

## GENERAL INFORMATION

The Supplemental Restraint System (SRS) is designed to supplement the driver's and front passenger's seat belts to help reduce the risk or severity of injury to the driver and front passenger by activating and deploying the air bag in certain frontal collisions.

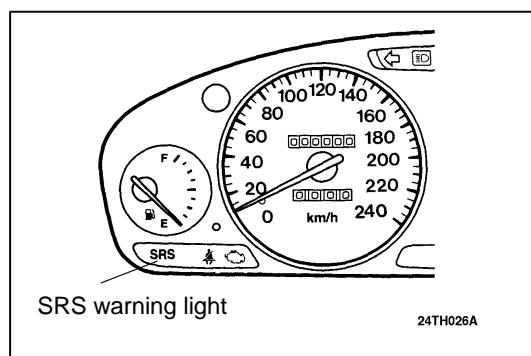
The SRS Airbag consists of two air bag modules, SRS air bag control unit (SRS-ECU), SRS warning light, and clock spring. The driver's air bag is located in the centre of the steering wheel and the passenger's airbag above the glove box. Each air bag is made up of a folded air bag and an inflator unit. The control unit under the floor console monitors the system and has a safing G sensor and an analog G sensor. The warning light on the

instrument panel indicates the operational status of the SRS. The clock spring is installed in the steering column.

Only authorised service personnel should do work on or around the SRS components. Those service personnel should read this manual carefully before starting any such work.

### Caution

**Extreme care must be used when servicing the SRS or performing repairs on components mounted near SRS components to avoid injury to the service personnel (by inadvertent deployment of the air bags) or the driver (by rendering the SRS inoperative).**



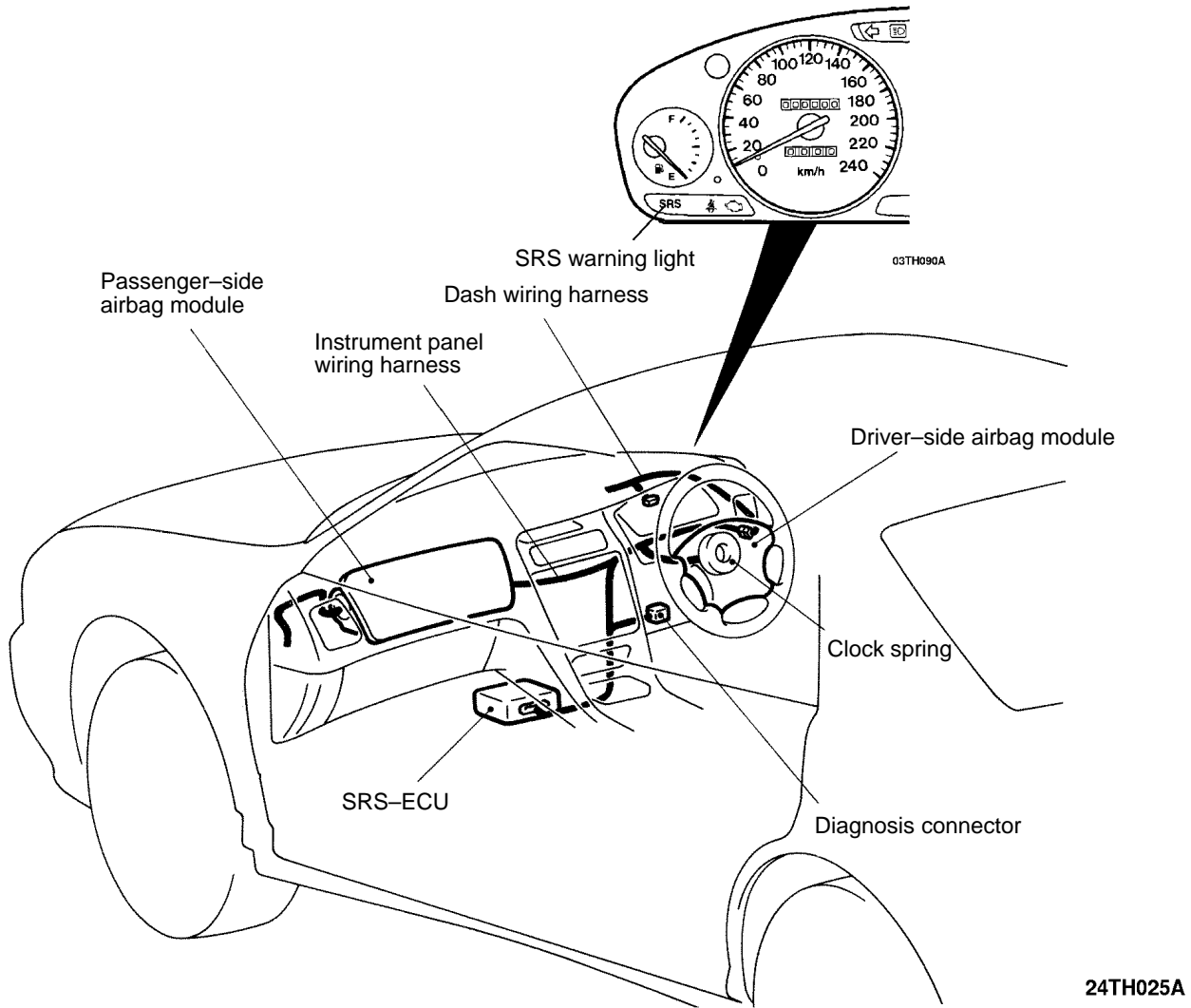
### SRS WARNING LIGHT FUNCTION

The SRS-ECU monitors the SRS Airbag system and stores data concerning any detected faults in the system. When the ignition key is in "ON" or "START" position, the SRS warning light should illuminate for about 7 seconds and then turn off and remain extinguished for at least 5 seconds. That indicates that the SRS system is in operational order. If the SRS warning light does any of the following, immediate inspection by an authorised dealer is needed.

- (1) The SRS warning light does not illuminate as described above.
- (2) The SRS warning light stays on for more than 7 seconds.
- (3) The SRS warning light illuminates while driving.

If a vehicle's SRS warning light is in any of these three conditions when brought in for inspection, the SRS system must be inspected, diagnosed and serviced in accordance with this manual.

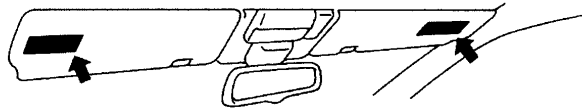
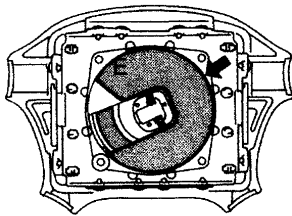
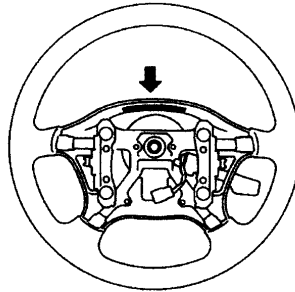
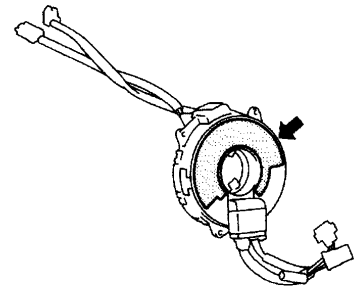
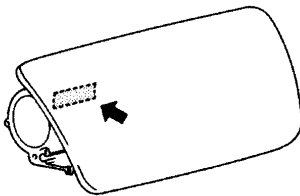
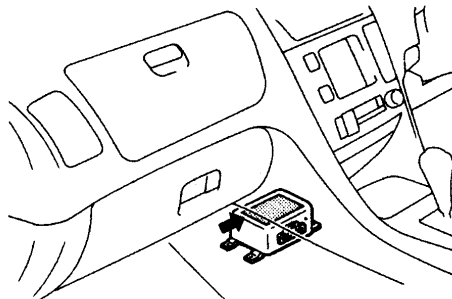
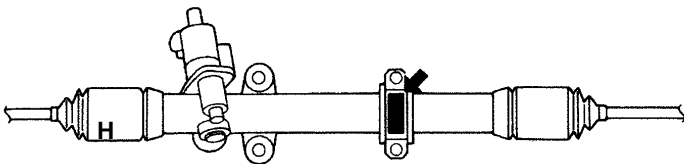
## CONSTRUCTION DIAGRAM



**WARNING/CAUTION LABELS**

A number of caution labels related to the SRS are found in the vehicle, as shown in the following

illustration. Follow label instructions when servicing SRS. If labels are dirty or damaged, replace them.

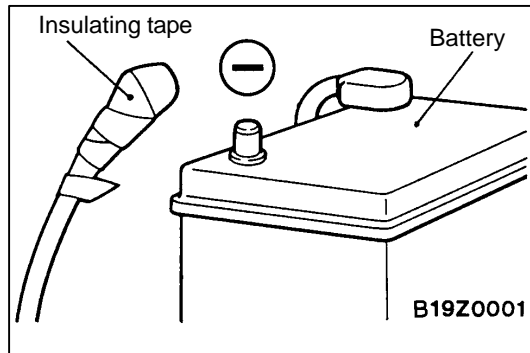
**Sun visor****Air bag module (driver's side)****Steering wheel****Clock spring****Air bag module  
(front passenger's side)****SRS-ECU****Steering gear box**

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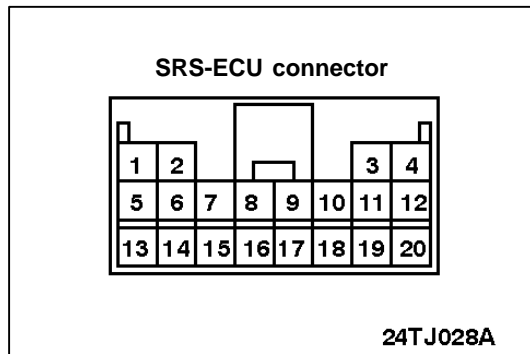
## SRS SERVICE PRECAUTIONS

1. In order to avoid injury to yourself or others from accidental deployment of the air bag during servicing, read and carefully follow all the precautions and procedures described in this manual.
2. Do not use any electrical test equipment on or near SRS Airbag components, except those specified in [special tools](#).
3. **Never Attempt to Repair the Following Components:**
  - SRS air bag control unit (SRS-ECU)
  - Clock Spring
  - Air Bag Module

If any of these components are diagnosed as faulty, they should only be replaced, in accordance with the [INDIVIDUAL COMPONENT SERVICE PROCEDURE](#) in this manual.



4. **After disconnecting the battery cable, wait 60 seconds or more before proceeding with the following work. The SRS system is designed to retain enough voltage to deploy the air bag for a short time even after the battery has been disconnected, so serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cables are disconnected.**



5. Do not attempt to repair the wiring harness connectors of the SRS airbag. If any of the connectors are diagnosed as faulty, replace the wiring harness. If the wires are diagnosed as faulty, replace or repair the wiring harness according to the following table.

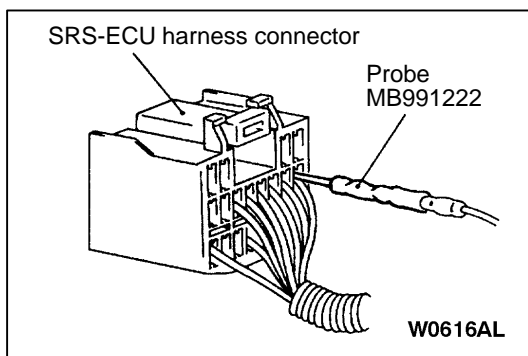
SRS-ECU terminal No.	Destination of harness	Corrective action
1 to 6	—	—
7	Body wiring harness → Ground	Correct or replace each wiring harness.
8	Body wiring harness → SRS warning light	
9	Body wiring harness → Air bag module (Front passenger's side)	
10		
11	Body wiring harness → Clock spring → Air bag module (Driver's side)	Correct or replace each wiring harness. Replace clock spring.
12		
13	Body wiring harness → Junction block (fuse No.4)	Correct or replace each wiring harness.
14	Body wiring harness → BEM (crash detector)	
15	Body wiring harness → Ground	
16	Body wiring harness → Junction block (fuse No.13)	
17 to 19	—	—
20	Body wiring harness → Diagnosis connector	Correct or replace body wiring harness.

6. SRS components should not be subjected to heat over 93°C, so remove the SRS-ECU, air bag module and clock spring before drying or baking the vehicle after painting.
7. Whenever you finish servicing the SRS airbag, check **warning light operation** to make sure that the system functions properly.
8. Make certain that the ignition switch is OFF when the MUT-II is connected or disconnected.

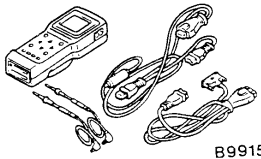
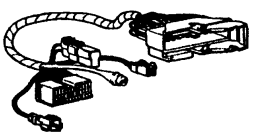
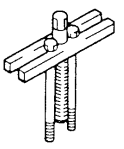
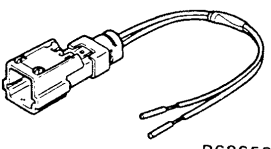
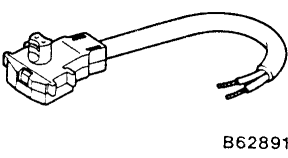

**WARNING**

**AS SERIOUS INJURY CAN RESULT FROM UNINTENDED DEPLOYMENT OF THE AIRBAGS, USE ONLY THE PROCEDURES AND EQUIPMENT SPECIFIED IN THIS MANUAL.**


9. If checks are carried out using the SRS-ECU harness connector, observe the following procedures:  
 Insert a small probe (MB991222) into the connector from the harness (rear) side, and connect the tester to this probe. If any tool other than a small probe is used, damage to the harness and other components will result. Never insert the probe directly to the terminals from the front of the connector. The terminals are plated to increase their conductivity, so that if they are touched directly by the probe, the plating may break, which will cause drops in reliability.



## SPECIAL TOOLS

Tool	Tool number and name	Supersession	Application
 B991502	MB991502 MUT-II	–	<ul style="list-style-type: none"> <li>• Reading diagnosis trouble codes</li> <li>• Erasing diagnosis trouble codes</li> <li>• Reading trouble period</li> <li>• Reading erase times</li> </ul>
	MB991613 SRS check harness	–	Checking the SRS electrical circuitry with a digital multi-meter
 B990803	7245 Steering wheel puller	–	Removal of steering wheel
 B686560	MB686560 SRS air bag adaptor harness A	–	<ul style="list-style-type: none"> <li>• Deployment of air bag module inside the vehicle</li> <li>• Deployment of air bag module (front passengers side) outside the vehicle</li> </ul>
 B628919	MR203491 or MB628919 SRS air bag adaptor harness B	–	Deployment of air bag module (driver's side) outside the vehicle
 MB991222	MB991222 Probe (part of harness set MB991223)	–	Checking the SRS electrical circuitry with a digital multi-meter

## TEST EQUIPMENT

Tool	Name	Use
 13R0746	Digital multi-meter Use a multi-meter for which the maximum test current is 2 mA or less at the minimum range of resistance measurement	Checking the SRS electrical circuitry with SRS check harness

## **TROUBLESHOOTING**

### **STANDARD FLOW OF DIAGNOSIS TROUBLESHOOTING**

Refer [Group 00](#).

#### **DIAGNOSIS FUNCTION**

#### **DIAGNOSIS CODES CHECK**

Connect the MUT-II to the diagnosis connector (16-pin) under the instrument under cover, then check diagnosis codes.

(Refer [Group 00](#).)

#### **ERASING DIAGNOSIS CODES**

(Refer [Group 00](#).)

**INSPECTION CHART FOR DIAGNOSIS TROUBLE CODES**

Inspect according to the inspection chart that is appropriate for the diagnosis code.

Code No.	Diagnosis item
14	Analog G-sensor system in the SRS-ECU
15,16	Safing G-sensor system in the SRS-ECU
21, 22, 61, 62*	Driver's air bag module (squib) system
24, 25, 64, 65*	Front passenger's air bag module (squib) system
31, 32	SRS-ECU DC-DC converter system
34*	Connector lock system
35	SRS-ECU (deployed air bag) system
41*	IG <sub>1</sub> (A) power circuit system (fuse No.13)
42*	IG <sub>1</sub> (B) power circuit system (fuse No.4)
43	SRS warning light drive circuit system
	Light does not illuminate. Light does not switch off.
44*	SRS warning light drive circuit system
45	Internal circuit system of non-volatile memory (EEPROM) inside SRS-ECU
51, 52	Driver's air bag module (squib) system
54, 55	Front passenger's air bag module (squib) system

**NOTE**

- (1) \*: If the vehicle condition returns to normal, the diagnosis code will be automatically erased, and the SRS warning light will return to normal.
- (2) If the vehicle has a discharged battery it will store the diagnosis codes 41 or 42. When these diagnosis codes are displayed, check the battery.

**INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSIS CODE**

Code No.14 Analog G-sensor system in the SRS-ECU	Probable cause
<p>The SRS-ECU monitors the output of the analog G-sensor inside the SRS-ECU. It outputs this code when any of the following are detected.</p> <ul style="list-style-type: none"> <li>• When the analog G-sensor is not operating</li> <li>• When the characteristics of the analog G-sensor are abnormal</li> <li>• When the output from the analog G-sensor is abnormal</li> </ul>	<ul style="list-style-type: none"> <li>• Malfunction of SRS-ECU</li> </ul>

Replace the SRS-ECU.

Code No.15 or 16 Safing G-sensor system in the SRS-ECU	Probable cause
<p>This code is output if there is a short or open circuit inside the SRS-ECU between the terminals of the safing G-sensor.</p> <p>The trouble causes for each diagnosis code No. are as follows.</p>	<ul style="list-style-type: none"> <li>• Malfunction of SRS-ECU</li> </ul>

Code No.	Trouble symptom
15	Short circuit in the safing G-sensor
16	Open circuit in the safing G-sensor

Replace the SRS-ECU.

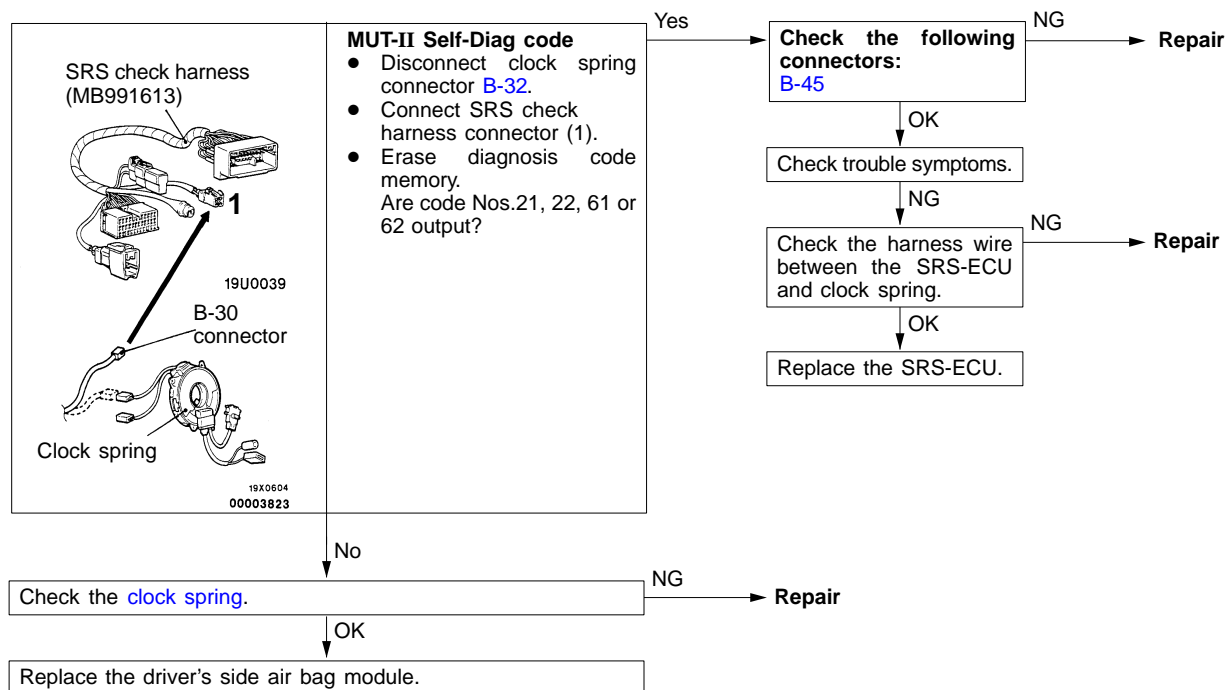


Code No.21, 22, 61 or 62 Driver's side air bag module (squib) system	Probable cause
These diagnosis trouble codes are output if there is abnormal resistance between the input terminals of the driver's air bag module (squib) inside the SRS-ECU. The trouble causes for each diagnosis trouble code No. are as follows. However, as for code Nos.21 and 22, if the vehicle's condition returns to normal, SRS warning lamp will go out. (diagnosis code will remained stored)	<ul style="list-style-type: none"> <li>• Malfunction of clock spring</li> <li>• Partially open as clock spring is not in neutral position</li> <li>• Malfunction of wiring harnesses or connectors</li> <li>• Malfunction of driver's side air bag module (squib)</li> <li>• Malfunction of SRS-ECU</li> </ul>

Code No.	Trouble symptom
21	<ul style="list-style-type: none"> <li>• Short in driver's air bag module (squib) or harness short</li> <li>• Short in clock spring</li> <li>• Poor connector contact *</li> </ul>
22	<ul style="list-style-type: none"> <li>• Open circuit in driver's side air bag module (squib) or open harness</li> <li>• Open circuit in clock spring</li> <li>• Disconnected driver's air bag module (squib) connector</li> <li>• Partially open as clock spring is not in neutral position</li> <li>• Malfunction of connector contact</li> </ul>
61	<ul style="list-style-type: none"> <li>• Short in driver's air bag module (squib) harness leading to the power supply</li> </ul>
62	<ul style="list-style-type: none"> <li>• Short in driver's air bag module (squib) harness leading to the ground</li> </ul>

**Note:**

\*: The shorting bars, which short positive (+) and negative (–) wires to prevent the air bags from accidental deployment during the disconnection of the connector, are set in the squib circuit connectors. In a defective connector, the short-bar may be still working even after the connection of the squib.

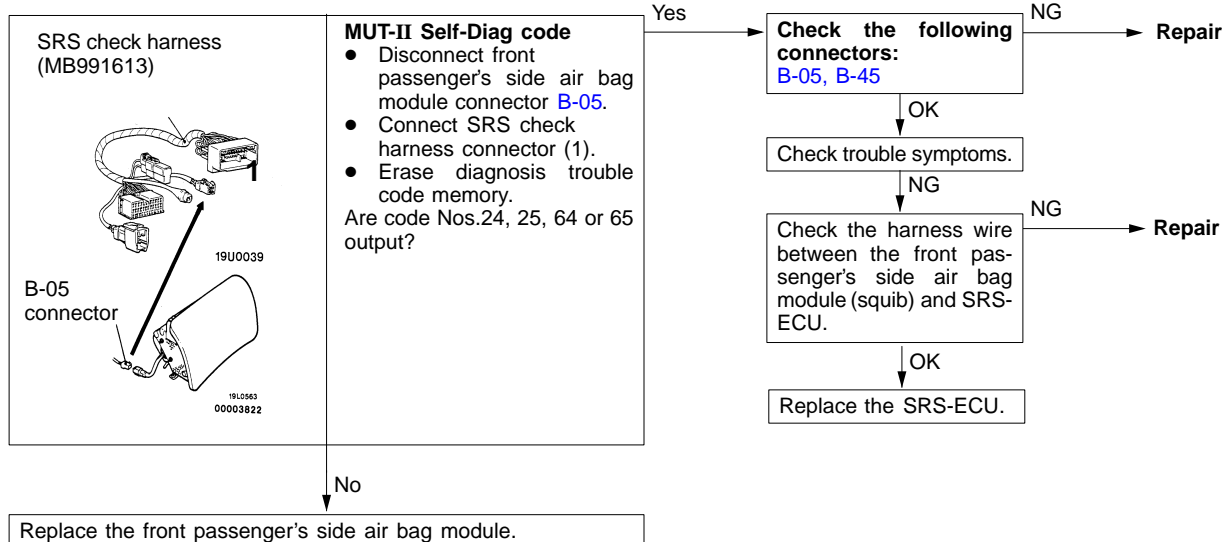


Code No.24, 25, 64 or 65 Front passenger's side air bag module (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the front passenger's air bag module (squib) inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follows. However, as for code Nos.24 and 25, if the vehicle's condition returns to normal, SRS warning light will go out. (diagnosis code will remain stored)	<ul style="list-style-type: none"> <li>• Malfunction of wiring harness or connector</li> <li>• Malfunction of front passenger's air bag module (squib)</li> <li>• Malfunction of SRS-ECU</li> </ul>

Code No.	Trouble symptom
24	<ul style="list-style-type: none"> <li>• Short in passenger's air bag module (squib) or harness short</li> <li>• Poor connector contact *</li> </ul>
25	<ul style="list-style-type: none"> <li>• Open circuit in passenger's air bag module (squib) or open harness</li> <li>• Poor connector contact</li> </ul>
64	<ul style="list-style-type: none"> <li>• Short in passenger's air bag module (squib) harness leading to the power supply</li> </ul>
65	<ul style="list-style-type: none"> <li>• Short in passenger's air bag module (squib) harness leading to the ground</li> </ul>

**Note:**

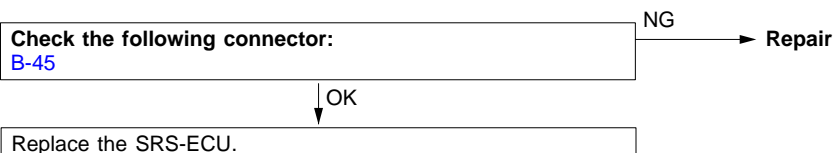
\*: The shorting bars, which short positive (+) and negative (–) wires to prevent the air bags from accidental deployment during the disconnection of the connector, are set in the squib circuit connectors. In a defective connector, the short-bar may be still working even after the connection of the squib.



Code No.31 or 32 SRS-ECU DC-DC converter system	Probable cause
These diagnosis codes are output if the voltage at the SRS-ECU converter terminal is higher (No.31) or lower (No.32) than the specified value for 5 seconds or more. However, if the diagnosis code Nos. 41 and 42 are being output due to a drop in battery voltage, code No. 32 will not be detected.	<ul style="list-style-type: none"> <li>• Malfunction of SRS-ECU</li> </ul>

Replace the SRS-ECU.

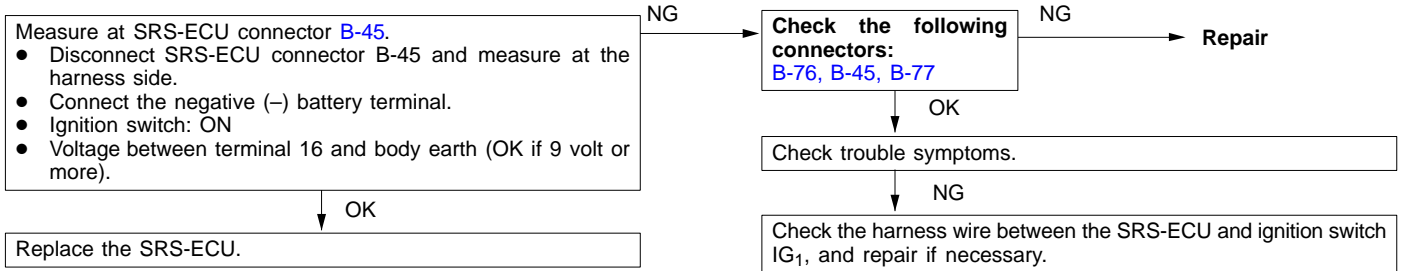
Code No.34 Connector lock system	Probable cause
This diagnosis code is output when the SRS-ECU detects that the SRS-ECU connector is improperly connected. However, if the vehicle condition returns to normal, diagnosis code No.34 will be automatically erased, and the SRS warning light will go out.	<ul style="list-style-type: none"> <li>• Malfunction of connector</li> <li>• Malfunction of SRS-ECU</li> </ul>



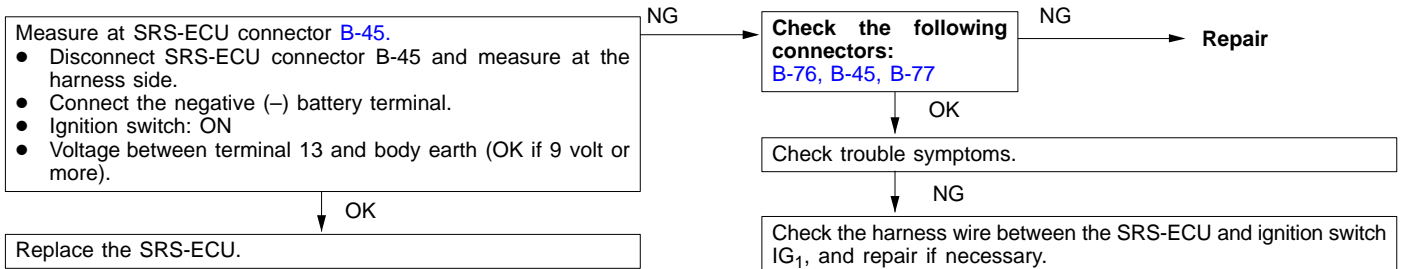
Code No.35 SRS-ECU (deployed air bag) system	Probable cause
This diagnosis code is output after the air bag deploys. If this code is output before the air bag has deployed, the cause is probably a malfunction inside the SRS-ECU.	<ul style="list-style-type: none"> <li>Malfunction of SRS-ECU</li> </ul>

Replace the SRS-ECU.

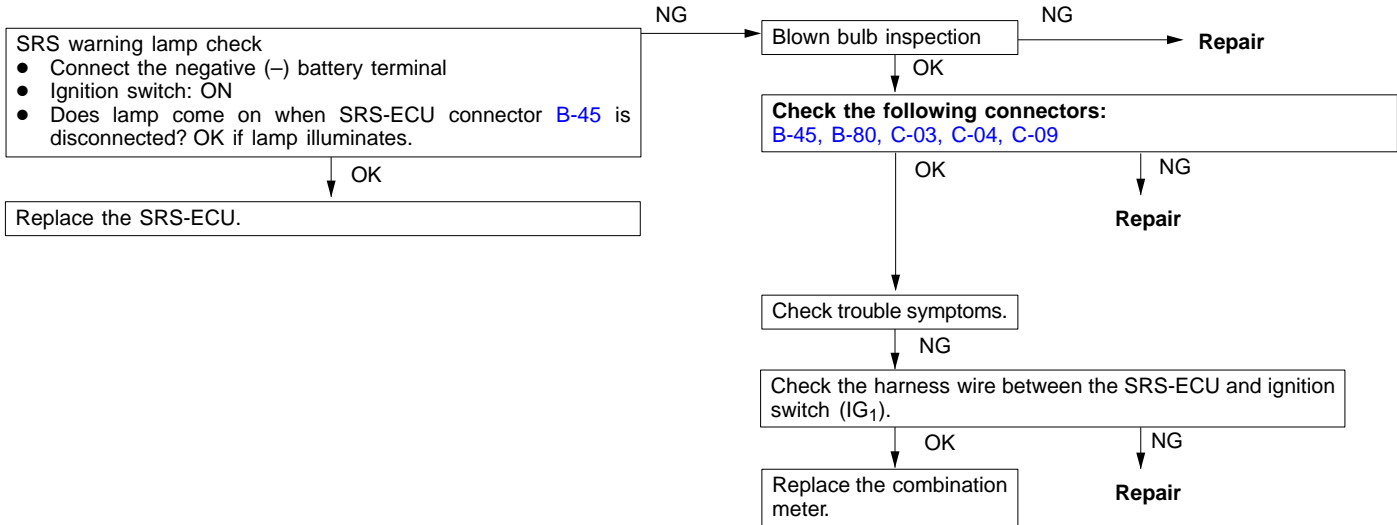
Code No.41 IG <sub>1</sub> (A) power circuit system	Probable cause
<p>This diagnosis code is output if the voltage between the IG<sub>1</sub> terminal (SRS-ECU terminal 16) and ground is lower than the specified value for a continuous period of 5 seconds or more.</p> <p>However, if the vehicle condition returns to normal, diagnosis code No.41 will be automatically erased, and the SRS warning light will switch off. If codes Nos.41 and 42 are displayed together, check the battery first as vehicle may have discharged battery.</p>	<ul style="list-style-type: none"> <li>Malfunction of wiring harnesses or connectors</li> <li>Malfunction of SRS-ECU</li> </ul>



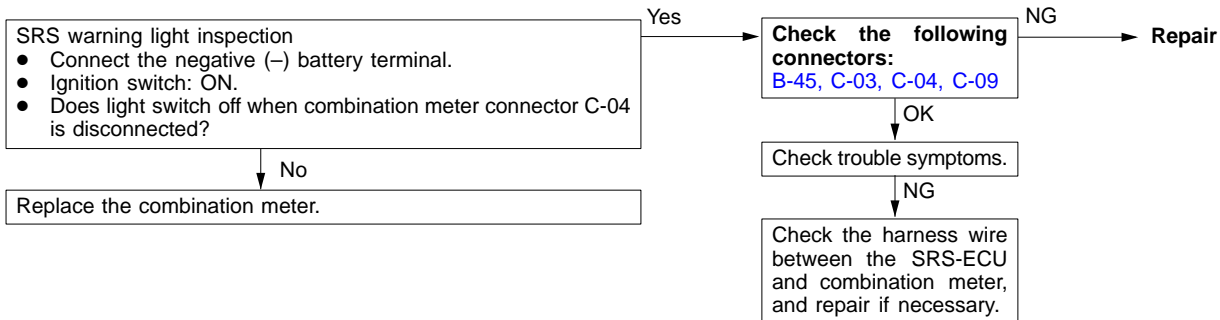
Code No.42 IG <sub>1</sub> (B) power circuit system	Probable cause
<p>This diagnosis code is output if the voltage between the IG<sub>1</sub> terminal (SRS-ECU terminal 13) and ground is lower than the specified value for a continuous period of 5 seconds or more.</p> <p>However, if the vehicle condition returns to normal, diagnosis code No.42 will be automatically erased, and the SRS warning light will switch off.. If codes Nos.41 and 42 are displayed together, check the battery first as vehicle may have discharged battery.</p>	<ul style="list-style-type: none"> <li>• Malfunction of wiring harnesses or connectors</li> <li>• Malfunction of SRS-ECU</li> </ul>



Code No.43 SRS warning light drive circuit system (Light does not illuminate.)	Probable cause
<p>This diagnosis code is output when an open circuit occurs for a continuous period of 5 seconds while the SRS-ECU is monitoring the SRS warning light and the light is OFF (transistor OFF). However, if this code is output due to an open circuit, if the vehicle condition returns to normal, this diagnosis code No.43 will be automatically erased, and the SRS warning light will return to normal.</p>	<ul style="list-style-type: none"> <li>• Malfunction of wiring harness or connector</li> <li>• Blown bulb</li> <li>• Malfunction of SRS-ECU</li> <li>• Malfunction of combination meter</li> </ul>



Code No.43 SRS warning light drive circuit system (Light does not switch off.)	Probable cause
<p>This diagnosis code is output when a short to ground occurs in the harness between the SRS warning light and the SRS-ECU. However, the vehicle condition returns to normal condition, this code will be automatically erased, and SRS warning lamp will go out.</p>	<ul style="list-style-type: none"> <li>• Malfunction of wiring harness or connector</li> <li>• Malfunction of SRS-ECU</li> <li>• Malfunction of combination meter</li> </ul>



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Code No.44 SRS warning light drive circuit system	Probable cause
<p>This diagnosis code is output when a short occurs in the light drive circuit or a malfunction of the output transistor inside the SRS-ECU is detected while the SRS-ECU is monitoring the SRS warning light drive circuit.</p> <p>However, if the vehicle conditions return to normal, the diagnosis code No. 44 will be automatically erased, and the SRS warning light will go out.</p>	<ul style="list-style-type: none"><li>• Malfunction of wiring harnesses or connectors</li><li>• Malfunction of SRS-ECU</li></ul>

Check the [SRS warning light drive circuit system](#). OK → [Replace the SRS-ECU.](#)

Code No.45 SRS-ECU non-volatile memory (EEPROM) and A/D converter system	Probable cause
<p>This diagnosis code is output if there is a malfunction in the SRS-ECU non-volatile memory (EEPROM).</p>	<ul style="list-style-type: none"><li>• Malfunction of SRS-ECU</li></ul>

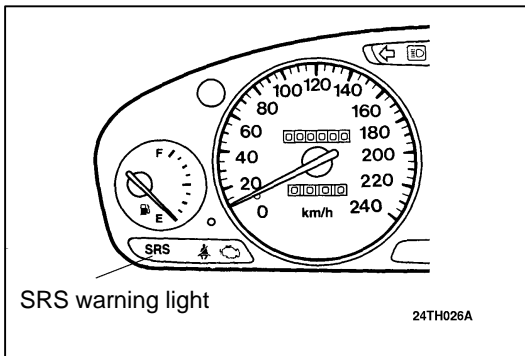
[Replace the SRS-ECU.](#)

Code No.51 or 52 Driver's air bag module (squib ignition drive circuit) system	Probable cause
<p>This diagnosis code is output if a short circuit (No.51) or an open circuit (No.52) is detected in the circuit for the driver's squib.</p>	<ul style="list-style-type: none"><li>• Malfunction of SRS-ECU</li></ul>

[Replace the SRS-ECU.](#)

Code No.54 or 55 Front passenger's air bag module (squib ignition drive circuit) system	Probable cause
<p>This diagnosis code is output if a short circuit (No.54) or an open circuit (No.55) is detected in the circuit for the passenger's squib.</p>	<ul style="list-style-type: none"><li>• Malfunction of SRS-ECU</li></ul>

[Replace the SRS-ECU.](#)



## SRS WARNING LIGHT CHECK

1. Check to be sure that the SRS warning light illuminates when the ignition switch is in the ON position.
2. Check to be sure that it illuminates for approximately 7 seconds and then switch off and remain extinguished for at least 5 seconds.
3. If the above is not the case, inspect for diagnosis codes.

## INSPECTION CHART FOR TROUBLE SYMPTOMS

Get an understanding of the trouble symptoms and check according to the inspection procedure chart.

Trouble symptom		Inspection procedure No.
Communication with MUT-II is not possible.	Communication with all systems is not possible.	1
	Communication is not possible with SRS only.	2
When the ignition key is turned to "ON" (engine stopped), the SRS warning light does not illuminate.		Refer to <a href="#">diagnosis code No.43</a> .
After the ignition switch is turned to ON, the SRS warning light is still on after approximately 7 seconds have passed.		Refer to diagnosis code <a href="#">No.43</a> or <a href="#">No.44</a> .

## INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

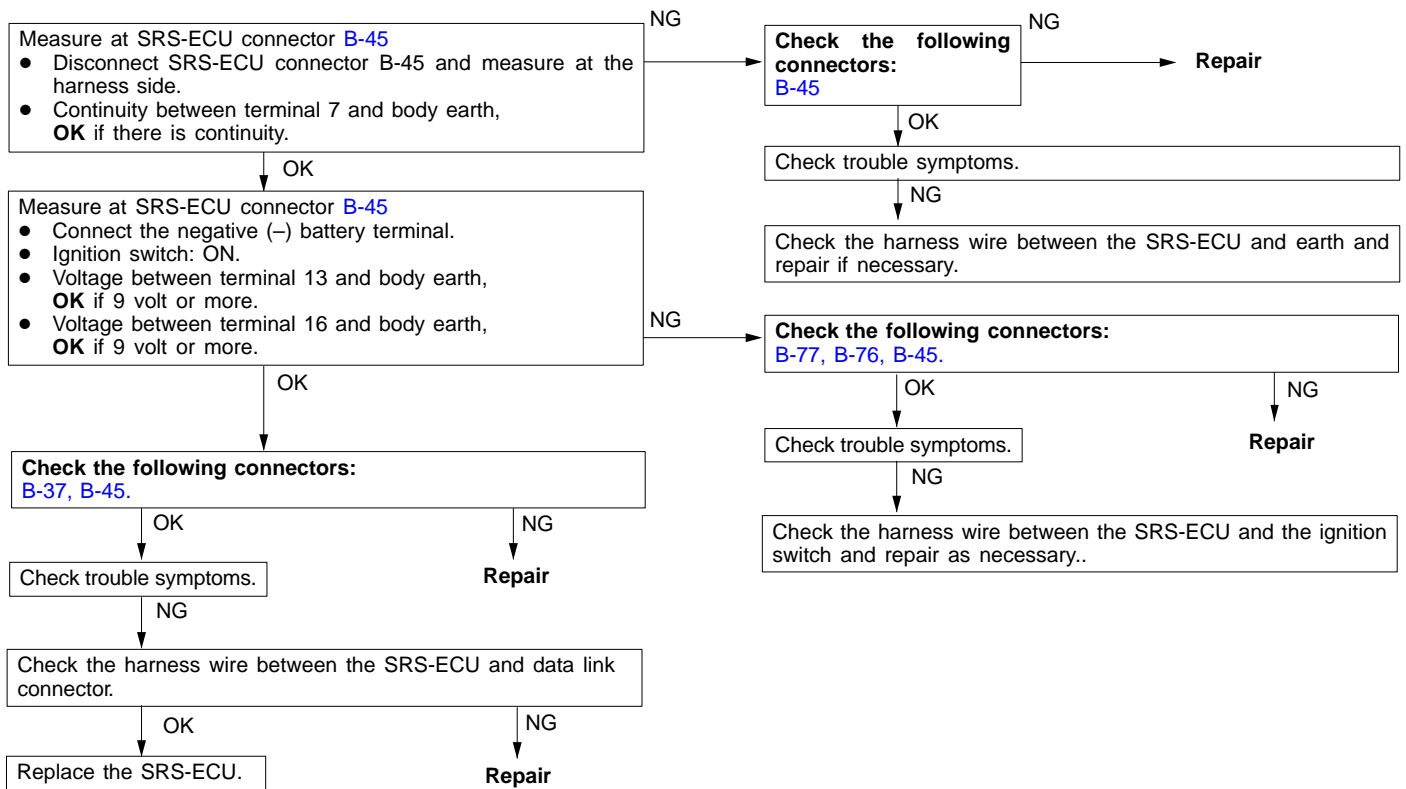
### Inspection Procedure 1

Communication with MUT-II is not possible. (Communication with all systems is not possible.)	Probable cause
The cause is probably in the power supply system (including ground circuit) of the diagnosis line.	<ul style="list-style-type: none"> <li>• Malfunction of wiring harnesses or connectors</li> </ul>

Refer [Group 13A](#).

### Inspection Procedure 2

Communication with MUT-II is not possible. (Communication is not possible with SRS only.)	Probable cause
If communication is not possible only with the SRS, the cause is probably an open circuit in the diagnosis output circuit of the SRS or in the power circuit (including ground circuit).	<ul style="list-style-type: none"> <li>• Malfunction of wiring harnesses or connectors</li> <li>• Malfunction of SRS-ECU</li> </ul>



## SRS MAINTENANCE

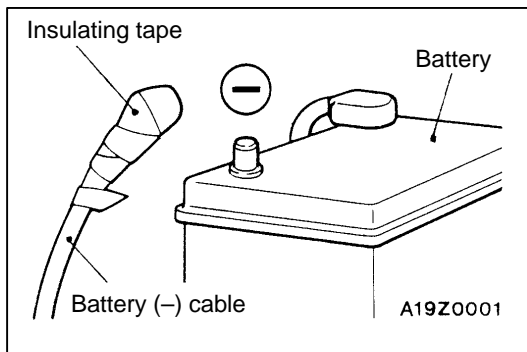
The SRS must be inspected by an authorised dealer up to 10 years after the date of vehicle registration.

### SRS COMPONENT VISUAL CHECK

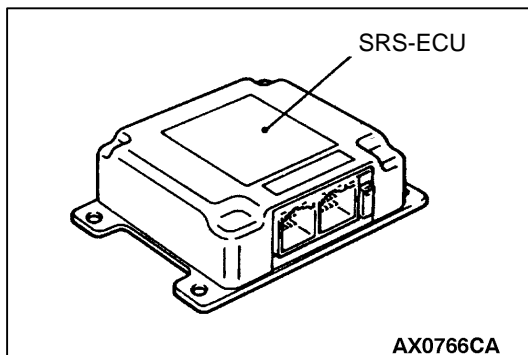
Turn the ignition key to the “LOCK” position, disconnect the negative battery cable and tape the terminal.

#### Caution

**Wait at least 60 seconds after disconnecting the battery cable before doing any further work. (Refer [SRS service precautions.](#))**





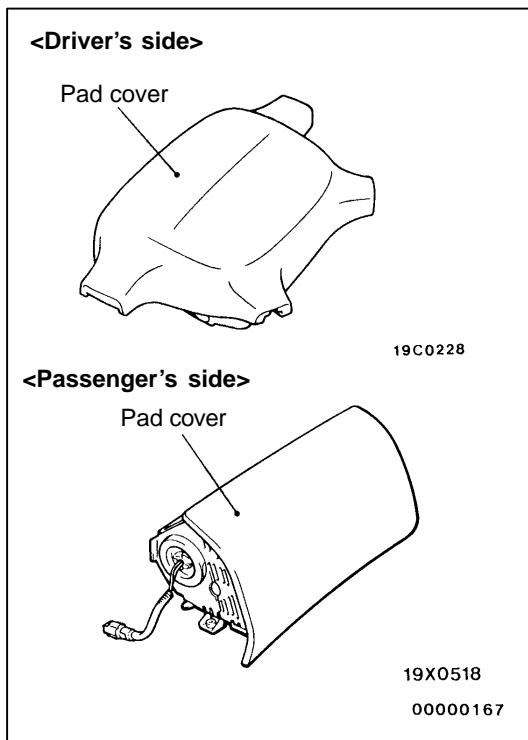
**SRS CONTROL UNIT (SRS-ECU)**

1. Check SRS-ECU case and brackets for dents, cracks, deformation or rust.

**Caution**

The SRS may not activate if the SRS-ECU is not installed properly, which could result in serious injury or death to the vehicle's driver or front passenger.

2. Check connector for damage, and terminals for deformation or rust.  
Replace SRS-ECU if it fails visual check. (Refer [ECU removal & Installation.](#))

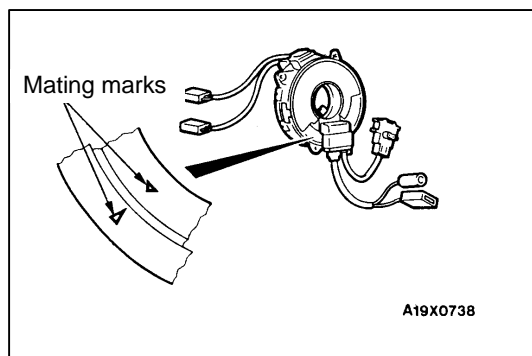
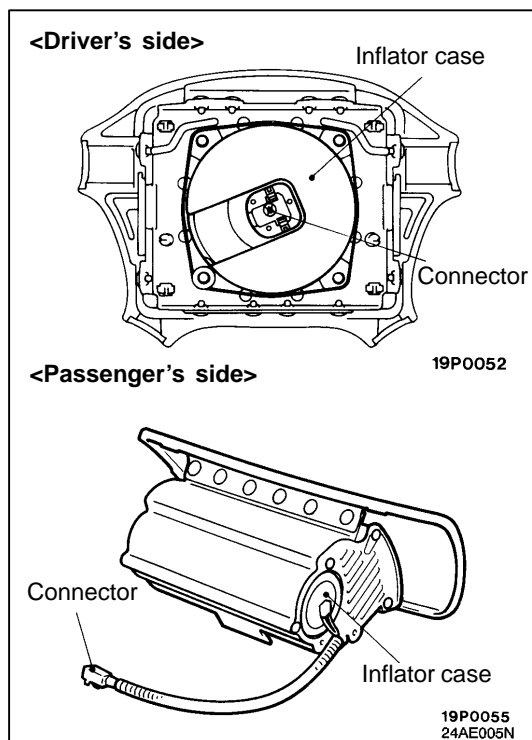
**AIR BAG MODULES, STEERING WHEEL AND CLOCK SPRING**

1. Remove the air bag modules, steering wheel and clock spring. (Refer [On vehicle service precautions.](#))

**Caution**

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

2. Check pad cover for dents, cracks or deformities.



3. Check connector for damage, terminals for deformities, and harness for binding.
4. Check air bag inflator case for dents, cracks or deformities.
5. Check harness (built into steering wheel) and connectors for damage and terminals for deformities.

6. Check clock spring connectors and protective tube for damage, and terminals for deformation.
7. Visually check the clock spring case for damage.
8. Align the mating marks of the clock spring and after turning the vehicles wheels to the straight ahead position, install the clock spring to the column switch..

#### Mating Mark Alignment

Turn the clock spring clockwise fully, and then turn it back approx. 3 4/5 turns counterclockwise to align the mating marks.

#### Caution

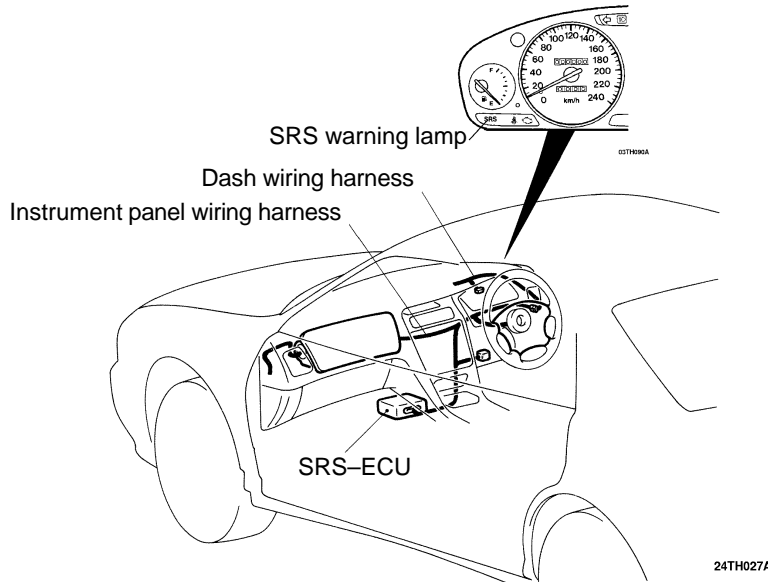
If the clock spring's mating marks are not properly aligned, the steering wheel may not be completely rotational during a turn, or the flat cable within the clock spring may be severed, obstructing normal operation of the SRS and possibly leading to serious injury to the vehicle's driver and passenger.

9. Install the steering column covers, steering wheel and the air bag module.
10. Check the steering wheel for noise, binds or difficult operation.
11. Check the steering wheel for excessive free play.  
REPLACE ANY VISUALLY INSPECTED PART IF IT FAILS THAT INSPECTION. (Refer [Component service.](#))

#### Caution

The SRS may not activate if any of the above components is not installed properly, which could result in serious injury or death to the vehicle's driver or front passenger.

## BODY WIRING HARNESS



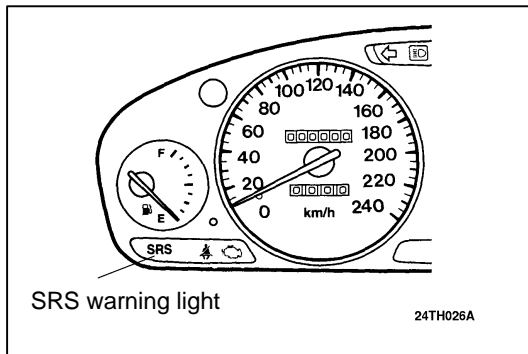
1. Check connectors for poor connection.
2. Check harnesses for binding, connectors for damage, and terminals for deformation.  
REPLACE ANY CONNECTORS OR HARNESS THAT FAIL THE VISUAL INSPECTION.  
(Refer [SRS - Service precautions.](#))

**Caution**

The SRS may not activate if SRS harnesses or connectors are damaged or improperly connected, which could result in serious injury or death to the vehicle's driver and passenger.

**POST-INSTALLATION INSPECTION**

Reconnect the negative battery terminal. Turn the ignition key to the "ON" position. Does the SRS warning light illuminate for about 7 seconds, turn off and then remain extinguished for at least 5 seconds? If yes, SRS system is functioning properly. If not, refer to [Troubleshooting](#).

**POST-COLLISION DIAGNOSIS**

To inspect and service the SRS after a collision (whether or not the air bags have deployed), perform the following steps.

**SRS-ECU MEMORY CHECK**

1. Connect the MUT-II to the diagnosis connector (16-pin).

**Caution**

**Turn off ignition switch before connecting or disconnecting the MUT-II.**

2. Read (and write down) all displayed diagnosis codes. (Refer [Inspection chart for diagnosis trouble codes.](#))

**NOTE**

If the battery power supply has been disconnected or disrupted by the collision, the MUT-II cannot communicate with the SRS-ECU. Check the battery then inspect and, if necessary, repair the body wiring harnesses before proceeding further.

3. Read the data list (fault duration and how many times memories are erased) using the MUT-II.

**Data list**

No	Service Data Item	Applicability
92	Number indicating how often the memory is cleared	Maximum time to be stored: 250
93	How long a problem has lasted (How long it takes from the occurrence of the problem till the first air bag squib igniting signal)	Maximum time to be stored: 99999 minutes (approximately 7 days)
94	How long a problem has lasted (How long it takes from the first air bag squib igniting signal till now)	

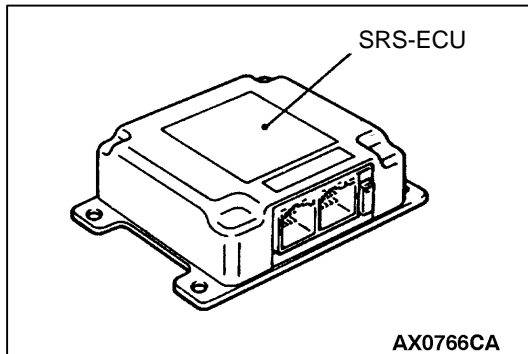
4. Erase the diagnosis codes and after waiting 5 seconds or more read (and write down) all displayed diagnosis codes. (Refer [Inspection chart for diagnosis trouble codes.](#))

**REPAIR PROCEDURE****WHEN AIR BAG DEPLOYS IN A COLLISION.**

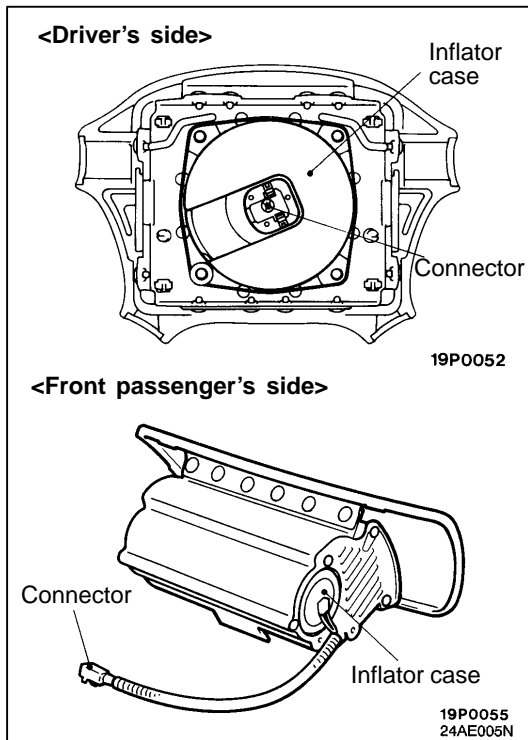
1. Replace the following parts with new ones.
  - SRS-ECU (Refer [On vehicle service.](#))
  - Air bag modules (Refer [On vehicle service.](#))
2. Check the following parts and replace if there are any malfunctions.
  - Clock spring (Refer [On vehicle service.](#))
  - Steering wheel, steering column and intermediate joint
    - (1) Check wiring harness (built into steering wheel) and connectors for damage, and terminals for deformation.
    - (2) Install air bag module to check fit or alignment with steering wheel.
    - (3) Check steering wheel for noise, binding or difficult operation and excessive free play.
3. Check harnesses for binding, connectors for damage, poor connections, and terminals for deformation. (Refer [SRS Service Precautions.](#))

**WHEN AIR BAG DOES NOT DEPLOY IN LOW-SPEED COLLISION.**

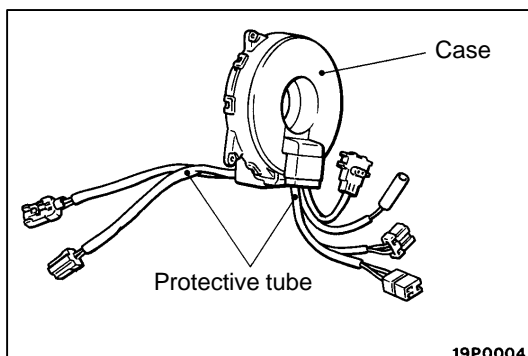
Check the SRS components. If the SRS components are showing any visible damage such as dents, cracks, or deformation, replace them with new ones. Concerning parts removed for inspection, replacement with new parts and cautionary points for working, refer to appropriate [INDIVIDUAL COMPONENT SERVICE](#).

**SRS-ECU**

1. Check SRS-ECU case and brackets for dents, cracks or deformation.
2. Check connector for damage, and terminals for deformation.
3. Check the SRS-ECU and bracket for installation condition.

**Air bag modules**

1. Check pad cover for dents, cracks or deformation.
2. Check connector for damage, terminals deformities, and harness for binds.
3. Check air bag inflator case for dents, cracks or deformities.
4. Check air bag modules for fit and proper installation.

**Clock spring**

1. Check clock spring connectors and protective tube for damage, and terminals for deformation.
2. Visually check the case for damage.

### Steering wheel, steering column and intermediate joint

1. Check wiring harness (built into steering wheel) and connectors for damage, and terminals for deformation.
2. Install air bag module to check fit or alignment with steering wheel.
3. Check steering wheel for noise, binding or difficult operation and excessive free play.

### Harness connector (body wiring harness)

Check harnesses for binding, connectors for damage, poor connection, and terminals for deformation. (Refer [SRS Service Precautions](#).)

## INDIVIDUAL COMPONENT SERVICE

If the SRS components are to be removed or replaced as a result of maintenance, troubleshooting, etc., follow each procedure. ([SRS Air Bag Control Unit](#), [Air Bag Modules and Clock Spring](#).)

### Caution

1. SRS components should not be subjected to heat over 93°C, so remove the SRS-ECU, air bag modules and clock spring before drying or baking the vehicle after painting. Recheck SRS airbag system after re-installing components. (Refer to [Group 00](#).)
2. If the SRS components are removed for the purpose of check, sheet metal repair, painting, etc., they should be stored in a clean, dry place until they are reinstalled.

## SRS AIR BAG CONTROL UNIT (SRS-ECU)

### Caution

1. Disconnect the negative (–) battery terminal and wait for 60 seconds or more before starting work. Also, the disconnected battery terminal should be insulated with tape.
2. Never attempt to disassemble or repair the SRS-ECU. If faulty, replace it.
3. Do not drop or subject the SRS-ECU to impact or vibration.

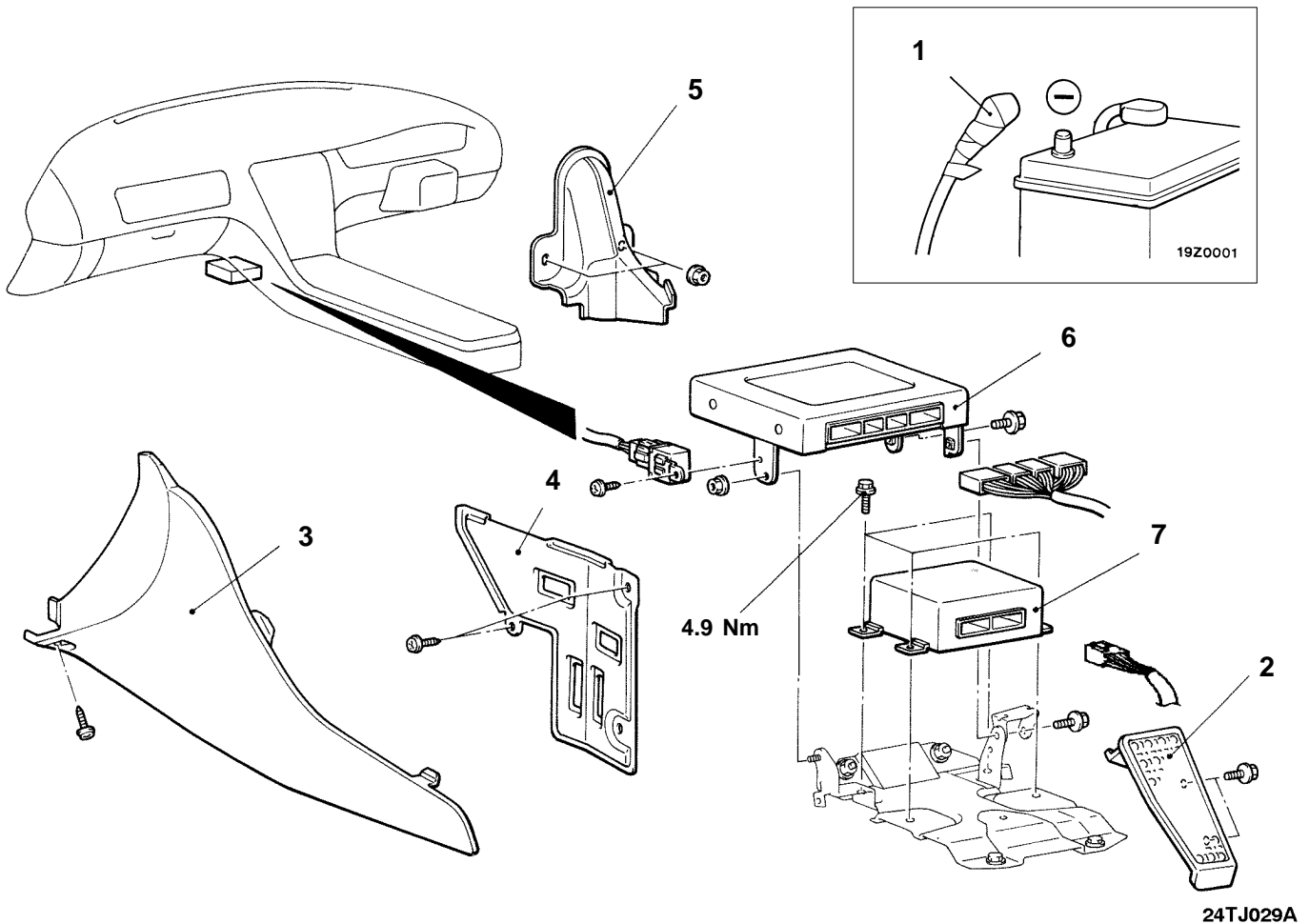
If denting, cracking, deformation, or rust are discovered in the SRS-ECU, replace it with a new SRS-ECU. Discard the old one.

4. After deployment of an air bag, replace the SRS-ECU with a new one.
5. Never use an ohmmeter on or near the SRS-ECU, and use only the **special test equipment**.

## REMOVAL AND INSTALLATION

### Pre-removal Operation

- Turn the ignition key to the "LOCK" position.

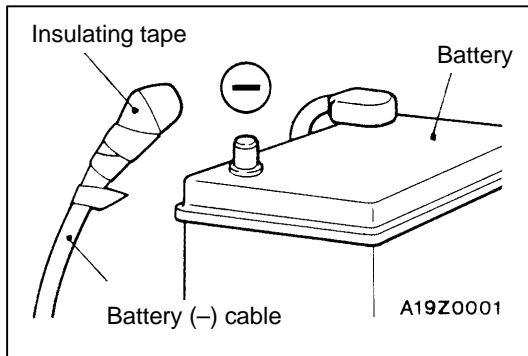


### Removal steps

- Post-installation inspection
- 1. Negative (–) battery cable connection
- 2. Footrest
- 3. Console side cover (LH and RH)
- 4. Floor carpet reinforcement (LH and RH)

- 5. Harness protector
- 6. Engine-A/T-ECU and A/T control relay
- 7. SRS-ECU





## REMOVAL SERVICE POINT

### ◀A▶ NEGATIVE (-) BATTERY CABLE DISCONNECTION

Disconnect the negative battery cable from the battery and tape the terminal.

#### Caution

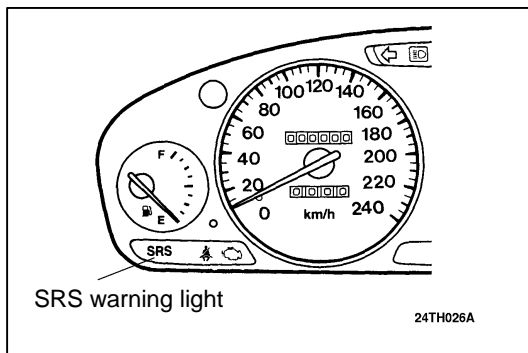
Wait at least 60 seconds after disconnecting the battery cable before doing any further work. (Refer [SRS-Service Precautions](#).)

## INSTALLATION SERVICE POINTS

### ▶A◀ SRS-ECU INSTALLATION

#### Caution

The SRS may not activate if SRS-ECU is not installed properly, which could result in serious injury or death to the vehicle's driver or front passenger.



### ▶B◀ POST-INSTALLATION INSPECTION

1. Turn the ignition key to the "ON" position.
2. Does the "SRS" warning light illuminate for about 7 seconds, and then remain off for at least 5 seconds after turning off?
3. If yes, SRS system is functioning properly.  
If no, consult [Troubleshooting](#).

## INSPECTION

- Check the SRS-ECU and brackets for dents, cracks or deformation.
- Check connector for damage, and terminals for deformation.

#### Caution

If a dent, crack, deformation or rust is discovered, replace the SRS-ECU with a new one.

#### NOTE

For checking of the SRS-ECU other than described above, refer [Troubleshooting](#).



## AIR BAG MODULES AND CLOCK SPRING

### Caution

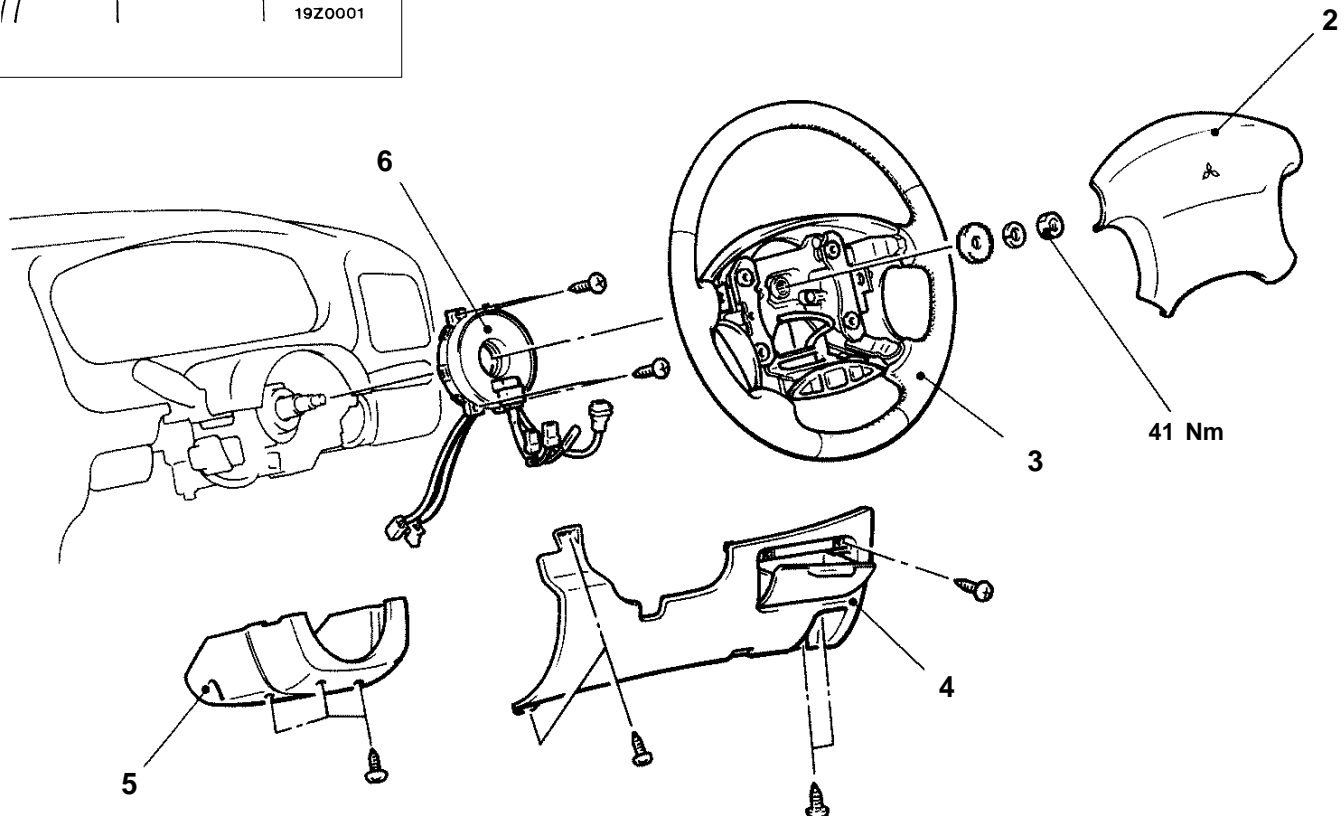
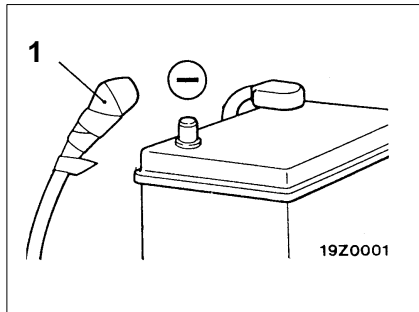
1. Disconnect the negative (–) battery terminal and wait for 60 seconds or more before starting work. Also, the disconnected battery terminal should be insulated with tape.
2. Never attempt to disassemble or repair the air bag modules or clock spring. If faulty, replace the component.
3. Do not drop the air bag modules or clock spring or allow contact with water, grease or oil. Replace the component if a dent, crack, deformation or rust is detected.
4. The air bag modules 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.
5. Do not expose the air bag modules to temperatures over 93°C.
6. After deployment of an air bag, replace the air bag with a new one.
7. Wear gloves and safety glasses when handling air bags that have already deployed.
8. An undeployed air bag module should only be disposed of in accordance with the [Undeployed air bag disposal procedures](#).

## REMOVAL AND INSTALLATION

## &lt;Air bag module (driver's side), clock spring&gt;

**Pre-removal Operation**

- After setting the steering wheel and the front wheels to the straight ahead position, remove the ignition key.

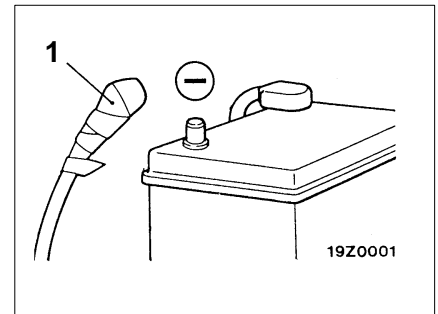
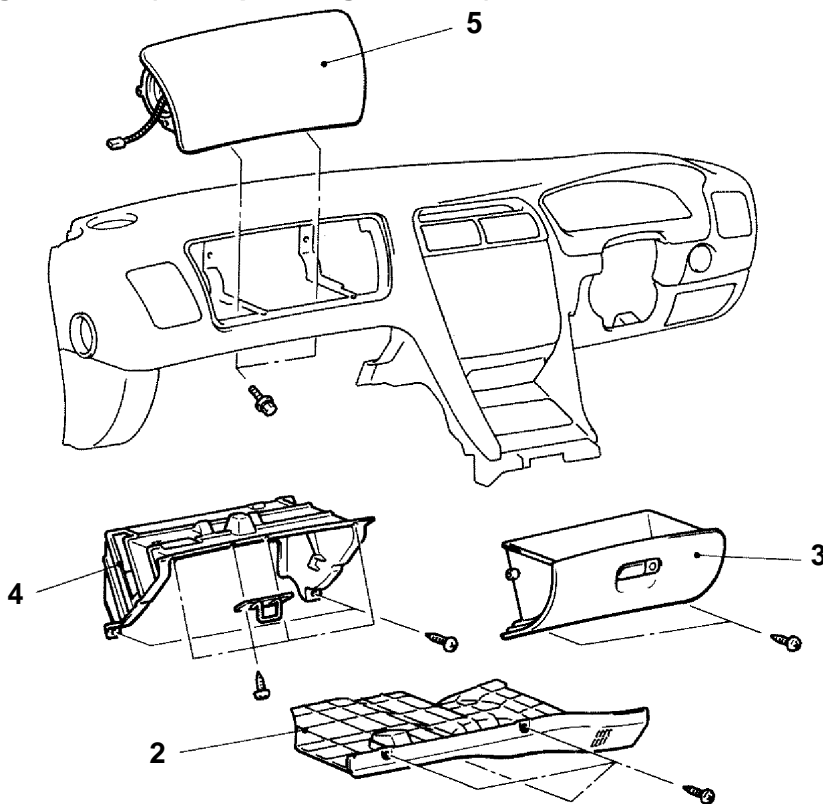
**Air bag module removal steps**

- ◀A▶ ▶D▶
- Post-installation inspection
- ◀B▶
1. Negative (-) battery cable connection
  2. Air bag module
- ▶A▶
- Pre-installation inspection

**Clock spring removal steps**

- ▶D▶
- Post-installation inspection
- ◀A▶ ▶C▶
1. Negative (-) battery cable connection
  2. Air bag module
  3. Steering wheel
  4. Instrument lower panel
  5. Column cover lower
  6. Clock spring
- ◀D▶ ▶B▶ ▶A▶
- Pre-installation inspection

## <Air bag module (front passenger's side)>



19P0040

### Air bag module removal steps

- Post-installation inspection

1. Negative (-) battery cable connection
2. Undercover

3. Glove box assembly
4. Glove box case
5. Air bag module

- Pre-installation inspection

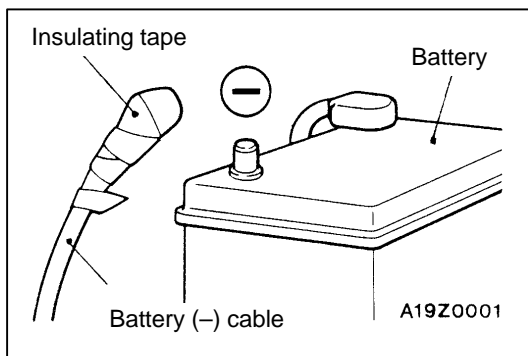
## REMOVAL SERVICE POINTS

### ◀A▶ NEGATIVE (-) BATTERY CABLE DISCONNECTION

Disconnect the negative battery cable from the battery and tape the terminal.

#### Caution

Wait at least 60 seconds after disconnecting the battery cable before doing any further work. (Refer [SRS - Service precautions.](#))

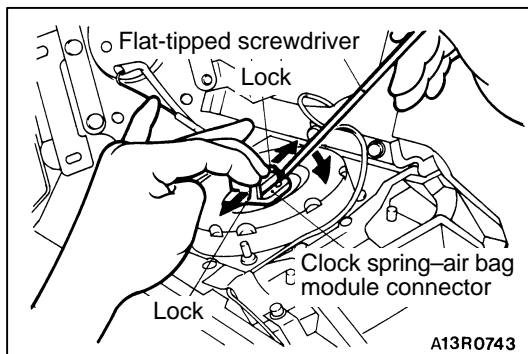


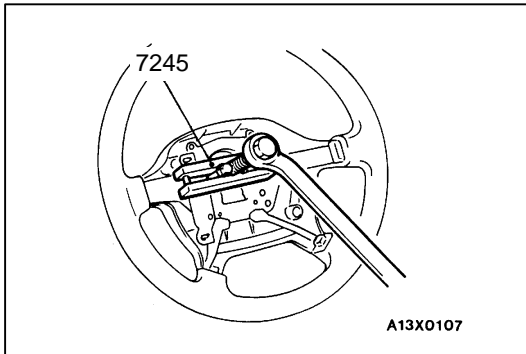
### ◀B▶ AIR BAG MODULE REMOVAL (DRIVER'S SIDE)

When disconnecting the connector of the clock spring from the air bag module, press the air bag's lock toward the outer side to spread it open. Use a flat-tipped screwdriver, prying gently as shown in the figure at the left, to remove the connector.

#### Caution

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





## ◀C▶ STEERING WHEEL REMOVAL

### Caution

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

## ◀D▶ CLOCK SPRING REMOVAL

### Caution

The removed clock spring should be stored in a clean, dry place.

## ◀E▶ AIR BAG MODULE REMOVAL (FRONT PASSENGER'S SIDE)

### Caution

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

## INSTALLATION SERVICE POINTS

### ▶A◀ PRE-INSTALLATION INSPECTION

1. When installing the new air bag modules and clock spring, refer to [INSPECTION](#).

### Caution

Dispose of air bag modules only according to the [specified procedure](#).

2. Connect the battery (–) terminal.
3. Connect the MUT-II to the diagnosis connector.

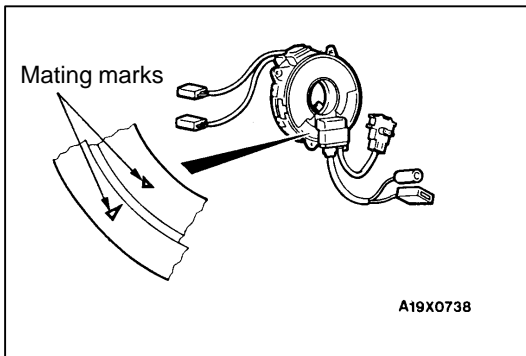
### Caution

Turn off the ignition switch before connecting or disconnecting the MUT-II.

4. Turn the ignition key to the “ON” position.
5. Conduct diagnosis test using the MUT-II to ensure entire SRS operates properly.
6. Turn the ignition key to the “LOCK” position, disconnect the negative battery cable and tape the terminal.

### Caution

Wait at least 60 seconds after disconnecting the battery cable before doing any further work.



## ►B◄ CLOCK SPRING INSTALLATION

Align the mating marks of the clock spring and, after turning the front wheels to the straightahead position, install the clock spring to the column switch.

### Mating Mark Alignment

Turn the clock spring clockwise fully, and then turn it back approx. 3 4/5 turns counterclockwise to align the mating marks.

### Caution

**If the clock spring's mating marks are not properly aligned, the steering wheel may not rotate completely during a turn, or the flat cable within the clock spring may be severed, obstructing normal operation of the SRS and possibly leading to serious injury to the vehicle's driver.**

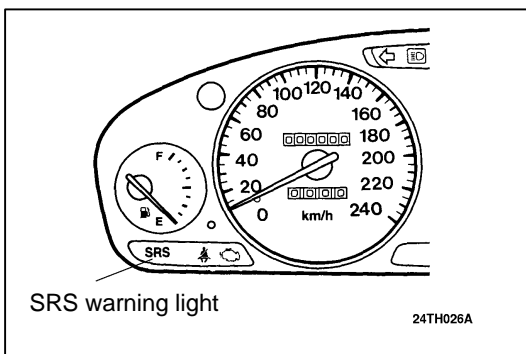
## ►C◄ STEERING WHEEL INSTALLATION

1. Before installing the steering wheel, be sure to first turn the vehicle's front wheels to the straight-ahead position and align the mating marks of the clock spring.

### Caution

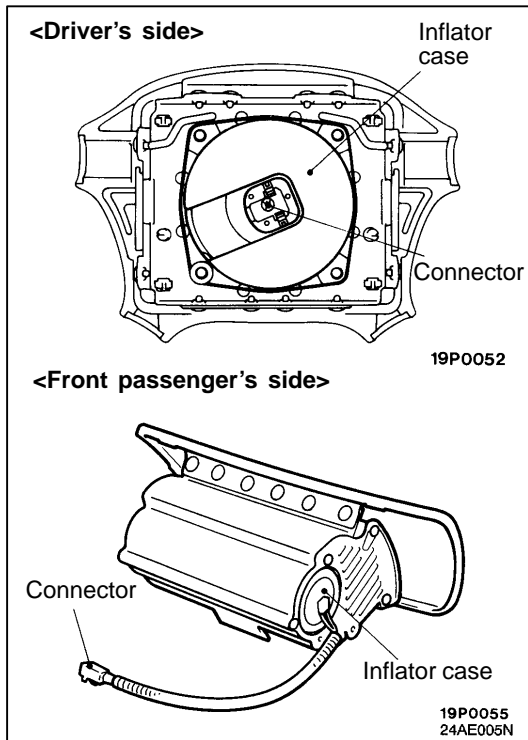
**Be sure when installing the steering wheel, that the harness of the clock spring does not become caught or tangled.**

2. After securing the steering wheel, turn the steering wheel all the way in both directions to confirm that steering wheel rotation is normal.



## ►D◄ POST-INSTALLATION INSPECTION

1. Turn the ignition key to the "ON" position.
2. Does the "SRS" warning light illuminate for about 7 seconds, and then remain off for at least 5 seconds after turning off?
3. If yes, SRS system is functioning properly.  
If no, consult [Troubleshooting](#).



## INSPECTION

### AIR BAG MODULE CHECK

If any improper part is found during the following inspection, replace the air bag module with a new one. Dispose the old one according to the [specified procedure](#).

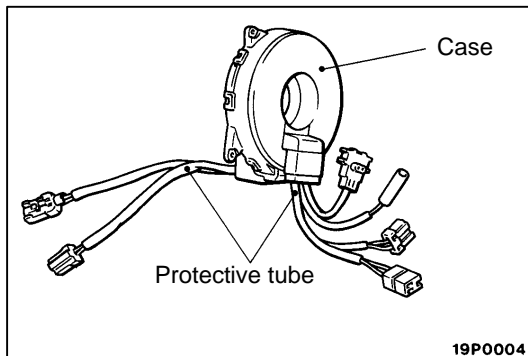
#### Caution

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

1. Check pad cover for dents, cracks or deformation.
2. Check connectors for damage, terminals for deformation, and harness for binds.
3. Check air bag inflator case for dents, cracks or deformation.
4. Install the air bag module to steering wheel or dash to check fit or alignment.

#### Caution

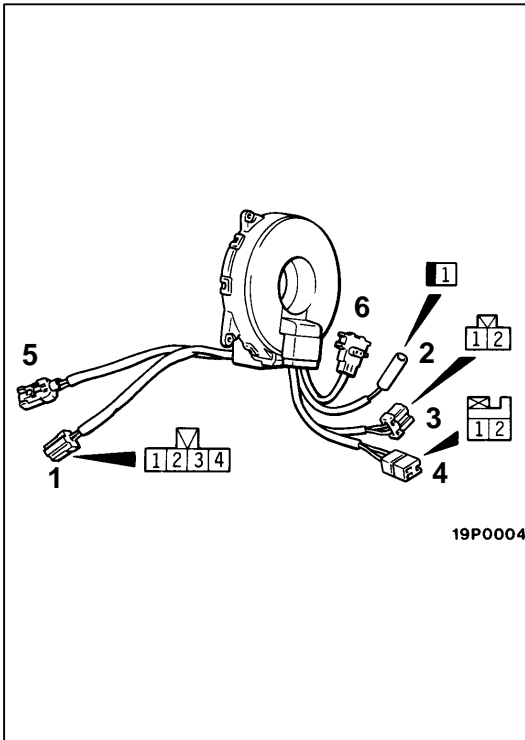
**If dents, cracks, deformation, or rust are discovered in the air bag module, replace it with a new one. Dispose of the old one according to the [specified procedure](#).**



### CLOCK SPRING CHECK

If, as result of following checks, even one abnormal point is discovered, replace the clock spring with a new one.

1. Check connectors and protective tube for damage, and terminals for deformation.
2. Visually check the case for damage.

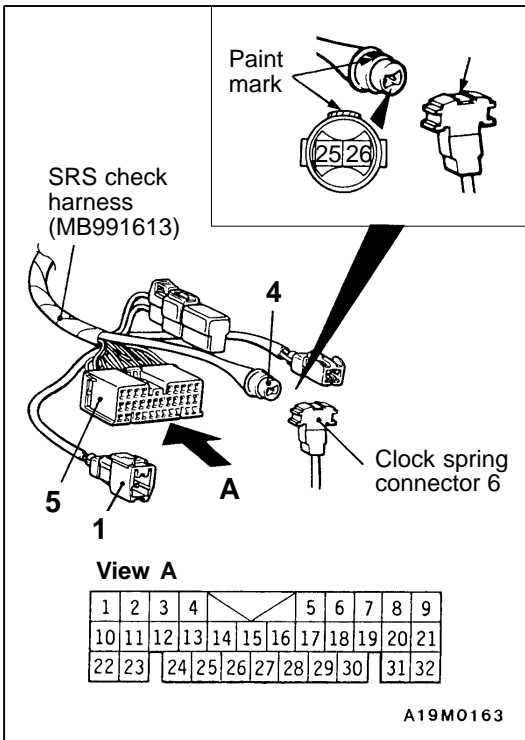


- Check for continuity between the No.1 connector of the clock spring and connectors No.2, 3 and 4

**NOTE:**

Connector No.1 terminal 4 and connector No.3 are provided only on vehicles equipped with audio system remote control.

Connector No.	1				2	3		4	
Terminal No.	1	2	3	4	1	1	2	1	2
Continuity between terminals	○								○
		○				○			
		○						○	
			○		○				
				○		○			



- Align the paint mark of the SRS check harness connector No.4 with the notch in clock spring connector No.6 (arrow in the illustration) to connect the connectors Nos.6 and 4.
- Connect SRS check harness connector No.1 with clock spring connector No.5.
- Check continuity between terminals 22 and 25 and between terminals 23 and 24 of the SRS check harness connector No.5.

## AIR BAG MODULE DISPOSAL PROCEDURES

Before disposing of an air bag or a vehicle which is equipped with it, follow the procedures below to deploy the air bag (s).

### UNDEPLOYED AIR BAG MODULE DISPOSAL

#### Caution

1. If the vehicle is to be scrapped or otherwise disposed of, deploy the air bags inside the vehicle. If the vehicle will continue to be used and only the air bag modules are to be disposed of, deploy the air bags outside the vehicle.
2. Since a large amount of smoke is produced when the air bag is deployed, avoid residential areas whenever possible.
3. Since there is loud noise when the air bags are deployed, avoid residential areas whenever possible. If anyone is nearby, give warning of the impending noise.
4. Suitable ear protection should be worn by personnel performing these procedures or by people in the immediate area.

### DEPLOYMENT INSIDE THE VEHICLE

#### (when disposing of a vehicle)

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

#### Caution

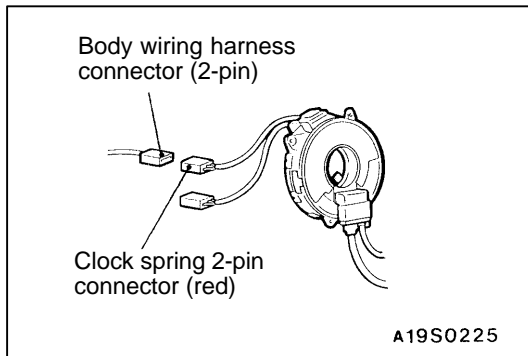
Wait at least 60 seconds after disconnecting the battery cables before doing any further work.  
(Refer to [SRS - Service precautions.](#))



## 52B SRS – Air Bag Module Disposal Procedures

Main  
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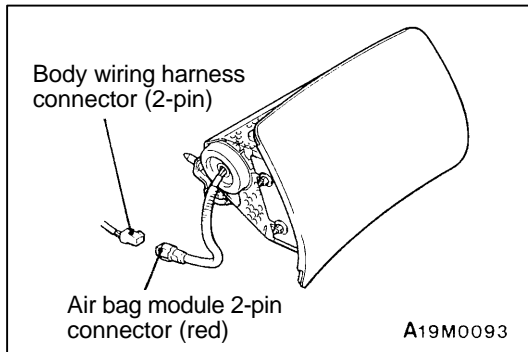
52B  
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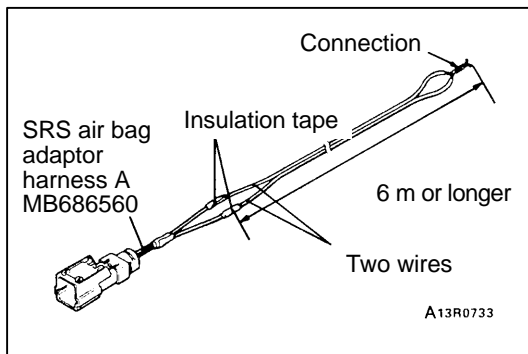
3. To deploy the air bag module (driver's side):
  - (1) Remove the steering column cover lower.
  - (2) Remove the connection between the clock spring 2-pin connector (red) and the body wiring harness connector.

### NOTE

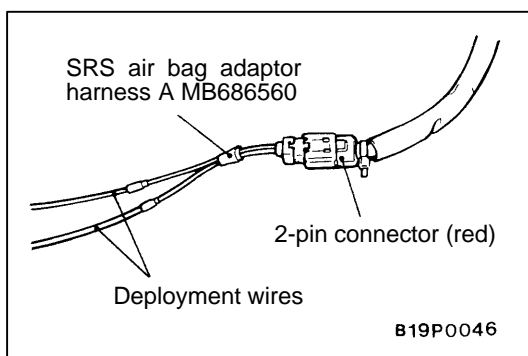
If the clock spring connector is disconnected from the body wiring harness, both electrodes of the clock spring connector will be automatically shorted to prevent unintended deployment of the air bag due to static electricity, etc.



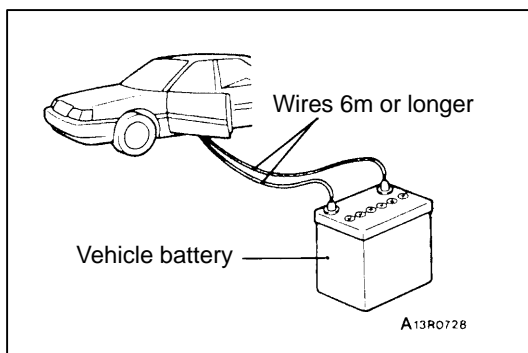
4. To deploy the air bag module (front passenger's side):
  - (1) Remove the glove box. (Refer [Removal & Installation.](#))
  - (2) Remove the connection between the air bag module (front passenger's side) connector (red 2-pin) and the body wiring harness connector.



5. Connect two wires, each six metres or longer, to the two leads of SRS air bag adaptor harness A and cover the connections with insulation tape. The other ends of the two wires should be connected to each other (short-circuited), to prevent sudden unexpected deployment of the air bag.



6. Connect the clock spring or air bag module (front passenger's side) 2-pin connector (red) to SRS air bag adaptor harness A and pass the deployment wires out of the vehicle.



7. At a location as far away from the vehicle as possible, disconnect the two connected wires from each other, and connect them to the two terminals of the battery (which has been removed from the vehicle) to deploy the air bag.

### Caution

1. Before deploying the air bag 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 at least 30 minutes to allow it to cool before attempting to handle it. Although not poisonous, do not inhale gas from air bag deployment. See [Deployed Air Bag Module Disposal Procedures](#) for post-deployment handling instructions.
3. If the air bag module fails to deploy when the procedures above are followed, do not go near the module. Contact your local Distributor
8. After deployment, dispose of the air bag module according to the [Deployed Air Bag Module Disposal Procedures](#).

### DEPLOYMENT OUTSIDE THE VEHICLE

#### Caution

1. This should be carried out in a wide, flat area at least 6 metres away from obstacles and other people.
2. Do not perform deployment outside, if a strong wind is blowing, and if there is even a slight breeze, the air bag module should be placed and deployed downwind from the battery.
1. Disconnect the negative (–) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle.

#### Caution

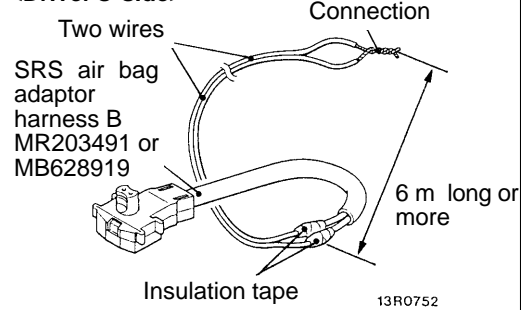
Wait at least 60 seconds after disconnecting the battery cables before doing any further work. (Refer [SRS - Service precautions](#).)

2. Remove the air bag module from the vehicle. (Refer [Removal and installation](#).)

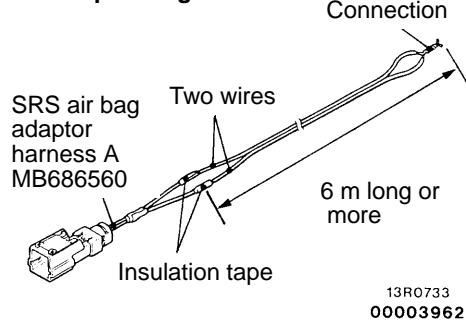
#### Caution

The air bag module should be stored on a flat surface and placed so that the pad cover face up. Do not place anything on top of it.

## <Driver's side>



## <Front passenger's side>



3. Connect two wires, each six metres or longer, to the two leads of SRS air bag adaptor harness B <driver's side> or SRS air bag adaptor harness A <front passenger's side>, and cover the connections with insulation tape. The other ends of the two wires should be connected to each other (short-circuited), to prevent sudden unexpected deployment of the air bag module.

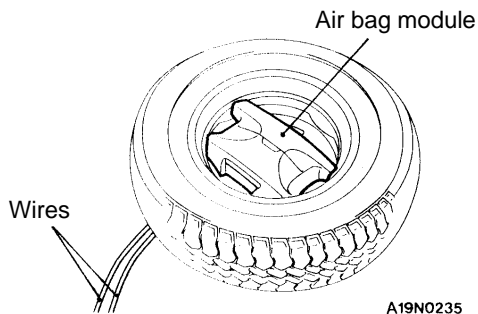
4. Set the air bag module as follows:

### <Air bag module (driver's side)>

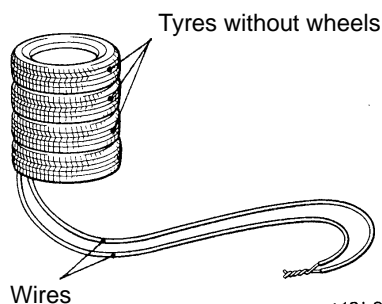
- (1) Take the SRS air bag adaptor harness B that is connected to the wires, pass it beneath an old tyre and wheel assembly, and connect it to the air bag module.
- (2) Pass thick wire through the air bag module mounting hole, and then secure the air bag module to an old tyre with a wheel in it so that the pad on the module is facing upwards.

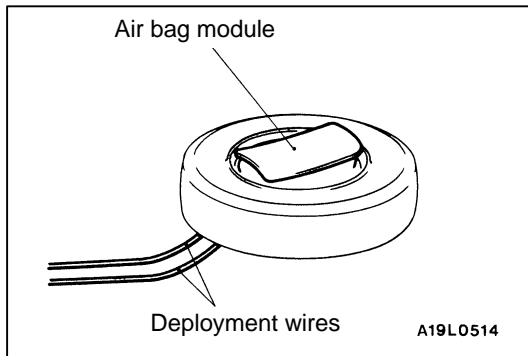
### Caution

Leave some space below the wheel for the adaptor harness. If there is no space, the reaction when the air bag deploys could damage the adaptor harness.



- (3) Place three old tyres with no wheels on top of the tyre secured to the air bag module, and secure all tyres with ropes (4 locations).



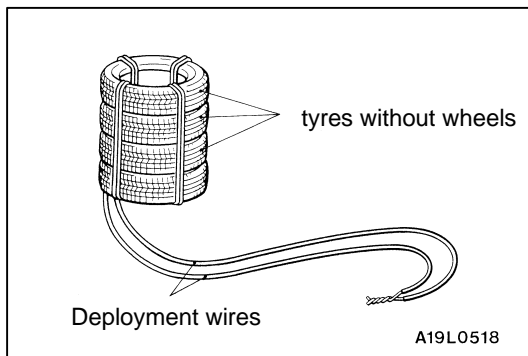


## <Air bag module (front passenger's side)>

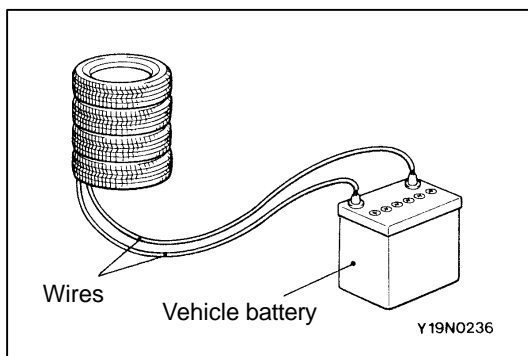
- (1) Connect the deployment wires to the SRS air bag adaptor harness A, pass it beneath the tyre and wheel assembly, and connect it to the air bag module.
- (2) Pass thick wires into the hole of the air bag module bracket, and secure it to the wheel of an old tyre and wheel (4 locations), with the air bag facing upwards.

### Caution

1. **Leave some space below the wheel for the deployment wires.**  
If there is no space, the reaction of the air bag deployment could result in damage of the adaptor harness.
2. **While deployment takes place, do not have the connector of the SRS air bag adaptor harness A inserted between the tyres.**



- (3) Place four old tyres without wheels on top of the tyre secured to the air bag module, and secure all tyres with ropes (4 locations).



5. At a location as far away from the air bag module as possible, and from a shielded position, disconnect the two connected wires from each other, and connect them to the two terminals of the battery (which has been removed from the vehicle) to deploy the air bag.

### Caution

1. **Before deployment, check carefully to be sure that no one is nearby.**
2. **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 air bag deployment. See [Deployed Air Bag Module Disposal Procedures](#) for post-deployment handling instructions.**
3. **If the air bag fails to deploy when the procedures above are followed, do not go near the module. Contact your local Distributor.**
6. After deployment, dispose of the air bag module according to the [Deployed Air Bag Module Disposal Procedures](#).

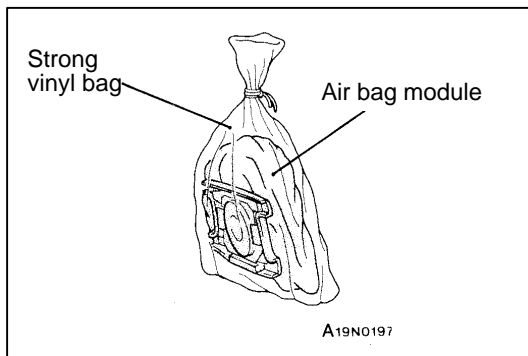
### DEPLOYED AIR BAG MODULE DISPOSAL

After deployment, the air bag module should be disposed of in the same manner as any other scrap parts, adhering to local laws and/or legislation that may be in force except that the following points should be carefully noted during disposal.

1. The inflator will be quite hot immediately following deployment, so wait at least 30 minutes to allow it cool before attempting to handle it.
2. Do not put water or oil on the air bag after deployment.
3. There may be, adhered to the deployed air bag module, material that could irritate the eye and/or skin, so wear gloves and safety glasses when handling a deployed air bag module.

#### Caution

**If after following these precautions, any 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 air bag module in a strong vinyl bag for disposal.
5. Be sure to always wash your hands after completing this operation.