ERTC041C

4. Check the SRSCM.

[PREPARATION]

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



ERTC041D

[CHECK]

- Turn the ignition switch to ON, and wait at least 30 seconds.
- Clear the malfunction code stored in the memory with the Hi-Scan Pro.
- 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 Hi-Sacn Pro, check the DTC. There is no DTC.

[HINT]

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

NG -> Replace the SRSCM.



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

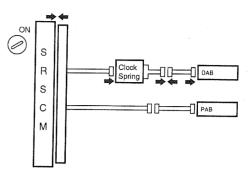
ERJB041F

5. Check the DAB squib.

[PREPARATION]

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

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



ERTC041E

[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 the Hi-Scan Pro.
- 3. Turn the ignition switch to LOCK, and wait for 30 seconds.
- Turn the ignition switch to ON, and wait for 30 seconds.
- Using the Hi-scan, check the DTC.There is no DTC.

[HINT]

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

NG -> Replace the DAB.



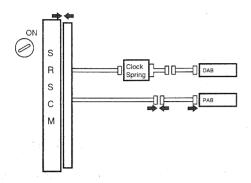
From the results of the above inspection, the malfunctioning part can now be considered normal.

ERJB041G

6. Check the 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 the PAB connector.
- 4. Connect the negative (-) terminal cable from the battery, and wait for 30 seconds.



ERTC041F

[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 Hi-Scan Pro.
- 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 Hi-Sacn Pro, check the DTC. There is no DTC.

[HINT]

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

NG -> Replace the PAB.



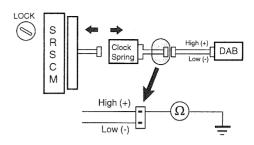
From the results of the above inspection, the malfunctioning part can now be considered normal.

ERJB041H

Check the clock spring circuit.

[PREPARAION]

Disconnect the connector between the SRSCM and the clock spring.



ERKB010B

[CHECK]

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

Resistance : ∞

NG -> Replace the clock spring.



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

ERDA027R

ERTC0420

CIRCUIT INSPECTION

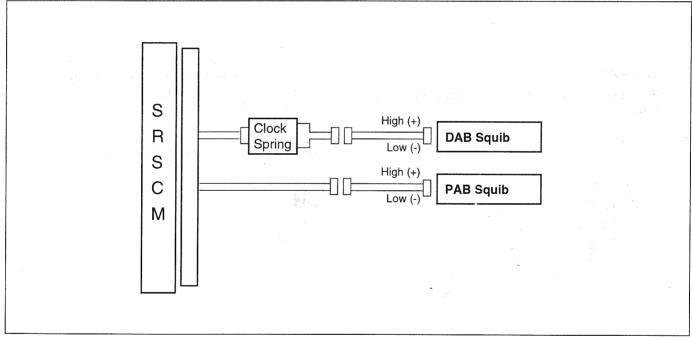
DTC	B1349	DAB Short to battery	
DIC	B1355	PAB Short to battery	

CIRCUIT DESCRIPTION

The squib circuit consists of the SRSCM, clock spring, DAB and PAB. 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 Clock spring malfunction SRSCM malfunction 	DAB squibPAB squibWire harness

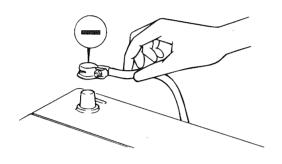
WIRING DIAGRAM



ERTC041A

INSPECTION PROCEDURE

- 1. Preparation
 - Disconnect the negative (-) terminal cable from the battery, and wait at least 30 seconds.
 - 2) Remove the DAB module.
 - 3) Disconnect the connectors of the PAB, left and right side airbags, belt pretensioners and satellite sensors.
 - Disconnect the SRSCM connector.



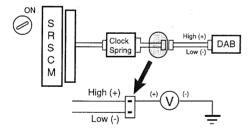
EADA011A



/ CAUTION

Place the DAB with the front surface facing upward.

Check the DAB squib circuit.

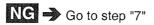


ERA90110

[CHECK]

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

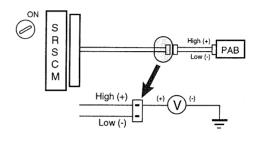
Voltage: 0 V





ERTC042B

Check the PAB squib circuit.



ERA9011P

[CHECK]

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

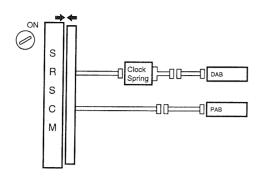
Voltage: 0 V

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



ERTC042C

4. Check the SRSCM.



ERTC041D

[PREPARATION]

- Connect the connector to the SRSCM.
- Using a service wire, connect the DAB high and low on the clock spring side of the connector between the clock spring and the DAB.
- Using a service wire, connect the PAB high and low on the SRSCM side of the connector between the SRSCM and the PAB.
- 4. Connect negative (-) battery cable to the battery, and wait at least 30 seconds.

[CHECK]

- 1. Turn the ignition switch to ON, and wait at least 30 seconds.
- Clear the malfunction code stored in memory with Hi-Scan Pro.
- 3. Turn the ignition switch to LOCK, and wait at least 30 seconds.
- 4. Turn the ignition switch to ON, and wait at least 30 seconds.
- 5. Using Hi-Scan Pro, check the DTC. There is no DTC.

[HINT]

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

NG -> Replace the SRSCM.



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

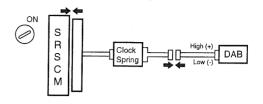
ERJB041F

Check the DAB squib.

[PREPARATION]

- 1. Turn the ignition switch to LOCK.
- 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.



ERA9011U

[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 the Hi-Scan Pro.
- 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 Hi-Scan Pro, check the DTC. There is no DTC.

HINT

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

NG -> Replace the DAB.



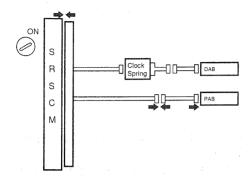
From the results of the above inspection, the malfunctioning part can now be considered normal.

ERJB041G

6. Check the 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 the PAB connector.
- 4. Connect the negative (-) terminal cable from the battery, and wait for 30 seconds.



ERTC041F

[CHECK]

- Turn the ignition switch to ON, and wait for at least 30 seconds.
- 2. Clear the malfunction code stored in the memory with Hi-Scan Pro.
- 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 Hi-Sacn Pro, check the DTC. **DTC is not output.**

[HINT]

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

NG -> Replace the PAB.



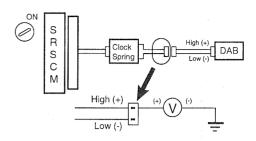
From the results of the above inspection, the malfunctioning part can now be considered normal.

ERJB041H

7. Check the clock spring.

[PREPARAION]

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



ERA90110

[CHECK]

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

Voltage: 0V

NG -> Replace the clock spring.



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

ERDA027R

ERUC4300

CIRCUIT INSPECTION

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

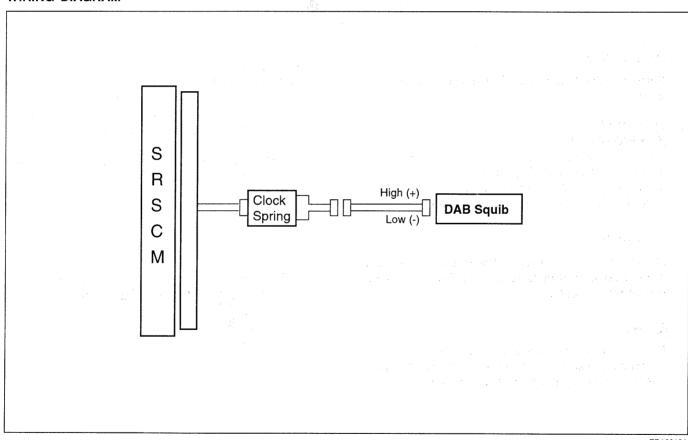
CIRCUIT DESCRIPTION

The DAB squib circuit consists of the SRSCM, the clock spring, the DAB. It causes the airbag to deploy when the airbag deployment conditions are satisfied. The above DTCs are recorded when the DAB circuit is open or the

DAB resistance too high or low is detected in the DAB squib circuit.

DTC Detecting Condition	Trouble Area	
 Too high or low resistane between DAB high (+) wiring harness and DAB low (-) wiring harness of squib. 	DAB squib	
DAB malfunctionClock spring malfunctionSRSCM malfunction	Clock springSRSCMWire harness	

WIRING DIAGRAM

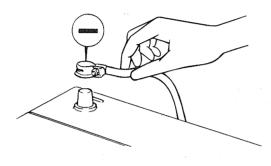


ERA9012A

INSPECTION PROCEDURE

1. Preparation

- Disconnect the negative (-) terminal cable from the battery, and wait at least 30 seconds.
- 2) Remove the DAB module.
- Disconnect the connectors of the PAB, left and right side airbags, belt pretensioners and satellite sensors.
- 4) Disconnect the SRSCM connector.



EADA011A



Place the DAB with the front surface facing upward.

2. Check the DAB resistance.

[PREPARATION]

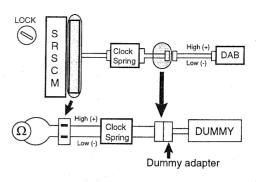
Release the airbag activation prevention mechanism on SRSCM side of airbag squib side. Connect the dummy (0957A-38200) and dummy adapter (0957A-38400) to the clock spring side connector.



Never attempt to measure the circuit resistance of the airbag module (squib) even if you are using the specified tester.

NOTE

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



ERKB010C

[CHECK]

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

1.8 $\Omega \leq R \leq$ 3.4 Ω



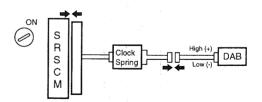


ERJB043A

Check the 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.



ERA9011U

[CHECK]

- Turn the ignition switch to ON, and wait for at least 30 seconds.
- Clear the malfunction code stored in the memory with the Hi-Scan Pro.
- 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 Hi-Scan Pro, check the DTC. There is no DTC.

[HINT]

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

NG -> Replace the DAB.



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

ERJB041G

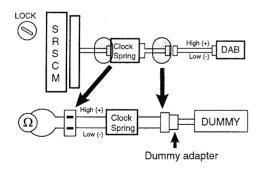
Check the clock spring.

[PREPARAION]

Disconnect the connector between the SRSCM clock spring, and connect the dummy connector (0957A-38200) and dummy adapter (0957A-38400) to the clock spring side connector.

₩ NOTE

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



ERKB010D

[CHECK]

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

1.8 $\Omega \le R \le 3.4 \Omega$





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

ERDA027R

ERTC0440

CIRCUIT INSPECTION

DIC	B1352	PAB resistance too high (R \geq 5.4 Ω)
DIC	B1353	PAB resistance too low (R \leq 0.4 Ω)

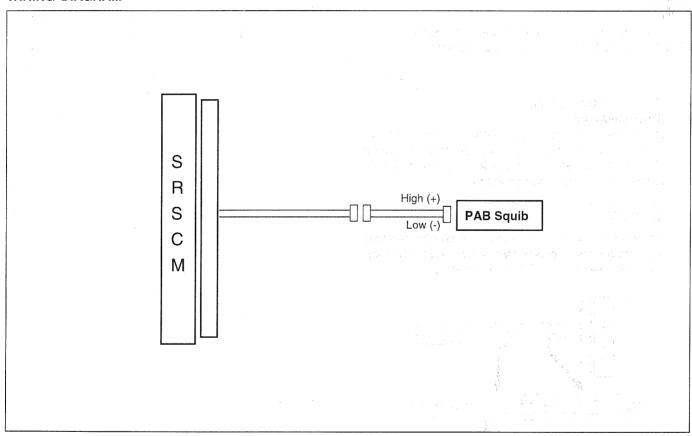
CIRCUIT DESCRIPTION

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 the PAB circuit is open or the PAB resistance too high or low is detected in the PAB squib circuit.

DTC Detecting Condition		Trouble Area
 Too high or low resistane between PAB high (+) wiring harness and PAB low (-) wiring harness of squib. 	• PAB squib	
PAB malfunctionSRSCM malfunction	SRSCMWire harness	

WIRING DIAGRAM

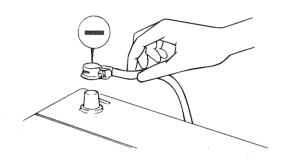


ERA9012E

INSPECTION PROCEDURE

1. Preparation

- 1) Disconnect the negative (-) terminal cable from the battery, and wait at least 30 seconds.
- 2) Remove the DAB module.
- Disconnect the connectors of the PAB, left and right side airbags, belt pretensioners and satellite sensors.
- 4) Disconnect the SRSCM connector.



EADA011A

(CAUTION

Place the DAB with the front surface facing upward.

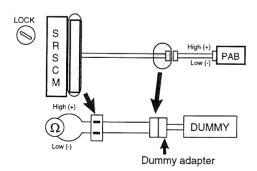
2. Check the PAB resistance.

[PREPARATION]

Release the airbag activation prevention mechanism on the SRSCM side of the airbag squib side. Connect the dummy (0957A-38200) and dummy adapter (0957A-38300) to PAB connector of the SRSCM connector side.

NOTE

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



ERKB010E

[CHECK]

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

1.6 $\Omega \leq R \leq$ 2.8 Ω

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

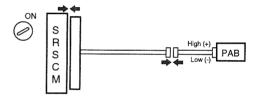


ERJB044A

3. Check the PAB squib.

[PREPARATION]

- 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 to the battery, and wait for 30 seconds.



ERA9011V

[CHECK]

- Turn the ignition switch to ON, and wait for at least 30 seconds.
- 2. Clear the malfunction code stored in the memory with the Hi-Scan Pro.
- 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 Hi-Scan Pro, check the DTC. There is no DTC.

RT-36

[HINT]

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

NG → Replace the PAB.



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

ERJB041H

ERTC0450

CIRCUIT INSPECTION

DTC	DOEGO	Marring lanes failure
DIC	DZ300	Warning lamp failure
		J

CIRCUIT DESCRIPTION

The SRS warning lamp is located on the instrument cluster. When the airbag system is normal, the SRI flashes for approx. imately 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 lights up to inform the driver of the abnormality. The SRSCM measures the voltage at the airbag SRI (Malfunction Indicator Lamp) output pin, both when the lamp is on and when the lamp is off, to detect whether the commanded state matches the actual state.

INSPECTION PROCEDURE

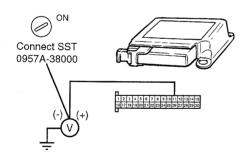
1. Check the fuse.

[PREPARATION]

- 1. Remove airbag fuse and airbag warning lamp fuse from the junction block.
- 2. Inspect the fuses.
- 3. Replace if necessary.
- 2. Check the SRS warning lamp circuit.

[PREPARATION]

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



ERTC040A

[CHECK]

 Measure voltage of pin 11 on the harness side connector of the SRSCM.

Voltage: 9-16.5V

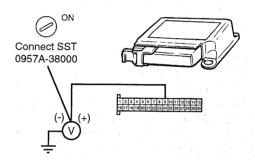
NG Check the SRS warning light bulb/repair the SRS warning light circuit.



ERDA032A

2. Check the SRS SRI (Service Reminder Indicator).

OK: SRS SRI ON



ERTC045A

NG

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



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

ERDA032B

ERTC0460

CIRCUIT INSPECTION

	B1620	Airbag unit internal failure
DTC	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. Safing 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 watch dog 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.

AIRBAG MODULE DISPOSAL PROCEDURES

Before 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 MODULE DISPOSAL

FIELD DEPLOYMENT PROCEDURES ERTC0600



(CAUTION

When handling the deployed airbag be careful that not the dust enters your eyes and always wear

ΑI

gloves to avoid direct contact with the dust.	
AIRBAG REMOTE DEPLOYMENT DEVICES	
Tool, Number, Name	Use
Deployment tool (0957A-34100A) SRS DEPLOYMENT ADAPTER HARNESS DAB: 0957A-38500 PAB: 0957A-38100	Deployment inside the vehicle (if the vehicle will no longer be driven)

DISPOSAL PLAN

Take the following disposal steps.

CASE		DISPOSAL PLAN	
Abnormal problems i	n airbag module	Deploy and discard	
Car scrapping	DAB, PAB	Deploy the airbag module with the SST	
Crash (Deployed)		Discard	1.7

UNDEPLOYED AIRBAG MODULE DISPOSAL ERFB0230

CAUTION

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

DEPLOYMENT INSIDE THE VEHICLE

when vehicle will no longer be driven

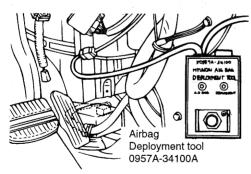
- Open all windows and doors of the vehicle. Move the vehicle to an isolated spot.
- Disconnect the negative (-) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle



/ CAUTION

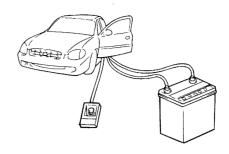
Wait at least 30 seconds after disconnecting the battery cable before doing any further work.

- Remove the center crash pad side cover.
- Remove Airbag SRSCM connector. 4.
- Connect deployment tool to the connector of each module.



ERDA034B

At location as far away from the vehicle as possible, press the push button (removed from the vehicle) to deploy the airbag.



ERA9009B

/ CAUTION

- 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.
- The inflator will be quite hot immediately following the deployment, so wait at least 30 minutes to allow it to cool before attempting to handle it. Although not poisonous, do not inhale gas from airbag deployment. See Deployed Airbag Module Disposal Procedures for post-deployment handling instructions.
- 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 ERJB0620

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

- The inflator will be quite hot immediately following deployment, so wait at least 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 your eyes or on your 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.



ERA9009C

Be sure to always wash your hands after completing this operation.