SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Click on the applicable bookmark to selected the required model year.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

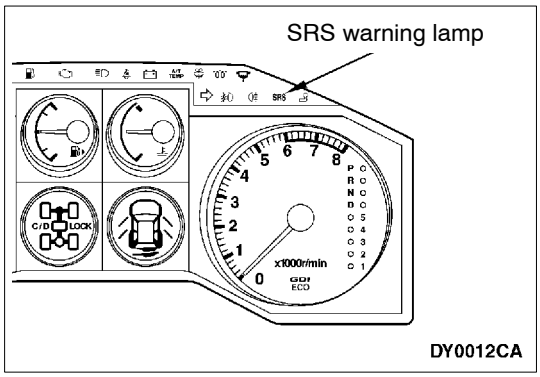
CONTENTS

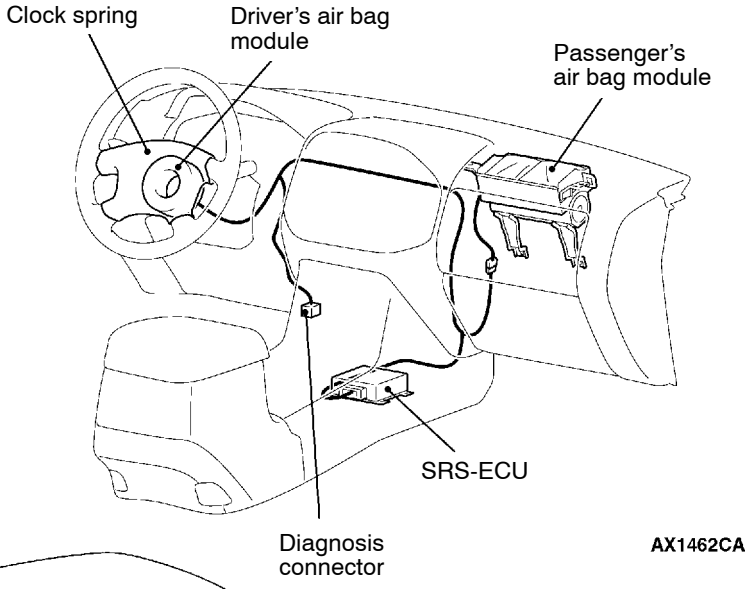
CAUTION

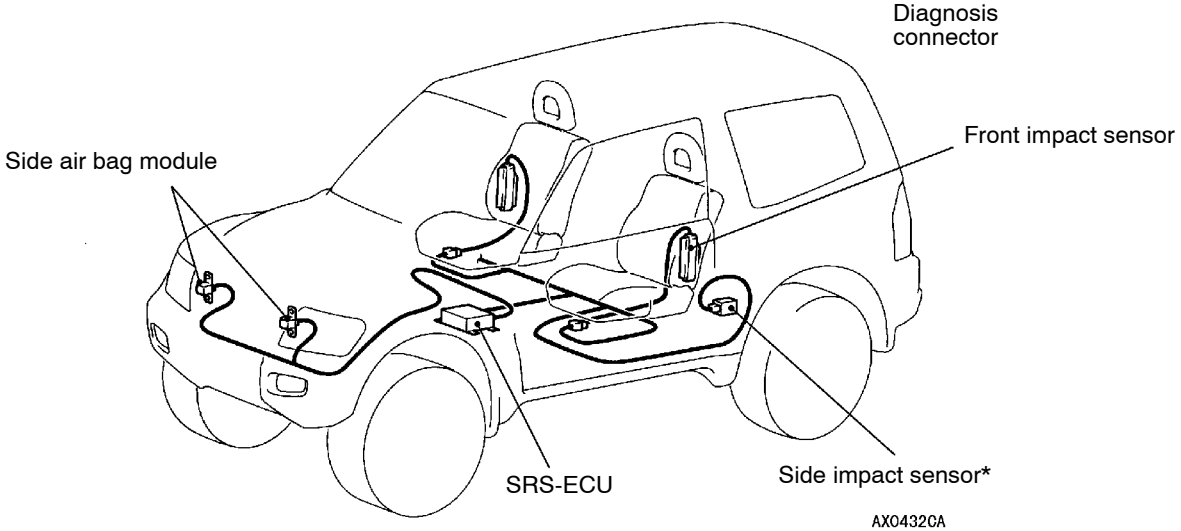
- **Carefully read and observe the information in the SERVICE PRECAUTIONS (P.52B-3.) prior to any service.**
- **For information concerning troubleshooting or maintenance, always observe the procedures in the Troubleshooting (P.52B-7.) section.**
- **If any SRS components are removed or replaced in connection with any service procedures, be sure to follow the procedures in the INDIVIDUAL COMPONENT SERVICE section (P.52B-26.) for the components involved.**
- **If you have any questions about the SRS, please contact your local distributor.**

GENERAL INFORMATION

To improve safety, the SRS are available as optional parts. These systems enhance collision safety by restraining the front passengers in case of an accident.
The SRS consists of four air bag modules, SRS air bag control unit (SRS-ECU), front impact sensors, side impact sensors, SRS warning lamp and clock spring. The air bags are located in the centre of the steering wheel, above the glove box, and built into the front seat back assemblies. Each air bag has a folded air bag and an inflator unit. The SRS-ECU under the floor console monitors the system and has a safing G sensor and an analog G sensor. The front impact sensors are installed on the headlamp support panel. The side impact sensor, which is located inside the quarter panels <short wheelbase> or center pillar <long wheelbase> inner, monitors any shocks coming from the side of the vehicle. The warning lamp on the instrument panel indicates the operational status of the SRS. The clock spring is installed in the steering column.
The SRS side air bag deploys if an impact received at the side of the vehicle is stronger than a certain set value, in order to protect the upper bodies of front seat passengers in the event of a collision. Only authorized service personnel should do work on or around the SRS components. Those service personnel should read this manual carefully before starting any such work. Extreme care must be used when servicing the SRS to avoid injury to the service personnel (by inadvertent deployment of the air bags) or the driver (by rendering the SRS inoperative).







NOTE
*: Indicates the parts equipped on the right and left sides.

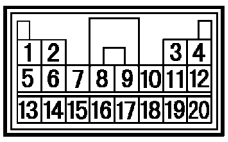
SRS SERVICE PRECAUTIONS

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 components, except those specified on P.52B-6.
3. **Never Attempt to Repair the Following Components:**
   - SRS air bag control unit (SRS-ECU)
   - Front impact sensor
   - Clock spring
   - Driver's and front passenger's air bag modules
   - Side air bag module
   - Side impact sensor

   If any of these components are diagnosed as faulty, they should only be replaced, in accordance with the INDIVIDUAL COMPONENTS SERVICE procedures in this manual, starting at page 52B-26.

SRS-ECU connector

Vehicles without side air bags



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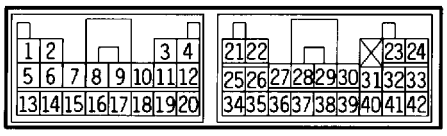
Vehicles with side air bags



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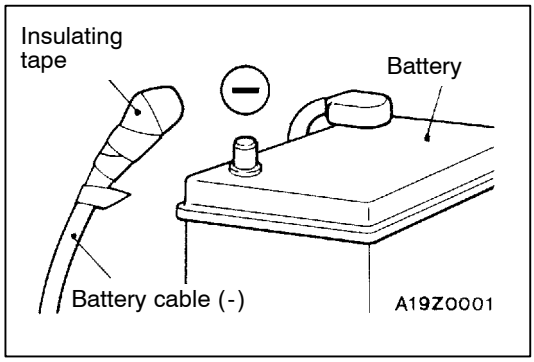
4. **Do not attempt to repair the wiring harness connectors of the SRS. If a defective wiring harness is found, repair or replace it by referring to the table below.**

SRS-ECU terminal No.	Destination of harness	Remedy
1, 2, 3, 4	Instrument panel wiring harness → Front wiring harness → Front impact sensor	Repair or replace each wiring harness.
7	Instrument panel wiring harness → Earth	Repair or replace the instrument panel wiring harness.
8	Instrument panel wiring harness → SRS warning lamp	
9, 10	Instrument panel wiring harness → Passenger's air bag module	
11, 12	Instrument panel wiring harness → Clock spring to driver's air bag module	Replace the clock spring or repair or replace the instrument panel wiring harness.
13	Instrument panel wiring harness → Junction block (fuse No.8)	Repair or replace the instrument panel wiring harness.
16	Instrument panel wiring harness → Junction block (fuse No.6)	
20	Instrument panel wiring harness → Diagnosis connector	
21, 22	Side air bag wiring harness → Left side air bag module	Repair or replace side air bag wiring harness.
23, 24	Side air bag wiring harness → Side air bag module (R.H.)	
34, 35, 36	Side air bag wiring harness → Floor wiring harness → Side impact sensor (L.H.)	Repair or replace each wiring harness.
40, 41, 42	Side air bag wiring harness → Floor wiring harness → Side impact sensor (R.H.)	



5. After disconnecting the battery cable, wait 60 seconds or more before proceeding with the following work. In addition, insulate the negative battery terminal with a tape. The condenser inside the SRS-ECU 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.

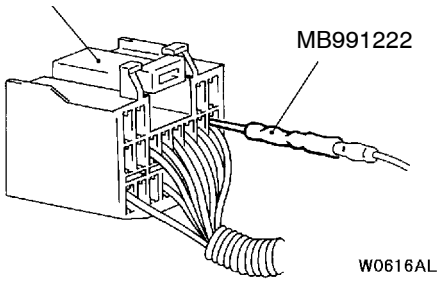
6. SRS components should not be subjected to heat over 93°C, so remove the SRS-ECU, front impact sensor, driver's air bag module, clock spring, passenger's air bag module, front seat assembly(side air bag module) and side impact sensor before drying or baking the vehicle after painting.

7. Whenever you finish servicing the SRS, always erase the diagnosis code and check warning lamp operation to make sure that the system functions properly. (Refer to P.52B-7)

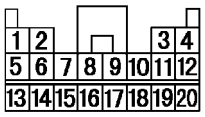
8. If checks are carried out by using the SRS-ECU harness connector, observe the following procedures:
Insert the special tool (probe in the harness set) into connector from harness side (rear side), and connect the tester to this probe. If any tool than special tool is used, damage to the harness and 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.

Vehicles without side air bags

SRS-ECU harness connector

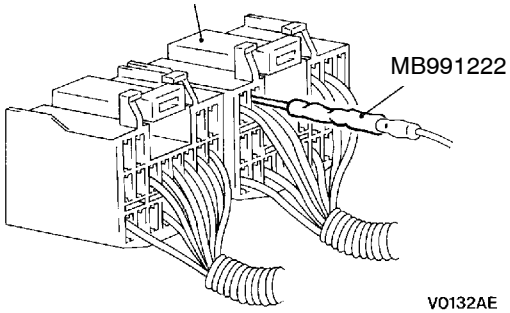


SRS-ECU harness connector (rear view)

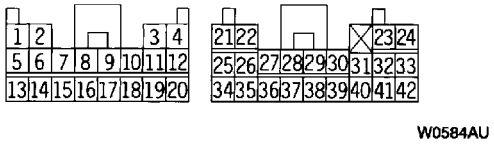


Vehicles with side air bags

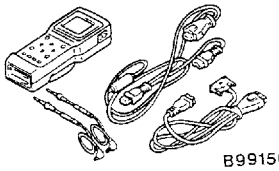
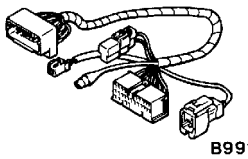
SRS-ECU harness connector

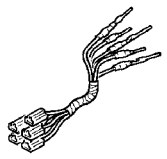
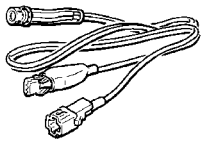
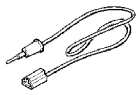
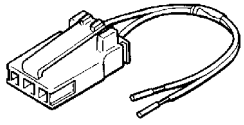
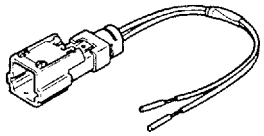


SRS-ECU harness connector (rear view)

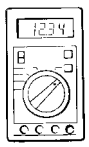


SPECIAL TOOLS

Tools	No.	Name	Application
 B991502	MB991502	MUT-II sub assembly	• Reading and erasing diagnosis code • Reading trouble period • Reading erase times
 B991613	MB991606 or MB991613	SRS check harness	Checking SRS electrical circuitry

Tools	No.	Name	Application
A  B  C  D  C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Check harness B: LED harness C: LED harness adapter D: Probe	Checking continuity and measuring voltage at SRS-ECU harness connector
 R372530	MR372530	SRS air bag adapter harness	Deploying driver's air bag module inside vehicle
 B686560	MB686560	SRS air bag adapter harness	Deploying front passenger's air bag module and side air bag modules inside or outside vehicle

TEST EQUIPMENT

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

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 - How to Use Troubleshooting/Inspection Service Points.

DIAGNOSIS FUNCTION

DIAGNOSIS CODES CHECK

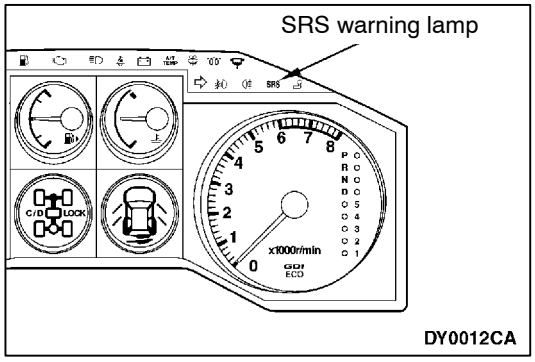
Connect the MUT-II to the diagnosis connector (16-pin) under the instrument cover, then check diagnosis codes.
(Refer to GROUP 00 - How to Use Troubleshooting/Inspection Service Points.)

ERASING DIAGNOSIS CODES

WHEN USING THE MUT-II

Connect the MUT-II to the diagnosis connector and erase the diagnosis code.

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



SRS WARNING LAMP CHECK

1. Check that the SRS warning lamp comes on when the ignition switch is turned ON.
2. Check that the SRS warning lamp illuminates for about 7 seconds and then goes out.
3. If this is not the cause, check the diagnosis codes.

INSPECTION CHART FOR DIAGNOSIS CODES

Code No.	Diagnosis item	Reference page
11, 12, 13	Front impact sensor system	52B-8
14	Front impact analog G-sensor system inside SRS-ECU	52B-9
15, 16	Front impact safing G-sensor system inside SRS-ECU	52B-9
17	Side impact safing G-sensor system inside SRS-ECU	52B-9
21*2, 22*2, 61, 62	Driver's air bag module (squib) system	52B-10
24*2, 25*2, 64, 65	Passenger's air bag module (squib) system	52B-12
31, 32	DC-DC converter system inside SRS-ECU	52B-9
34*1	Connector lock system	52B-13
35	SRS-ECU (deployed air bag) system	52B-13
41*1	Power circuit system (fuse No.6 circuit)	52B-13
42*1	Power circuit system (fuse No.8 circuit)	52B-13

Code No.	Diagnosis item		Reference page
43*1	SRS warning lamp drive circuit system	Lamp does not illuminate.	52B-14
		Lamp does not go out off.	52B-14
44*1	SRS warning lamp drive circuit system		52B-14
45	Internal circuit system of non-volatile memory (EEPROM) inside SRS-ECU		52B-9
51, 52	Driver's air bag module (squib) system		52B-9
54, 55	Passenger's air bag module (squib) system		52B-9
71*2, 72*2, 75, 76	Side air bag module (R.H.) (squib) system		52B-15
73, 74	Side air bag module (R.H.) (squib) system		52B-9
79, 93	Side impact sensor (L.H.) communication system		52B-16
81*2, 82*2, 85, 86	Side air bag module (L.H.) (squib) system		52B-16
83, 84	Side air bag module (L.H.) (squib ignition drive circuit) system		52B-9
89, 96	Side impact sensor (R.H.) communication system		52B-17
91*1	Side impact sensor (L.H.) power supply circuit system		52B-17
92	Analog G-sensor system inside side impact sensor		52B-17
94*1	Side impact sensor (R.H.) power supply circuit		52B-18
95	Analog G-sensor system inside side impact sensor (R.H.)		52B-17

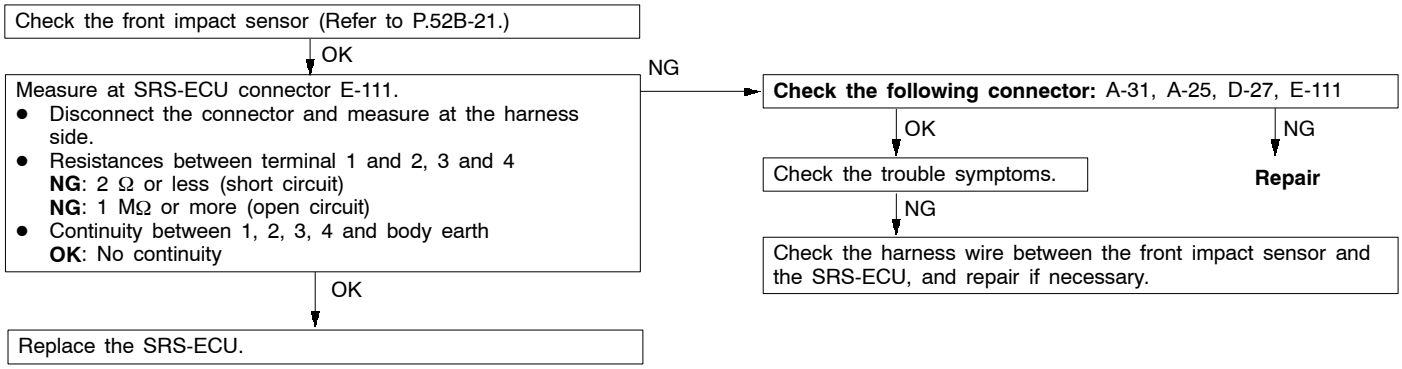
NOTE
1. *1: If the trouble(s) are extinguished, the SRS warning lamp will go out with diagnosis code history automatically erased.
2. *2: If the vehicle condition return to normal, the diagnosis code will be automatically erased, and the SRS warning lamp will return to normal.
3. If the vehicle has a discharged battery, it will store the fault codes 41 or 42. When these diagnosis codes are displayed, check the battery.

INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSIS CODE

Code No.11, 12 or 13 Front impact sensor system	**Probable cause**
These diagnosis codes are output if there is abnormal resistance between the input terminals of the front impact sensors inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follow.	• Malfunction of harness or connector • Malfunction of front impact sensor • Malfunction of SRS-ECU

Table 1

Code No.	Trouble Symptom
11	• Short circuit in front impact sensor or harness • Short circuit in front impact sensor harness leading to the vehicle body ground • Short circuit in front impact sensor harness leading to the power supply
12	• Open circuit in either left or right front impact sensor or harness • Short circuit in front impact sensor harness leading to the power supply
13	• Open circuit in both left and right front impact sensor or harness • Short circuit in front impact sensor harness leading to the power supply



Code No.14, 15, 16, 17, 31, 32, 45, 51, 52, 54, 55, 73, 74, 83, 84 System inside SRS-ECU	Probable cause
These diagnosis trouble codes are output when a fault is detected in the SRS-ECU. The trouble causes for each diagnosis code No. are as follows.	Malfunction of SRS-ECU

Table 2

Code No.	Defective part	Trouble Symptom
14	Front impact analog G-sensor	● When the analog G-sensor is not operating ● When the characteristics of the analog G-sensor are abnormal ● When the output from the analog G-sensor is abnormal
15	Front impact safing G-sensor	Short circuit in the safing G-sensor
16		Open circuit in the safing G-sensor
17	Side impact safing G-sensor	● When the safing G-sensor is not operating ● When the characteristics of the safing G-sensor are abnormal ● When the output from the safing G-sensor is abnormal
31	DC-DC converter	Voltage at the DC-DC converter terminal is higher than the specified value for five seconds or more.
32		Voltage at the DC-DC converter terminal is lower than the specified value for five seconds or more(this is not detected if diagnosis code No.41 or 42 indicating battery voltage drop has been output.)
45	Non-volatile memory (EEPROM)	When the non-volatile memory (EEPROM) is abnormal
51	Driver's side air bag module (squib)	Short circuit in the squib ignition drive circuit
52		Open circuit in the squib ignition drive circuit
54	Passenger's air bag module (squib)	Short circuit in the squib ignition drive circuit
55		Open circuit in the squib ignition drive circuit
73	Side air bag module (R.H.) (squib)	Short circuit in the squib ignition drive circuit
74		Open circuit in the squib ignition drive circuit
83	Side air bag module (L.H.) (squib)	Short circuit in the squib ignition drive circuit
84		Open circuit in the squib ignition drive circuit

Replace the SRS-ECU.

Code No.21, 22, 61, 62 Driver's side air bag module (squib) system	Probable cause
These diagnosis codes are output if there is an abnormal resistance between the input terminals of the driver's side air bag module (squib) inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follow. However, as for code Nos.21 and 22, if the vehicle's condition return to normal, SRS warning lamp will go out. (Diagnosis code will remain stored)	● Malfunction of clock spring ● Partially open as clock spring is not in neutral position ● Malfunction of harness or connector ● Malfunction of driver's air bag module (squib) ● Malfunction of SRS-ECU

Table 3

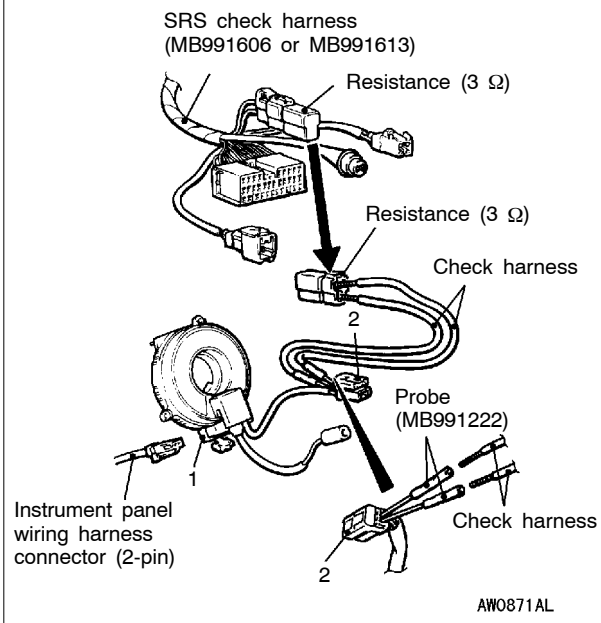
Code No.	Trouble Symptom
21	● Short circuit in driver's air bag module (squib) or harness short ● Short circuit in clock spring ● Poor connector contact*
22	● Open circuit in driver's air bag module (squib) or open harness ● Open circuit in clock spring ● Disconnected driver's air bag module (squib) connector ● Partially open as clock spring is not in neutral position ● Poor connector contact
61	Short circuit in driver's air bag module (squib) harness leading to the power supply
62	Short circuit in driver's air bag module (squib) harness leading to the earth

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 connecter.

Check the clock spring (Refer to P.52B-37.) — NG → **Replace**

OK



MUT-II Self-Diag Code

- Connect clock spring connector No.1 D-206 and the harness side connector(2-pin).
- Insert the probes (MB991222) from the rear of the clock spring No.2connector and connect the check harness to the probe.
  Caution
  Never insert the probe directly to the terminals from the front of the connector.
- Disconnect the resistance connector from the SRS check harness (MB991606 or MB991613) and connect to the check harness.
- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Is code Nos.21, 22, 61 or 62 displayed?

YES

Check the following connector: D-206, E-111

OK → Check the trouble symptoms.

NG → **Repair**

NG

Check wiring harness between clock spring and SRS-ECU.

OK → Replace the SRS-ECU.

NG → **Repair**

NO

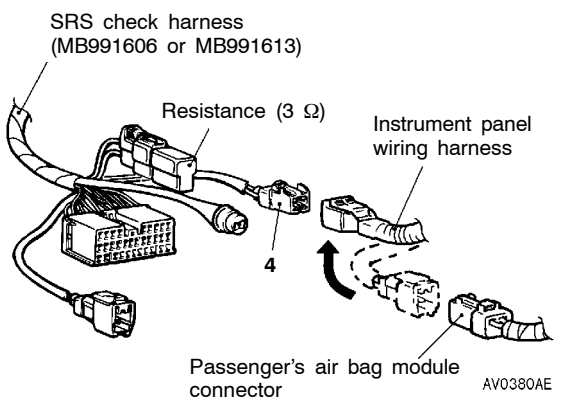
Replace driver's air bag module (squib).

Code No.24, 25, 64, 65 Passenger's air bag module (squib) system	Probable cause
These diagnosis codes are output if there is an abnormal resistance between the input terminals of the passenger's air bag module (squib) inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follow. However, as for code Nos.24, 25, if the vehicle's condition return to normal, SRS warning lamp will go out. (Diagnosis code will remain stored).	• Malfunction of harness or connector • Malfunction of passenger's air bag module (squib) • Malfunction of SRS-ECU

Table 4

Code No.	Trouble Symptom
24	• Short in passenger's air bag module (squib) or harness short • Poor connector contact*
25	• Open circuit in passenger's air bag module (squib) or open harness • Poor connector contact
64	Short in passenger's air bag module (squib) harness leading to the power supply
65	Short in passenger's air bag module (squib) harness leading to the earth

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 connector.



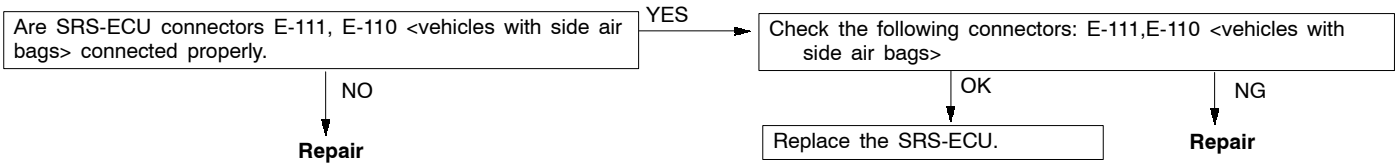
MUT-II Diagnosis Code
- Disconnect passenger's air bag module connector D-10, and connect the harness side connector to SRS check harness (MB991606 or MB991613) connector No.4.
- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Is code Nos.24, 25, 64 or 65 output?

YES → **Check the following connectors:** D-10, E-111
- OK → Check the trouble symptoms.
  - NG → **Repair**
- NG → Check the harness wire between the passenger's air bag module (squib) and the SRS-ECU.
  - OK → Replace the SRS-ECU.
    - NG → **Repair**

NO → Replace passenger's air bag module (squib).

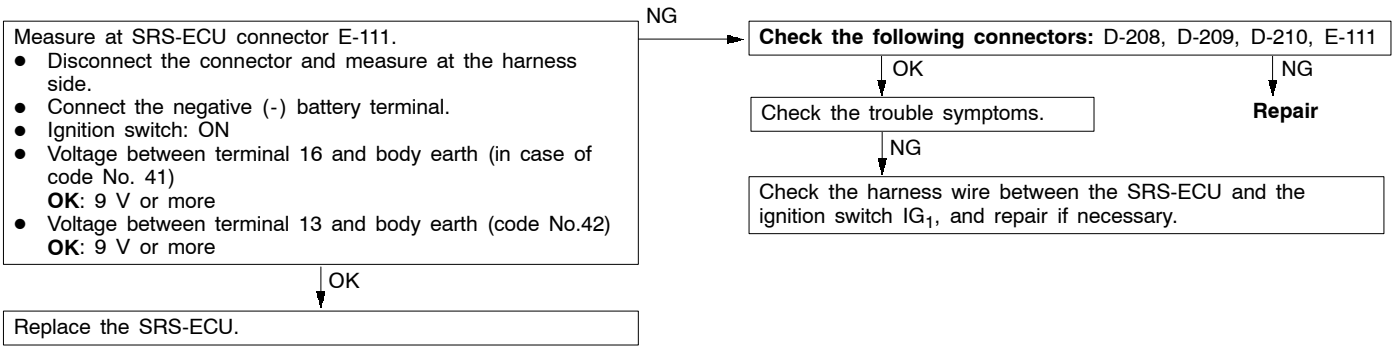
Code No.34 Connector lock system	Probable cause
This diagnosis code is output when the SRS-ECU detects that the SRS-ECU connector is improperly connected. However, when vehicle condition returns to normal, this code will be automatically erased, and the SRS warning lamp will go out.	• Malfunction of connector • Malfunction of SRS-ECU



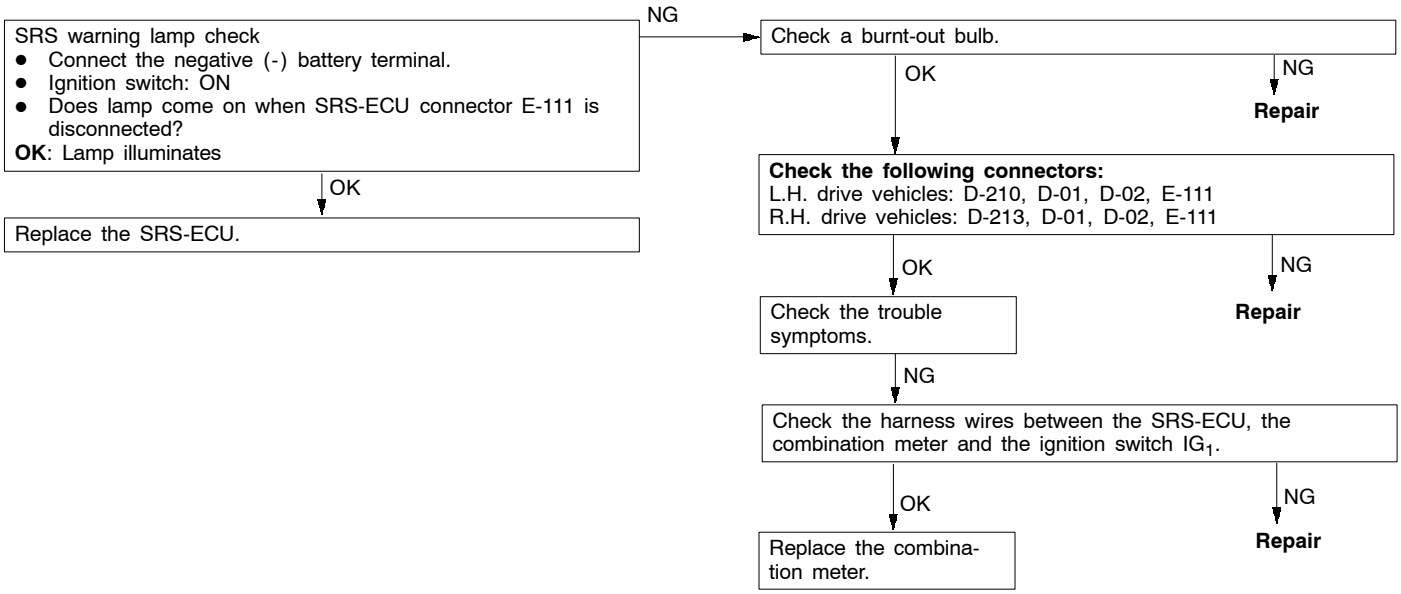
Code No.35 SRS-ECU (deployed air bag) system	Probable cause
This code is displayed after deployment of air bags. If displayed before deployment, the code indicates malfunction probably present in SRS-ECU.	Malfunction of SRS-ECU

Replace the SRS-ECU.

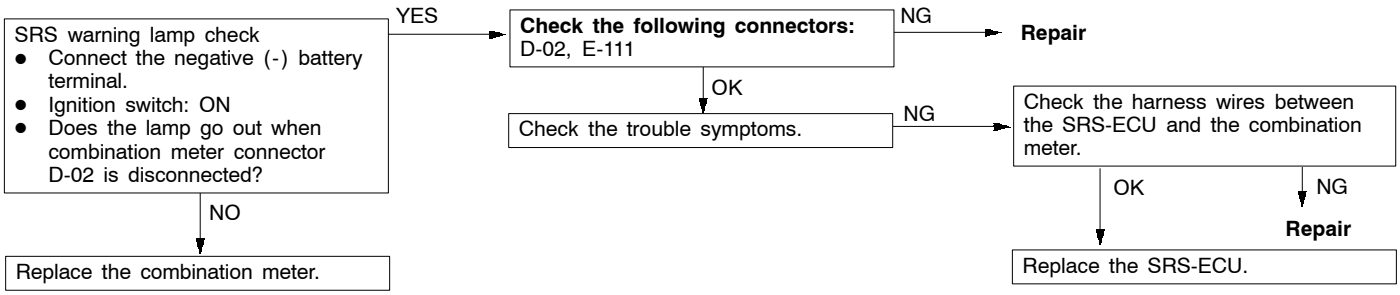
Code No.41 Power circuit system (fuse No.6 circuit) Code No.42 Power circuit system (fuse No.8 circuit)	Probable cause
Code No.41 is displayed if voltage between IG_1 terminal (SRS-ECU, terminal 16) and earth is lower than specified for five successive seconds or more. Code No.42 is displayed if voltage between IG_1 terminal (SRS-ECU, terminal 13) and earth is lower than specified for five successive seconds or more. However, when vehicle condition returns to normal, these codes will be automatically erased, and the SRS warning lamp will go out. If codes No.41 and 42 are displayed together, check the battery first as vehicle may have discharged battery.	• Malfunction of harness or connector • Malfunction of SRS-ECU



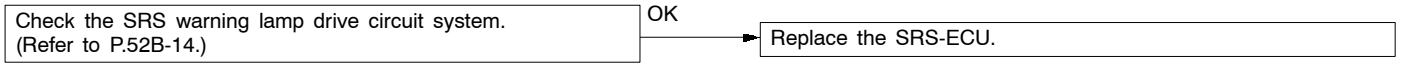
Code No.43 SRS warning lamp drive circuit system (Lamp does not come on.)	Probable cause
This diagnosis code is output when a open circuit is present for5 successive seconds or more in SRS warning lamp drive circuit. However, the vehicle condition return to normal condition, this code, if displayed due to open circuit, will be automatically erased.	• Malfunction of harness or connector • Blown bulb • Malfunction of SRS-ECU • Malfunction of combination meter



Code No.43 SRS warning lamp drive circuit system (Lamp does not go out.)	Probable cause
This diagnosis code is output when a short to earth occurs in the harness between the SRS warning lamp 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.	• Malfunction of harness or connector • Malfunction of SRS-ECU • Malfunction of combination meter



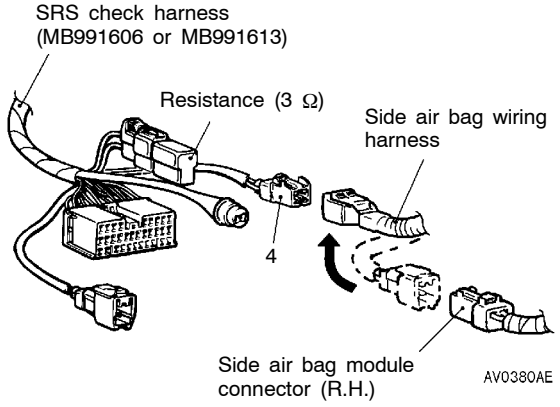
Code No.44 SRS warning lamp drive circuit system	Probable cause
This diagnosis code is output when a short occurs in the lamp drive circuit or a malfunction of the output transistor inside the SRS-ECU is detected while the SRS-ECU is monitoring the SRS warning lamp drive circuit. However, when vehicle condition returns to normal, these codes will be automatically erased, and the SRS warning lamp will go out.	• Malfunction of harness or connector • Malfunction of SRS-ECU



Code No. 71, 72, 75, 76 Side air bag module (R.H.) (squib) system	Probable cause
These diagnosis codes are output if there is an abnormal resistance between the input terminals of the side air bag module (R.H.) (squib) inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follow. However, as for code No.71, 72, if the vehicle condition returns to normal, the SRS warning lamp will go out. (Diagnosis code will remain stored).	• Malfunction of harness or connector • Malfunction of side air bag module (R.H.) (squib) • Malfunction of SRS-ECU

Table 5

Code No.	Trouble Symptom
71	Short in side air bag module (R.H.) (squib) or harness short
72	• Open in side air bag module (R.H.) (squib) or open harness • Poor connector contact
75	Short in side air bag module (R.H.) (squib) harness leading to the power supply
76	Short in side air bag module (R.H.) (squib) harness leading to the earth



MUT-II Self-Diag Code
- Disconnect the side air bag module (R.H.) connector F-28 and connect the harness side connector to the SRS check harness (MB991606 or MB991613) No.4 connector.
- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Are code No.71, 72, 75 or 76 displayed?

YES → **Check the following connectors: F-28, E-110**
- OK → Check the trouble symptoms.
  - NG → Repair
  - NG → Check wiring harness between the side air bag module (R.H.) (squib) and SRS-ECU.
    - OK → Replace the SRS-ECU.
    - NG → **Repair**

NO → Replace the driver's front seat back assembly.

Code No.79, 93 Side impact sensor communication system (L.H.)	Probable cause
These diagnosis codes are output if communication between the side impact sensor (L.H.)and the SRS-ECU is not possible (code No.93) or abnormal (code No.79).	• Malfunction of harness or connector • Malfunction of side impact sensor (L.H.) • Malfunction of SRS-ECU

MUT-II Self-Diag Code
- Switch over the right side impact sensor (R.H.) and the side impact sensor (L.H.).
- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Are code Nos.79 and 93 erased and code Nos.89 and 96 output?

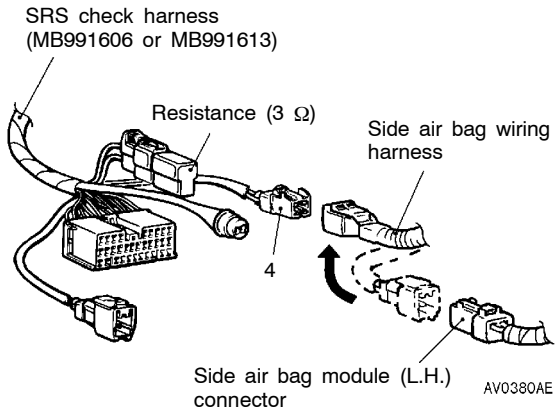
NO → **Check the following connectors:** F-19, E-21, E-110
- OK → Check the trouble symptoms.
  - NG → **Repair**
- NG → Check the harness wire between the left side impact sensor and the SRS-ECU.
  - OK → Replace the SRS-ECU.
  - NG → **Repair**

YES → Replace the side impact sensor (L.H.) mounted driver's side.

Code No.81, 82, 85, 86 Side air bag module (L.H.) (squib) system	Probable cause
These diagnosis codes are output if there is an abnormal resistance between the input terminals of the side air bag module (L.H.) (squib) inside the SRS-ECU. The trouble causes for each diagnosis code No. are as follow. However, as for code No.81, 82, if the vehicle condition returns to normal, the SRS warning lamp will go out. (Diagnosis code will remain stored)	• Malfunction of harness or connector • Malfunction of side air bag module (L.H.) (squib) • Malfunction of SRS-ECU

Table 6

Code No.	Trouble Symptom
81	Short in side air bag module (L.H.) (squib) or harness short
82	• Open circuit in side air bag module (L.H.) (squib) or open harness • Poor connector contact
85	Short in side air bag module (L.H.) (squib) harness leading to the power supply harness
86	Short in side air bag module (L.H.) (squib) harness leading to the earth



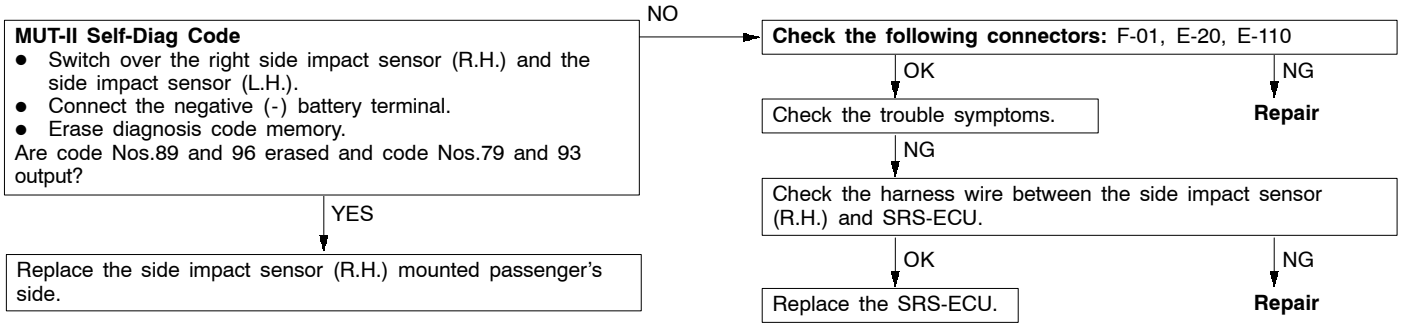
MUT-II Self-Diag Code
- Disconnect side air bag module connector (L.H.) F-21 and connect the harness side connector to SRS check harness (MB991606 or MB991613) connector No.4.
- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Is code No.81, 82, 85 or 86 displayed?

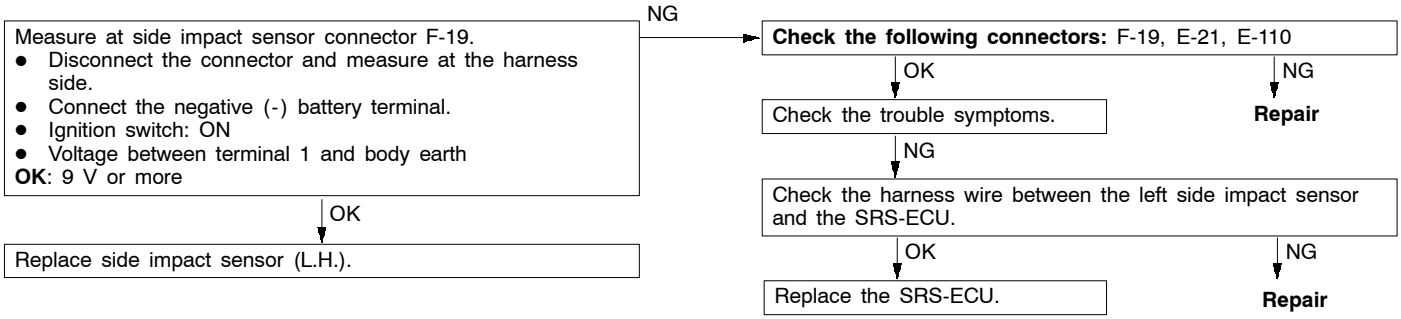
YES → **Check the following connectors:** F-21, E-110
- OK → Check the trouble symptoms.
  - NG → **Repair**
- NG → Check wiring harness between side air bag module (L.H.) (squib) and SRS-ECU.
  - OK → Replace the SRS-ECU.
  - NG → **Repair**

NO → Replace the passenger's front seat back assembly

Code No.89, 96 Side impact sensor (R.H.) communication system	Probable cause
These diagnosis codes are output if communication between the side impact sensor (R.H.) and the SRS-ECU is not possible (code No.96) or abnormal (code No.89).	• Malfunction of harness or connector • Malfunction of side impact sensor (R.H.) • Malfunction of SRS-ECU



Code No.91 Side impact sensor (L.H.) power supply circuit system	Probable cause
Power supply voltage of side impact sensor (L.H.) is lower than specified for five successive seconds or more. However, when vehicle condition returns to normal, this code will be automatically erased, and the SRS warning lamp will go out.	• Malfunction of harness or connector • Malfunction of side impact sensor (L.H.) • Malfunction of SRS-ECU



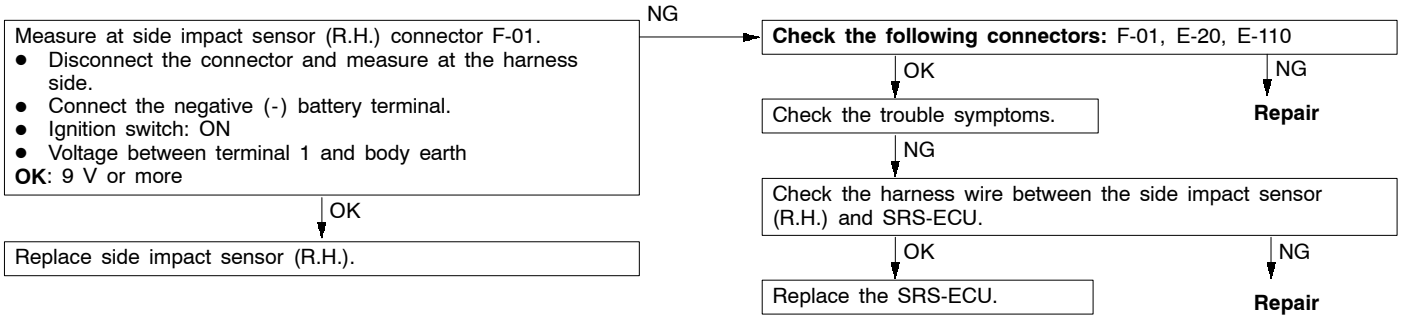
Code No.92, 95 Side impact sensor system	Probable cause
Code No.92 is displayed when malfunction is present inside side impact sensor (L.H.). Code No.95 is displayed when malfunction is present inside side impact sensor (R.H.). The trouble causes for each diagnosis code No. are as follows.	• Malfunction of side impact sensor (L.H.) (in case of code No.92) • Malfunction of side impact sensor (R.H.) (in case of code No.95)

Table 7

Code No.	Defective part	Trouble Symptom
92	Side impact analog G-sensor	• Not working • Having abnormal characteristics • Having abnormal output
95		

• Replace the side impact sensor (L.H.) (in case of code No.92) • Replace the side impact sensor (R.H.) (in case of code No.95)

Code No.94 Side impact sensor (R.H) power supply circuit system	Probable cause
Power supply voltage of side impact sensor (R.H.) is lower than specified for consecutive five seconds or more. However, when vehicle condition returns to normal, this code will be automatically erased, and the SRS warning lamp will go out.	• Malfunction of harness or connector • Malfunction of side impact sensor (R.H.) • Malfunction of SRS-ECU



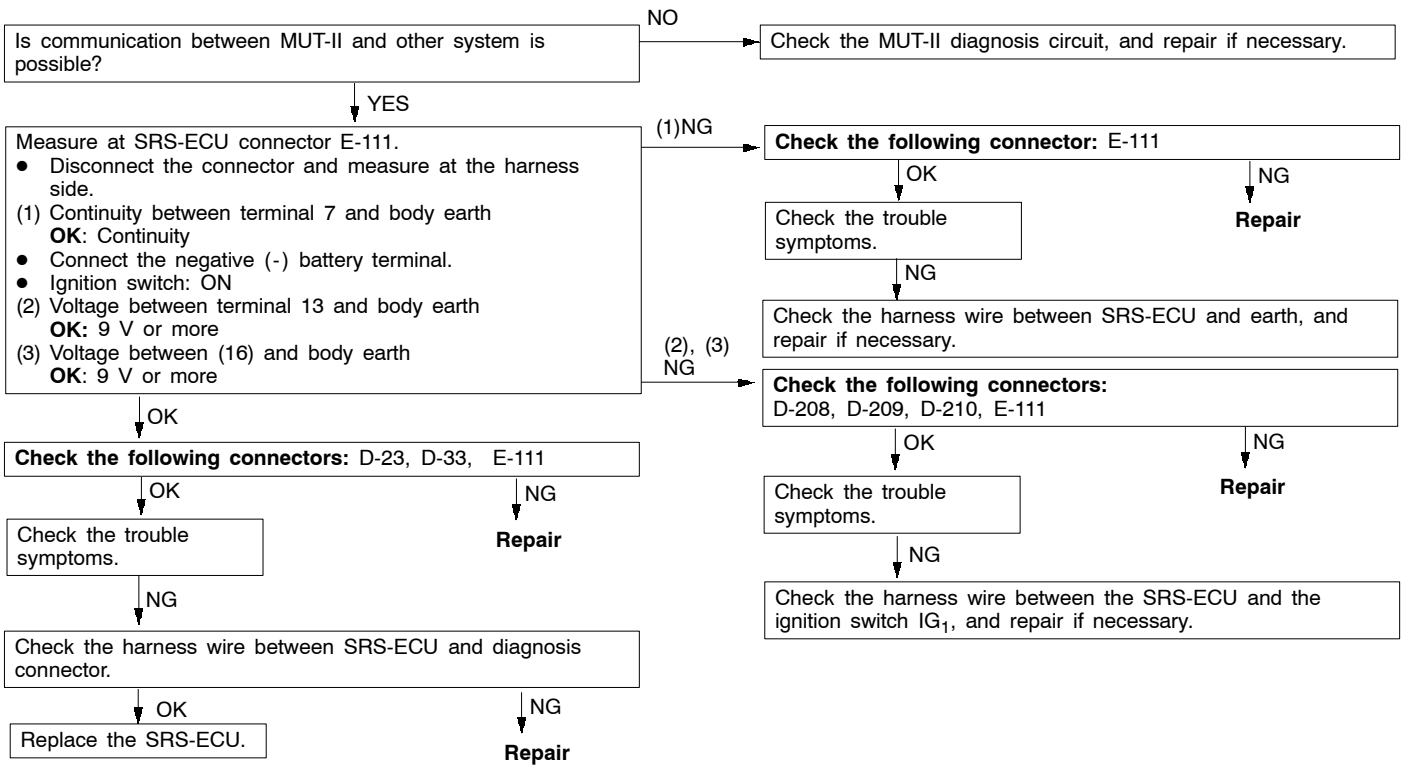
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble Symptom	Inspection procedure No(s).	Reference page
Communication with the MUT-II is not possible.	1	52B-18
SRS warning lamp does not come on.	See diagnosis code No.43.	52B-14
SRS warning lamp does not go out.	See diagnosis code Nos.43, 44.	52B-14

INSPECTION PROCEDURES FOR TROUBLE SYMPTOMS

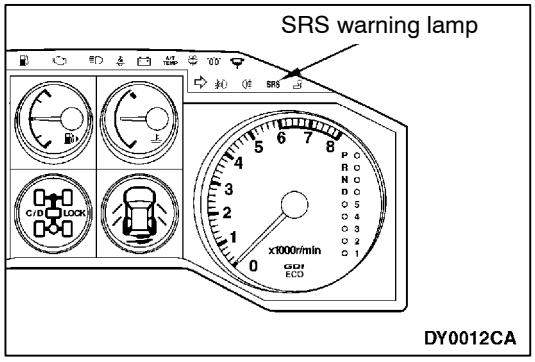
Inspection procedure 1

Communication with the MUT-II is not possible.	Probable cause
If communication with all other systems is not possible, there is a high possibility that there is a malfunction of the diagnosis line. When only communication with SRS air bags is impossible, open in diagnosis output circuit or power supply circuit including earth circuit may be present.	• Malfunction of harness or connector • Malfunction of SRS-ECU



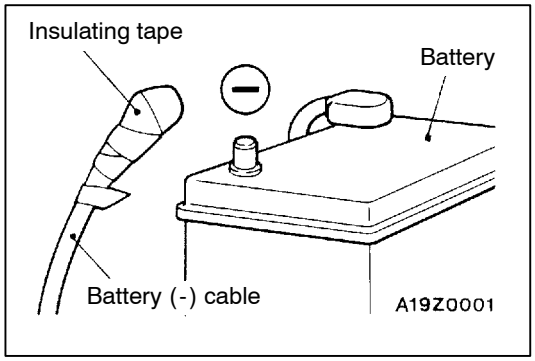
SRS MAINTENANCE

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



SRS WARNING LAMP CHECK

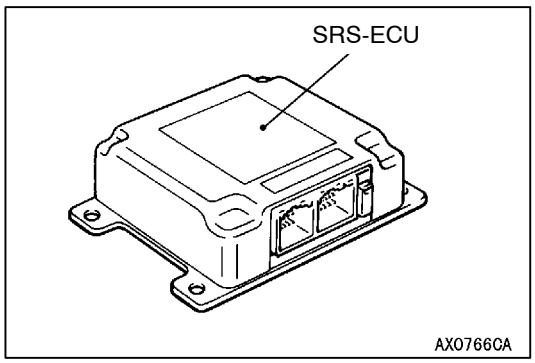
Turn the ignition key to the ON position. Does the SRS warning lamp illuminate for about 7 seconds, turn off and then remain extinguished for at least 5 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.



SRS COMPONENT VISUAL CHECK

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

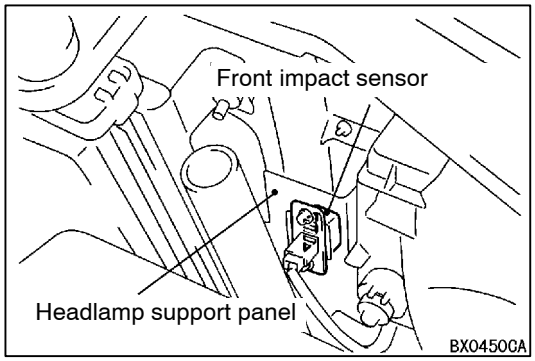
Caution
Wait at least 60 seconds after disconnecting the battery cable before doing any further work. (Refer to P.52B-4.)



SRS CONTROL UNIT (SRS-ECU)

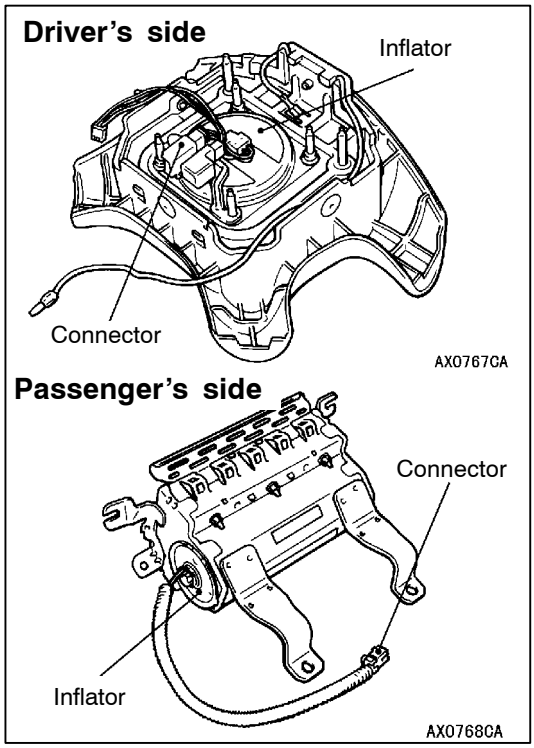
1. Check SRS-ECU case and brackets for dents, cracks, deformation or rust.

   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 to P.52B-30.)



FRONT IMPACT SENSORS

1. Check the headlamp support panel for deformation or rust.
2. Check the front impact sensor for dents, cracks, deformation or rust.
3. Check the sensor harnesses for binding, the connectors for damage, and the terminals for deformation.

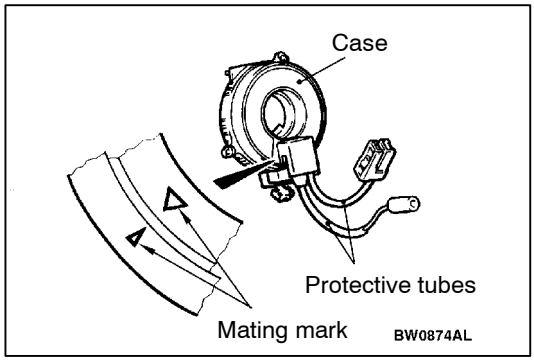


AIR BAG MODULES, STEERING WHEEL AND CLOCK SPRING

1. Remove the air bag modules, steering wheel and clock spring. (Refer to P.52B-32.)

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

2. Check pad cover for dents, cracks or deformation.
3. Check connector for damage, terminals deformities, and harness for binds.
4. Check air bag inflator case for dents, cracks or deformities.
5. Check harness and connectors for damage, and terminals for deformation.



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 vehicle's front wheels to straight-ahead position, install the clock spring to the column switch.

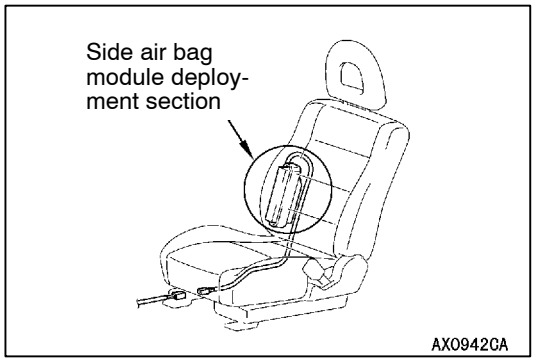
   Mating Mark Alignment

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

   Caution
   If the clock spring's mating mark is 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 or front passenger.

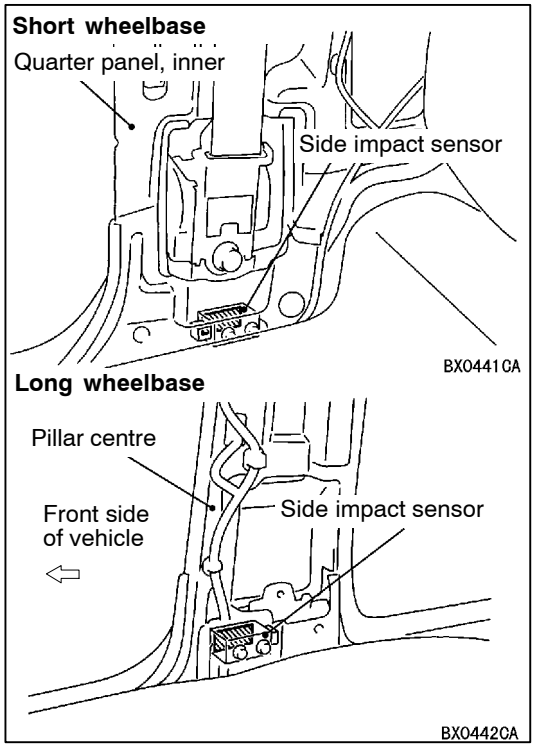
9. Install the steering column covers, steering wheel and the air bag module.
10. Check steering wheel for noise, binds of difficult operation.
11. Check steering wheel for excessive free play.
    REPLACE ANY VISUALLY INSPECTED PART IF IT FAILS THAT INSPECTION. (Refer to P.52B-38.)

    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.



FRONT SEAT BACK ASSEMBLY (SIDE AIR BAG MODULE)

1. Check the side air bag module deployment section in the seat for dents and deformation.
2. Check the harness for binds, the connector for damage and the terminals for deformation.



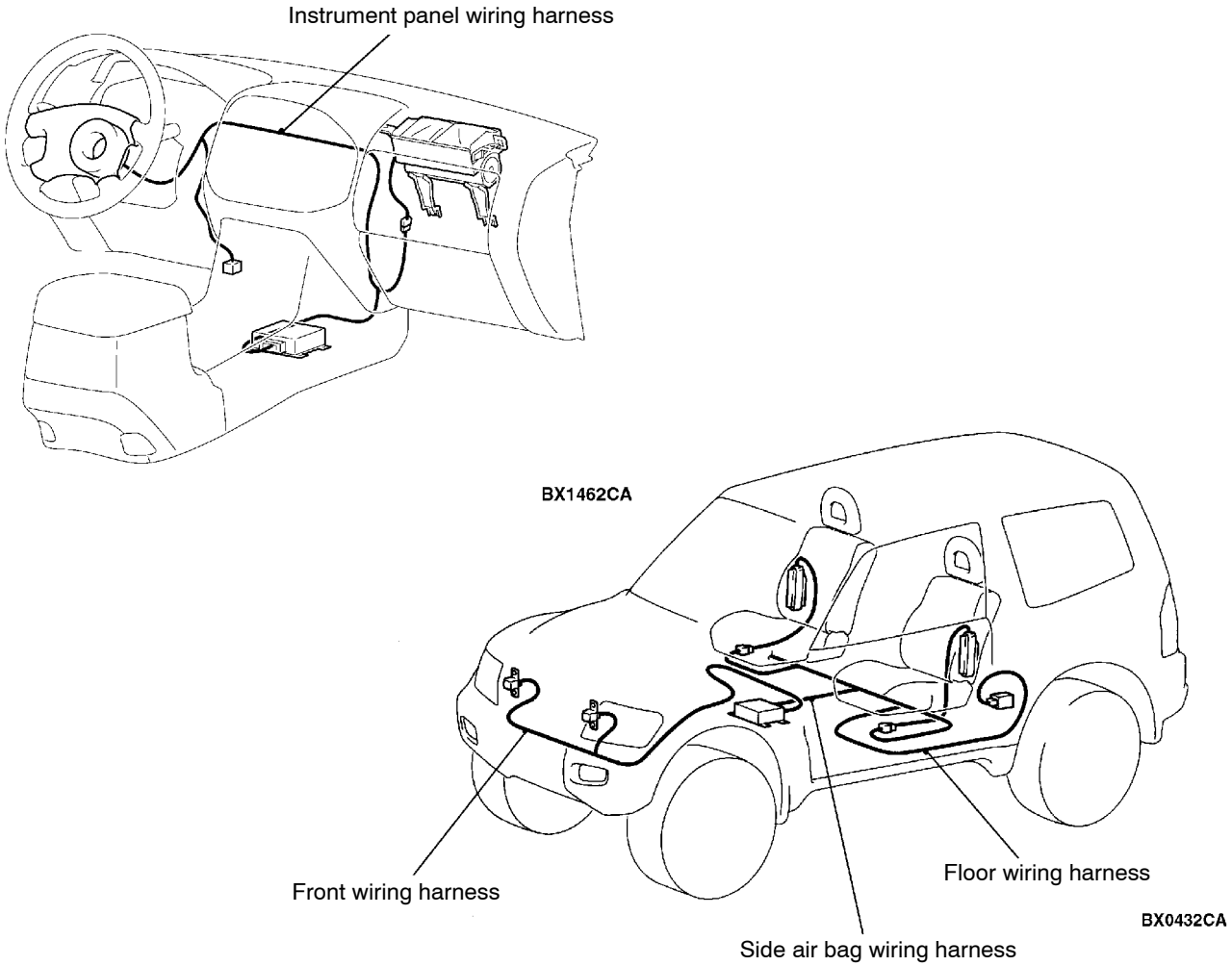
SIDE IMPACT SENSOR

1. Check the center pillar <long wheelbase> or quarter panel inner <short wheelbase> for deformation or rust.
2. Check the side impact sensors for dents, cracks, deformation and rust.
3. Check the connector for damage and the terminals for deformation.

NOTE
The figures show side impact sensors (R.H.). The side impact sensors (L.H.) is symmetrical with the side impact sensors (R.H.).

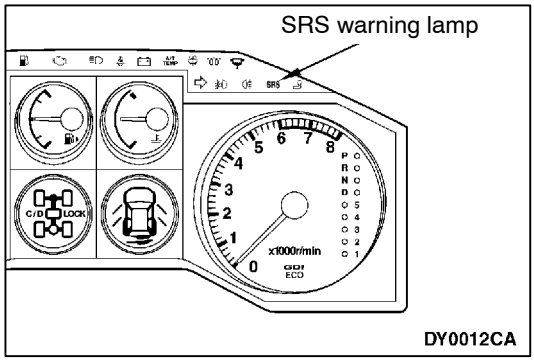
Caution
The SRS may not activate if the impact sensors are not installed properly, which could result in serious injury or death to the vehicle's driver or front passenger.

INSTRUMENT PANEL WIRING HARNESS/FRONT WIRING HARNESS/SIDE AIR BAG WIRING HARNESS/FLOOR WIRING HARNESS



1. Check connector for poor connection.
2. Check harnesses for binds, connectors for damage, and terminals for deformation.
   FAIL THE VISUAL INSPECTION. (Refer to P.52B-4.)

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 or front passenger.



POST-INSTALLATION INSPECTION

Reconnect the negative battery terminal. Turn the ignition key to the ON position. Does the SRS warning lamp illuminate for about 7 seconds, turn off and then remain extinguished for at least 5 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.

POST-COLLISION DIAGNOSIS

Whether or not the air bags have deployed, check and service the vehicle after collision as follows:

SRS-ECU MEMORY CHECK

1. Connect the MUT-II to the diagnosis connector. (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)

   Caution
   Refer to that the ignition switch is LOCK(OFF) when connecting or disconnecting MUT-II.

2. Read (and write down) all displayed diagnosis codes. (Refer to P.52B-7.)

   NOTE
   If battery power supply has been shut down by the collision, the MUT-II cannot communicate with the SRS-ECU. Check and, repair if necessary, the instrument panel wiring harness before the next job.

3. Use the the MUT-II to read the data list (how long trouble(s) have continued and how often memory have been erased).

Data list

No	Service Data Item	Applicability
92	Number indication how often the memory is cleared.	Maximum time to be stored: 250
93	How long problem have lasted (How long it takes from the occurrence of the problem till the first air bag squib igniting signal)	Maximum time to be stored: 9999 minutes (approximately 7 days)
94	How long problem(s) have 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 to P.52B-7.)

REPAIR PROCEDURE

DEPLOYED DRIVER'S AND FRONT PASSENGER'S AIR BAGS

1. Replace the following parts with new ones.
   - SRS-ECU (Refer to P.52B-30.)
   - Driver's air bag module (Refer to P.52B-32.)
   - Front passenger's air bag module (Refer to P.52B-32.)
2. Check the following parts and replace if malfunction is found:
   - Clock spring (Refer to P.52B-32.)
   - Steering wheel, steering column and intermediate joint
     (1) Check the wiring harness (built into steering wheel) and connectors for damage, and terminals for deformation.
     (2) Check the driver's air bag module for proper installation to the steering wheel.

(3) Check the steering wheel for noise, binds or difficult operation and excessive free play.

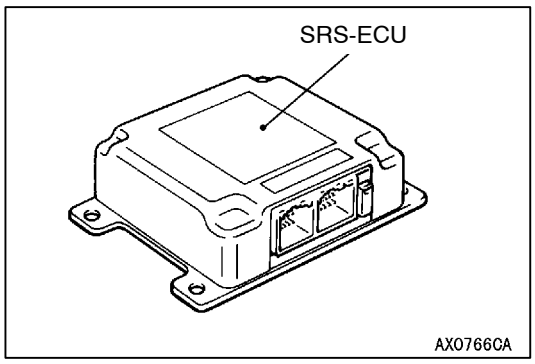
3. Check the harness for binding, connectors for damage, poor connections, and terminals for deformation. (Refer to P.52B-4.)

DEPLOYED SIDE AIR BAGS

1. Replace the following parts with new ones:
   - SRS-ECU (Refer to P.52B-30.)
   - Side impact sensors (Refer to P.52B-41.)
   - Front seat back assemblies (Refer to P.52B-32.)
2. Check harnesses for binding, connectors for damage, poor connections, and terminals for deformation. (Refer to P.52B-4.)

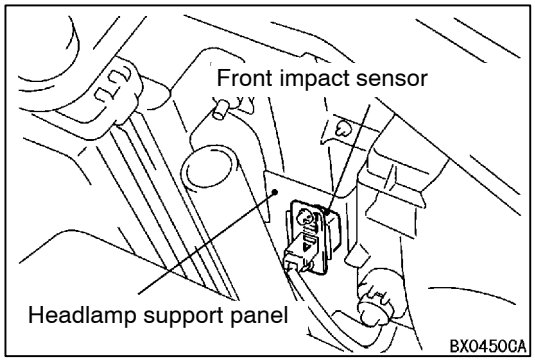
UNDEPLOYED AIR BAGS IN LOW-SPEED COLLISION

Check the SRS components. If visible damage such as dents, cracks, or deformation are found on the SRS components, replace them with new ones. Concerning parts removed for inspection, replacement with new parts and cautions in working, refer to INDIVIDUAL COMPONENT SERVICE, P.52B-26



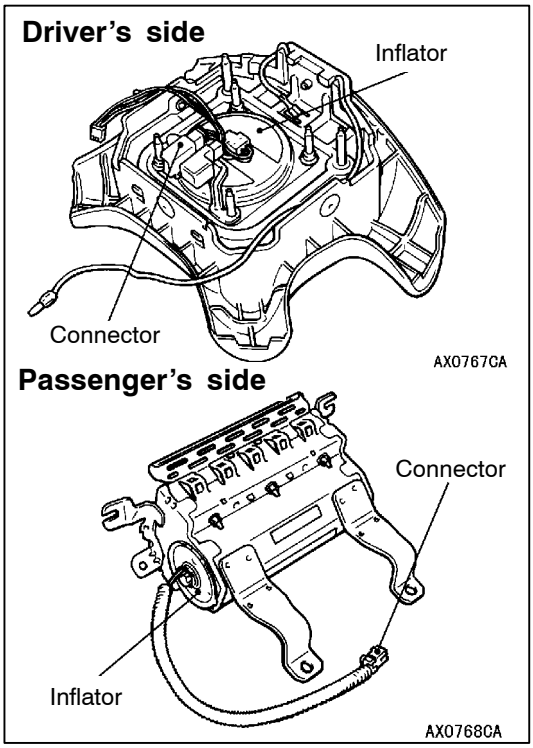
SRS-ECU

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



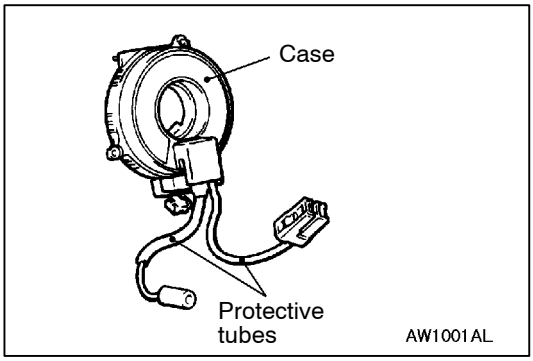
Front impact sensor

1. Check the headlamp support panel for deformation or rust.
2. Check the front impact sensor for dents, cracks, deformation or rust.
3. Check the sensor harness for binding, the connectors for damage, and the terminals for deformation.



Driver's and passenger's air bag modules

1. Check the pad cover for dents, cracks or deformation.
2. Check the connectors for damage, the terminals for deformation, and the harness for binds.
3. Check the air bag inflator cases for dents, cracks or deformation.
4. Check the air bag modules for proper installation.

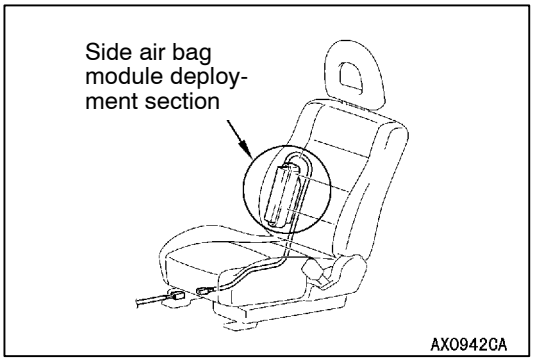


Clock spring

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

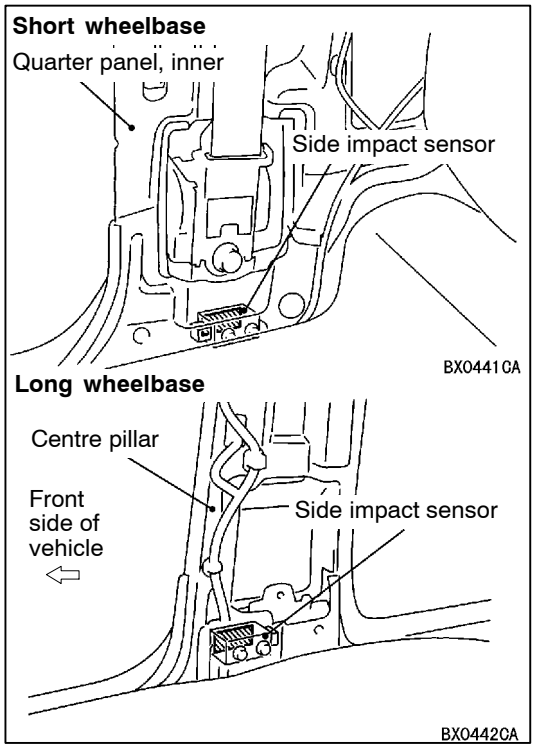
Steering wheel, steering column and lower shaft assembly

1. Check the driver's air bag module for proper installation to the steering wheel.
2. Check steering wheel for noise, binds or difficult operation and excessive free play.



Front seat back assembly (side air bag module)

1. Check the side air bag module deployment section in the seat for dents and deformation.
2. Check the connectors for damage, the terminals for deformation, and the harness for binds.



Side impact sensor

1. Check the center pillar <long wheelbase> or quarter panel inner <short wheelbase> for deformation or rust.
2. Check the side impact sensor for dents, cracks, deformation and rust.
3. Check connectors for damage, and terminals for deformation.

NOTE
The figures show side impact sensors (R.H.).The side impact sensors (L.H.) is symmetrical with the side impact sensors (R.H.).

Harness connectors (Instrument panel wiring harness, side air bag wiring harness, floor wiring harness)

Check harnesses for binding, connectors for damage and terminals for deformation.(Refer toP.52B-4.)

INDIVIDUAL COMPONENT SERVICE

If the SRS components are to be removed or replaced as a result of maintenance, troubleshooting etc., follow the service procedures that follow. (P.52B-28 to 42.)

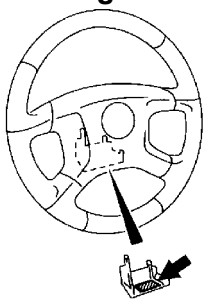
Caution

1. **SRS components should not be subjected to temperature over 93°C, so remove the SRS-ECU, front impact sensors, driver's and front passenger's air bag modules, clock spring, side impact sensors and front seat assemblies (side air bag modules) before drying or baking the vehicle after painting.**
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.**

WARNING/CAUTION LABELS

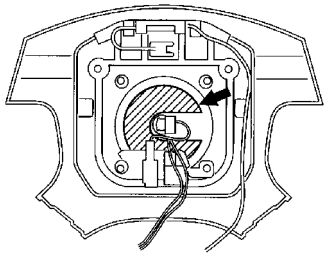
Caution labels on the SRS are attached in the vehicle as shown. Follow label instructions when servicing the SRS. If the label(s) are dirty or damaged, replace with new one(s).

Steering wheel



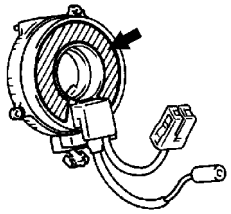
AX0433CA

Driver's air bag module



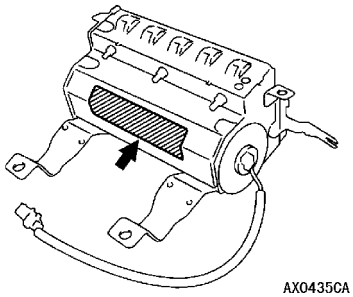
AX0434CA

Clock spring



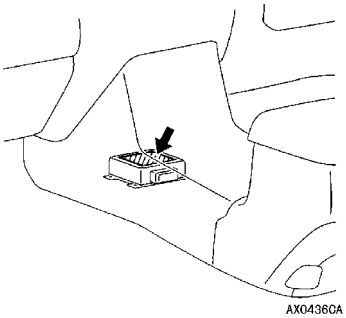
BW0963AL

Passenger's air bag module



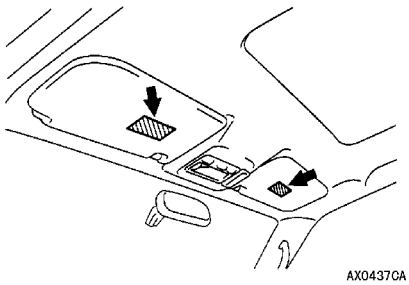
AX0435CA

SRS-ECU



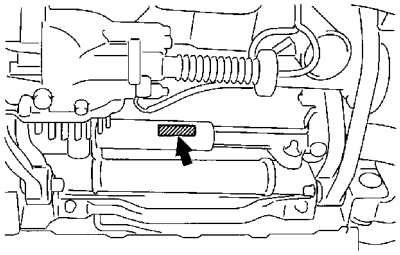
AX0436CA

Sun visor



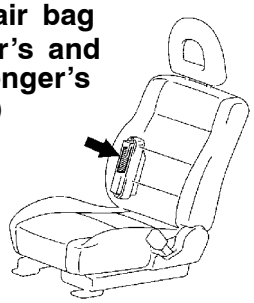
AX0437CA

Steering gear box



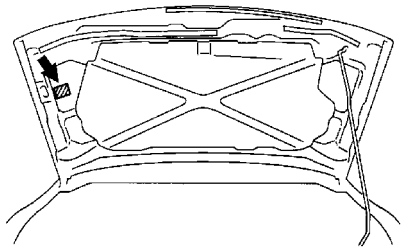
AX0438CA

Side air bag (driver's and passenger's sides)



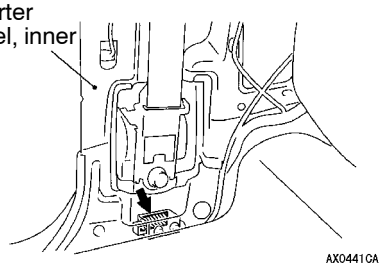
AX0439CA

Hood



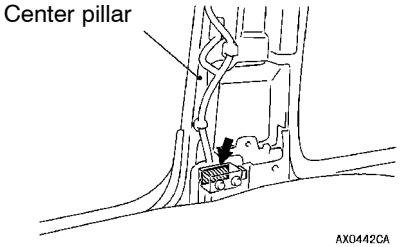
AX0440CA

Side impact sensor
Short wheelbase



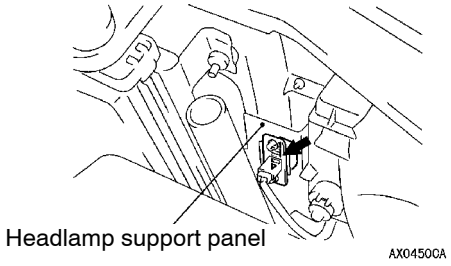
AX0441CA

Long wheelbase



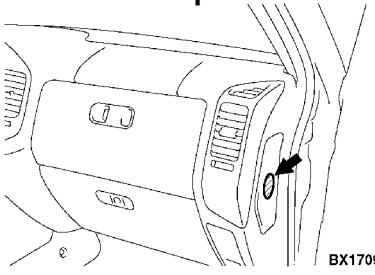
AX0442CA

Front impact sensor



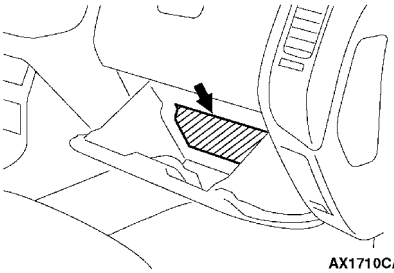
AX0450CA

Instrument panel



BX1709CA

Glove box



AX1710CA

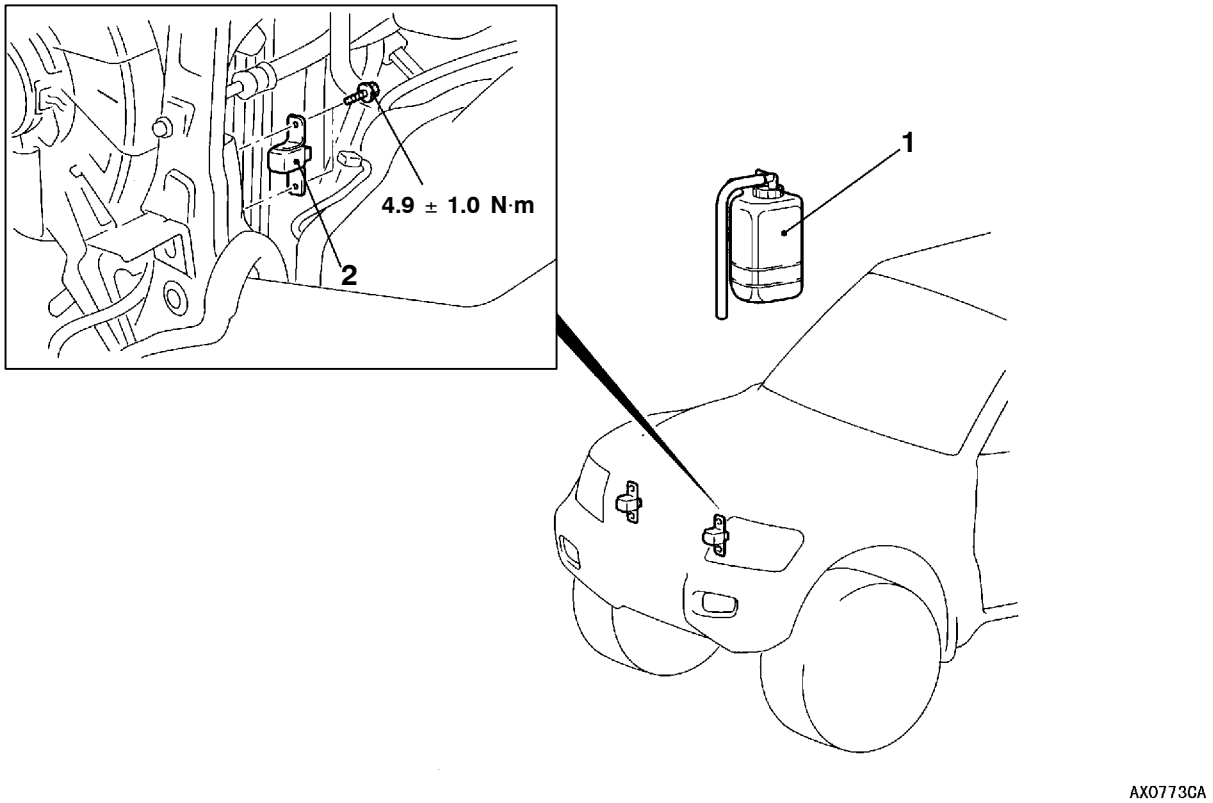
FRONT IMPACT SENSORS

Caution

1. **Disconnect the battery (–) terminal and wait for 60 seconds or more before starting work. Furthermore, the disconnected battery terminal should be covered with tape to insulate it. (Refer to P.52B-4.)**
2. Never attempt to disassemble or repair the front impact sensor. If faulty, replace it.
3. Do not drop or subject the front impact sensor to impact or vibration.
   If denting, cracking, deformation, or rust are discovered in the front impact sensor, replace it with a new front impact sensor. Discard the old one.
4. After deployment of an air bag, replace the front impact sensor with a new one.

REMOVAL AND INSTALLATION

Pre-removal Operations
- Turn the ignition switch to LOCK(OFF) position.
- Disconnect the negative battery (-) terminal.



AX0773CA

Removal steps
1. Condense tank
2. Front impact sensor

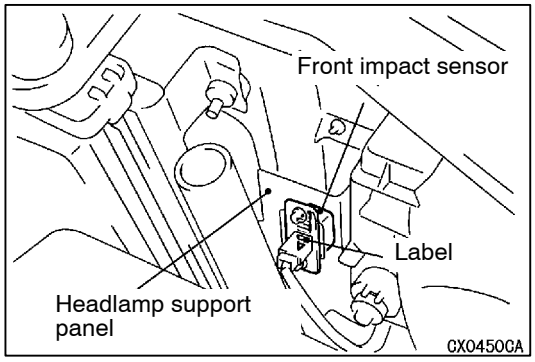
Installation steps
- ▶A◀ ● Pre-installation inspection
- ▶B◀ 2. Front impact sensor
  1. Condense tank
  ● Connect the negative (-) battery terminal.
- ▶C◀ ● Post-installation inspection

NOTE
The figure shows the front impact sensor (L.H.).

INSTALLATION SERVICE POINTS

▶A◀ PRE-INSTALLATION INSPECTION

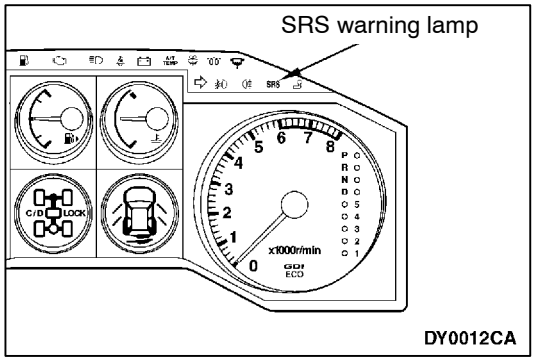
To mount the new front impact sensor, visually check it and measure the resistance between the terminals.(Refer to the previous item “INSPECTION”.)



▶B◀ FRONT IMPACT SENSOR INSTALLATION

1. Securely connect the connector.
2. Position the front impact sensor facing toward the front of the vehicle as shown by the arrow on the label and install it securely.

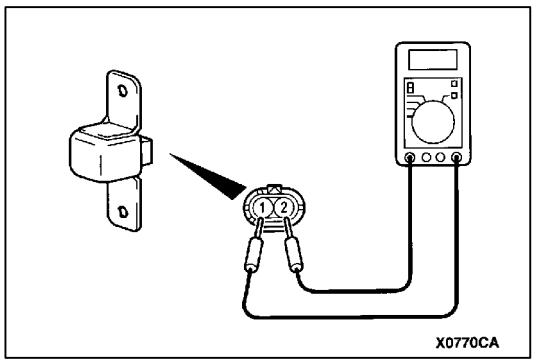
Caution
The SRS may not activate properly if a front impact sensor is not installed properly.



▶C◀ POST-INSTALLATION INSPECTION

1. Turn the ignition key to the ON position.
2. Does the SRS warning lamp illuminate for about 7 seconds, and then remain extinguished for at least 5 seconds after turning OFF?
3. If no, refer to troubleshooting.
   (Refer to P.52B-7)

INSPECTION

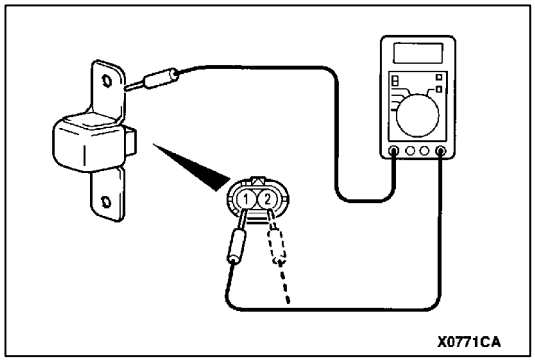


1. Check the front impact sensor for dents, cracks, deformation or rust.

Caution
If a dent, crack, deformation or rust is found, replace the sensor with a new one.

2. Check short or open circuit between the terminals of the front impact sensor.

Short circuit: 1 Ω or less
Open circuit: 1 MΩ or more



Caution
Always replace the sensor with a new one if the resistance shows a short or open circuit.

3. Check the continuity between the terminal and bracket. If there is a continuity, the insulation is malfunctioned, and replace the sensor with a new one.
4. Check the headlamp support panel for deformation and rust.

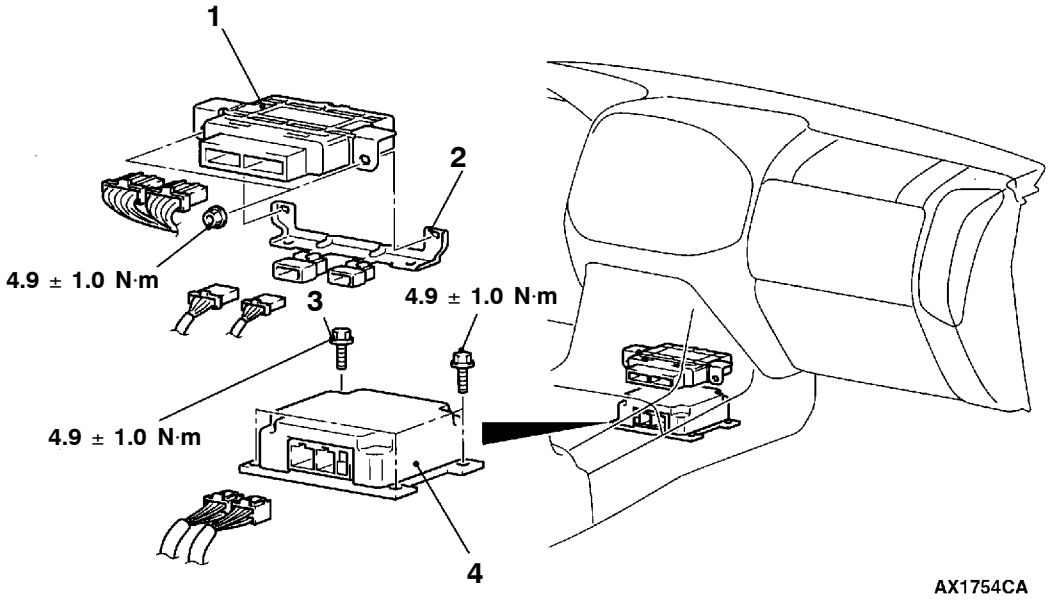
SRS AIR BAG CONTROL UNIT (SRS-ECU)

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. (Refer to P.52B-4.)**
2. **Never attempt to disassemble or repair the SRS-ECU. If faulty, just replace with a new one.**
3. **Do not drop or subject the SRS-ECU to impact or vibration.**
   If denting, cracking, deformation, or rust are found in the SRS-ECU, replace it with a new one. Discard the old one.
4. **After deployment of the air bags, 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 described on P.52B-7.**

REMOVAL AND INSTALLATION

Pre-removal Operations
- Turn the ignition switch to LOCK(OFF) position.
- Disconnect the negative battery (-) terminal.



Removal steps
- Front floor console (Refer to GROUP 52A.)

1. Transfer-ECU
2. Connector bracket
3. SRS-ECU mounting bolts (earth bolt)
4. SRS-ECU

Installation steps

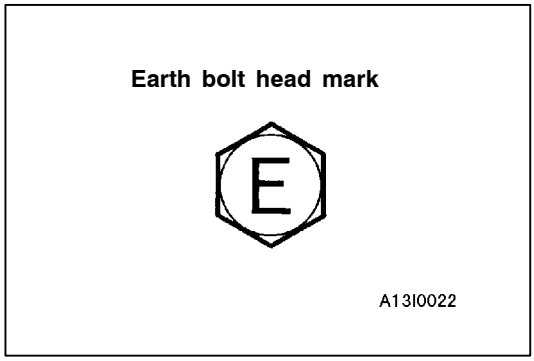
▶A◀ 4. SRS-ECU
▶B◀ 3. SRS-ECU mounting bolts (earth bolt)
2. Connector bracket
1. Transfer-ECU
- Front floor console (Refer to GROUP 52A.)
- Connect the negative (-) battery terminal.

▶C◀ • Post-installation inspection

INSTALLATION SERVICE POINTS

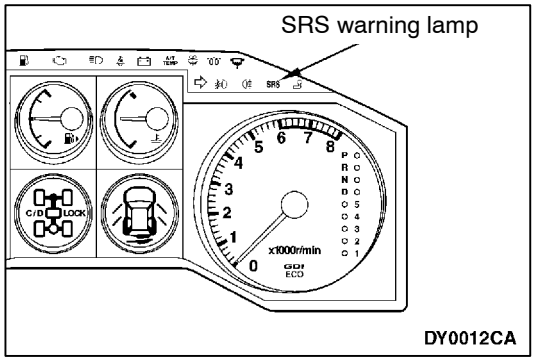
▶A◀ SRS-ECU INSTALLATION

Caution
The SRS may not activate if SRS-ECU is not installed properly.



▶B◀ SRS-ECU MOUNTING BOLT (EARTH BOLT) INSTALLATION

Before installation, check that the bolt is stamped mark “E” on the head.



▶C◀ POST-INSTALLATION INSPECTION

1. Turn the ignition key to the ON position.
2. Does the SRS warning lamp illuminate for about 7 seconds, and then remain extinguished for at least 5 seconds after turning OFF?
3. If no, refer to troubleshooting.
   (Refer to P.52B-7)

INSPECTION

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

   Caution
   If any problems are found, replace the SRS-ECU.

   NOTE
   For the checks other than the items above, refer to “Troubleshooting.”(Refer to P.52B-7.)

AIR BAG MODULES AND CLOCK SPRING

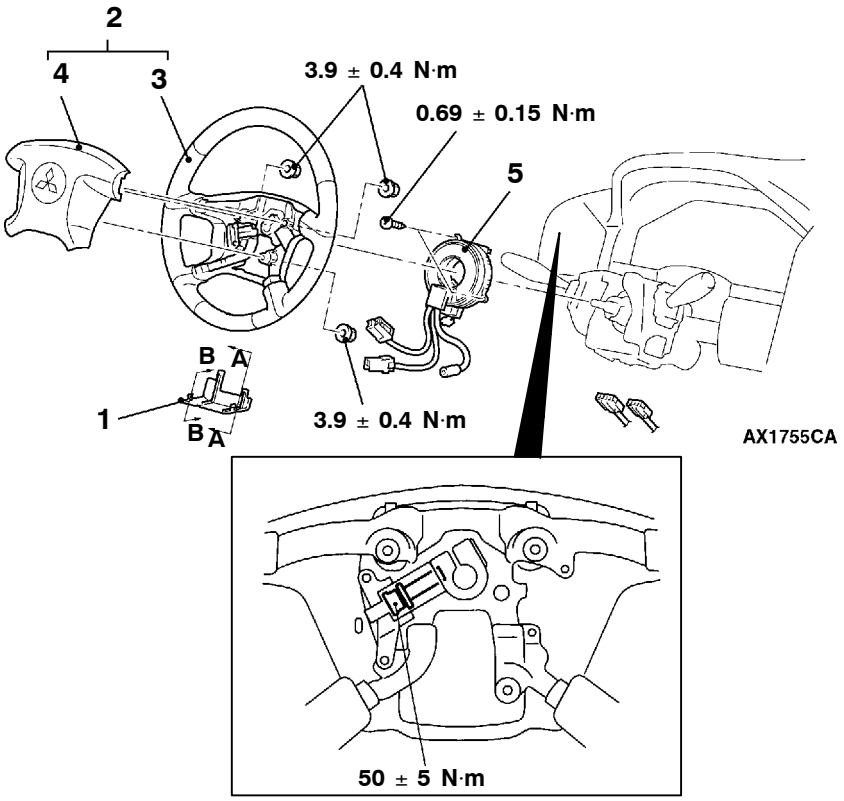
Caution

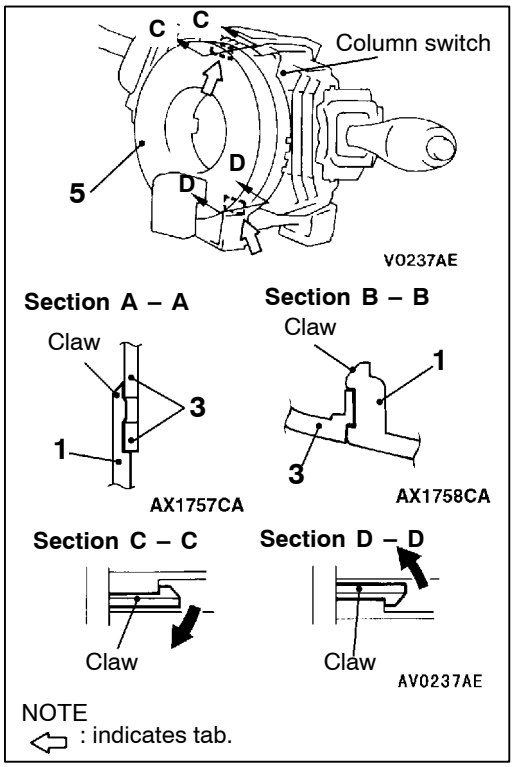
1. **Disconnect the negative (–) battery terminal and wait for 60 seconds or more before starting work. Also, the disconnected battery terminal should be insulated with tape. (Refer to P.52B-4.)**
2. **Never attempt to disassemble or repair the air bag modules and clock spring. If faulty, just replace with new one(s).**
3. **Do not drop the air bag modules or clock spring or allow contact with water, grease or oil. Replace if a dent, crack, deformation or rust are present.**
4. **Store the air bag modules on a flat surface with the deployment surface facing up. Do not place anything on top of them.**
5. **Do not store the air bag modules in a place more than 93°C.**
6. **When the driver's and front passenger's air bags have been deployed, replace the driver's and passenger's air bag modules with new ones.**
7. **Put on gloves and safety glasses when handling deployed air bags.**
8. **When discarding the undeployed air bag module(s), be sure to deploy the air bag(s) in advance as specified in the service procedure. (Refer to to P.52B-43.)**

REMOVAL AND INSTALLATION

Pre-removal Operations
- After setting the steering wheel and the front wheels to the straight ahead position, remove the ignition key.
- Disconnect the negative battery (-) terminal.

<Driver's air bag module and clock spring>





Driver's air bag module removal steps

◀A▶ 1. Cover
◀B▶ 2. Steering wheel and air bag module assembly
3. Steering wheel
◀C▶ 4. Driver's air bag module

Driver's air bag module installation steps

▶A◀ ● Pre-installation inspection
4. Driver's air bag module
3. Steering wheel
▶C◀ 2. Steering wheel and air bag module assembly
1. Cover
● Connect the negative (-) battery terminal.
▶D◀ ● Post-installation inspection

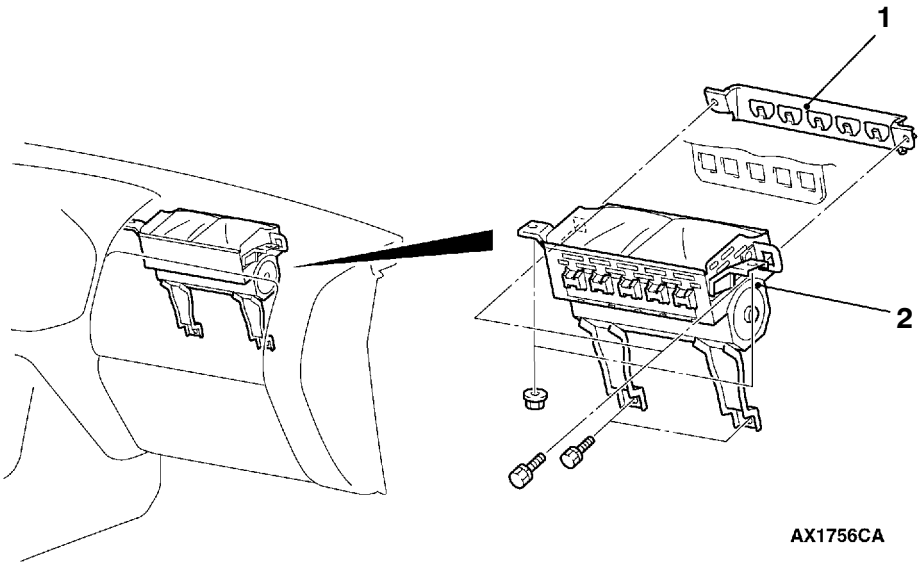
Clock spring removal steps

◀A▶ 1. Cover
◀B▶ 2. Steering wheel and air bag module assembly
● Lower column cover
◀D▶ 5. Clock spring

Clock spring installation steps

▶A◀ ● Pre-installation inspection
▶B◀ 5. Clock spring
● Lower column cover
▶C◀ 2. Steering wheel and air bag module assembly
1. Cover
● Connect the negative (-) battery terminal.
▶D◀ ● Post-installation inspection

<Passenger's air bag module>



Removal steps

- Upper glove box (Refer to GROUP 52A - Instrument Panel.)
- Glove box (Refer to GROUP 52A - Instrument Panel.)

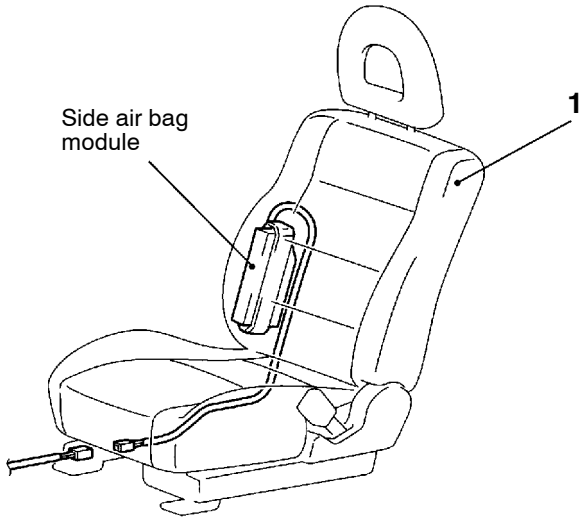
◀E▶ 1. Air bag side plate
◀F▶ 2. Passenger's air bag module

Installation steps

▶A◀ - Pre-installation inspection
2. Passenger's air bag module
1. Air bag side plate
- Glove box (Refer to GROUP 52A - Instrument Panel.)
- Upper glove box (Refer to GROUP 52A - Instrument Panel.)
- Connect the negative (-) battery terminal.

▶D◀ - Post-installation inspection

<Front seatback assembly equipped with side air bag module>

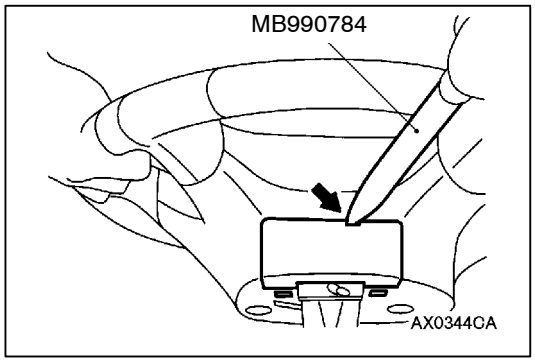


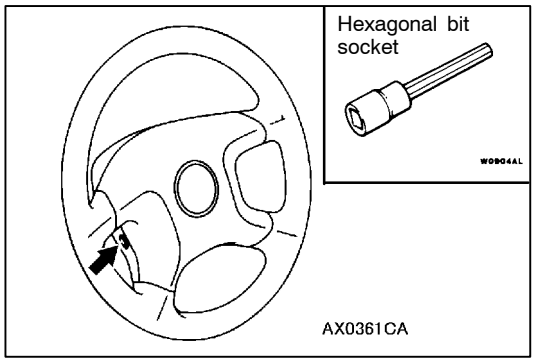
Removal steps

◀G▶ 1. Front seat back assembly

Installation steps

▶A◀ ● Pre-installation inspection
1. Front seat back assembly
● Connect the negative (-) battery terminal.
▶D◀ ● Post-installation inspection





REMOVAL SERVICE POINTS

◀A▶ COVER REMOVAL

Insert the special tool as shown in the illustration to remove the cover.

NOTE
The arrow in the illustration shows the notch for the special tool.

◀B▶ STEERING WHEEL AND AIR BAG MODULE ASSEMBLY REMOVAL

1. Remove the air bag module and disconnect the horn switch connector through space produced after the removal of the steering wheel.
2. Loosen the bolt completely and then remove the steering wheel assembly.

NOTE
Use a hexagonal bit socket or a hexagonal wrench having an effective length of 75 mm or more in the hexagonal section and the diameter of 8 mm or more.

◀C▶ DRIVER'S AIR BAG MODULE REMOVAL

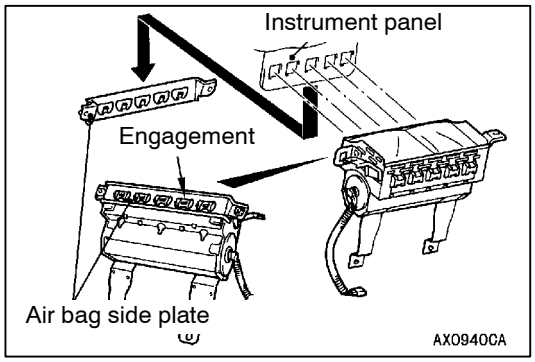
Caution

1. **The air bag module must not be measured with such equipment as an ohmmeter, nor disassembled.**
2. **The removed air bag module should be stored in a clean, dry place with the deployment surface facing up.**

◀D▶ CLOCK SPRING REMOVAL

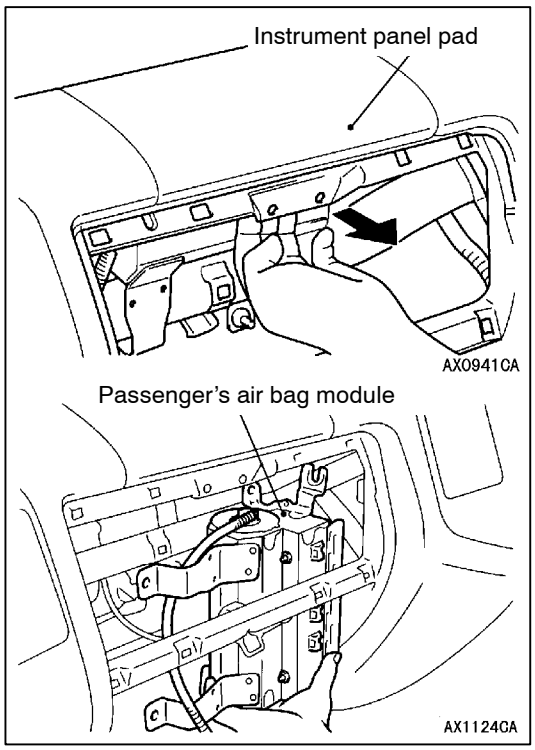
Caution

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



◀E▶ AIR BAG SIDE PLATE REMOVAL

1. Remove the air bag side plate mounting bolt and slide downward the air bag side plate and then disengage it from the the passenger's air bag module.
2. After removal of the passenger's air bag module mounting bolt and nut, move the passenger's air bag aside and remove the air bag side plate.



◀F▶ PASSENGER'S AIR BAG MODULE REMOVAL

While the instrument panel pad as shown in the illustration is pulled forward, remove the air bag module and pull it out from the down side.

Caution

The removed passenger's air bag module should be stored in a clean, dry place with facing the deployment surface facing up.

◀G▶ FRONT SEATBACK ASSEMBLY REMOVAL

(Refer to GROUP 52A - Seat.)

Caution

1. **When the side air bag module is required replacing, replace the front seat back assembly.**
2. **The removed front seat back assembly should be stored in clean, dry place with its back touching the ground.**

INSTALLATION SERVICE POINTS

▶A◀ PRE-INSTALLATION INSPECTION

1. Even new air bag modules, clock spring and front seat back assembly require inspection before installation. (Refer to P.52B-38.)

   Caution
   When discarding the air bag module or seat back assembly, deploy the air bag as specified in the service procedure. (Refer to P.52B-43.)

2. Connect the negative (-) battery terminal.
3. Connect the MUT-II to the diagnosis connector (16 pin) .

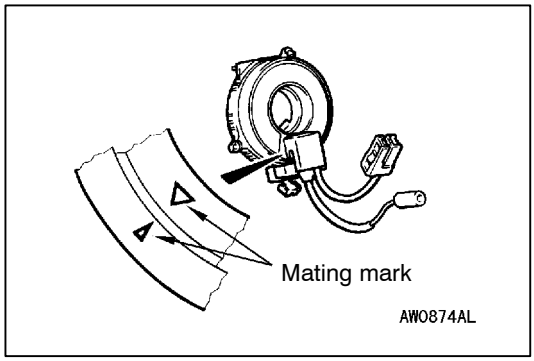
   Caution
   Turn the ignition switch to the LOCK (OFF) position when connecting and disconnecting the MUT-II.

4. Turn the ignition key to the ON position.
5. Read a diagnostic code to refer to that the SRS is operating properly except an open in the air bag module circuit.
6. Turn the ignition switch to LOCK(OFF) position.
7. Disconnect the negative (-) battery cable and insulate with tape.

   Caution
   Wait at least 60 seconds after the disconnection of the battery cable before any further job.
   (Refer to P.52B-4, item 5 of the Service Precautions)

▶B◀ CLOCK SPRING INSTALLATION

Align the mating marks on the clock spring as mentioned in the next step. Then, install the clock spring to the column switch.



CLOCK SPRING CENTERING

Fully turn the clock spring clockwise and then turn it back about 3 times counterclockwise to align the mating marks.

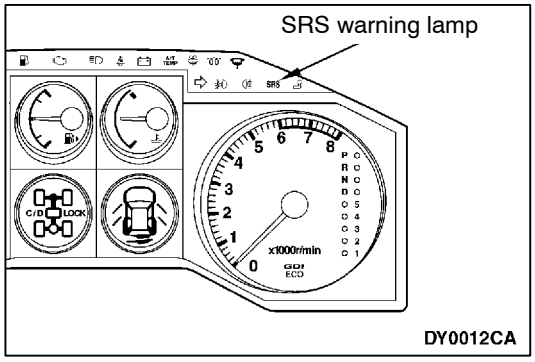
Caution
Unless the mating marks are properly aligned, the steering wheel gets stuck amid a turn or the flat cable in the clock spring is cut. These hinder the SRS air bag from proper operation, resulting in serious injury to the vehicle's driver.

▶C◀ STEERING WHEEL AND AIR BAG MODULE ASSEMBLY INSTALLATION

1. Refer to first that the clock spring has been centered properly. Then, install the steering wheel.

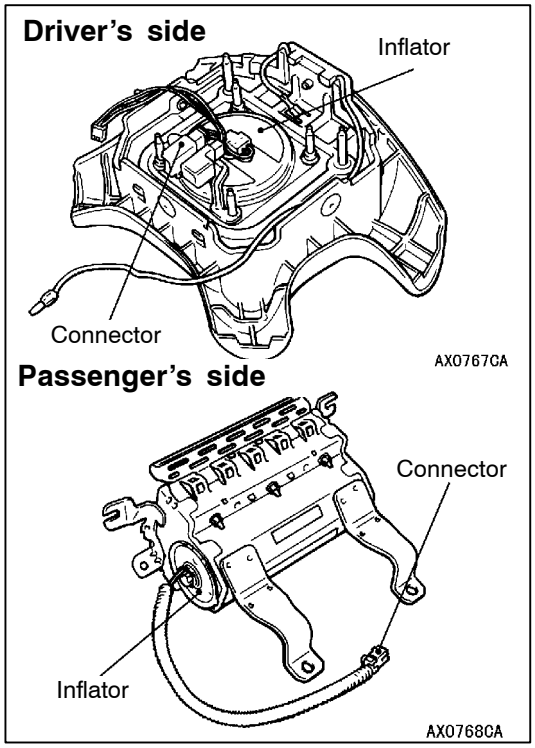
   Caution
   Be sure when installing the steering wheel, that the harness of the clock spring does not become caught or tangled.

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



▶D◀ POST-INSTALLATION INSPECTION

1. When the driver's airbag module or the clock spring is installed, turn the steering wheel clockwise and counterclockwise slowly to confirm that there is no noise or improper operation.
2. Turn the ignition key to the ON position.
3. Does the SRS warning lamp illuminate for about 7 seconds, and then remain extinguished for at least 5 seconds after turning OFF?
4. If no, refer to troubleshooting.
   (Refer to P.52B-7)



INSPECTION

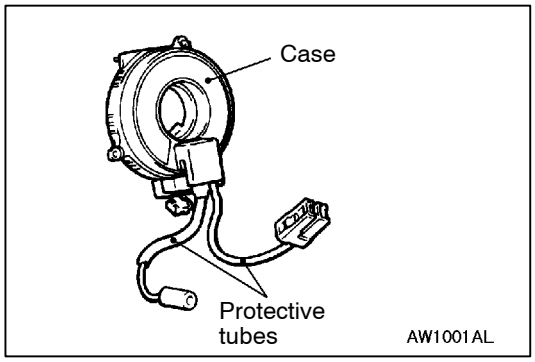
Driver's and passenger's air bag module

If any malfunction is found in the following inspection, replace the air bag module(s) with new one(s).
Discard the old one(s) after deployment as specified in the service procedure. (Refer to P.52B-43.)

Caution
Never measure circuit resistance in the air bag modules (squib) even with the specified tester.
Measuring the circuit resistance with a tester causes accidental air bag deployment due to current that flows or static, resulting in serious personal injury.

1. Check the cover for dents, cracks or deformation.
2. Check the harness and connector for damage and the terminals for deformation.
3. Check the air bag inflator cases for dents, cracks or deformation.
4. Check the air bag module for proper installation.

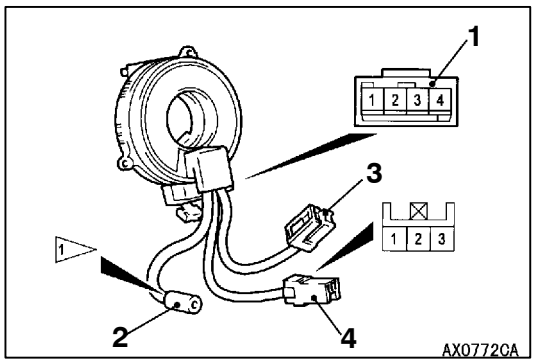
Caution
If a dent, crack or deformation is detected, replace with a new sensor. Discard the old one(s) as specified in the service procedure.
(Refer to P.52B-43.)



Clock spring

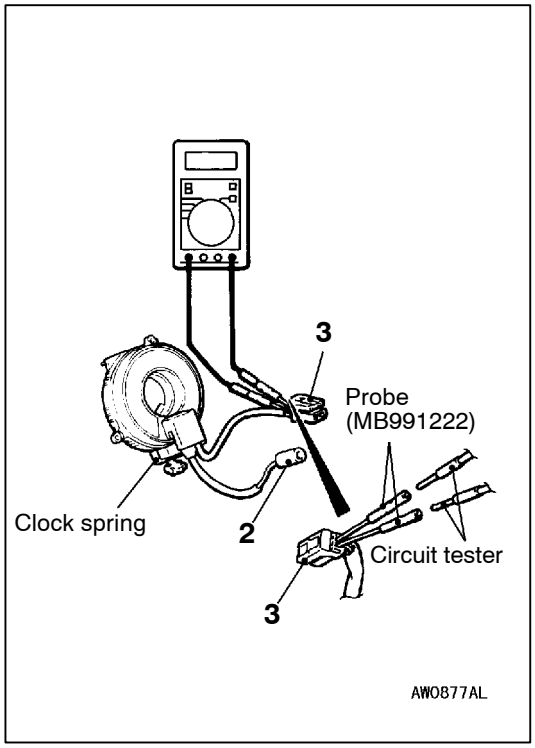
If any malfunction is found in the following inspections, replace the clock spring with a new one.

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



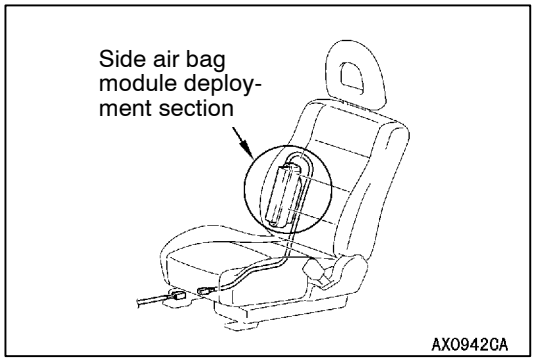
3. Refer to that the clock spring has continuity between connectors No.1, No.2, No.4 <vehicles with auto-cruise control>.

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



4. Insert the probes (MB991222) from the rear of the clock spring No.3 connector.
   Caution
   Never insert the probe directly to the terminals from the front of the connector.
5. Connect a digital multimeter to the probe (MB991222) as shown, to check that the resistance is 1 Ω or less. Also, check that there is a open circuit.

   Open circuit: 1 MΩ or more



Front seat back assembly equipped with side air bag module

If any malfunction is found in the following inspections, replace the front seat back assembly.
To discard the removed front seat back assembly, deploy the side air bag first as specified in the service procedure. (Refer to P.52B-43.)

Caution
Never measure circuit resistance in the side air bag modules (squib) even with the specified tester.
Measuring the circuit resistance with a tester causes accidental air bag deployment due to current that flows or static, resulting in serious personal injury.

1. Check the side air bag module deployment section for dents and deformation.
2. Check the harness and connector for damage and the terminals for deformation.

SIDE IMPACT SENSOR

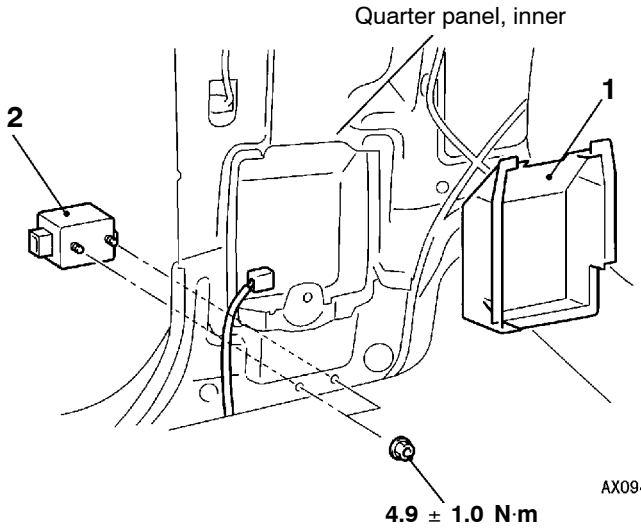
Caution

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. (Refer to P.52B-4.)**
2. **Never attempt to disassemble or repair the side impact sensors. If faulty, just replace with new ones.**
3. **Do not drop or subject the side impact sensors to impact or vibration.**
   If denting, cracking, deformation, or rust are found in the side impact sensors, replace it with new ones. Discard the old ones.
4. **After deployment of the air bags, replace the side impact sensors with new ones.**
5. **Never use an ohmmeter on or near the side impact sensors, and use only the special test equipment described on P.52B-7.**

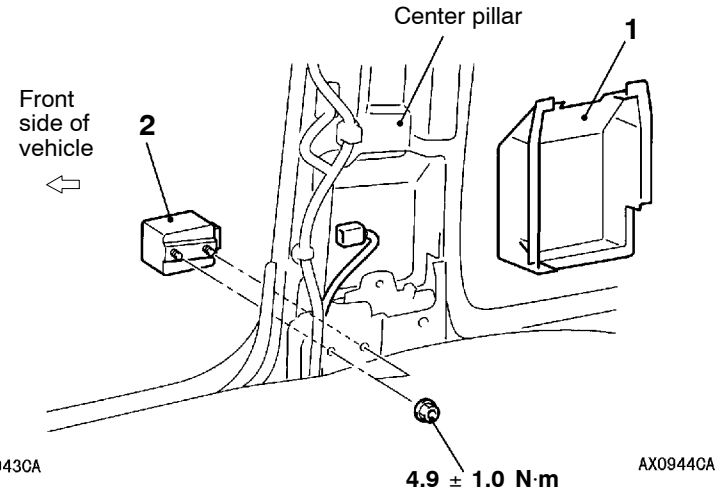
REMOVAL AND INSTALLATION

Pre-removal Operations
- Turn the ignition switch to LOCK(OFF) position.
- Disconnect the negative battery (-) terminal.

Short wheelbase



Long wheelbase



Removal steps
- Front seat belt (Refer to GROUP 52A.)

1. Front noise protector
2. Side impact sensor

Installation steps

▶A◀ ● Pre-installation inspection
▶B◀ 2. Side impact sensor
1. Front noise protector
- Front seat belt (Refer to GROUP 52A.)
- Connect the negative (-) battery terminal.

▶C◀ ● Post-installation inspection

NOTE
The figure shows the side impact sensor (R.H.).

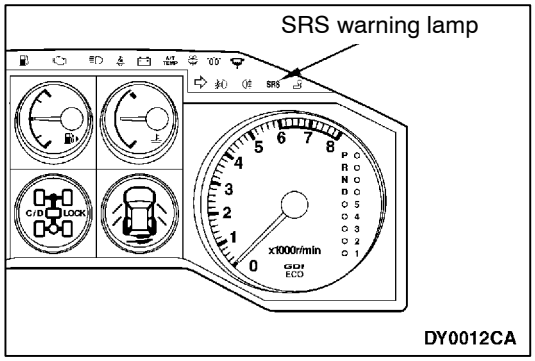
INSTALLATION SERVICE POINTS

▶A◀ PRE-INSTALLATION INSPECTION

Even new side impact sensor requires inspection before installation. (Refer to the previous item “INSPECTION”.)

▶B◀ SIDE IMPACT SENSOR INSTALLATION

Caution
The side impact sensor, unless properly installed, does not operate properly, thereby resulting in serious injury or death of the vehicle’s occupants.



▶C◀ POST-INSTALLATION INSPECTION

1. Turn the ignition key to the ON position.
2. Does the SRS warning lamp illuminate for about 7 seconds, and then remain extinguished for at least 5 seconds after turning OFF?
3. If no, refer to troubleshooting.
   (Refer to P.52B-7)

INSPECTION

1. Check the side impact sensor for dents, cracks, deformation and rust.
2. Check connector for damage, and terminals for deformation.
3. Check the center pillar or quarter panel, inner for deformation and rust.

   Caution
   If a dent, crack, deformation or rust is found, replace the sensor with a new one.

   NOTE
   For other inspections than described above, go to Troubleshooting. (Refer to P.52B-7.)

AIR BAG MODULE DISPOSAL PROCEDURES

When discarding the air bag modules or a vehicle with SRS air bags, be sure to deploy the air bags in advance as specified in the service procedure that follows.

UNDEPLOYED AIR BAG MODULES

Caution

1. **If the vehicle is to be scrapped or otherwise disposed of, deploy the air bags inside the vehicle. If the vehicle is still to be used and only the air bag modules are to be discarded, deploy the air bags outside the vehicle.**
2. **Since a large amount of smoke is produced when the air bags are deployed, avoid residential areas whenever possible.**
3. **Since there is substantial report 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 must be put on by personnel performing these procedures or by people in the immediate area.**

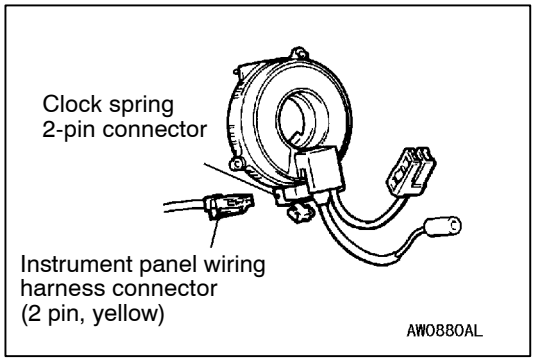
DEPLOYMENT INSIDE THE VEHICLE

1. Move the vehicle to flat and isolated spot.
2. Disconnect the negative (–) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle.

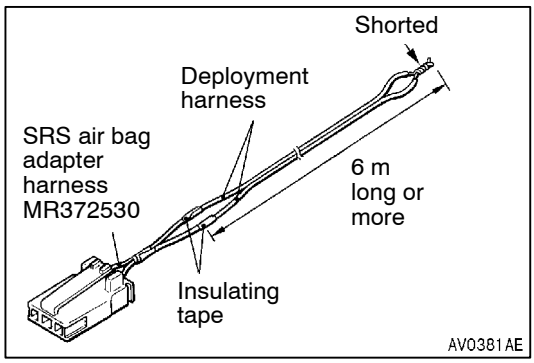
   Caution
   Wait at least 60 seconds after the disconnection of the battery cables before any further job.
   (Refer to P.52B-4.)

3. Deploy each air bag module as specified in the service procedures that follow.

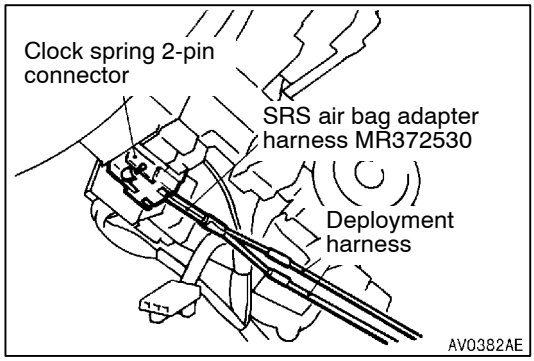
   Driver's air bag module
   (1) Remove the steering column cover, lower. (Refer to GROUP 52A - Instrument Panel.)
   (2) Disconnect the clock spring 2-pin connector and instrument panel wiring harness connector (2-pin, yellow).



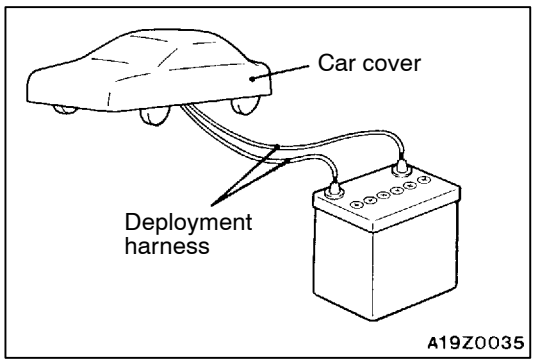
NOTE
Once disconnected from the instrument panel wiring harness, both electrodes of the clock spring connector short automatically. This prevents the driver's air bag from accidental deployment caused by static, etc.



(3) Connect deployment harnesses longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the deployment harnesses in the other ends to short, thereby preventing the driver's air bag from accidental deployment caused by static etc.



(4) Connect the SRS air bag adapter harness to the clock spring 2-pin connector and route the deployment harnesses out of the vehicle.



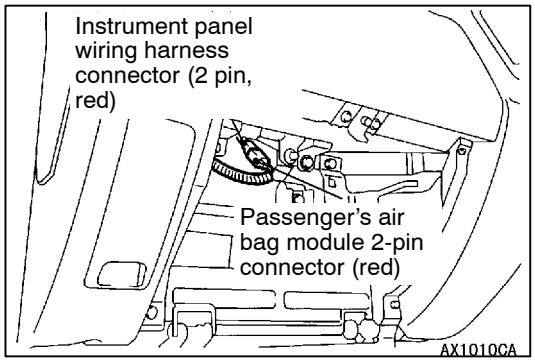
(5) Close all the doors with the windows fully closed and put a cover over the vehicle to minimize report.

Caution
The cover is required as the glass, if already damaged, may break.

(6) Separate the deployment harnesses as far from the vehicle as possible and connect to the terminals of the battery removed from the vehicle. Then deploy the passenger's air bag module.

Caution
1) Before deploying the air bag, see that no one is in and near the vehicle.
2) The deployment makes the inflator of the driver's air bag very hot. Before handling the inflator, wait more than 30 minutes for cooling.
3) If the air bag module fails to deploy although the procedure is respected, do not go near the module. Contact your distributor.

(7) After deployment of the air bag module, discard as specified in the procedure. (Refer to P.52B-52)

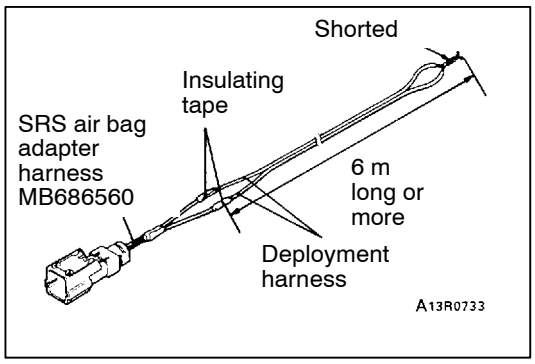


Passenger's air bag module

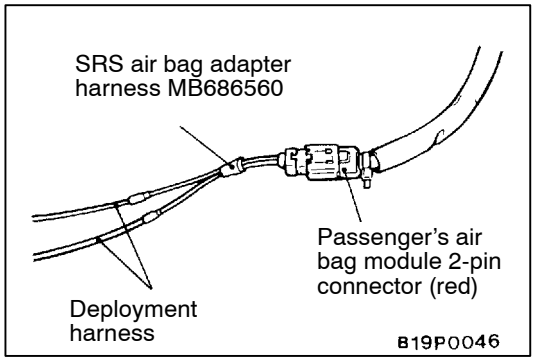
(1) Remove the glove box.
(Refer to GROUP 52A - Instrument Panel.)

(2) Disconnect the front passenger's air bag module 2-pin connector (red) and instrument panel wiring harness connector (2-pin, red).

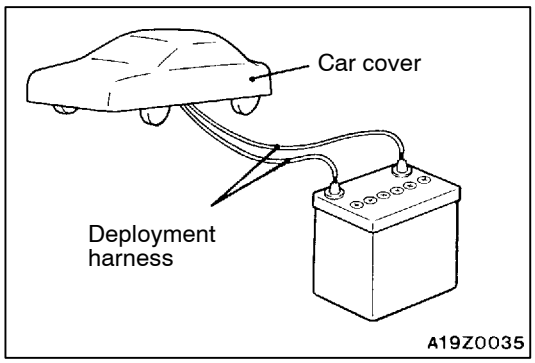
NOTE
Once disconnected from the instrument panel wiring harness, both electrodes of the passenger's air bag module short automatically. This prevents the passenger's air bag from accidental deployment caused by static, etc.



(3) Connect deployment harnesses longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the deployment harnesses in the other ends to short, thereby preventing the passenger's air bag from accidental deployment caused by static etc.



(4) Connect the SRS air bag adapter harness to the passenger's air bag module 2-pin (red) connector and route the deployment harnesses out of the vehicle.



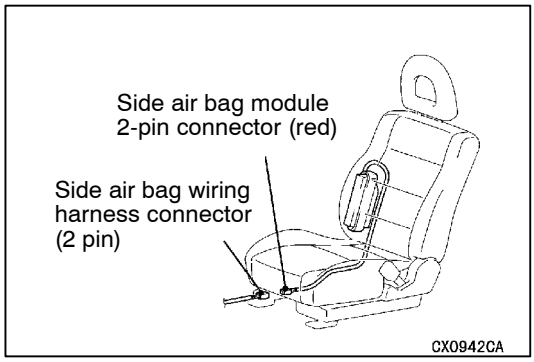
(5) Close all the doors with the windows fully closed and put a cover over the vehicle to minimize report.

Caution
The cover is required as the glass, if already damaged, may break.

(6) Separate the deployment harnesses as far from the vehicle as possible and connect to the terminals of the battery removed from the vehicle. Then deploy the passenger's air bag module.

Caution
1) Before deploying the air bag, see that no one is in and near the vehicle.
2) The deployment makes the inflator of the passenger's air bag very hot. Before handling the inflator, wait more than 30 minutes for cooling.
3) If the air bag module fails to deploy although the procedure is respected, do not go near the module. Contact your local distributor.

(7) After deployment of the air bag module, discard as specified in the procedure. (Refer to P.52B-52)

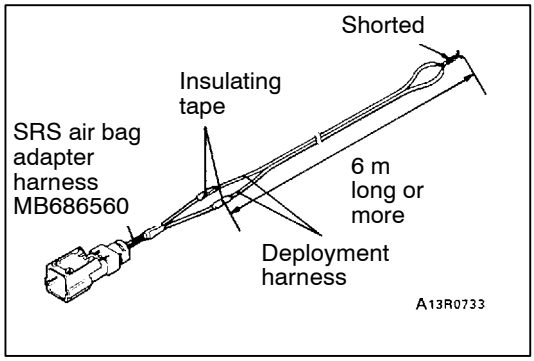


Side air bag module

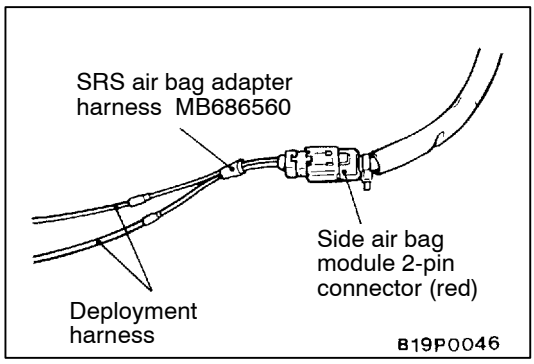
(1) Disconnect the side airbag module 2-pin connector (red) and side airbag wiring harness connector(2-pin).

Caution
The side air bag modules both in the driver's and passenger's sides should be deployed.

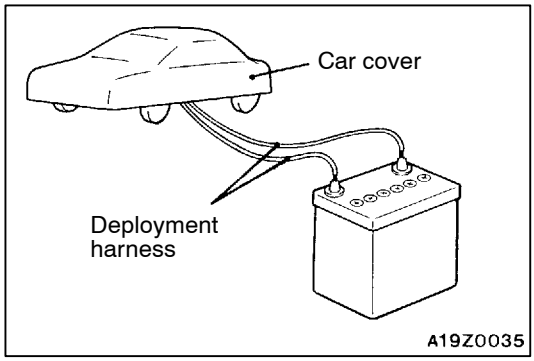
NOTE
Once disconnected from the side air bag wiring harness, both electrode of the side air bag module connector short automatically. This prevents the side air bag from accidental deployment caused by static etc.



(2) Connect deployment harnesses longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the deployment harnesses in the other ends to short, thereby preventing the side air bag from accidental deployment caused by static etc.



(3) Connect the SRS air bag adapter harness to the side air bag module 2-pin connector (red) and route the deployment harness out of the vehicle.



(4) Close all the doors with the windows fully closed and put a cover over the vehicle to minimize report.

Caution
The cover is required as the glass, if already damaged, may break.

(5) Separate the deployment harnesses as far from the vehicle as possible and connect to the terminals of the battery removed from the vehicle. Then deploy the side air bag module.

Caution
1) **Before deploying the air bag, see that no one is in and near the vehicle.**
2) **The deployment of the side air bag makes the inflator very hot. Before handling the inflator, wait more than 30 minutes for cooling.**
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.**

(6) After deployment of the air bag module, discard as specified in the procedure. (Refer to P.52B-52.)

DEPLOYMENT OUTSIDE THE VEHICLE

Caution
1. **This should be carried out in a wide, flat area at least 6 m away from obstacles and other people.**
2. **Do not deploy outside if wind is high. Even in a soft wind, ignite to windward of the air bag modules.**

1. Disconnect the negative (-) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle.

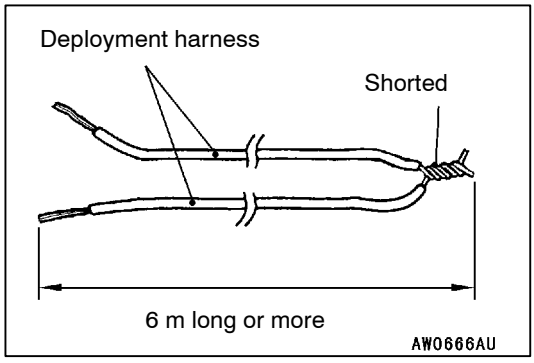
   Caution
   Wait at least 60 seconds after disconnecting the battery cables before doing any further work. (Refer to P.52B-4, item 5 of the Service Precautions)

2. Deploy each air bag module as specified in the service procedures that follows.

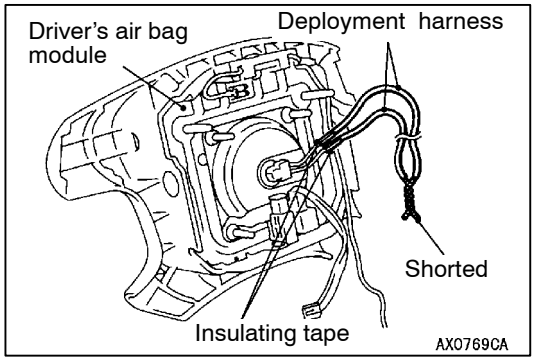
   Driver's air bag module
   (1) Remove the driver's air bag module from the vehicle. (Refer to P.52B-32)

   Caution
   Once disconnected, both electrodes of the driver's air bag module connector short automatically to prevent accidental deployment caused by static etc. Still in consideration of the accidental deployment, store the air bag module on flat place with deployment surface facing up. Do not place anything on top of it.

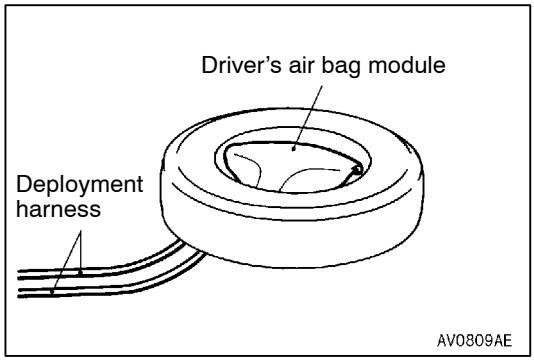
   (2) Connect two wires, each 6 meters or longer, to the two leads of SRS air bag adapter harness and cover the connections with insulation tape. The other ends of the two wires should be connected to each other(short-circuited), to prevent sudden unexpected deployment of the driver's air bag.
   (3) Touch the vehicle's body with bare hands to discharge static in you.



Caution
Never fail to do Step (3) in order to prevent accidental deployment caused by static.



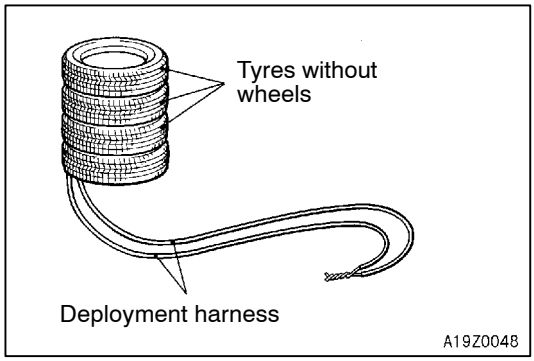
(4) Using pliers, cut the driver's air bag module connector from the harnesses. Connect the deployment harnesses to each harness that has been cut and insulate the connections with plastic tape.



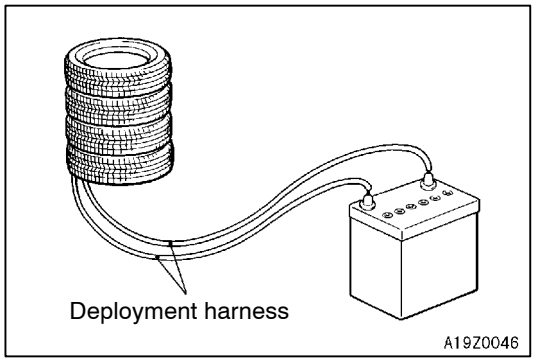
(5) Install a nut to the bolt behind the driver's air bag module and tie thick wire for securing to the wheel.

(6) Take the SRS air bag adapter harness that is connected to the wires, pass it beneath the old tyre wheel assembly, and connect it to the driver's air bag module. With the driver's air bag module upwards, place it in the wheel of old tyre and secure with the wire tied to the bolt.

Caution
The deployment harnesses must not be tight below the wheel. Otherwise, the adapter harness could get damaged at deployment.



(7) Place three old tyres without wheels on top of the tyre secured to the driver's air bag module.



(8) Disconnect the deployment harnesses as far from the driver's air bag module as possible and connect the wires to the terminals of the battery removed from the vehicle. Then deploy the air bag.

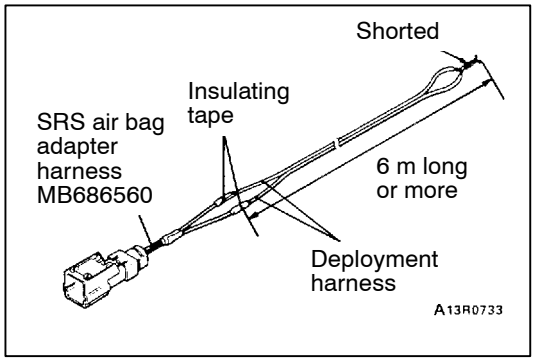
Caution
1) Before the deployment, be sure that no one is near the driver's air bag module.
2) The deployment makes the inflator of the driver's air bag very hot. Before handling the inflator, wait more than 30 minutes for cooling.
3) If the driver's air bag module fails to deploy although the procedure is respected, do not go near the module. Contact your distributor.

(9) After deployment of the driver's air bag module, discard as specified in the procedure. (Refer to P.52B-52.)

Passenger's air bag module

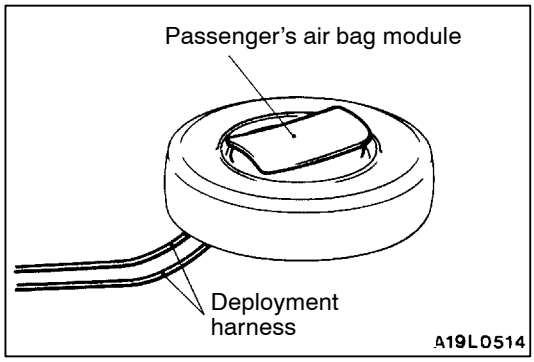
(1) Remove the passenger's air bag module from the vehicle.
(Refer to P.52B-32.)

Caution
Once disconnected, both electrodes of the passenger's air bag module connector short automatically to prevent accidental deployment caused by static etc. Still, in consideration of the accidental deployment, store the air bag module on flat place with deployment surface facing up. Do not place anything on top of it.



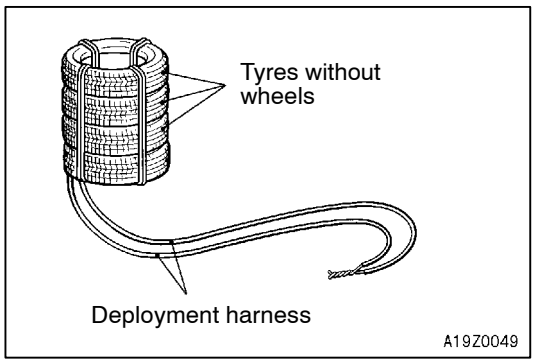
(2) Connect deployment harnesses longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the deployment harnesses in the other ends to short, thereby preventing the passenger's air bag from accidental deployment caused by static etc.

(3) Route the SRS air bag adapter harness with the deployment harnesses beneath an old tyre and wheel assembly. Then, connect the harnesses to the passenger's air bag module.

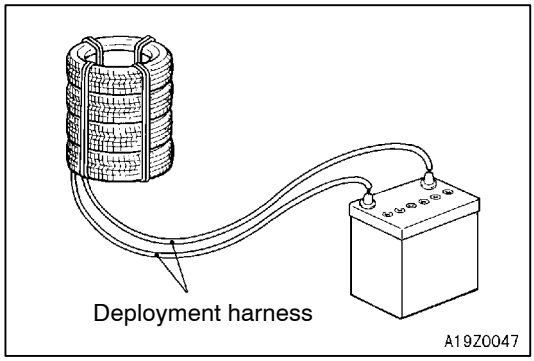


(4) Route a thick wire through the holes in the passenger's air bag module bracket. With the deployment surface facing up, secure the passenger's air bag module to the old tyre and wheel assembly.

Caution
1) **The deployment harnesses must not be tight below the wheel. Otherwise, the adapter harness could get damaged at deployment.**
2) **Place the connector of the SRS air bag adapter harness so that it is not clamped by the tyre at deployment.**



(5) Put three old tyres without wheels on the tyre secured to the passenger's air bag module. Secure all the tyres with ropes (4 locations).



(6) Disconnect the deployment harnesses as far from the passenger's air bag module as possible and connect the harnesses to the battery removed from the vehicle. Then deploy the airbag.

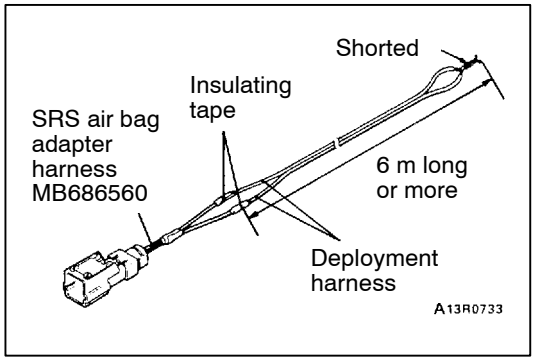
Caution
1) **Before the deployment, see that no one is near the passenger's air bag module.**
2) **The deployment makes the inflator of the passenger's air bag very hot. Before handling the inflator, wait more than 30 minutes for cooling.**
3) **If the passenger's air bag module fails to deploy although the procedure is respected, do not go near the module. Contact your local distributor.**

(7) After deployment of the passenger's air bag module, discard as specified in the procedure. (Refer to P.52B-52.)

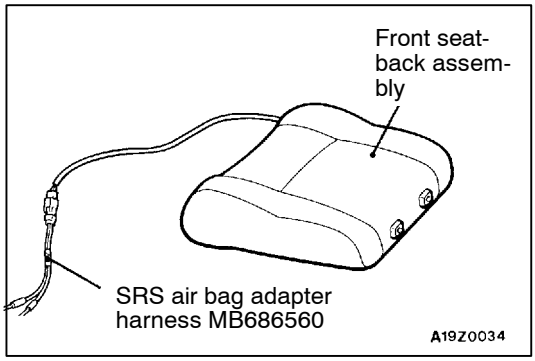
<Side air bag module>

(1) Remove the front seat back assembly with side air bag module from the vehicle. (Refer to 52B-32.).

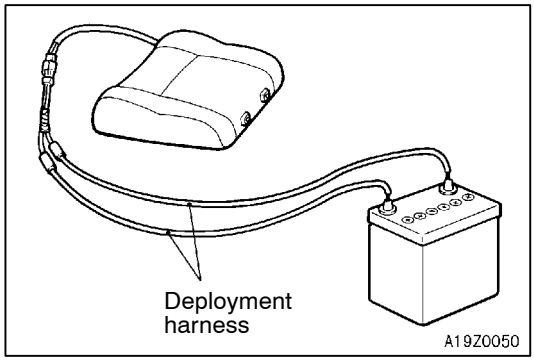
Caution
Once disconnected, both electrodes of the side air bag module connector short automatically to prevent accidental deployment caused by static etc. Still, in consideration of the accidental deployment, store the air bag module on flat place with deployment surface facing up. Do not place anything on top of it.



(2) Connect deployment harnesses longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the deployment harnesses in the other ends to short, thereby preventing the side air bag from accidental deployment caused by static etc.



(3) Place the front seat back assembly with its back facing the ground.
(4) Connect the SRS air bag adapter harness which connected with the deployment harness to the side air bag module connector.



(5) Disconnect the deployment harnesses as far from the front seat back assembly as possible and connect the harnesses to the battery removed from the vehicle. Then deploy the air bag.

Caution
1) **Before the deployment, see that no one is near the front seat back assembly.**
2) **The deployment of the side air bag makes the inflator very hot. Before handling the inflator, wait more than 30 minutes for cooling.**
3) **If the side air bag module fails to deploy when the procedures above are followed, do not go near the module. Contact your local distributor.**

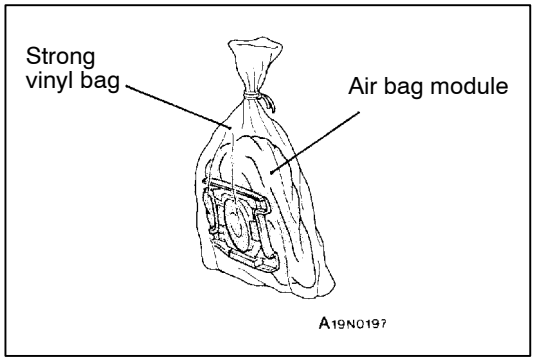
(6) Remove the deployed side air bag module from the seat back assembly and discard as specified in the procedure. (Refer to P.52B-52.)

DEPLOYED AIR BAG MODULE DISPOSAL PROCEDURES

After the deployment, discard the air bag modules the same way as any other scrap parts, respecting local laws and/or legislation that may be in force.
However, note the following points at the disposal:

1. The inflators will be quite hot just after deployment. So, wait at least 30 minutes to cool it before handling.
2. Do not put water or oil on the air bags after deployment.
3. There may be, adhered to the deployed air bag modules, material that could irritate the eye and/or skin, so put on gloves and safety glasses when handling the 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. Discard the air bag module in a vinyl bag tightly sealed.
5. Be sure to always wash your hands after completing this operation.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

CONTENTS

CAUTION

- **Carefully read and observe the information in the SRS SERVICE PRECAUTIONS (P.52B-3.) prior to any service.**
- **For information concerning troubleshooting or maintenance, always observe the procedures in the Troubleshooting (P.52B-6.) section.**
- **If any SRS components are removed or replaced in connection with any service procedures, be sure to follow the procedures in the INDIVIDUAL COMPONENT SERVICE section (P.52B-11.) for the components involved.**
- **If you have any questions about the SRS, please contact your local distributor.**

GENERAL

OUTLINE OF CHANGES

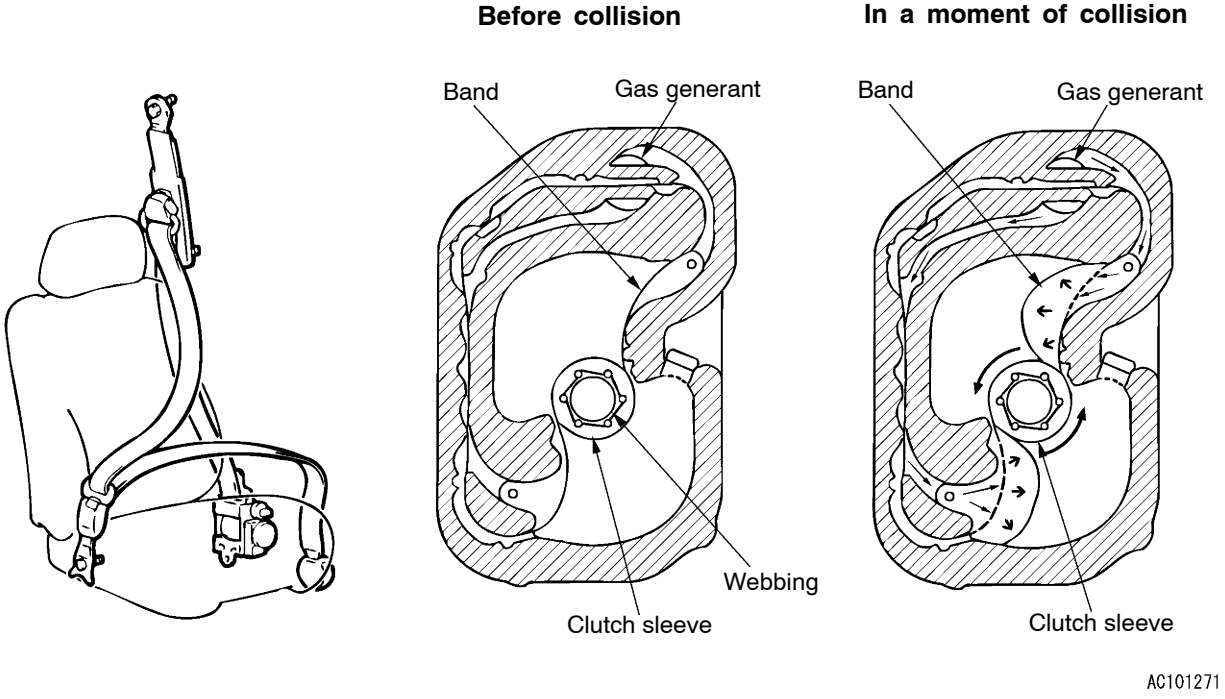
- A service procedure has been established as seat belts with pre-tensioner have been added.
- The side impact sensor circuit has been changed. The sensor service procedure is the same as before.

SEAT BELT WITH PRE-TENSIONER

Caution
Never disassemble the seat belt with pre-tensioner.

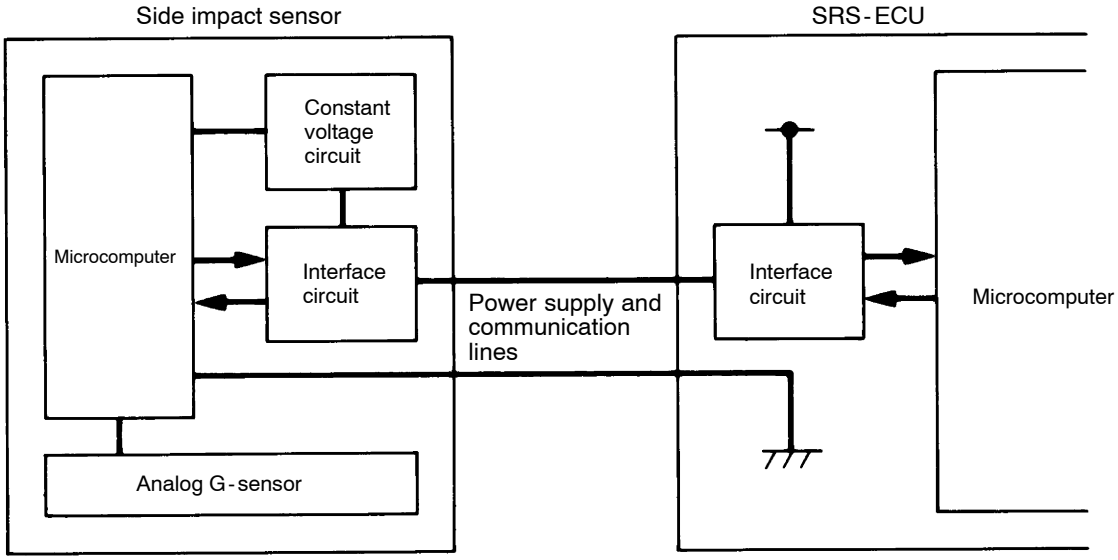
The driver's and passenger's seat belt pre-tensioners take up seat belt slack immediately when a collision takes place, thus restraining the pre-tensioners on the seats simultaneously with the SRS air bags. this improves the passive safety. when the G sensor in the SRS-ECU detects impact above a certain level during a collision, the pre-tensioner operates as follows:

1. The igniting heater heats up according to the signal from the SRS-ECU.
2. this ignites the gas generant and explosive gas will be generated.
3. The strip is pushed outwards by the gas pressure. As the strip wound around the clutch sleeve is pulled out, the clutch sleeve rotates at high speed.
4. The clutch sleeve rotates to wind the webbing.



SIDE IMPACT SENSOR

The power supply circuit to the side impact sensor and the communication line have been unified. This contributes to simplifying wiring harnesses and improving reliability.



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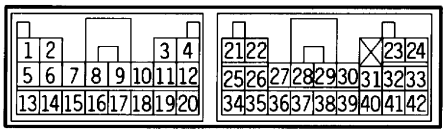
SRS SERVICE PRECAUTIONS

1. In order to avoid injury to yourself or others from accidental deployment of the air bag and accidental operation of the seat belt with pre-tensioner 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 components, except those specified on G.52B-6.
3. **Never Attempt to Repair the Following Components:**
   - SRS air bag control unit (SRS-ECU)
   - Clock spring
   - Driver's and front passenger's air bag modules
   - Side air bag modules
   - Front impact sensors
   - Side impact sensors
   - Seat belt with Pre-tensioner

NOTE
If any of these components are diagnosed as faulty, they should only be replaced, in accordance with the INDIVIDUAL COMPONENTS SERVICE procedures in this manual, starting at page G.52B-26.

SRS-ECU connector



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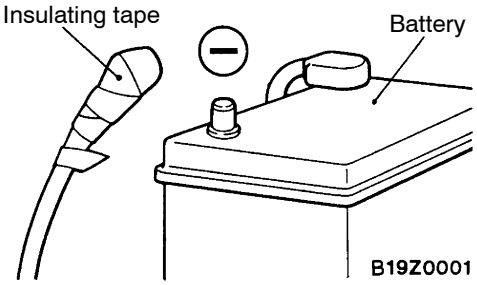
4. **Do not attempt to repair the wiring harness connectors of the SRS. If a defective wiring harness is found, repair or replace it by referring to the table follows.**

   NOTE
   The table below shows the pre-tensioner related terminals only. The other terminals are the same as before.

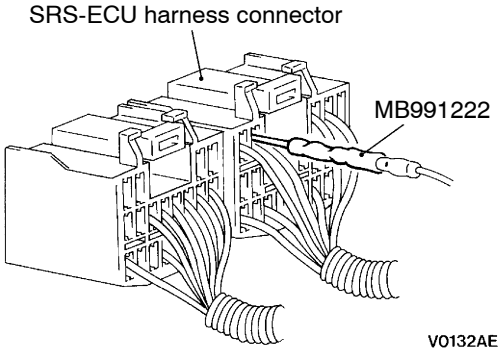
SRS-ECU Terminal No.	Destination of harness	Corrective action
27, 28	Floor wiring harness → Seat belt with pre-tensioner (Front passenger's side)	Correct or replace each wiring harness.
29, 30	Floor wiring harness → Seat belt with pre-tensioner (Driver's side)	



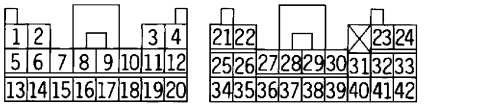
5. **After disconnecting the negative (–) battery cable, wait 60 seconds at least before any service and insulate the disconnected cable with tape. The SRS retain enough voltage to deploy the air bags for a short time even after the disconnection of the battery. So, serious injury may result by accidental air bag deployment if a work is done on the SRS just after the disconnection of the battery.**

6. **SRS components and seat belt with pre-tensioner should not be subjected to heat, so remove the SRS-ECU, air bag module (driver's side and front passenger's side), clock spring, side impact sensor, front seat assembly (side air bag module), and seat belt with pre-tensioner before drying or baking the vehicle after painting.**
   - **SRS-ECU, air bag module, clock spring, side impact sensor: 93°C or more**
   - **Seat belt with pre-tensioner: 90°C or more**
7. **Whenever you finish servicing the SRS, check warning lamp operation to make sure that the system functions properly.**

8**If checks are carried out by using the SRS-ECU harness connector, observe the following procedures:**
Insert the special tool (probe in the harness set) into connector from harness side (rear side), and connect the tester to this probe. If any tool than special tool 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.



SRS-ECU harness connector (rear side)



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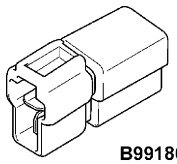
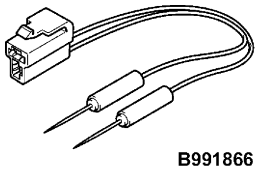
SPECIAL TOOLS

The items other than below are the same as before.

Tools	No.	Name	Application
 B991865	MB991865	Dummy resistor	SRS air bag circuit check
 B991866	MB991866	Resistor harness	

TROUBLESHOOTING

The following items have been changed. The other items are the same as before.

INSPECTION CHART FOR DIAGNOSIS CODES

Code No.	Diagnosis item	Reference page
26*, 27*, 66, 67	Driver's side pre-tensioner (squib) system	52B-7
28*, 29*, 68, 69	Front passenger's side pre-tensioner (squib) system	52B-8
56, 57	Driver's side pre-tensioner (squib ignition drive circuit) system	52B-9
58, 59	Front passenger's side pre-tensioner (squib ignition drive circuit) system	52B-9

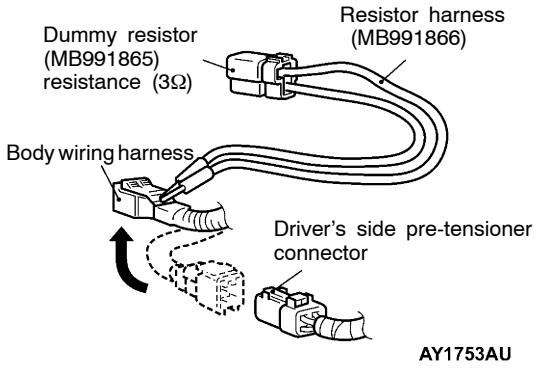
NOTE

*: If the system returns to normal, the SRS warning lamp will go out, but the relevant diagnosis code will be retained in memory.

INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSIS CODE

Code No.26, 27, 66 or 67 Driver's side pre-tensioner (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's side pre-tensioner (squib). The trouble causes for each diagnosis code No. are as follows.	• Malfunction of wiring harnesses or connectors • Malfunction of driver's side pre-tensioner (squib) • Malfunction of SRS-ECU

Code No.	Trouble causes
26	• Short in driver's side pre-tensioner (squib) or harness short
27	• Open circuit in driver's side pre-tensioner (squib) or open harness • Malfunction of connector contact
66	• Short in driver's side pre-tensioner (squib) harness leading to the power supply
67	• Short in driver's side pre-tensioner (squib) harness leading to the earth



MUT-II Self-diag code

- Connect the dummy resistor (MB991865) to the resistor harness (MB991866).
- Disconnect driver's side pre-tensioner connector F-34 <L.H. drive vehicles> or F-31 <R.H. drive vehicles> 28, and insert probe of resistor harness MB991866 to the connector by backprobling.

Caution
Never insert the probe directly to the terminals from the front of the connector.

- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Is code No.26, 27, 66 or 67 displayed?

YES

Check the following connectors: E-110, E-21, F-34 <L.H. drive vehicles>, E-20, F-31 <R.H. drive vehicles>

OK

Check trouble symptoms.

NG

Check wiring harness between the driver's side pre-tensioner and SRS-ECU.

OK

Replace SRS-ECU.

NG

Repair

NG

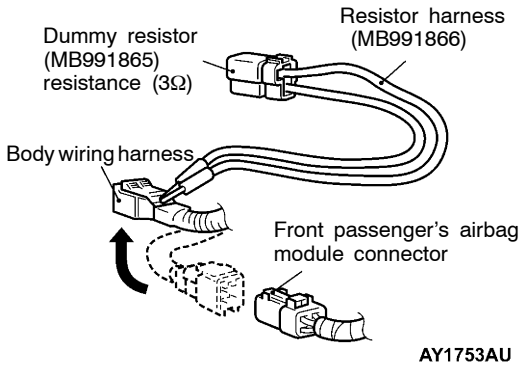
Repair

NO

Replace the driver's side seat belt with pre-tensioner.

Code No.28, 29, 68 or 69 Front passenger's side pre-tensioner (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the front passenger's side pre-tensioner (squib). The trouble causes for each diagnosis code No. are as follows.	• Malfunction of wiring harnesses or connectors • Malfunction of front passenger's side pre-tensioner (squib) • Malfunction of SRS-ECU

Code No.	Trouble causes
28	• Short in front passenger's side pre-tensioner (squib) or harness short
29	• Open circuit in front passenger's side pre-tensioner (squib) or open harness • Malfunction of connector contact
68	• Short in front passenger's side pre-tensioner (squib) harness leading to the power supply
69	• Short in front passenger's side pre-tensioner (squib) harness leading to the earth



MUT-II Self-diag code
- Connect the dummy resistor (MB991865) to the resistor harness (MB991866).
- Disconnect front passenger's side pre-tensioner connector F-31 <L.H. drive vehicles> or F-34 <R.H. drive vehicles>, and insert probe of resistor harness MB991866 to the connector by backprobing.

Caution
Never insert the probe directly to the terminals from the front of the connector.

- Connect the negative (-) battery terminal.
- Erase diagnosis code memory.

Is code No.28, 29, 68 or 69 displayed?

YES

Check the following connectors: E-110, E-20, F-31 <L.H. drive vehicles>, E-21, F-34 <R.H. drive vehicles>

OK

Check trouble symptoms.

NG

Check wiring harness between the front passenger's side pre-tensioner and SRS-ECU.

OK

Replace SRS-ECU.

NG

Repair

NG

Repair

NO

Replace the front passenger's side pre-tensioner.

Code No.56, 57, 58, 59 System inside SRS-ECU	Probable cause
These diagnostic trouble codes are output when a fault is detected in the SRS-ECU. The defective parts and trouble causes for each diagnosis code No. are as follows.	• Malfunction of SRS-ECU

Code No.	Defective parts	Trouble causes
56	Driver's side pre-tensioner (squib ignition drive circuit)	• Short circuit in the squib ignition drive circuit
57		• Open circuit in the squib ignition drive circuit
58	Front passenger's side pre-tensioner (squib ignition drive circuit)	• Short circuit in the squib ignition drive circuit
59		• Open circuit in the squib ignition drive circuit

If the diagnosis code(s) above is set, replace the SRS-ECU.

POST-COLLISION DIAGNOSIS

Check and service the vehicle after collision as follows regardless of the operation of the pre-tensioner:

SRS-ECU MEMORY CHECK

The check procedure is the same as before.

REPAIR PROCEDURE

WHEN PRE-TENSIONER OPERATES IN A COLLISION.

1. Replace the following parts with new ones.
   - SRS-ECU
   - Front impact sensor
   - Seat belt with pre-tensioner (Refer to P.52B-12.)
2. Check harnesses for binding, connectors for damage, poor connections, and terminals for deformation.

UNDEPLOYED AIR BAGS IN LOW-SPEED COLLISION

Check the SRS-ECU and Front impact sensor and Seat belt with pre-tensioner. If visible damage such as dents, cracks, or deformation are found on the the SRS-ECU and Front impact sensor and Seat belt with pre-tensioner, replace them with new ones. Concerning parts removed for inspection, replacement with new parts and cautions in working, refer to INDIVIDUAL COMPONENT SERVICE.

SRS-ECU

The check procedure is the same as before.

Front impact sensor

The check procedure is the same as before.

Seat belt with pre-tensioner

1. Check the seat belt for damage or deformation.
2. Check the pre-tensioner for cracks or deformation.
3. Check that the unit is installed correctly to the vehicle body.

INDIVIDUAL COMPONENT SERVICE

If the seat belt with pre-tensioner are to be removed or replaced as a result of maintenance, troubleshooting, etc., follow each procedure (P.52B-10 - P.52B-13.)

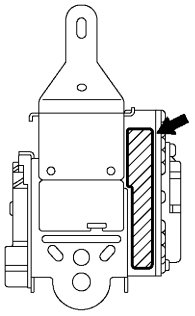
Caution

1. **The seat belt with pre-tensioner should not be subjected to temperature 90°C, so remove the seat belts with pre-tensioner before drying or baking the vehicle after painting.**
2. **If the seat belt with pre-tensioner 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.**

WARNING/CAUTION LABELS

Caution labels on the seat belt with pre-tensioner are attached in the vehicle as shown. Follow label instructions when servicing the seat belt with pre-tensioner. If the label(s) are dirty or damaged, replace with new one(s).

Seat belt with pre-tensioner



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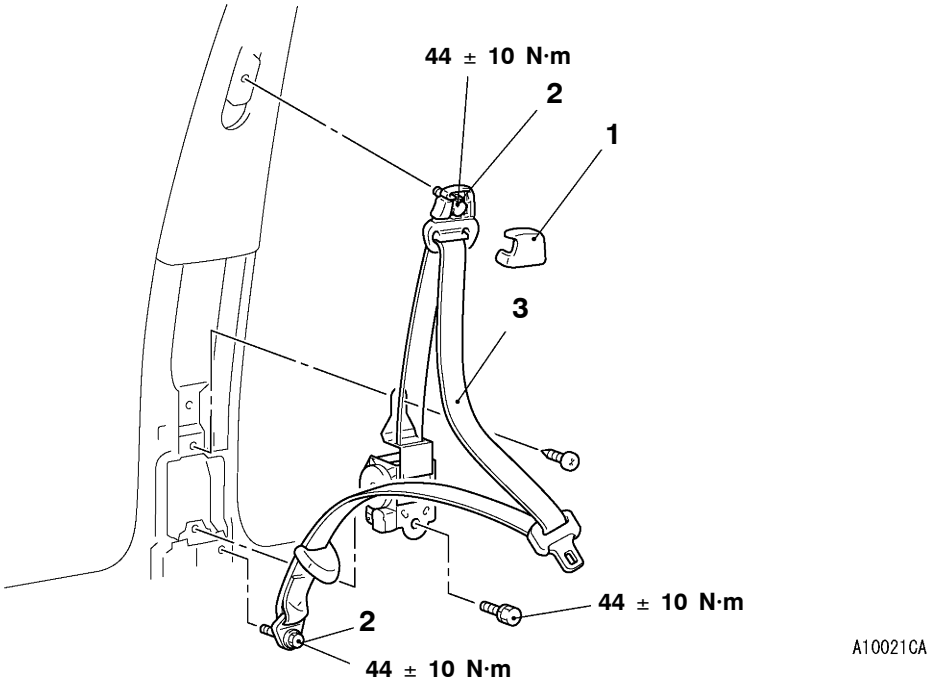
SEAT BELT WITH PRE-TENSIONER

Caution

1. **Never attempt to disassemble or repair the with pre-tensioner. If faulty, replace it.**
2. **Be extremely careful when handling the seat belt with pre-tensioner. Do not subject it to shocks, drop it, bring it close to strong magnets or allow contact with water, grease or oil. Always replace it with a new part if any dents, cracks or deformation is found.**
3. **Do not place anything on top of the pre-tensioner.**
4. **Do not expose the seat belt with pre-tensioner to temperatures over 90°C.**
5. **After operating the pre-tensioner, replace the seat belt pre-tensioner with a new part.**
6. **Gloves and protective goggles should be worn when handling a pre-tensioner once it has been used.**
7. **If disposing of a seat belt with pre-tensioner which has not yet been used, its pre-tensioner should be operated first before disposal. (Refer to P.52B-14.)**

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
- Turn Ignition Key to LOCK (OFF) Position
- Disconnect the Negative (-) Battery Terminal.



Removal steps

1. Sash guide cover
2. Outer seat belt connection
- Center pillar trim, lower
3. Seat belt with pre-tensioner

Installation steps

▶A◀
- Post-installation inspection

3. Seat belt with pre-tensioner
- Center pillar trim, lower
2. Outer seat belt connection
1. Sash guide cover
- Negative (-) battery cable connection

▶B◀
- Pre-installation inspection

NOTE
The figure shows the seat belt with pre-tensioner (RH)

INSTALLATION SERVICE POINTS

▶A◀ PRE-INSTALLATION INSPECTION

1. Even new seat belt with pre-tensioner require inspection before installation.

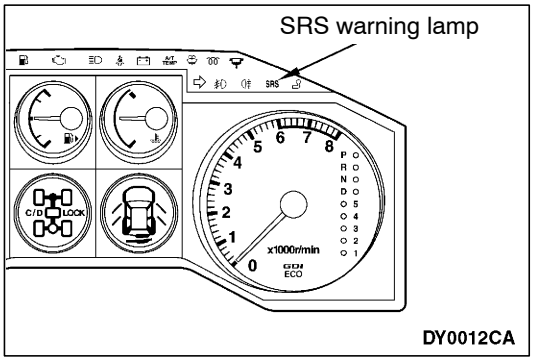
   Caution
   When discarding the seat belt with pre-tensioner, operate the pre-tensioner as specified in the service procedure. (Refer to P.52B-14.)

2. Connect the negative (-) battery terminal.
3. Connect the MUT-II to the diagnosis connector (16 pin).

   Caution
   Turn the ignition switch to the LOCK (OFF) position when connecting and disconnecting the MUT-II.

4. Turn the ignition key to the ON position.
5. Read a diagnosis code to refer to that the SRS is operating properly except an open in the air bag module circuit.
6. Turn the ignition switch to LOCK(OFF) position.
7. Disconnect the negative (-) battery cable and insulate with tape.

   Caution
   Wait at least 60 seconds after the disconnection of the battery cable before any further job.
   (Refer to P.52B-4, item 5 of the Service Precautions)



▶B◀ POST-INSTALLATION INSPECTION

1. Reconnect the negative (-) battery terminal.
2. Turn the ignition key to the ON position.
3. Does the SRS warning lamp illuminate for about 7 seconds after turning OFF?
4. If no, refer to troubleshooting.
   (Refer to P.52B-6)

INSPECTION

SEAT BELT WITH PRE-TENSIONER CHECK

If any part is found to be faulty during the inspection, it must be replaced with a new one.
Dispose of the old one according to the specified procedure. (Refer to P.52B-14.)

- Check pre-tensioner for dents, cracks or deformation.

SEAT BELT PRE-TENSIONER DISPOSAL PROCEDURES

Before disposing of a vehicle which is equipped with seat belts with pre-tensioner, or when disposing of the seat belts with pre-tensioner themselves, the following procedures must be used to deploy the pre-tensioners before disposal.

UNDEPLOYED SEAT BELT PRE-TENSIONER DISPOSAL

Caution

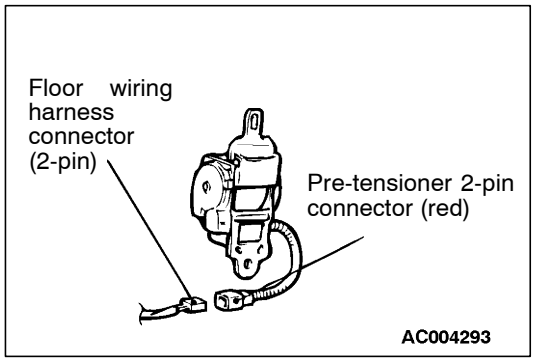
1. **If the vehicle is to be scrapped or otherwise disposed of, operate the pre-tensioners inside the vehicle. If the vehicle is still to be used and only the seat belt pre-tensioner are to be disposed of, operate the pre-tensioners outside the vehicle.**
2. **Since a large amount of smoke is produced when the pre-tensioner is operated, avoid residential areas whenever possible.**
3. **Since there is a loud noise when the pre-tensioners are operated, 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

1. 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 P.52B-4.)

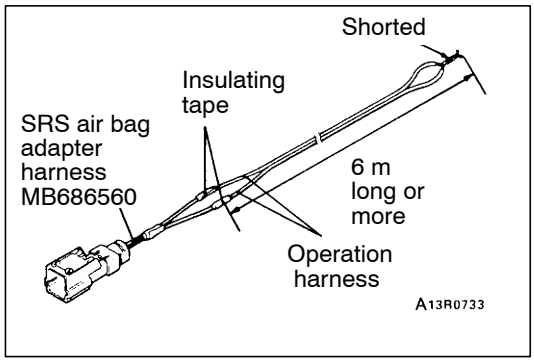
3. Operate the pre-tensioner as specified in the service procedures that follows.
   (1) Remove the center pillar trim, lower.



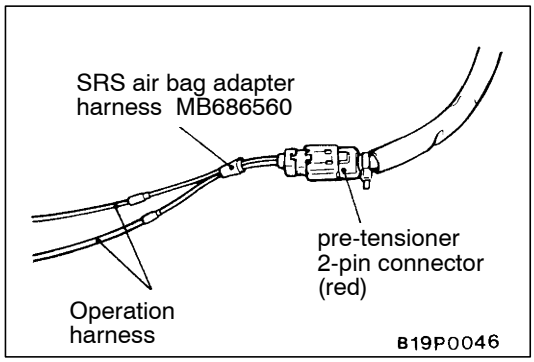
(2) Remove the connection between the pre-tensioner 2-pin connector (red) and the floor wiring harness connector (2-pin).

Caution
The pre-tensioner both in the driver's and passenger's sides should be operated.

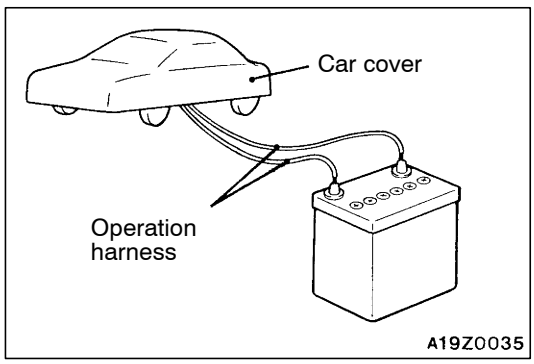
NOTE
Once disconnected from the body wiring harness, both electrode of the pre-tensioner connector short automatically. This prevents the pre-tensioner from accidental operation caused by static etc.



(3) Connect operation harness longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the operation harness in the other ends to short, thereby preventing the pre-tensioner from accidental operation caused by static etc.



(4) Connect the SRS air bag adapter harness to the pre-tensioner 2-pin connector (red) and route the operation harness out of the vehicle.



(5) Close all the doors with the windows fully closed and put a cover over the vehicle to minimize report.

Caution
The cover is required as the glass, if already damaged, may break.

(6) Separate the operation harness as far from the vehicle as possible and connect to the terminals of the battery removed from the vehicle. Then operate the pre-tensioner.

Caution
1) Before operating the pre-tensioner, see that no one is in and near the vehicle.
2) The operation of the pre-tensioner makes the inflator very hot. Before handling the inflator, wait more than 30 minutes for cooling.
3) If the pre-tensioner fails to operate when the procedures above are followed, do not go near the pre-tensioner. Contact your local distributor.

(7) After operation of the pre-tensioner, discard as specified in the procedure. (Refer to P.52B-18.)

DEPLOYMENT OUTSIDE THE VEHICLE

Caution
1) This should be carried out in a wide, flat area at least 6 m away from obstacles and other people.
2) Do not operate outside if wind is high. Even in a soft wind, ignite to windward of the pre-tensioner.

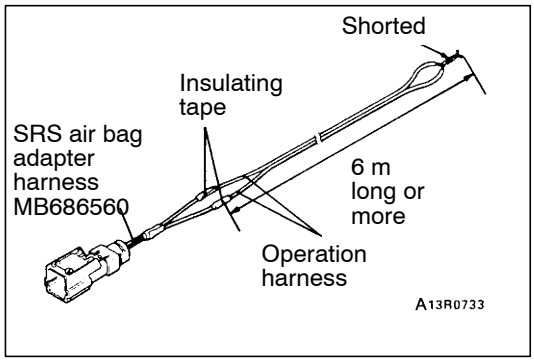
1. Disconnect the negative (-) and positive (+) battery cables from the battery terminals, and then remove the battery from the vehicle.

   Caution
   Wait at least 60 seconds after disconnecting the battery cables before doing any further work. (Refer to P.52B-4.)

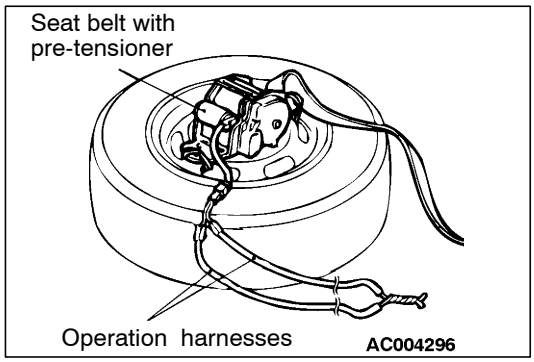
2. Operate pre-tensioner as specified in the service procedures that follows.

(1) Remove the seat belt pre-tensioner from the vehicle. (Refer to P.52B-12.)

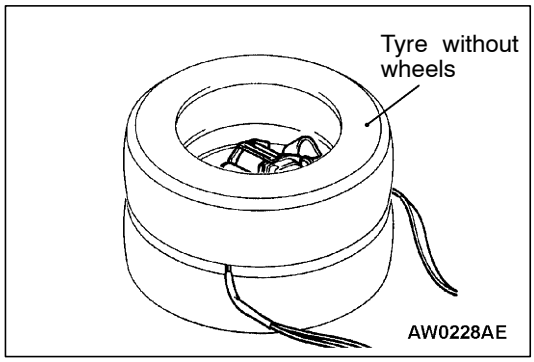
Caution
The pre-tensioner should be stored on a flat surface and placed so that the pre-tensioner operation surfaces are facing upward. Do not place anything on top of them.



(2) Connect operation harness longer than 6 m to each SRS air bag adapter harness and insulate the connections with plastic tape.
Also, connect the operation harness in the other ends to short, thereby preventing the pre-tensioner from accidental operation caused by static etc.

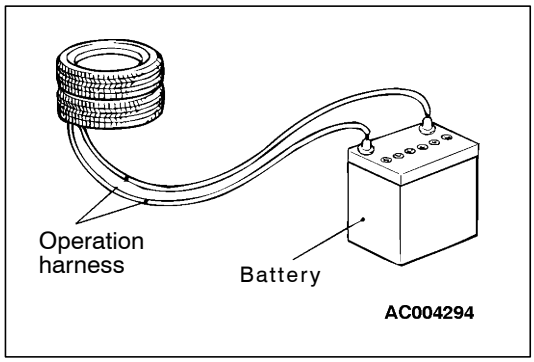


(3) Feed a thick wire through the bracket of the seat belt with pre-tensioner, and connect it to a old tyre with a wheel.
(4) Connect the operation harness to the pre-tensioner.
(5) Pull out the seat belt outside the tyre.



(6) Place an old tyre (without a wheel) on the tyre, which the seat belt with pre-tensioner is secured on.

Caution
Be careful not to trap the SRS air bag adapter harness connector between tyres.



(7) Untie the operation harness ends at the place as far as possible from the seat belt with pre-tensioner, and connect the harness wires to the vehicle battery to activate the pre-tensioner.

Caution
1) **Before the operation, be sure that no one is near the pre-tensioner.**
2) **The operation of the pre-tensioner makes itself very hot. Before handling the pre-tensioner, wait more than 30 minutes for cooling.**
3) **If the pre-tensioner fails to operate when the procedures above are followed, do not go near the pre-tensioner. Contact your local distributor.**

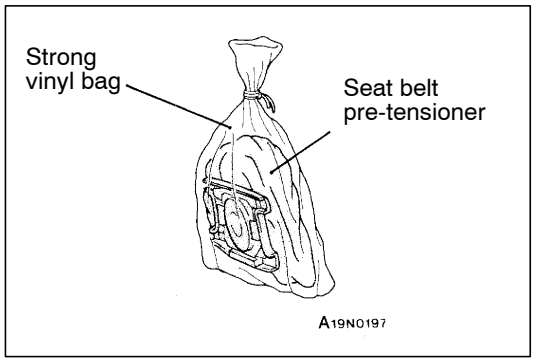
(8) After operation of the pre-tensioner, discard as specified in the procedure.

OPERATED PRE-TENSIONER DISPOSAL PROCEDURES

After operation, the pre-tensioner 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 operation, so wait at least 30 minutes to allow it cool before attempting to handle it.
2. Do not put water or oil on the pre-tensioner after operation.
3. There may be, adhered to the operated pre-tensioner, material that could irritate the eye and/or skin, so wear gloves and safety glasses when handling a operated pre-tensioner.

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 pre-tensioner in a strong vinyl bag for disposal.
5. Be sure to always wash your hands after completing this operation.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

CONTENTS

CAUTION

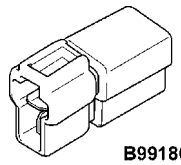
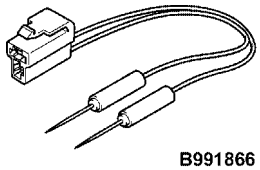
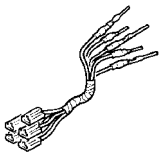
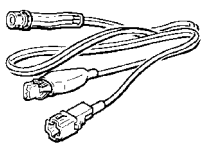
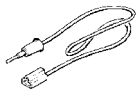
- **Carefully read and observe the information in the SRS SERVICE PRECAUTIONS prior to any service.**
- **For information concerning troubleshooting or maintenance, always observe the procedures in the Troubleshooting (P.52B-3.) section.**
- **If any SRS components are removed or replaced in connection with any service procedures, be sure to follow the procedures in the INDIVIDUAL COMPONENT SERVICE section for the components involved.**
- **If you have any questions about the SRS, please contact your local distributor.**

GENERAL

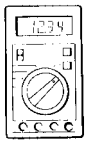
OUTLINE OF CHANGES

The following service procedures have been established due to the changes of the clock spring connector.

SPECIAL TOOLS

Tool	Number	Name	Use
 B991865	MB991865	Dummy resistor	Checking SRS air bag circuit
 B991866	MB991866	Resistor harness (for SRS air bag)	Checking SRS air bag circuit
A  B  C  D  C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Check harness B: LED harness C: LED harness adapter D: Probe	Checking continuity and measuring voltage at SRS-ECU harness connector

TEST EQUIPMENT

Tool	Name	Use
 13R0746	Digital multi-meter	Checking SRS air bag circuit Use multi-meter for which the maximum test current is 2 mA or less at minimum range of resistance measurement

TROUBLESHOOTING

The following items have been changed. The other items are the same as before.

INSPECTION CHART FOR DIAGNOSIS CODES

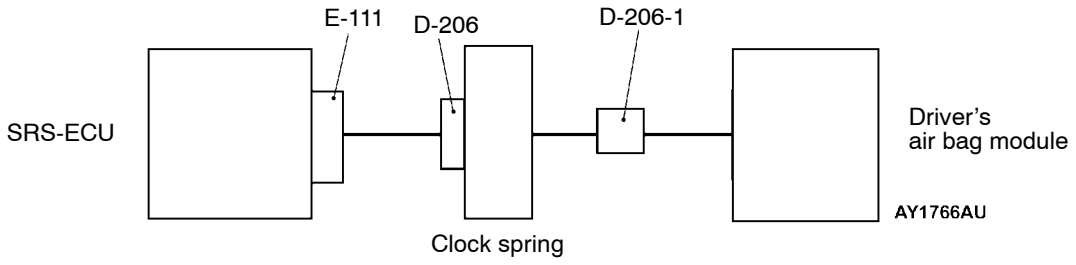
Code No.	Diagnosis item		Reference page
21*	Driver's air bag module (squib) system	Short circuit between terminals of the squib circuit	52B-3
22*	Driver's air bag module (squib) system	Open in the squib circuit	52B-5
61	Driver's air bag module (squib) system	Short-circuited to power supply	52B-6
62	Driver's air bag module (squib) system	Short-circuited to earth	

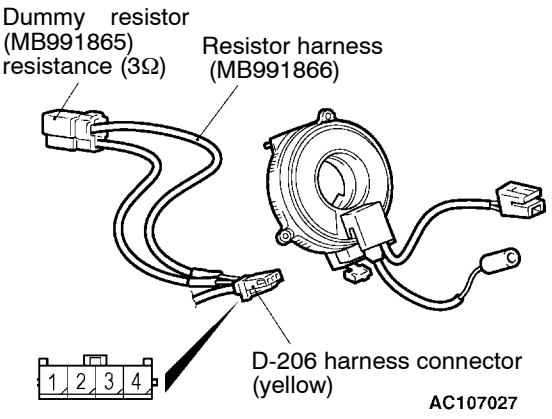
NOTE
*: If the system returns to normal, the SRS warning lamp will go out, but the relevant diagnosis code will be retained in memory.

INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSIS CODE

Code No.21 Driver's air bag module (squib) system	Possible cause
This code is output when short circuit occurs between terminals of the SRS-ECU driver's air bag module (squib) circuit. However, SRS warning lamp goes out when a normal operation is resumed (diagnosis code is not cleared.)	• Connector engagement faulty or short bar faulty* • Short circuit in the clock spring • Short circuit between terminals of the driver's air bag module (squib) circuit • Faulty connector • SRS-ECU inoperable

NOTE:
*: The connector of the squib circuit contains a short bar (short-circuiting the positive (+) cable and the negative (-) cable to avoid an erroneous deployment caused by static electricity when a connector is not connected). Thus, when a connector is connected, the short bar may not be released due to improper engagement of the connector or faulty connector as shown in the illustration below. Disconnect the connector as shown in the illustration below, then reconnect it. Check that a diagnosis code is output again after erasing the memory. If the diagnosis code is not output, the above-mentioned code is output due to improper engagement of the connector.





<Driver's air bag module(squib) and clock spring>

MUT-II self-diag code

- Disconnect the D-206 clock spring connector (4-pin, yellow).
- Connect the dummy resistor (MB991865) to the resistor harness (MB991866).
- Insert resistor harness (MB991866) to terminal No.3 and No.4 from the rear of D-206 harness connector.
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.
- Connect the negative (-) terminal of the battery.
- Check the diagnosis code again after erasing the memory.

Is code No.21 output?

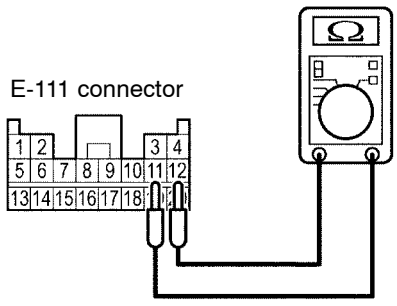
YES

<Check the circuit between the SRS-ECU and clock spring>

Measure at the E-111 SRS-ECU connector.

- Disconnect the E-111 SRS-ECU connector.
- Disconnect the D-206 clock spring connector.
  Caution
  Disconnect the connector and short-circuit the squib circuit before releasing the short bar of the SRS-ECU connector in the following operation.
- Insert a cable band (width: 3 mm, thickness: 0.5 mm) between terminals 11, 12 and the short bar between terminals 11 and 12 and the short bar, and release the short bar.
  (See Figure A.)
  Caution
  As the short bar may not be releasable if inserted insufficiently, insert more than 4 mm.
- Measure at the harness side.
- Continuity check between terminals 11 and 12
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.

OK: No continuity



OK

Replace the SRS-ECU.

NO

Check the clock spring. (Refer to P.52B-11.)

OK

Replace the driver's air bag module (squib).

NG

Replace the clock spring.

NG

Check connector: E-111, D-206

OK

Check the trouble symptoms.

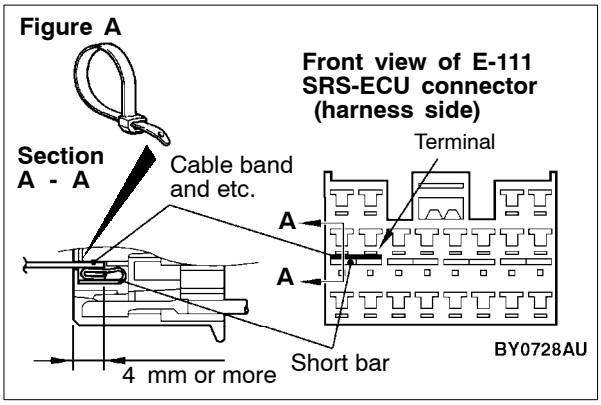
NG

Repair

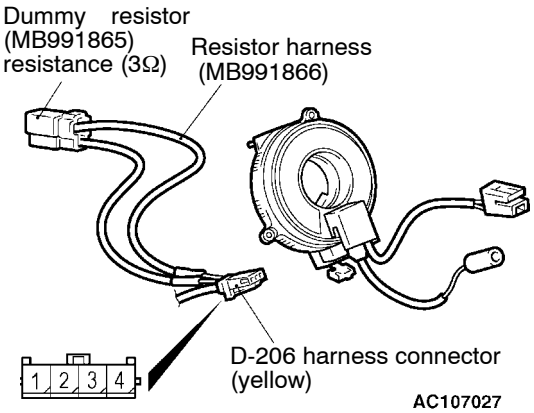
NG

Check the harness between the clock spring and the SRS-ECU, and repair if necessary.

Figure A



Code No.22 Driver's air bag module (squib) system	Possible cause
This code is output when open circuit occurs in the SRS-ECU driver's air bag module (squib) circuit. However, SRS warning lamp goes out when a normal operation is resumed (diagnosis code is not cleared.)	• Open in the clock spring • Half open in the circuit due to improper neutral positioning of the clock spring • Open in the driver's air bag module (squib) circuit • Driver's air bag module (squib) connector falling out • Connector improper contact • SRS-ECU inoperable



<Driver's air bag module (squib) and clock spring check>

MUT-II self-diag code

- Disconnect the D-206 clock spring connector (4-pin, yellow).
- Connect the dummy resistor (MB991865) to the resistor harness (MB991866).
- Insert resistor harness (MB991866) to terminal No.3 and No.4 from the rear of D-206 harness connector.
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.
- Connect the negative (-) terminal of the battery.
- Check the diagnosis code again after erasing the memory.

Is code No.22 output?

YES

<Check the circuit between the SRS-ECU and clock spring>

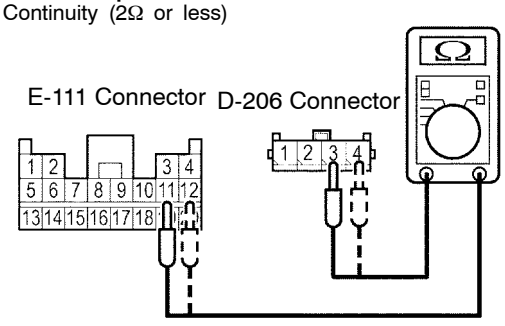
Measure at the E-111 SRS-ECU connector and the D-206 clock spring connector.

- Disconnect the E-111 SRS-ECU connector and the D-206 clock spring connector and measure at the harness side.
- Continuity check between the following terminals

E-111 connector		D-206 Connector
11	–	3
12	–	4

Caution
Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.

OK: Continuity (2Ω or less)



OK

Replace the SRS-ECU.

NO

Check the clock spring. (Refer to P.52B-11.)

OK

Replace the driver's air bag module (squib).

NG

Replace the clock spring.

NG

Check connector: E-111, D-206

OK

Check the trouble symptoms.

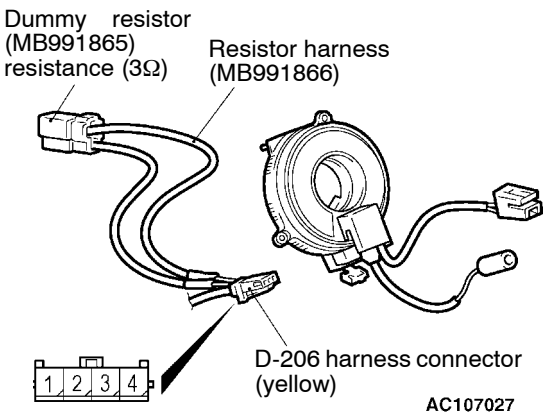
NG

Check the harness between the clock spring and the SRS-ECU, and repair if necessary.

NG

Repair

Code No.61 Driver's air bag module (squib) system (short-circuited to power supply) Code No.62 Driver's air bag module (squib) system (short-circuited to earth)	Possible cause
This code is output when the input terminal of the SRS-ECU driver's air bag module (squib) is short-circuited to power supply (code No.61) or short-circuited to earth (code No.62).	• Clock spring fault • Harness or connector fault • The harness of the driver's air bag module (squib) is short-circuited to power supply (code No.61) or short-circuited to earth (code No.62) • SRS-ECU inoperable



<Driver's air bag module (squib) and check the clock spring>
MUT-II self-diag code
- Disconnect the D-206 clock spring connector (4-pin, yellow).
- Connect the dummy resistor (MB991865) to the resistor harness (MB991866).
- Insert resistor harness (MB991866) to terminal No.3 and No.4 from the rear of D-206 harness connector.
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.
- Connect the negative (-) terminal of the battery.
- Check the diagnosis code again after erasing the memory.

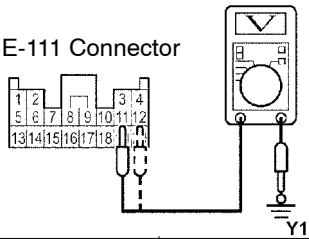
Is code No.61 or No.62 output?

YES (when No.61 is output)

YES (when No.62 is output) → NO → Check the clock spring. (Refer to P.52B-11.)
- OK → Replace the driver's air bag module (squib).
- NG → Replace the clock spring.

<Check the circuit between the SRS-ECU and clock spring>
Measure at the E-111 SRS-ECU connector.
- Disconnect the E-111 SRS-ECU connector.
- Disconnect the the D-206 clock spring connector.
- Ignition switch: ON
- Measure at the harness side.
- Voltage between terminal 11 or 12 and body earth
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.

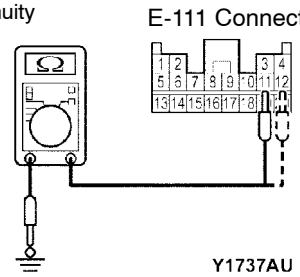
OK: 0 V



- OK → Replace the SRS-ECU.
- NG → **Check connector:** E-111, D-206
  - NG → **Repair**
  - OK → Check the trouble symptoms.
    - NG → Check the harness between the clock spring and the SRS-ECU, and repair if necessary.

<Check the circuit between the SRS-ECU and clock spring>
Measure at the E-111 SRS-ECU connector.
- Disconnect the E-111 SRS-ECU connector.
- Disconnect the D-206 clock spring connector.
- Measure at the harness side.
- Continuity between terminal 11 or 12 and body earth
  Caution
  Do not directly insert a probe or other devices at the front of the connector to avoid a possible decrease in the contact pressure.

OK: No continuity



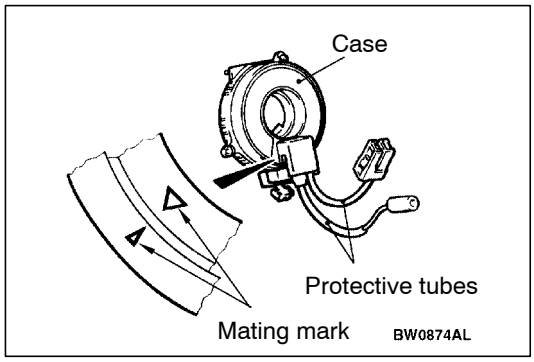
- OK → Replace the SRS-ECU.
- NG → **Check connector:** E-111, D-206
  - NG → **Repair**
  - OK → Check the trouble symptoms.
    - NG → Check the harness between the clock spring and the SRS-ECU, and repair if necessary.

SRS MAINTENANCE

SRS COMPONENT VISUAL CHECK

CLOCK SPRING

1. Remove the clock spring. (Refer to P.52B-8.)
2. Check clock spring connectors and protective tube for damage, and terminals for deformation.
3. Visually check the clock spring case for damage.



4. Align the mating marks of the clock spring and, after turning the vehicle's front wheels to straight-ahead position, install the clock spring to the column switch.

   Mating Mark Alignment

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

   Caution
   If the clock spring's mating mark is 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 or front passenger.

5. Install the steering column covers, steering wheel and the air bag module.
6. Check steering wheel for noise, binds of difficult operation.
7. Check steering wheel for excessive free play.
   REPLACE ANY VISUALLY INSPECTED PART IF IT FAILS THAT INSPECTION. (Refer to P.52B-11.)

   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.

AIR BAG MODULES AND CLOCK SPRING

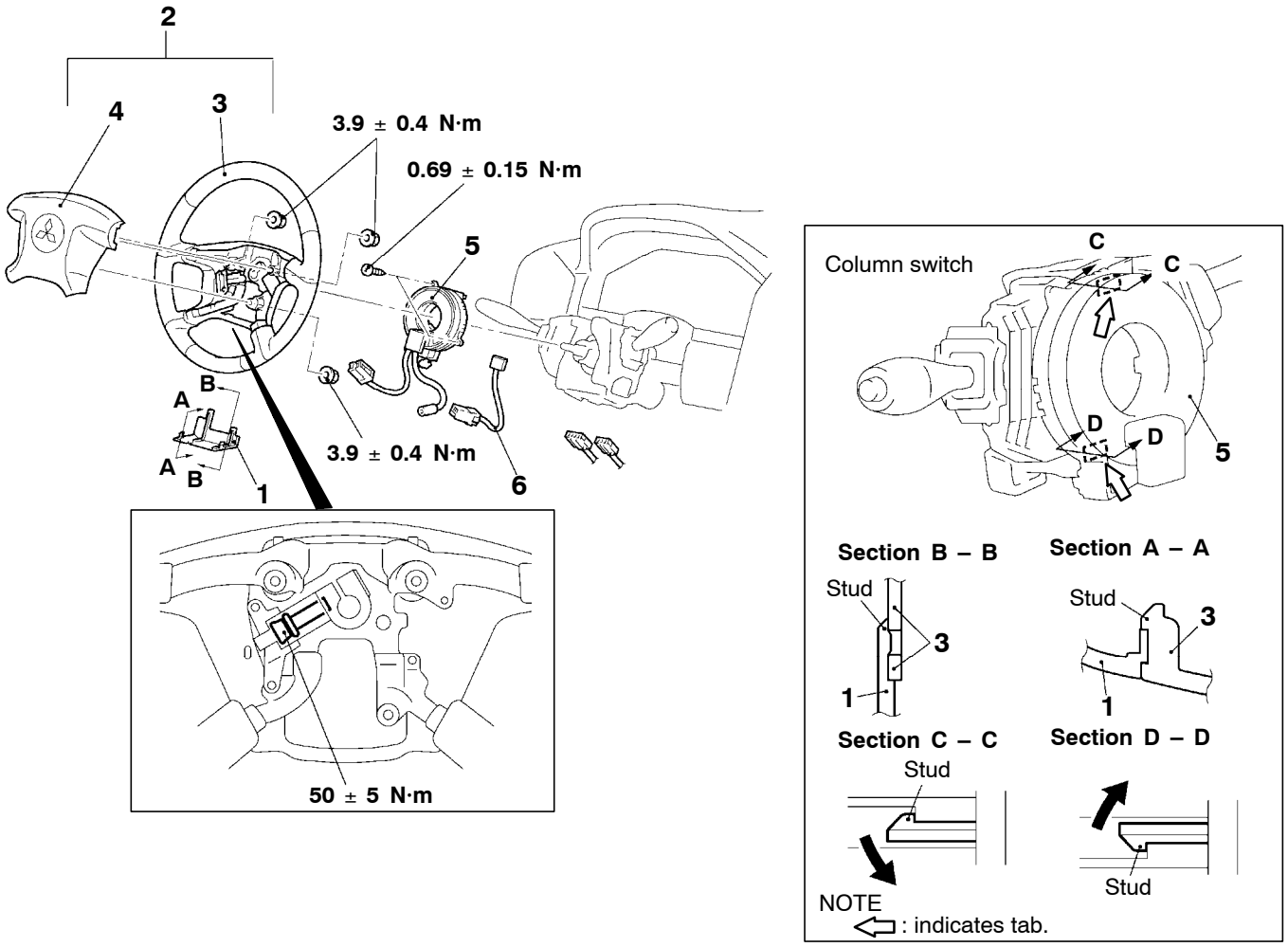
Caution

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 and clock spring.**
   If faulty, just replace with new one(s).
3. **Do not drop the air bag modules or clock spring or allow contact with water, grease or oil.**
   Replace if a dent, crack, deformation or rust are present.
4. **Store the air bag modules on a flat surface with the deployment surface facing up.**
   Do not place anything on top of them.
5. **Do not store the air bag modules in a place more than 93°C.**
6. **When the driver's and front passenger's air bags have been deployed, replace the driver's and passenger's air bag modules with new ones.**
7. **Put on gloves and safety glasses when handling deployed air bags.**
8. **When discarding the undeployed air bag module(s), be sure to deploy the air bag(s) in advance as specified in the service procedure.**
   (Refer to to P.52B-12.)

REMOVAL AND INSTALLATION

Pre-removal Operations
- After setting the steering wheel and the front wheels to the straight ahead position, remove the ignition key.
- Disconnect the negative battery (-) terminal.

<Driver's air bag module and clock spring>



AAC204150

Driver's air bag module removal steps

◀A▶ 1. Cover
◀B▶ 2. Steering wheel and air bag module assembly
3. Steering wheel
◀C▶ 4. Driver's air bag module

Driver's air bag module installation steps

▶A◀ ● Pre-installation inspection
4. Driver's air bag module
3. Steering wheel
▶C◀ 2. Steering wheel and air bag module assembly
1. Cover
● Connect the negative (-) battery terminal.
▶D◀ ● Post-installation inspection

Clock spring removal steps

◀A▶ 1. Cover
◀B▶ 2. Steering wheel and air bag module assembly
- Lower column cover

◀D▶ 5. Clock spring
6. Clock spring sub harness

Clock spring installation steps

▶A◀ - Pre-installation inspection
6. Clock spring sub harness
▶B◀ 5. Clock spring
- Lower column cover

▶C◀ 2. Steering wheel and air bag module assembly
1. Cover
- Connect the negative (-) battery terminal.

▶D◀ - Post-installation inspection

<Passenger's air bag module>

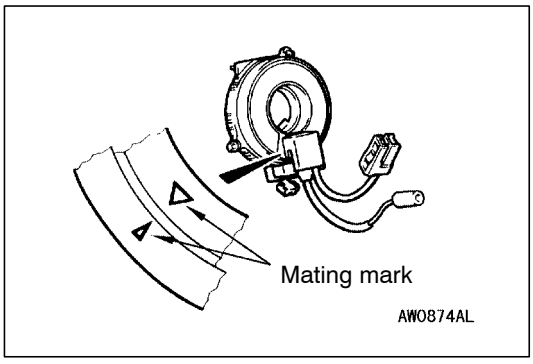
The removal and installation service procedures are the same as before.

<Front seatback assembly equipped with side air bag module>

The removal and installation service procedures are the same as before.

REMOVAL SERVICE POINTS

The removal service points are the same as before.



INSTALLATION SERVICE POINTS

The installation service points are the same as before except the followings.

▶B◀ CLOCK SPRING INSTALLATION

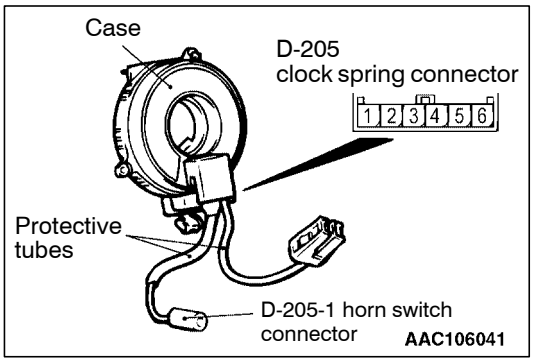
Align the mating marks on the clock spring as mentioned in the next step. Then, install the clock spring to the column switch.

CLOCK SPRING CENTERING

Fully turn the clock spring clockwise and then turn it back about 3 3/4 times counterclockwise to align the mating marks.

Caution

Unless the mating marks are properly aligned, the steering wheel gets stuck amid a turn or the flat cable in the clock spring is cut. These hinder the SRS air bag from proper operation, resulting in serious injury to the vehicle's driver.



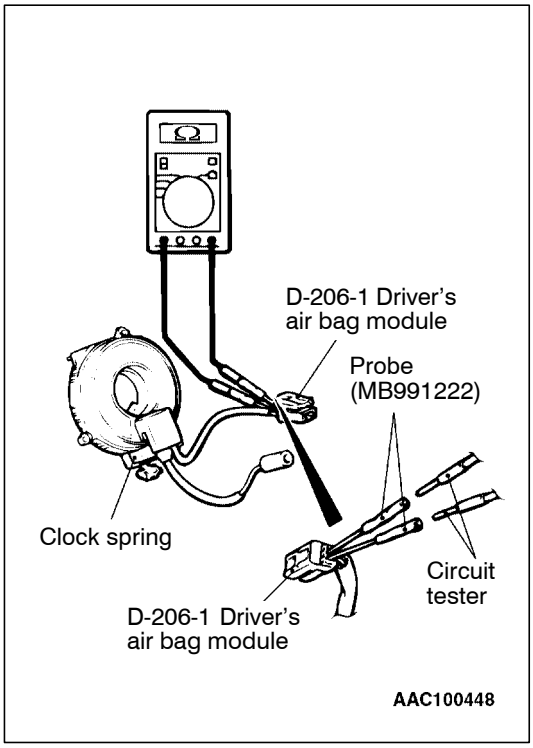
INSPECTION

Clock spring

If any malfunction is found in the following inspections, replace the clock spring with a new one.

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

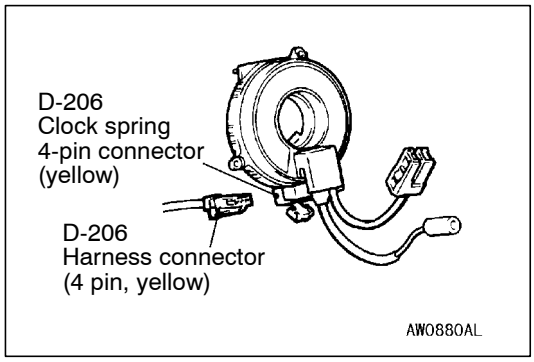
3. Check the continuity between clock spring 6-pin connector D-205 terminal No.1 and horn switch connector D-205-1 terminal.
   Caution
   Never insert the probe directly to the terminals from the front of the connector.



4. Insert the probes (MB991222) from the rear of the driver's air bag module connector D-61-1 as shown and connect a circuit tester to check that there is a continuity between terminals.

AIR BAG MODULE DISPOSAL PROCEDURES

The disposal procedures are the same as before except the followings.



UNDEPLOYED AIR BAG MODULES

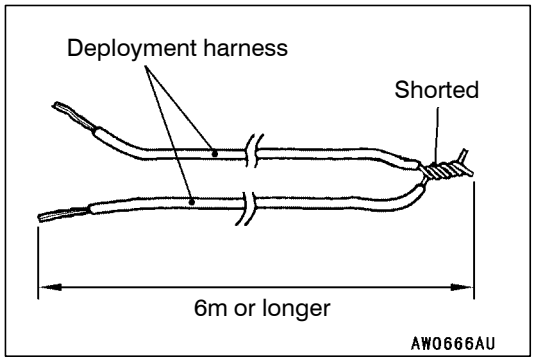
DEPLOYMENT INSIDE THE VEHICLE

Driver's air bag module

(1) Remove the steering column cover, lower.

(2) Disconnect the D-206 clock spring 4-pin connector (yellow) and D-206 harness connector (4-pin, yellow).

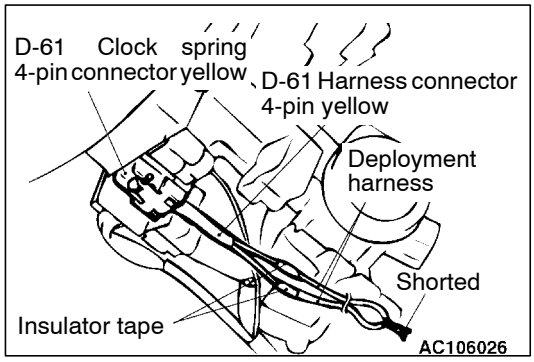
NOTE
Once disconnected from the instrument panel wiring harness, both electrodes of the clock spring connector short automatically. This prevents the driver's air bag from accidental deployment caused by static, etc.



(3) Prepare two deployment harnesses longer than 6 m for deployment and connect the terminals in one end to short-circuit. This is to prevent accidental deployment caused by static etc.

(4) Touch the vehicle's body with bare hands to discharge static in you.

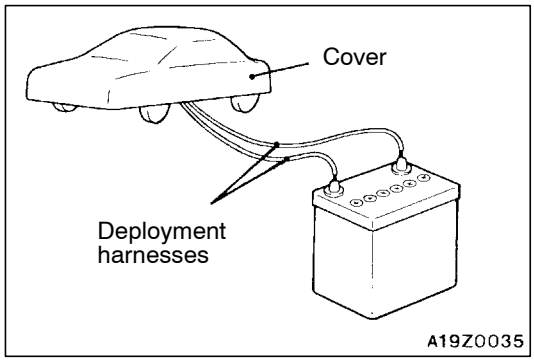
Caution
Never fail to do Step (3) in order to prevent accidental deployment caused by static.



(5) Use a nipper or other tools to cut off the harness of the disconnected D-61 harness connector (4-pin, yellow)

NOTE
Carefully determine the cut off position in relation to the connection position of deployment harness so that enough space from the D-61 clock spring 4-pin connector (yellow). can be provided.

(6) Connect deployment harnesses to each of two cut-off harnesses and insulate the connections with tape, then connect the deployment harness to the D-61 clock spring 4-pin connector in order to pull the deployment harness out of the vehicle.



(7) Close all the doors with the windows fully closed and put a cover over the vehicle to minimize report.

Caution
The cover is required as the glass, if already damaged, may break.

(8) Separate the deployment harnesses as far from the vehicle as possible and connect to the terminals of the battery removed from the vehicle. Then deploy.

Caution
1) **Before deploying the air bag, see that no one is in and near the vehicle. Also, put on safety glasses.**
2) **The deployment makes the inflator of the driver's air bag very hot. Before handling the inflator, wait more than 30 minutes for cooling.**
3) **If the driver's air bag module fails to deploy although the procedure is respected, do not go near the module. Contact your local distributor.**

(9) Discard the deployed air bag module according to Deployed Air Bag Module Disposal Procedures.

NOTES