

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

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E52BA00AA

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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-7) or the SRS Maintenance (P.52B-25) sections respectively.
- 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-32) for the components involved.
- If you have any questions about the SRS, please contact your local distributor.

GENERAL INFORMATION

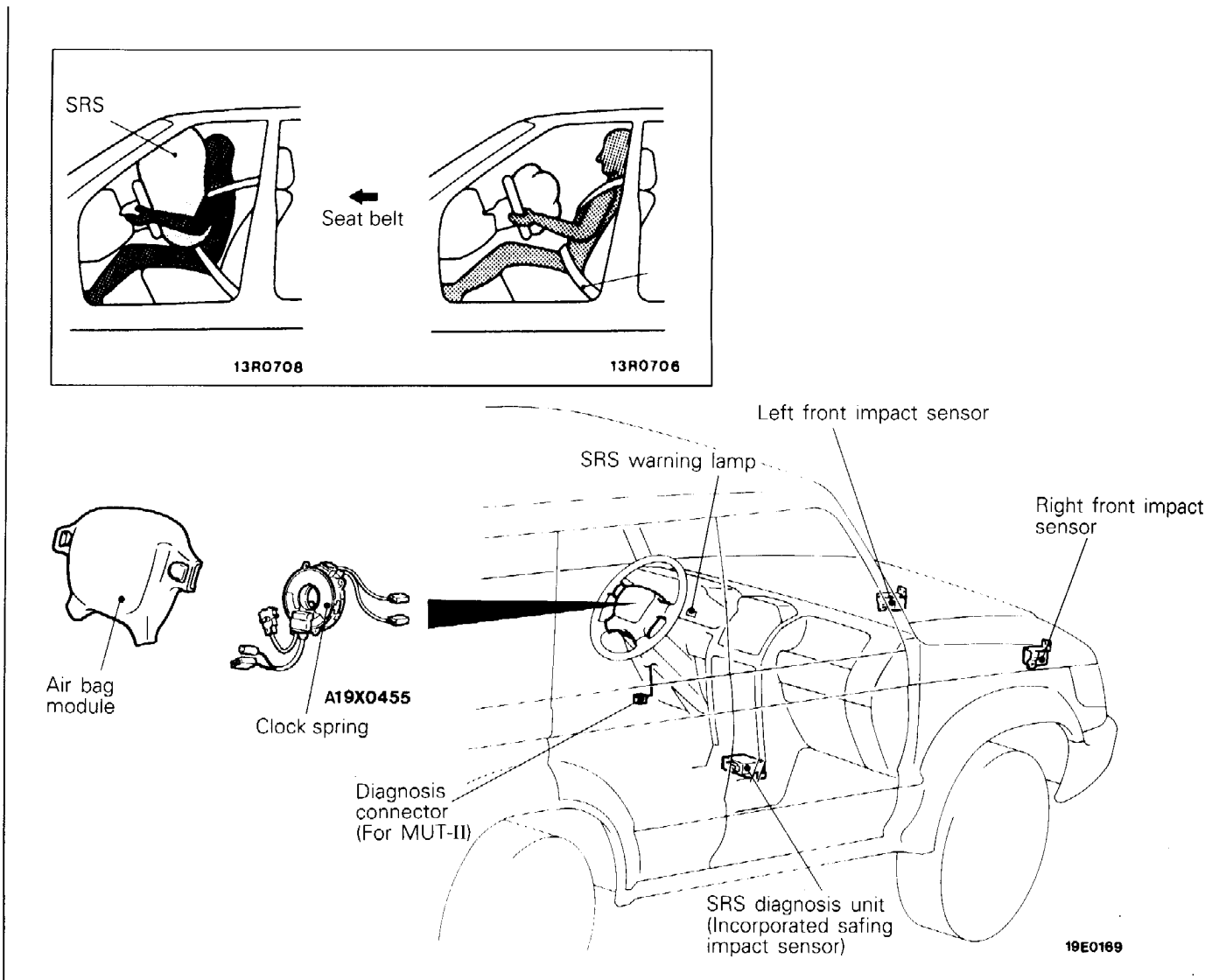
The Supplemental Restraint System (SRS) is designed to supplement the driver's seat belt to help reduce the risk or severity of injury to the driver by activating and deploying an air bag in certain frontal collisions.

The SRS consists of: left front and right front impact sensors one located, on the right and left radiator support panel; an air bag module located in the centre of the steering wheel, which contains the folded air bag and an inflator unit; the SRS diagnosis unit located in front of the shift lever, which monitors the system, and which contains a safing impact sensor; an SRS warning lamp located on the instrument panel, which indicates the operational status of the SRS, and clock

spring interconnection located within the steering column; wiring.

The SRS is designed so that the air bag will deploy when the safing sensor, plus either or both of the left front and right front impact sensors simultaneously activate while the ignition switch is "ON". That is designed to occur in frontal or near-frontal impacts of moderate to severe force.

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 bag) or the driver (by rendering the SRS inoperative).



SRS SERVICE PRECAUTIONS

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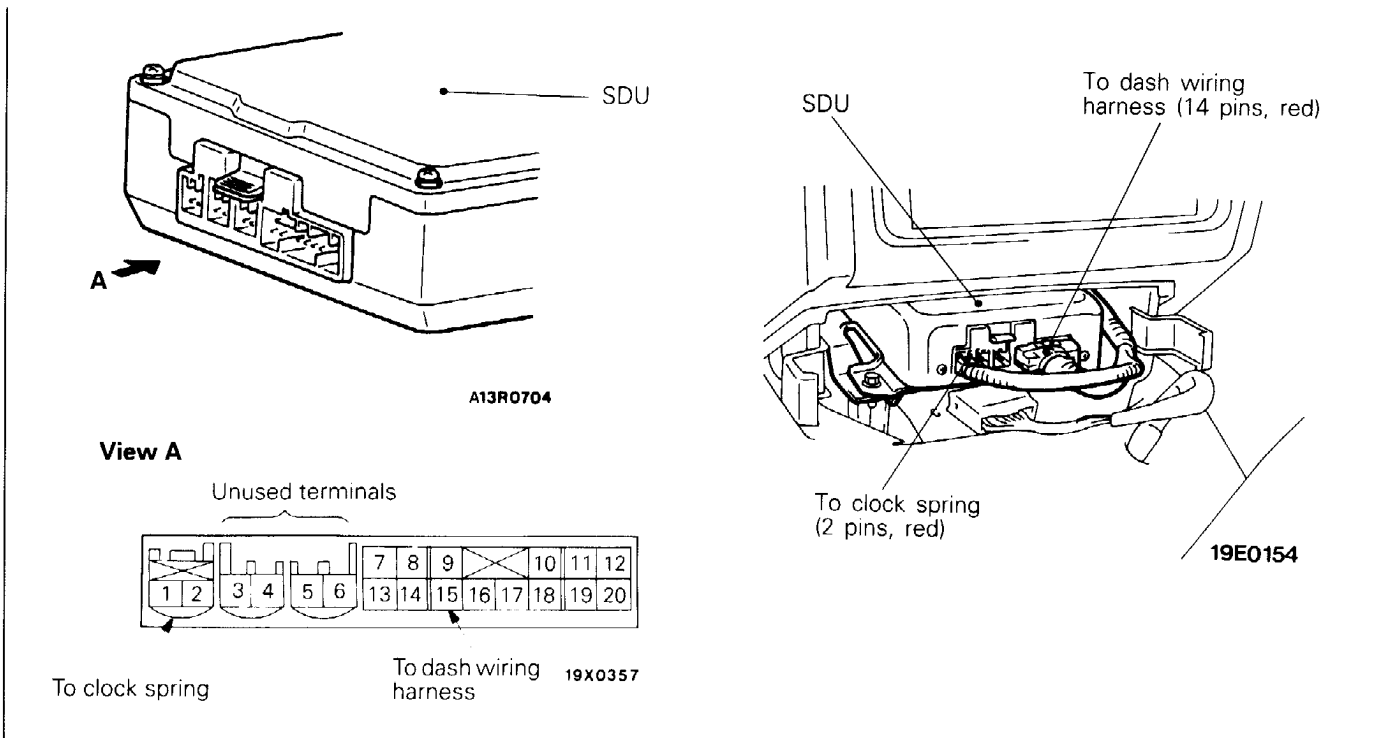
- In order to avoid injury to yourself or others from accidental deployment of the air bag during servicing, read and carefully follow all the precautions and procedures described in this manual.
- Do not use any electrical test equipment on or near SRS components, except those specified on P.52B-5.
Never use an analogue ohmmeter.
- 3. Never Attempt to Repair the Following Components:**
 - Front Impact Sensors
 - SRS Diagnosis Unit (SDU)
 - Clock Spring
 - Air Bag Module

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-32.
- Do not attempt to repair the wiring harness connectors of the SRS. If any of the connectors are diagnosed as faulty, replace the wiring harness. If the wires are diagnosed as faulty, replace or repair the wiring harness according to the following table.

SDU Terminal No.	Harness Connector (No. of Terminals, Colour)	Destination of Harness		Corrective Action		
1 2	2 pins, red	Dash wiring harness	▶ Clock spring	Correct or replace each wiring harness Replace clock spring		
7 and 8		-				
9	14 pins, red	Dash wiring harness	▶ Diagnosis connector	Correct or replace each wiring harness		
10		Dash wiring harness	▶ Control wiring harness		▶ Dash wiring harness	▶ Ignition switch (ST)
11		Dash wiring harness	▶ Junction block (fuse No. 18)			
12		Dash wiring harness	▶ Junction block (fuse No. 12)			
13		Dash wiring harness	▶ Instrument panel wiring harness		▶ SRS warning lamp	
14		Dash wiring harness	▶ Front wiring harness		▶ Front impact sensor (LH)	Replace with sensor cable*
16		Dash wiring harness	▶ Front wiring harness		▶ Front impact sensor (RH)	
17		Dash wiring harness	▶ Front wiring harness		▶ Front impact sensor (RH)	
15		Dash wiring harness	▶ Front wiring harness		▶ Front impact sensor (RH)	
18		Dash wiring harness	▶ Front wiring harness		▶ Front impact sensor (RH)	
19 20	Dash wiring harness	▶ Earth		Correct or replace dash wiring harness		

NOTE

- The sensor cable marked with* is available as service part.
- The sensor cable used as a replacement part is routed along the dash wiring harness and front wiring harness.



5. **After disconnecting the battery cable, wait 60 seconds or more before proceeding with the following work. The SRS system is designed to retain enough voltage to deploy the air bag for a short time even after the battery has been disconnected, so serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cables are disconnected.**
6. SRS components should not be subjected to heat over 93°C, so remove the front impact sensors, SRS diagnosis unit, air bag module and clock spring before drying or baking the vehicle after painting. Recheck SRS system operability after re-installing the components.
7. Whenever you finish servicing the SRS, check the SRS warning lamp operation to make sure that the system functions properly. (Refer to P.52B-7.)
8. Make certain that the ignition switch is OFF when the MUT-II is connected or disconnected.
9. If you have any questions about the SRS, please contact your local distributor.

NOTE

SERIOUS INJURY CAN RESULT FROM UNINTENDED AIR BAG DEPLOYMENT, SO USE ONLY THE PROCEDURES AND EQUIPMENT SPECIFIED IN THIS MANUAL.

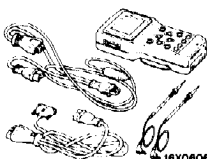

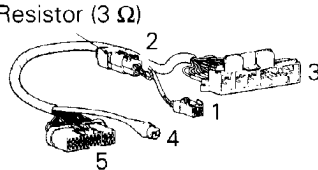



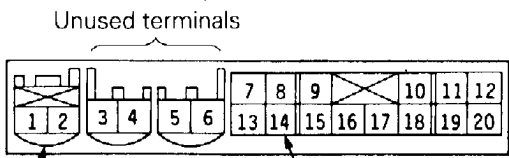
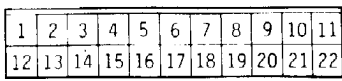
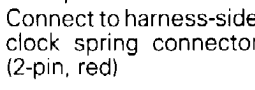
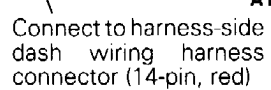
SERVICE SPECIFICATIONS


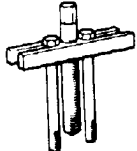
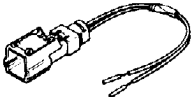
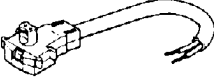
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Items	Specifications
Standard value	
Front impact sensor resistance	Ω 2,000 \pm 20
Clock spring resistance	Ω less than 0.4

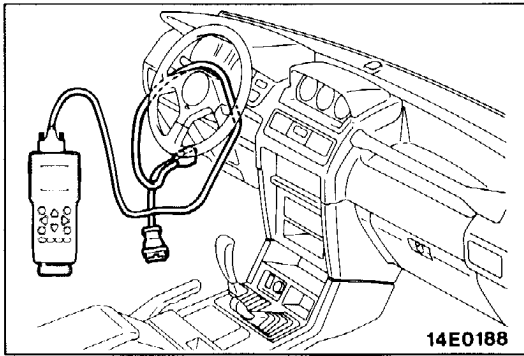
SPECIAL TOOLS AND TEST EQUIPMENT

E52BD00AA

Tool	Number	Name	Use
	MB991502	MUT-II sub assembly	<ul style="list-style-type: none"> • Reading diagnosis codes • Erasing diagnosis code • Reading trouble period • Reading erase times [Refer to MUT-II INSTRUCTION MANUAL]
	16X0607	ROM pack	
	MB991349	SRS Check Harness	<ul style="list-style-type: none"> • Checking the SRS electrical circuitry with a digital multi-meter NOTE SRS check harness is used on various Diagnostic Tests. For details, refer to DIAGNOSTIC SEQUENCE (P.52B-9 - P.52B-24.)
	19X0463	To SDU connector for clock spring	
	19X0464	(connected 3 Ω resistor)	
	19X0462	To clock spring connector for air bag module	
	A19X0524	Unused terminals	
	19X0546	(check connector)	
		Connect to harness-side clock spring connector (2-pin, red)	
		Connect to harness-side dash wiring harness connector (14-pin, red)	

Tool	Number	Name	Use
 <p>13R0748</p>	<p>Use a multi-meter for which the maximum test current is 2 mA or less at the minimum range of resistance measurement</p>	<p>Digital multi-meter</p>	<p>Checking the SRS electrical circuitry with SRS Check Harness</p>
	<p>MB990803</p>	<p>Steering wheel puller</p>	<p>Removal of steering wheel</p>
 <p>13R0732</p>	<p>MB686560</p>	<p>SRS AIR BAG ADAPTER HARNESS A</p>	<p>Deployment of air bag module inside the vehicle</p>
 <p>13R0751</p>	<p>MB628919</p>	<p>SRS AIR BAG ADAPTER HARNESS B</p>	<p>Deployment of air bag module outside the vehicle</p>

TROUBLESHOOTING



DIAGNOSTIC FUNCTION

E52BE01AA

DIAGNOSTIC CODES CHECK

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

ERASING DIAGNOSTIC CODES

Connect the MUT-II to the diagnosis connector (16-pin) then erase the diagnostic codes.

INSPECTION CHART FOR DIAGNOSTIC TROUBLE CODES

E52BE02AA

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

Code No.	Diagnostic item	Reference page	
11	Front impact sensor system	P.52B-8	
12			
13			
21	Air bag module (squib) system	P.52B-10	
22			
31	SDU capacitor system	P.52B-12	
32			
33* ²	Cranking signal system	P.52B-13	
34* ²	Connector lock system	P.52B-14	
41* ¹ , * ²	IG ₁ (A) power circuit system	P.52B-15	
42* ¹ , * ²	IG ₁ (B) power circuit system	P.52B-16	
43	SRS warning lamp drive circuit system	Lamp does not illuminate* ²	P.52B-18
		Lamp does not switch off	P.52B-19
44	SDU warning lamp drive circuit system	P.52B-20	
45	SDU non-volatile memory (EEPROM) and A/D converter system	P.52B-21	

NOTE

- *¹: For diagnosis codes marked with *, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds, the diagnosis code will be automatically erased, and the SRS warning lamp will return to normal.
- *²: 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 DIAGNOSTIC TROUBLE

E52BE03AA

**Code No. 11,
12 or 13****Front impact sensor system****Probable cause**

[Comment]

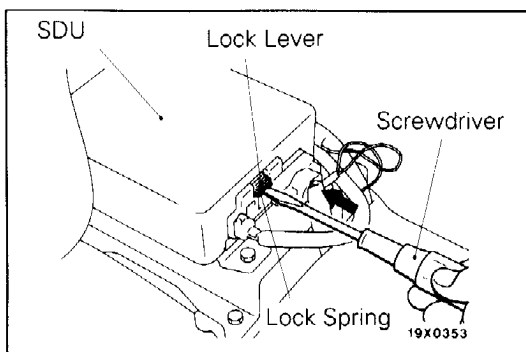
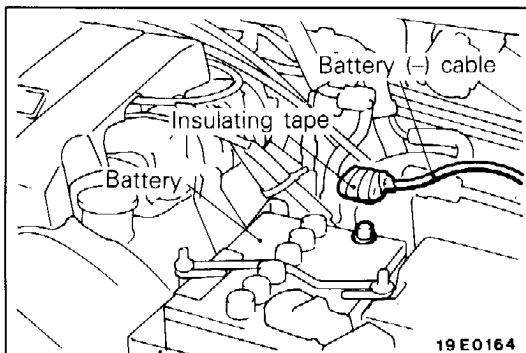
(1) These diagnosis codes are output if there is abnormal resistance between the input terminals of the SDU front impact sensor.
The trouble causes for each code No. are as follows.

- Malfunction of front impact sensor
- Malfunction of harnesses or connectors
- Malfunction of SDU

Code No.	Trouble Symptom
11	<ul style="list-style-type: none"> • Short in front impact sensor or harness short • Short in front impact sensor or air bag module (squib) harnesses leading to the vehicle body earth • Short in front impact sensor or air bag module (squib) harnesses leading to the power supply
12	<ul style="list-style-type: none"> • Open circuit in either left or right front impact sensor or open harness • Short in front impact sensor or air bag module (squib) harnesses leading to the power supply
13	<ul style="list-style-type: none"> • Open circuit in both left and right front impact sensors or open harness • Short in front impact sensor or air bag module (squib) harnesses leading to the power supply

(2) Diagnosis codes 11, 12 and 13 are sometimes generated in combination with malfunction codes relating to the air bag module (squib) (code Nos. 21 and 22), but sometimes only one may be output instead of both being memorised. Because of this, the air bag module should also be inspected at the same time.
The relationships between the codes are as follows.

Air bag module (squib)		Front impact sensor		
		Short	Open circuit (1 sensor)	Open circuit (2 sensors)
Short	Short	11 or 21	12 or 21	13 or 21
	Open circuit	11 or 22	12 or 22	13 or 22



1. 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)

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

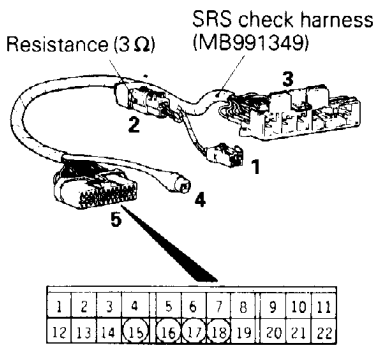
4. Disconnect the red 14-pin connector from the SDU.

Inspection of front impact sensor (Refer to P.52B-39.)

NG

Replace

OK



Measure at SRS check harness connector (5).

- Disconnect SDU connector C-47.
- Connect SRS check harness connector (3)
- Resistance between terminals (15) – (18)
OK :2,000±20 Ω
- Resistance between terminals (16) – (17)
OK :2,000±20 Ω
- Continuity between terminals (15), (16), (17), (18) and body earth
OK: No continuity

19X0468

OK

Inspect the air bag module (squib) system (Refer to P.52B-38.)

OK

Replace the SDU.

NG

Check the following connectors

C-47, C-29, A-28 and A-54

NG

Repair

OK

Check trouble symptom

NG

Inspect harness between SDU and front impact sensor.

NG

Replace the sensor harness.

**Code No. 21
or 22****Air bag module (squib) system****Probable cause**

[Comment]

(1) These diagnosis codes are output if there is abnormal resistance between the input terminals of the SDU air bag module (squib).

The trouble causes for each code No. are as follows.

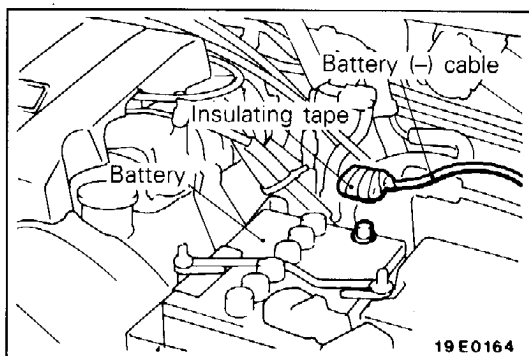
Code No.	Trouble Symptom
21	<ul style="list-style-type: none"> • Short in air bag module (squib) or harness short • Short in clock spring • Short in air bag module (squib) or front impact sensor harnesses leading to the power supply
22	<ul style="list-style-type: none"> • Open circuit in air bag module (squib) or open harness • Open circuit in clock spring • Malfunction of connector contact • Short in air bag module (squib) or front impact sensor harnesses leading to the power supply

(2) Diagnosis codes 21 and 22 are sometimes generated in combination with malfunction codes relating to the front impact sensor (code Nos. 11, 12 and 13), but sometimes only one may be output instead of both being memorised. Because of this, the front impact sensor should also be inspected at the same time.

The relationships between the codes are as follows.

		Front impact sensor		
		Short	Open circuit (1 sensor)	Open circuit (2 sensors)
Air bag module (squib)	Short	11 or 21	12 or 21	13 or 21
	Open circuit	11 or 22	12 or 22	13 or 22

- Malfunction of clock spring
- Malfunction of harnesses or connectors
- Malfunction of air bag module (squib)
- Malfunction of SDU

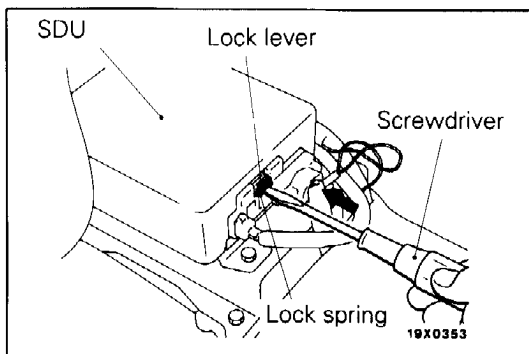


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)



3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

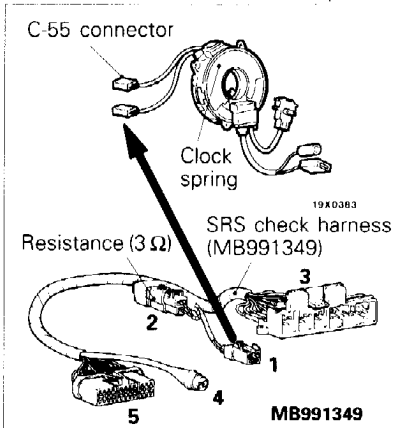
4. Disconnect the red 14-pin connector from the SDU.

Clock spring inspection (Refer to P.52B-38, 40.)

NG

▶ Replace

OK



MUT-II SELF DIAG. CODE

- Connect clock spring connector C-55.
 - Connect SRS check harness connector (1)
 - Erase diagnosis code memory
- Are code Nos. 21 and 22 output?

NG

Check the following connectors.

C-48 and C-55

NG

▶ Repair

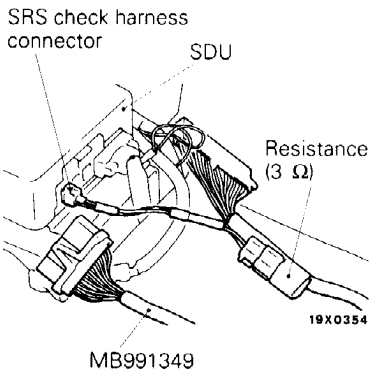
OK

Check trouble symptom

NG

Replace the air bag module (squib).

Yes



MUT-II SELF DIAG. CODE

- Connect clock spring connector C-55.
 - Disconnect SDU connector C-48.
 - Connect SRS check harness connector (1)
 - Erase diagnosis code memory
- Are code Nos. 21 and 22 output?

No

Check the harness between the SDU and clock spring, and repair if necessary.

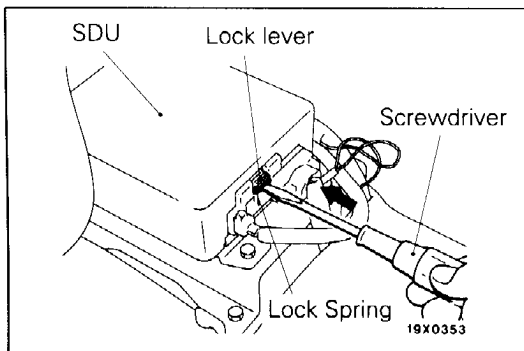
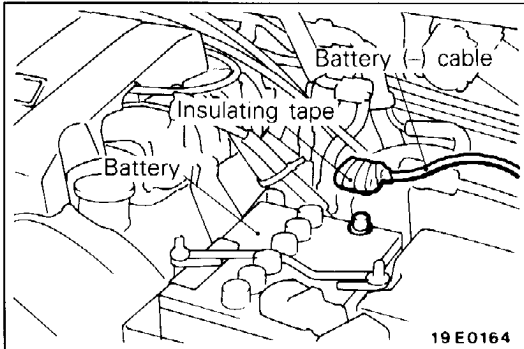
Yes

Inspect the front impact sensor system (Refer to P.52B-33.)

OK

Replace the SDU.

Code No. 31 or 32	SDU capacitor system	Probable cause
[Comment] These diagnosis codes are output if the voltage at the SDU capacitor terminals is higher (No. 31) or lower (No. 32) than the specified value for 5 seconds or more. However, if diagnosis code Nos. 41 and 42 are being output due to a drop in battery voltage, code No. 32 will not be detected.		<ul style="list-style-type: none"> ● Malfunction of front impact sensor ● Malfunction of SDU



1. 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)

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

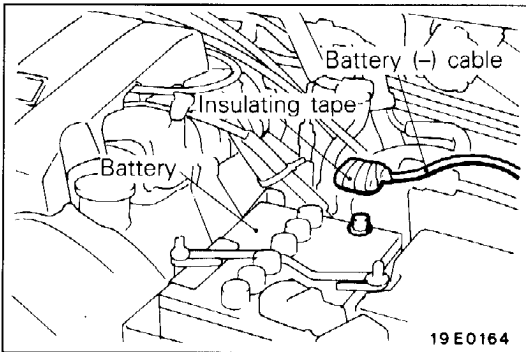
3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

4. Disconnect the red 14-pin connector from the SDU. The capacitor inside the SDU is probably defective, so replace the SDU. However, code No. 32 could also be a result of a short in the front impact sensor, so inspection of the front impact sensor system should also be carried out. (Refer to P.52B-8.)

Code No. 33	Cranking signal system	Probable cause
<p>[Comment] The cranking signal is provided in order to prevent mistaken detection of power supply voltage drops at the IG1 terminal during cranking. This diagnosis code is output if the cranking signal is output for a continuous period of 45 seconds or more (cranking signal harness is shorted to the power supply). However, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds (except when cranking), diagnosis code No. 33 will be automatically erased, and the SRS warning lamp will switch off.</p>		<ul style="list-style-type: none"> • Malfunction of harnesses or connectors • Malfunction of SDU

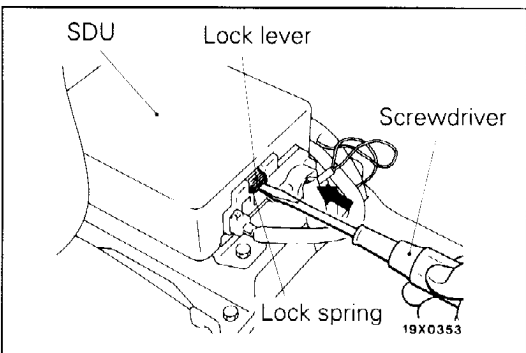


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

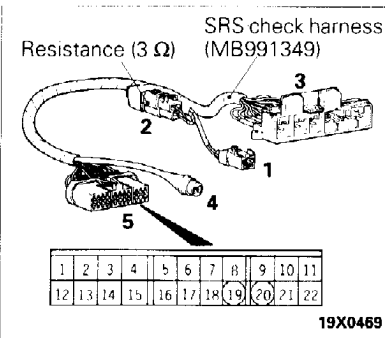


3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

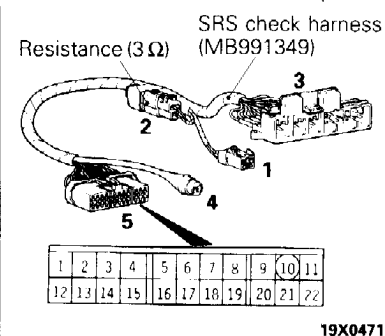
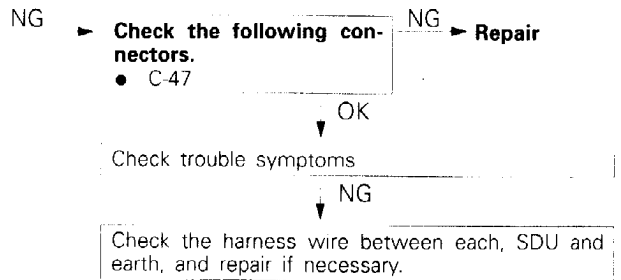
4. Disconnect the red 14-pin connector from the SDU.



Measure at SRS check harness connector (5).

- Disconnect SDU connector C-47.
- Connect SRS check harness connector (3)
- Continuity between terminals (19) – (20)

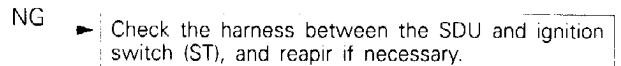
OK: Continuity



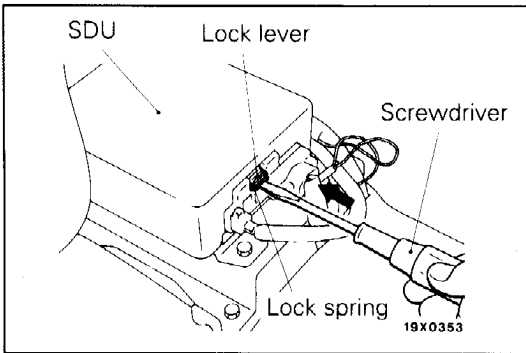
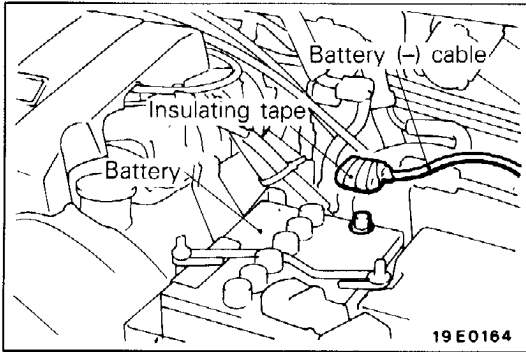
Measure at SRS check harness connector (5).

- Ignition switch ON
- Voltage between terminal (10) and body earth

OK: 0 V



Code No. 34 Connector lock system	Probable cause
<p>[Comment] This diagnosis code is output if the double lock shorting bar of the SDU connector is detected to be open. However, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds, diagnosis code No. 34 will be automatically erased, and the SRS warning lamp will switch off</p>	<ul style="list-style-type: none"> ● Malfunction of connectors ● Malfunction of SDU



1. 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 P52B-4.)

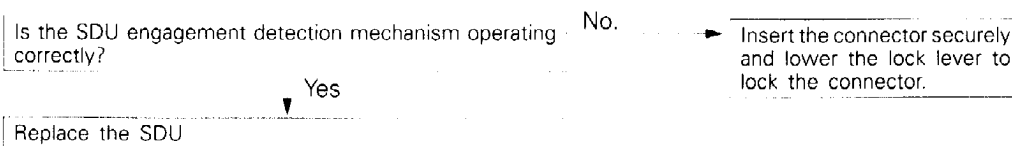
2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

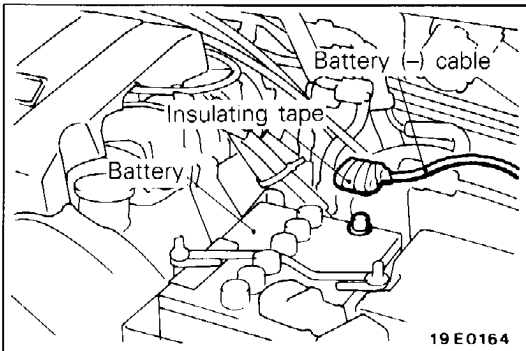
Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

4. Disconnect the red 14-pin connector from the SDU.



Code No. 41	IG ₁ (A) power circuit system	Probable cause
<p>[Comment] This diagnosis code is output if the voltage between the IG₁ (A) terminal and the earth is lower than the specified value for a continuous period of 5 seconds or more. However, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds, diagnosis code No. 41 will be automatically erased, and the SRS warning lamp will switch off.</p>		<ul style="list-style-type: none"> • Malfunction of harnesses or connectors • Malfunction of SDU

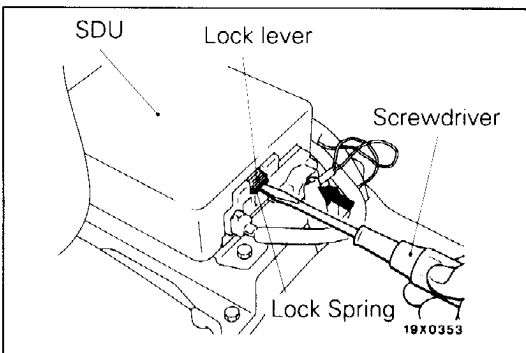


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

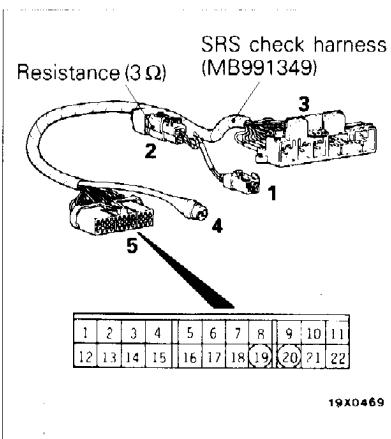


3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

4. Disconnect the red 14-pin connector from the SDU.



Measure at SRS check harness connector (5).

- Disconnect SDU connector C-47.
- Connect SRS check harness connector (3)
- Continuity between terminals (19) – (20)

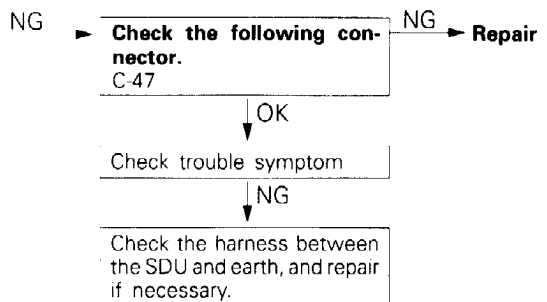
OK: Continuity

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

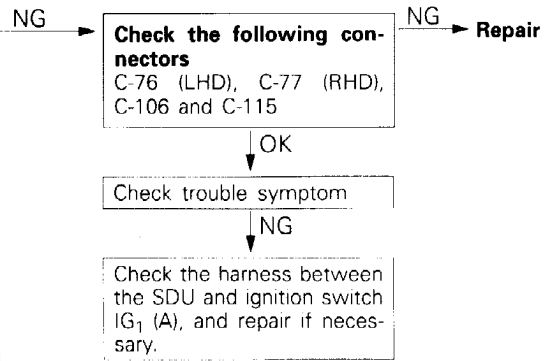
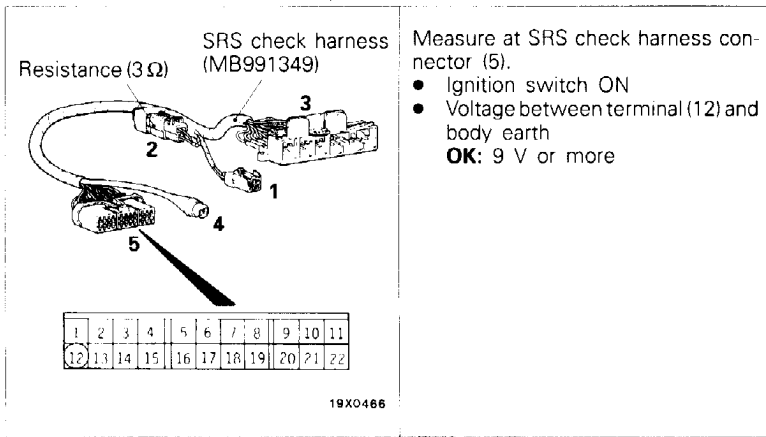
19X0469

OK

To next page



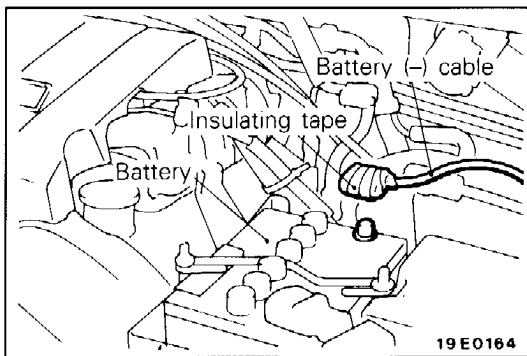
From previous page



Remarks
LHD: L.H. drive vehicles
RHD: R.H. drive vehicles

OK
Replace the SDU.

Code No. 42	IG ₁ (B) power circuit system	Probable cause
<p>[Comment] This diagnosis code is output if the voltage between the IG₁ (B) terminal and the earth is lower than the specified value for a continuous period of 5 seconds or more. However, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds, diagnosis code No. 41 will be automatically erased, and the SRS warning lamp will switch off.</p>		<ul style="list-style-type: none"> • Malfunction of harnesses or connectors

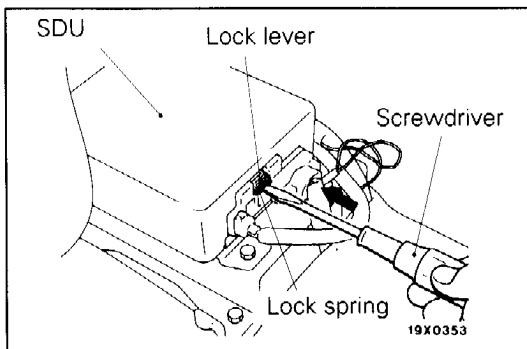


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

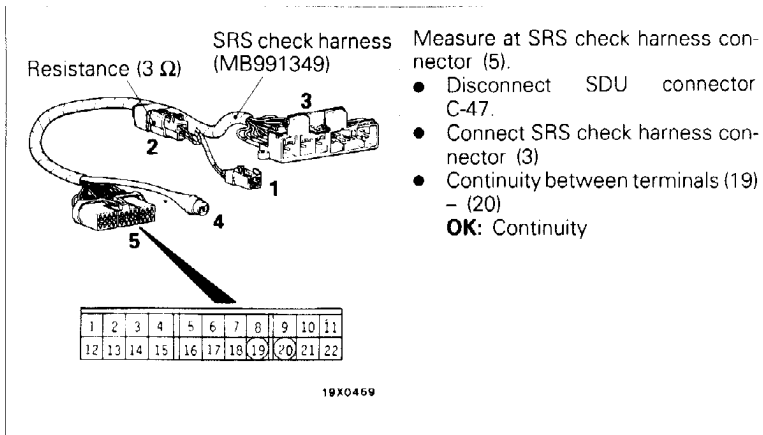


3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

4. Disconnect the red 14-pin connector from the SDU.



NG → **Check the following connector.**
C-47

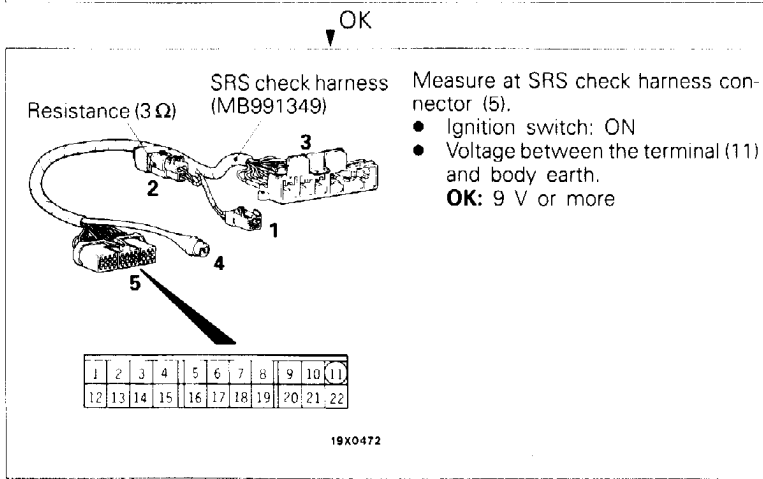
NG → **Repair**

↓ OK

Check trouble symptom

↓ NG

Check the harness between the SDU and earth, and repair if necessary.



NG → **Check the following connectors.**
C-106, C-101 and C-115

NG → **Repair**

↓ OK

Check trouble symptom

↓ NG

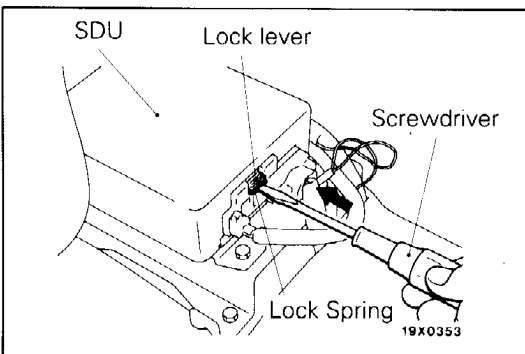
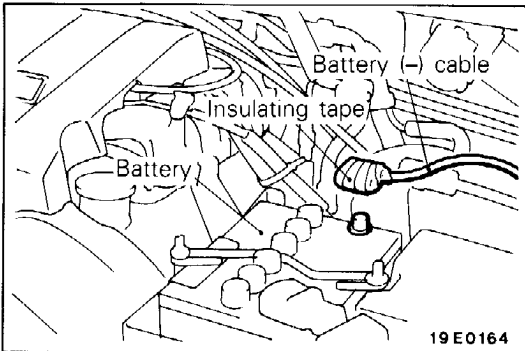
Check the harness between the SDU and ignition switch IG₁ (B), and repair if necessary.

OK

↓

Replace the SDU.

Code No. 43	SRS warning lamp drive circuit system (Lamp does not illuminate.)	Probable cause
<p>[Comment]</p> <p>This diagnosis code is output when an open circuit occurs for a continuous period of 5 seconds while the SDU is monitoring the SRS warning lamp and the lamp is OFF (transistor OFF). However, if this code is output due to an open circuit, if the vehicle condition returns to normal for a continuous period of 5 ± 0.2 seconds, this diagnosis code will be automatically erased, and the SRS warning lamp will return to normal.</p>		<ul style="list-style-type: none"> ● Malfunction of harnesses or connectors ● Blown bulb ● Malfunction of SDU ● Malfunction of combination meter



1. 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)

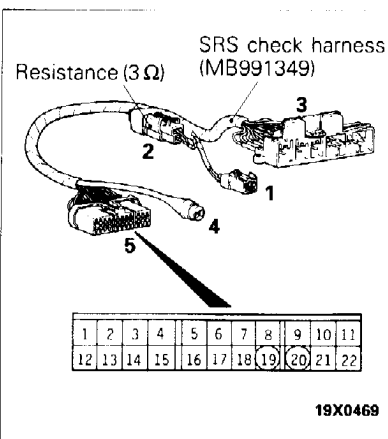
2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

4. Disconnect the red 14-pin connector from the SDU.

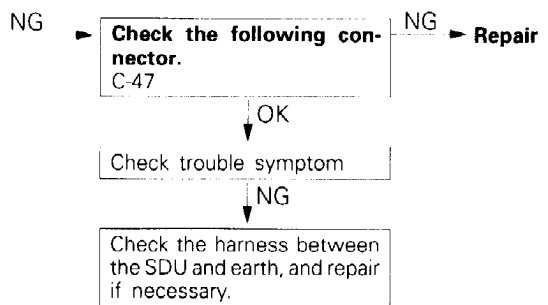


Measure at SRS check harness connector (5).

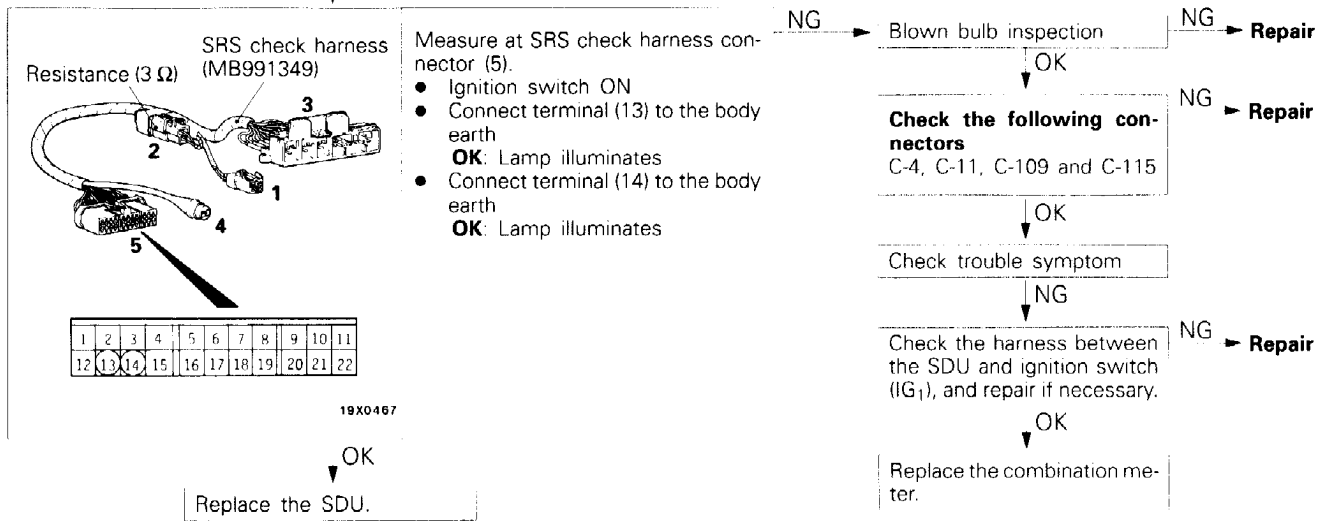
- Disconnect SDU connector C-47
 - Connect SRS check harness connector (3)
 - Continuity between terminals (19) – (20)
- OK: Continuity

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

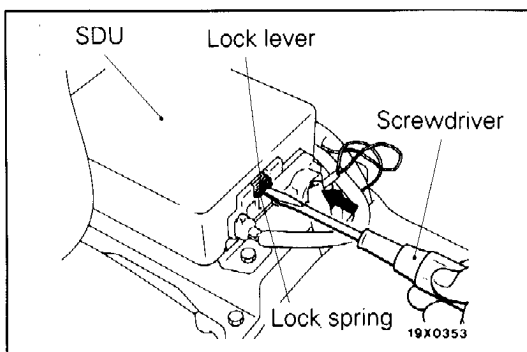
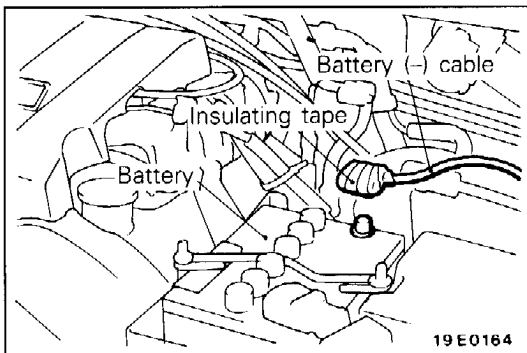
OK
To next page



From previous page



Code No. 43	SRS warning lamp drive circuit system (Lamp does not switch off.)	Probable cause
<p>[Comment] This diagnosis code is output when a short to earth occurs in the harness between the lamp and the SDU while the SDU is monitoring the SRS warning lamp and the lamp is ON.</p>		<ul style="list-style-type: none"> Malfunction of harnesses or connectors Malfunction of SDU



- 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)

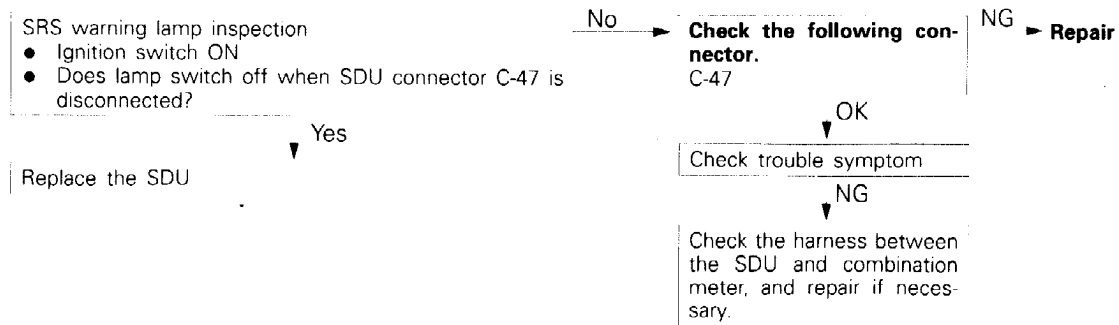
- Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

- Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

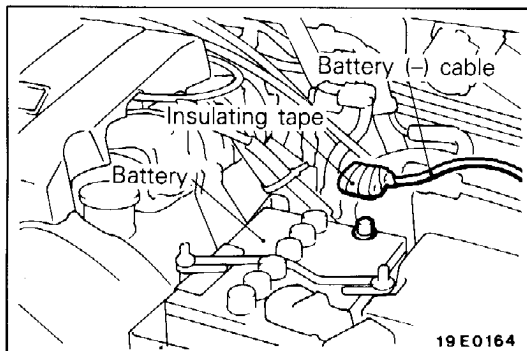
Caution

- Do not use excessive force to raise the lock lever (green).
- Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

- Disconnect the red 14-pin connector from the SDU.



Code No. 44	SRS warning lamp drive circuit system	Probable cause
[Comment] This diagnosis code is output when a short occurs in the lamp drive circuit or a malfunction of the output transistor inside the SDU is detected while the SDU is monitoring the SRS warning lamp drive circuit.		<ul style="list-style-type: none"> ● Malfunction of harnesses or connectors ● Malfunction of SDU

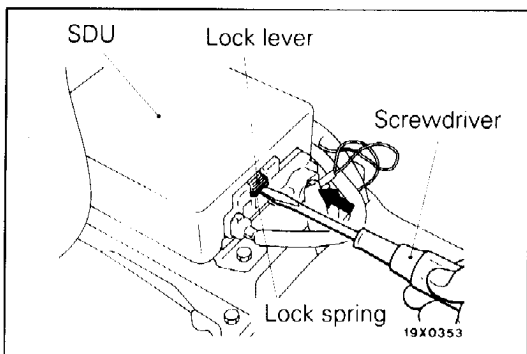


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)



3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

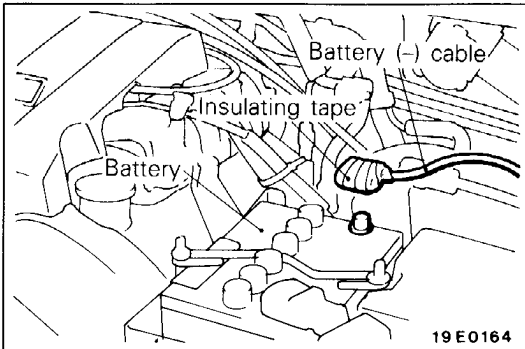
Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

4. Disconnect the red 14-pin connector from the SDU.

If the results of inspection of the SRS warning lamp drive circuit system (refer to P.52B-18) are normal, the transistor inside the SDU is probably defective, so replace the SDU.

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

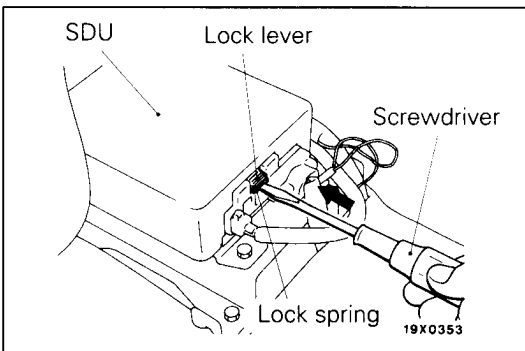


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)



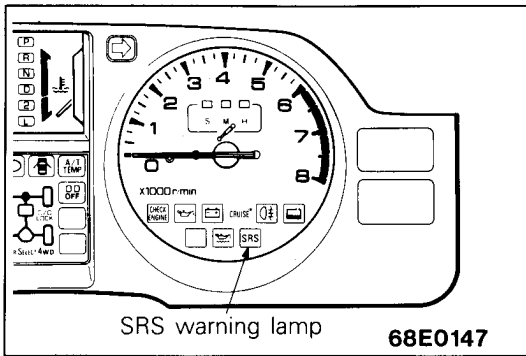
3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

4. Disconnect the red 14-pin connector from the SDU.

The SDU non-volatile memory (EEPROM) or A/D converter is probably defective, so replace the SDU.



SRS WARNING LAMP INSPECTION

E52BE04AA

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

INSPECTION CHART FOR TROUBLE SYMPTOMS

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

Trouble symptom		Inspection Procedure No.	Reference page
Communication with MUT-II is not possible.	Communication with all systems is not possible.	1	P.52B-23
	Communication is not possible with SRS only	2	P.52B-23
When the ignition key is turned to "ON" (engine stopped), the SRS warning lamp does not illuminate.		Refer to diagnosis code No. 43.	P.52B-18
SRS warning lamp	Illuminated _____ Not illuminated _____		
Ignition key	ON _____ ACC, LOCK _____		
		14N0167	
After the ignition switch is turned to ON, the SRS warning lamp is still on after approximately 7 seconds have passed.		Refer to diagnosis code No. 43.	P.52B-19
SRS warning lamp	Illuminated _____ Not illuminated _____		
Ignition key	ON _____ ACC, LOCK _____		
		14N0166	

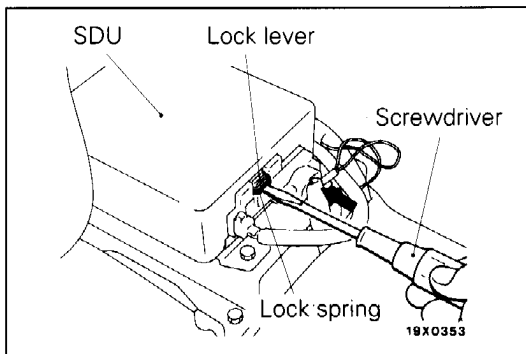
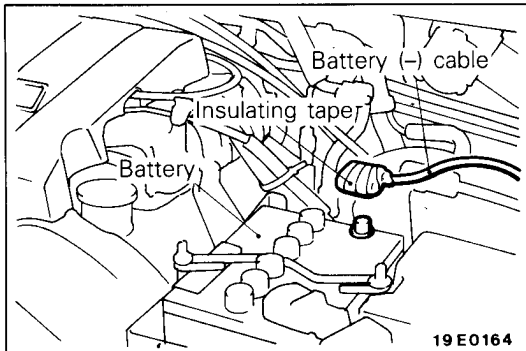
INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS**Inspection Procedure 1**

Communication with MUT-II is not possible. (Communication with all system is not possible)	Probable cause
[Comment] The cause is probably a power supply system (including earth circuit) of the diagnosis line.	<ul style="list-style-type: none"> ● Malfunction of connectors ● Malfunction of harness

Refer to GROUP 13A – Troubleshooting

Inspection Procedure 2

Communication with MUT-II is not possible. (Communication is not possible with SRS only)	Probable cause
[Comment] If communication is not possible with the SRS only, the cause is probably an open circuit in the diagnosis output circuit of the SRS or in the power circuit (including earth circuit).	<ul style="list-style-type: none"> ● Malfunction of harnesses or connectors ● Malfunction of SDU



1. 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)

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

4. Disconnect the red 14-pin connector from the SDU.

Resistance (3Ω) SRS check harness (MB991349)

Measure at SRS check harness connector (5).

- Disconnect SDU connector C-47.
- Connect SRS check harness connector (3)
- Continuity between terminals (19) – (20)

OK: Continuity

19X0469

NG → **Check the following connector.**
C-47

NG → **Repair**

↓ OK

Check Trouble symptom

↓ NG

Check the harness between the SDU and earth, and repair if necessary.

Resistance (3Ω) SRS check harness (MB991349)

Measure at SRS check harness connector (5).

- Disconnect SDU connector C-47.
- Connect SRS check harness connector (3)
- Voltage between the terminal (11) and body earth.
- Voltage between the terminal (12) and body earth

OK: 9 V or more

19X0470

NG → **Check the following connectors.**
C-76 (LHD), C-77 (RHD), C-101 C-106 and C-115

NG → **Repair**

↓ OK

Check Trouble symptom

↓ NG

Check the harness between the SDU and ignition switch IG₁ (A) or ignition switch IG₁ (B), and repair if necessary.

Inspect the harness between the SDU and diagnosis connector. NG → **Repair**

OK

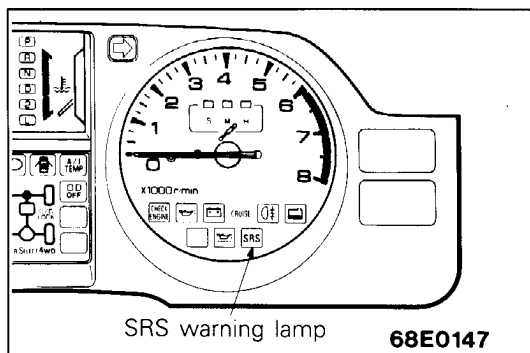
Replace the SDU

Remarks
LHD: L.H. drive vehicles
RHD: R.H. drive vehicles

SRS MAINTENANCE

E52BF00AA

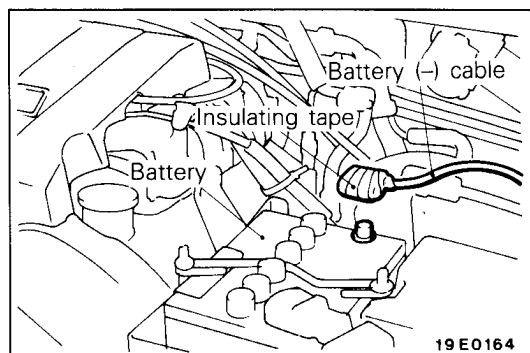
The SRS must be inspected by an authorized dealer 10 years after the date of vehicle registration.



"SRS" WARNING LAMP CHECK

E52BF01AA

Turn the ignition with the key "ON" position. Does the "SRS" warning lamp illuminate for about 7 seconds, turn OFF and then remain extinguished for at least 45 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.



SRS COMPONENTS VISUAL CHECK.

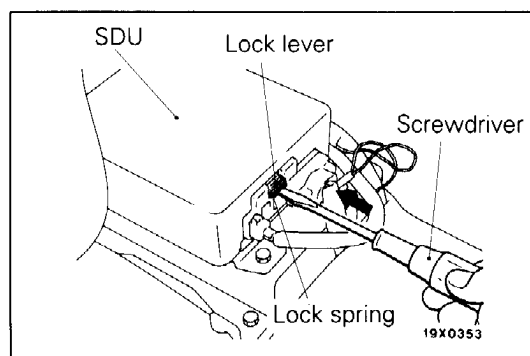
E52BF03AA

1. Turn the ignition key to "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.)

2. Remove the floor console assembly. (Refer to GROUP 52A – Floor Console.)

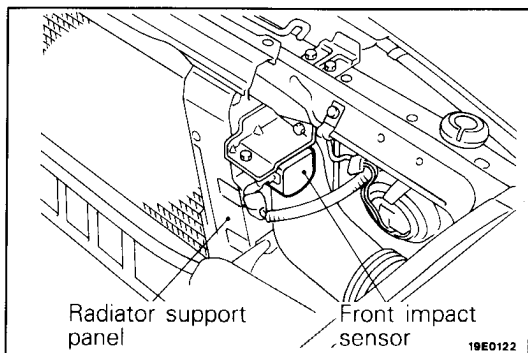


3. Place a flat-tipped (-) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. **Do not use excessive force to raise the lock lever (green).**
2. **Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).**

4. Disconnect the red 14-pin connector from the SRS diagnosis unit while pressing down the lock of the connector.

**FRONT IMPACT SENSORS**

E52BF03BA

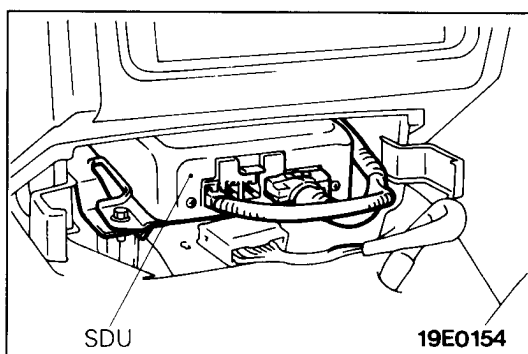
1. Check sensors to ensure the arrow marks face the front of the vehicle.
2. Check radiator support panel and front impact sensor for deformities or rust.

Caution

The SRS may not activate if a front impact sensor is not installed properly, which could result in serious injury or death to the vehicles driver.

3. Check wiring harness (for front impact sensor) for binds, connector for damage, and terminals for deformities.

Replace sensor and/or wiring harness if it fails visual check. (Refer to P.52B-3 and P.52B-33.)

**SRS DIAGNOSIS UNIT (SDU)**

E52BF03CA

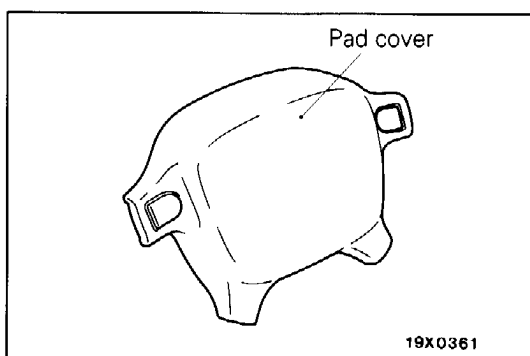
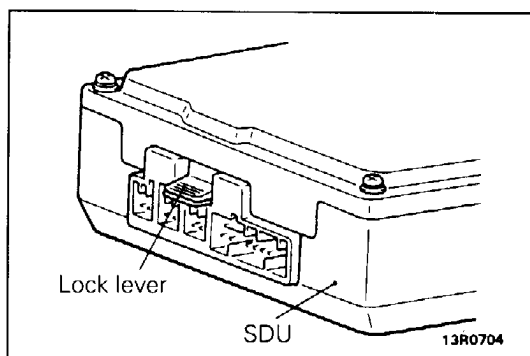
1. Check SDU case and brackets for dents, cracks, deformities or rust.

Caution

The SRS may not activate if a front impact sensor is not installed properly, which could result in serious injury or death to the vehicles driver.

2. Check connectors and lock lever for damage, and terminals for deformities or rust.

Replace SDU if it fails visual check. (Refer to P.52B-35.)

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

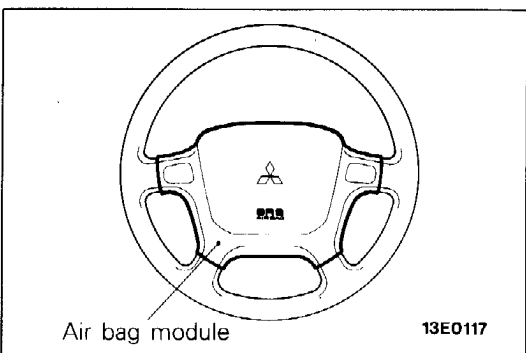
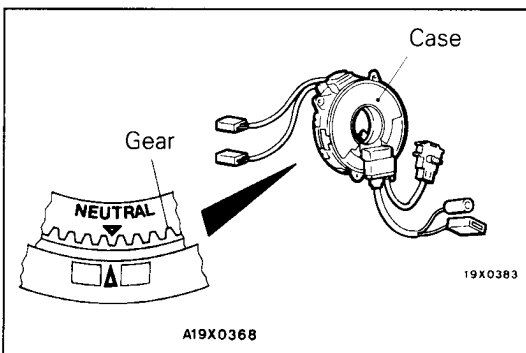
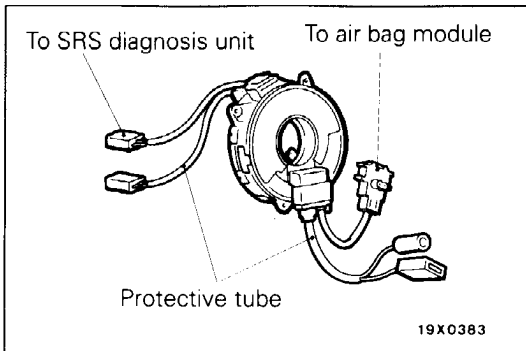
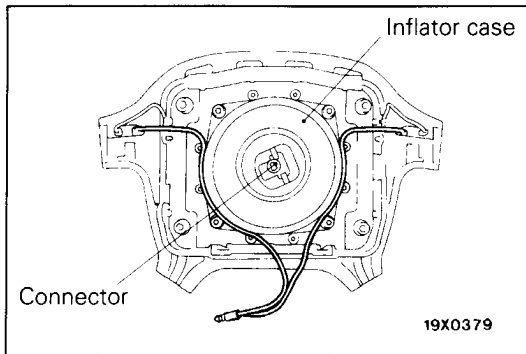
E52BF03DA

1. Remove the air bag module, steering wheel and clock spring. (Refer to P.52B-38.)

Caution

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

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



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 (built into steering wheel) and connectors for damage, and terminals for deformities.

6. Check clock spring connectors and protective tube for damage, and terminals for deformities.

7. Visually check the clock spring case and the gears for damage.
8. Align the mating mark and "NEUTRAL" position indicator and, after turning the vehicle's front wheels to straight-ahead position, install the clock spring to the column switch.

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.

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.

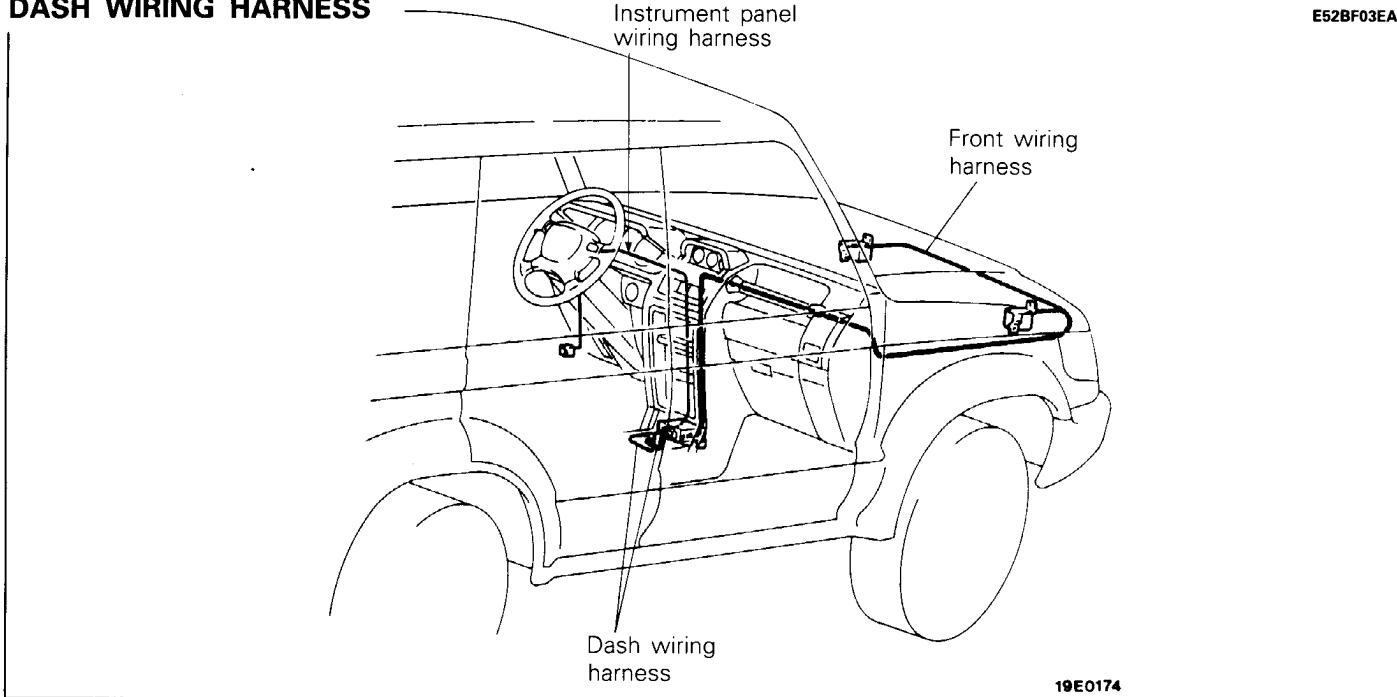
(Refer to P.52B-38.)

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.

FRONT WIRING HARNESS, INSTRUMENT PANEL WIRING HARNESS AND DASH WIRING HARNESS

E52BF03EA

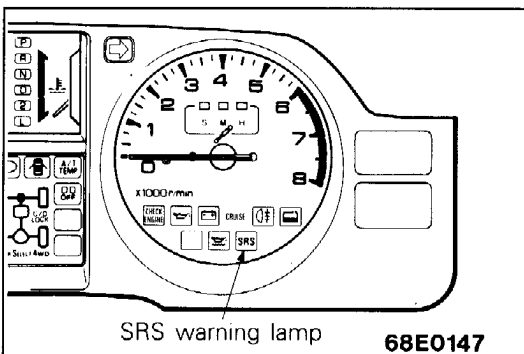


19E0174

1. Check connector for poor connection.
2. Check harnesses for binds, connectors for damage, and terminals for deformities.
REPLACE ANY CONNECTORS OR HARNESS THAT FAIL THE VISUAL INSPECTION.
(Refer to P.52B-3.)

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.

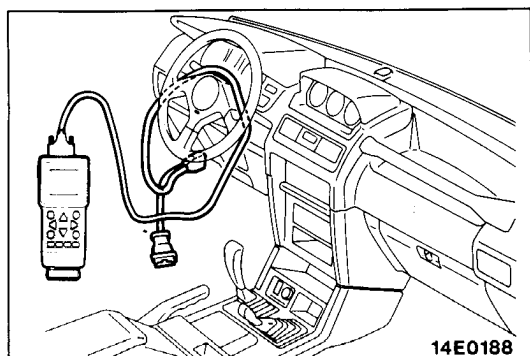


68E0147

POST-INSTALLATION INSPECTION

E52BF04AA

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 45 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.)



POST-COLLISION DIAGNOSIS

E13BF20AA

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

SRS DIAGNOSIS UNIT MEMORY CHECK

E13BF21AA

1. Connect the MUT-II to the diagnosis connector (16-pin) located at the right or left side of the junction block.

Caution

Make certain that the ignition switch is OFF when the MUT-II is connected or disconnected.

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

NOTE

If the battery power supply has been disconnected or disrupted by the collision, the MUT-II cannot communicate with the SRS diagnosis unit. Inspect and, if necessary, repair the body wiring harness before proceeding further.

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

NOTE

- Maximum stored period: 9999 minutes (approximately 7 days)
- Maximum number of times to be stored: 250

4. Erase the diagnosis codes and after waiting 45 seconds or more read (and write down) all displayed diagnosis codes. (Refer to P.52B-7.)

REPAIR PROCEDURE

E13BF22AA

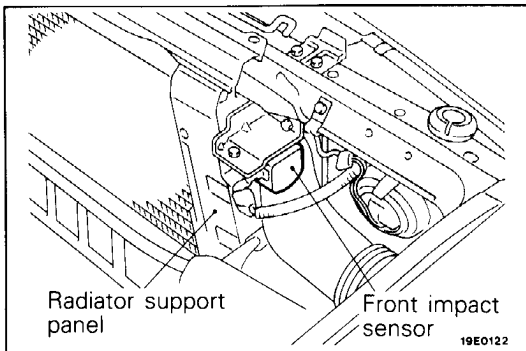
When air bag deploys collision.

1. Replace the following parts with new ones.
 - Front impact sensors (Refer to P.52B-33.)
 - SRS diagnosis unit (SDU)(Refer to P.52B-35.)
 - Air bag module (Refer to P.52B-38.)
2. Check the following parts and replace a part if there is a malfunction.
 - Clock spring (Refer to P.52B-38.)
 - Steering wheel, steering column and intermediate joint (Refer to P.52B-31 or GROUP 37 – Steering wheel and Shaft.)
3. Check harnesses for binding, connectors for damage, poor connections, and terminals for deformities. (Refer to P.52B-3.)

When air bag does not deploy in low-speed collision.

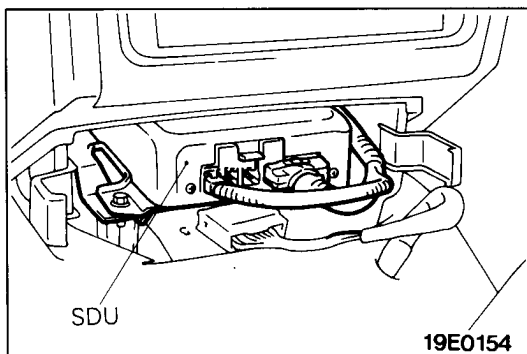
Check the SRS components.

If the SRS components are showing any visible damage such as dents, cracks, or deformation, replace them with new ones. Concerning parts removed for inspection, replacement with new parts and cautionary points for working, refer to appropriate INDIVIDUAL COMPONENT SERVICE, P.52B-32.

**FRONT IMPACT SENSORS**

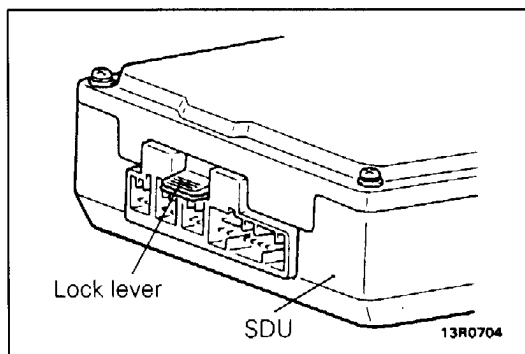
E52BF23AA

1. Check radiator support panel for deformities or rust.
2. Check front impact sensor for dents, cracks deformities or rust.
3. Check sensor harnesses for binds, connectors for damage, and terminals for deformities.

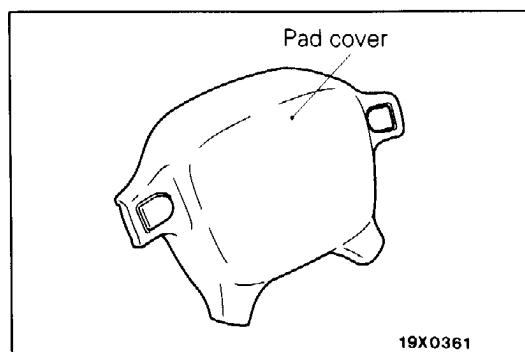
**SRS DIAGNOSIS UNIT (SDU)**

E52BF24AA

1. Check SDU case and brackets for dents, cracks or deformities.

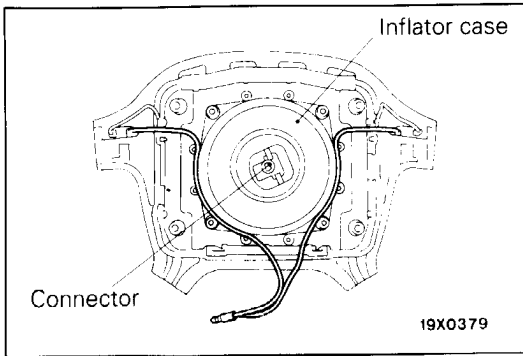


2. Check connectors and lock lever for damage, and terminals for deformities.

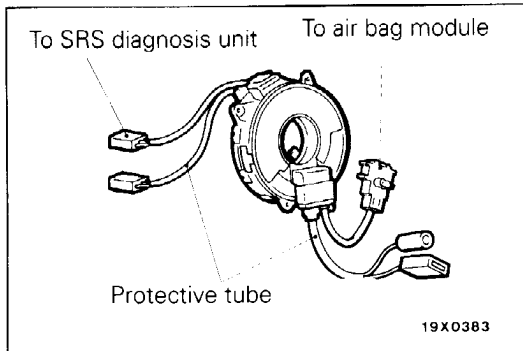
**AIR BAG MODULE**

E52BF25AA

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



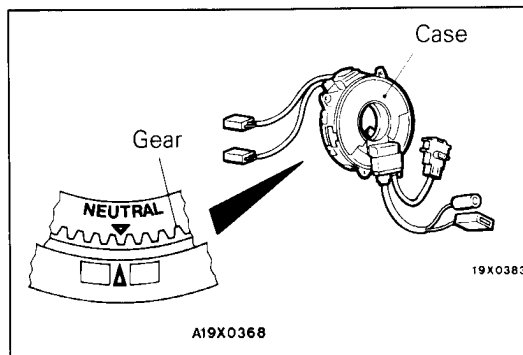
2. Check connector for damage, terminals deformities, and harness for binds.
3. Check air bag inflator case for dents, cracks or deformities.
4. Install air bag module to steering wheel to check fit or alignment with the wheel.



CLOCK SPRING

E52BF26AA

1. Check clock spring connectors and protective tube for damage, and terminals for deformities.



2. Visually check the case and the gear for damage.

STEERING WHEEL, STEERING COLUMN AND INTERMEDIATE JOINT

E52BF27AA

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

HARNESS CONNECTOR (BODY AND FRONT WIRING HARNESS)

E52BF28AA

Check harnesses for binding, connectors for damage, poor connections, and terminals for deformities. (Refer to P.52B-3.)

INDIVIDUAL COMPONENT SERVICE

E52BF40AA

If the SRS components are to be removed or replaced as a result of maintenance, troubleshooting, etc., follow each procedure (P.52B-33 – P.52B-43.)

Caution

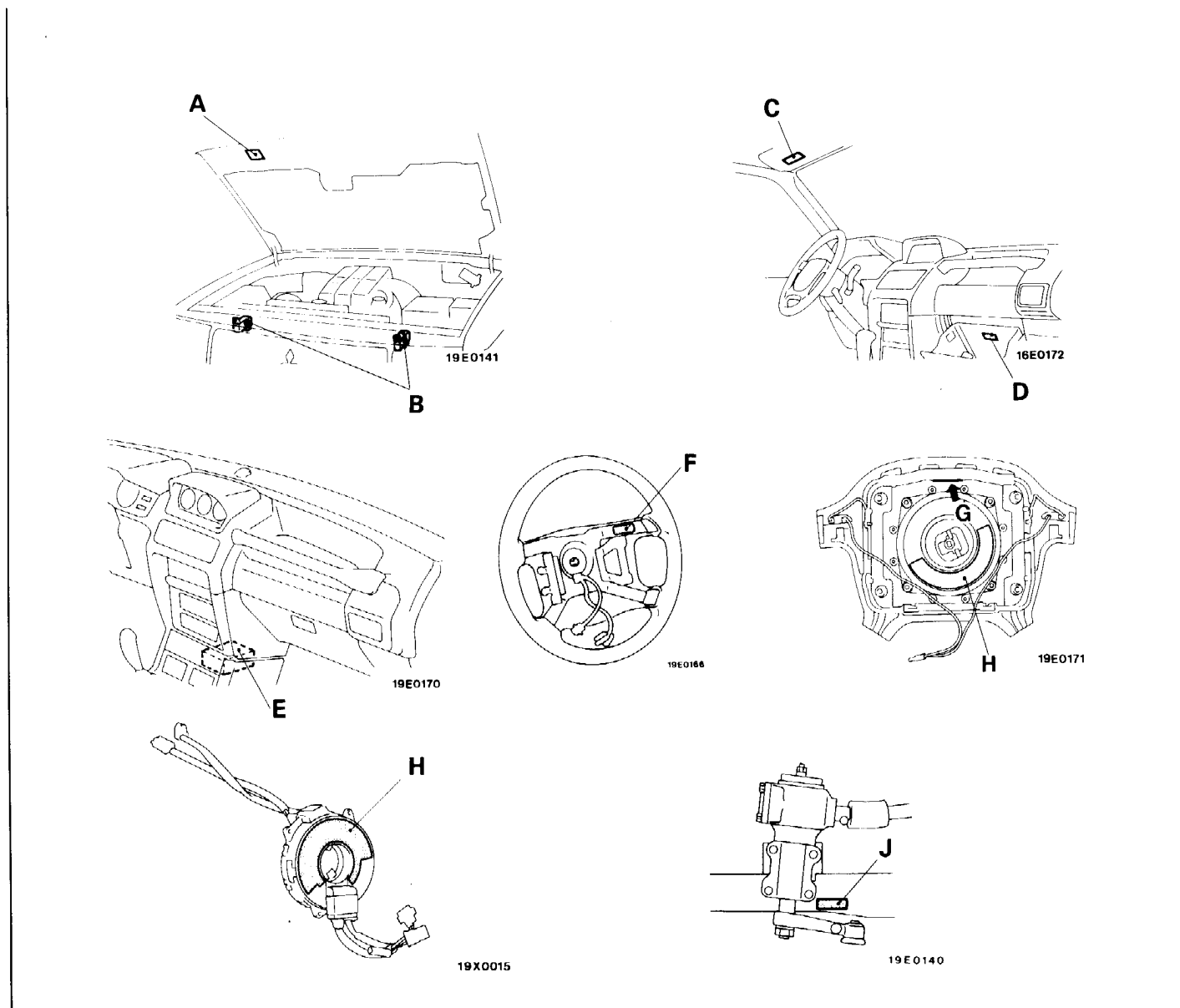
1. SRS components should not be subjected to heat over 93°C, so remove the front impact sensors, SRS diagnosis unit and air bag module and clock spring before drying or baking the vehicle after painting. Recheck SRS system operability after re-installing them.
2. If the SRS components are removed for 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

E52BF41AA

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

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



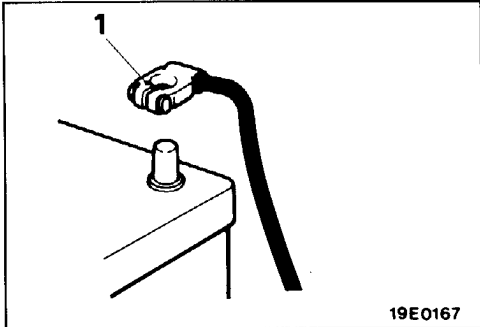
FRONT IMPACT SENSORS

N52BG00AA

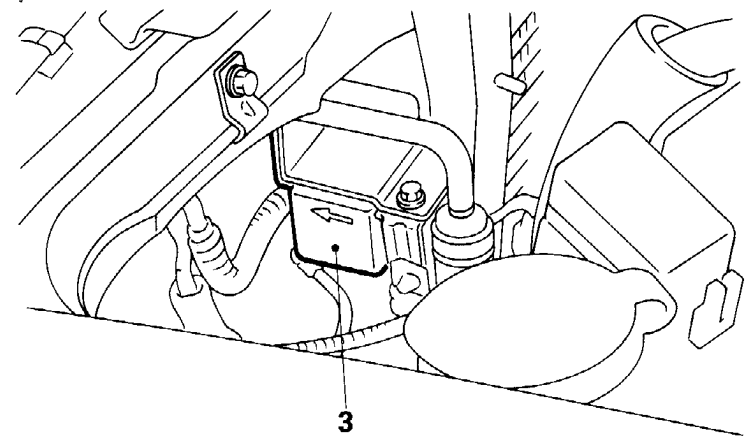
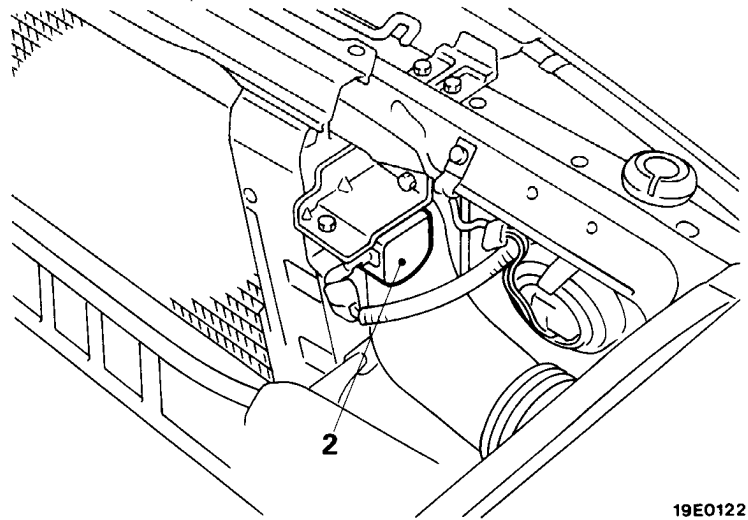
Caution

1. Never repair or disassemble a front impact sensor. If faulty, replace it.
2. Handle the front impact sensors very carefully, taking care not to drop them or subject them to impact. If a sensor is seen to be dented, cracked, deformed or rusted, replace it with a new one.
3. Replace sensors with new ones after the air bags have deployed.

REMOVAL AND INSTALLATION

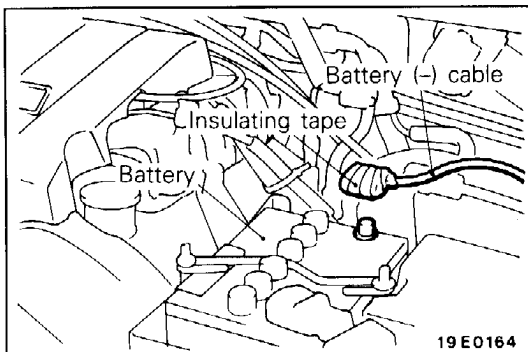


Pre-removal Operation
 • Turn the ignition key to the "LOCK" position.



Removal steps

- ◆◆ • Post-installation inspection
- ◆◆ 1. Connection of the negative (-) battery cable to the battery
- ◆◆ ◆◆ 2. Front impact sensor (R.H.)
- ◆◆ ◆◆ • Reserve tank
- ◆◆ ◆◆ 3. Front impact sensor (L.H.)
- ◆◆ ◆◆ • Pre-installation inspection



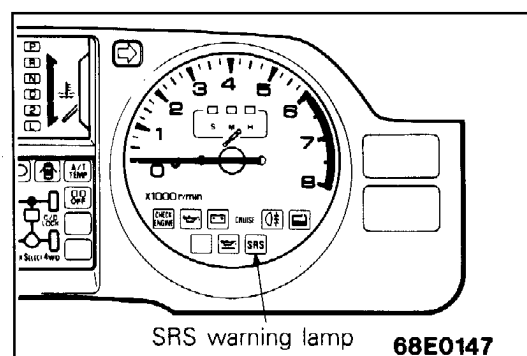
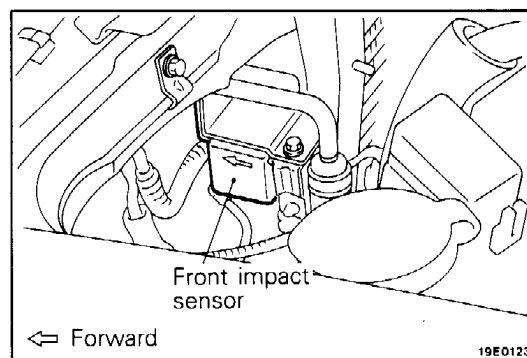
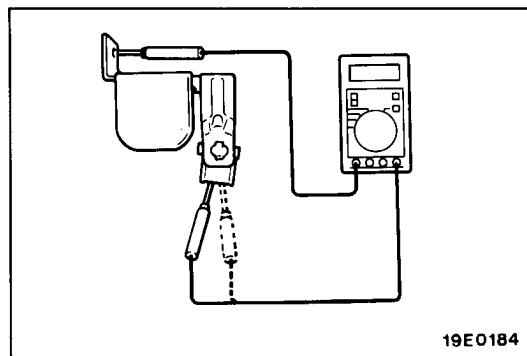
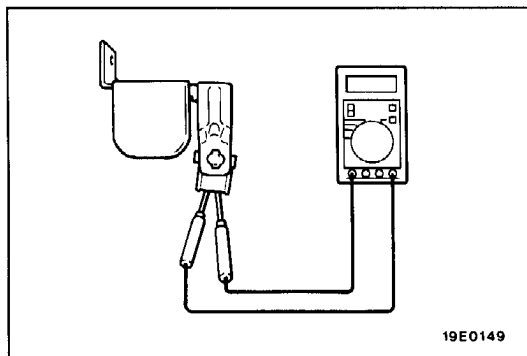
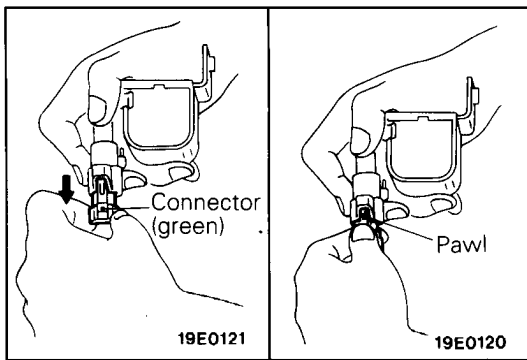
SERVICE POINTS OF REMOVAL

1. DISCONNECTION OF THE NEGATIVE (-) BATTERY CABLE FROM THE BATTERY

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

Caution

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



2. REMOVAL OF FRONT IMPACT SENSOR (R.H.)/ 3. FRONT IMPACT SENSOR (L.H.)

- (1) Slide the connector (green section) to release the lock.
- (2) Push down the pawl and disconnect the connector.

INSPECTION

N52BG02AA

- (1) Check upper frame and sensor brackets for deformities or rust.
- (2) Check sensor harness for binds, connectors for damage, and terminals for deformities.
- (3) Check for dents, cracks, deformation or rust of the front impact sensor.

Caution

If a dent, crack, deformation or rust is detected, replace with a new sensor.

- (4) Measure the resistance between terminals and check whether it is within the standard value.

Standard value: $2,000 \pm 20 \Omega$

Caution

Always replace the sensor with a new one if the resistance is not within the standard value.

- (5) Check for continuity between the terminal and the bracket. If there is continuity, it indicates a poor insulation. In that case, replace the sensor.

SERVICE POINT OF INSTALLATION

N52BG04AA

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")

3. INSTALLATION OF FRONT IMPACT SENSOR (L.H.)/ 2. FRONT IMPACT SENSOR (R.H.)

- (1) Securely connect the connector.
- (2) Set front impact sensor towards the front of the vehicle as shown by the arrow in the illustration, and install it securely.

Caution

The SRS may not activate properly if a front impact sensor is not installed properly, which could result in the SRS system not operating properly during a collision.

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 OFF for at least 45 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.

SRS DIAGNOSIS UNIT (SDU)

N52BH00AA

Caution

1. Never attempt to disassemble or repair the SDU. If faulty, replace it.
2. Do not drop or subject the SDU to impact or vibration. If dents, cracking, deformation, or rust are discovered on the SDU, replace it with a new SDU. Discard the old one.
3. After deployment of the air bags, replace the SDU with a new one.
4. Never use an ohmmeter on or near the SDU, and use only the special test equipment described on P.52B-5.

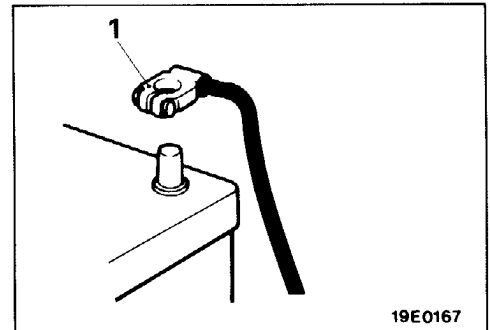
REMOVAL AND INSTALLATION

Pre-removal Operation

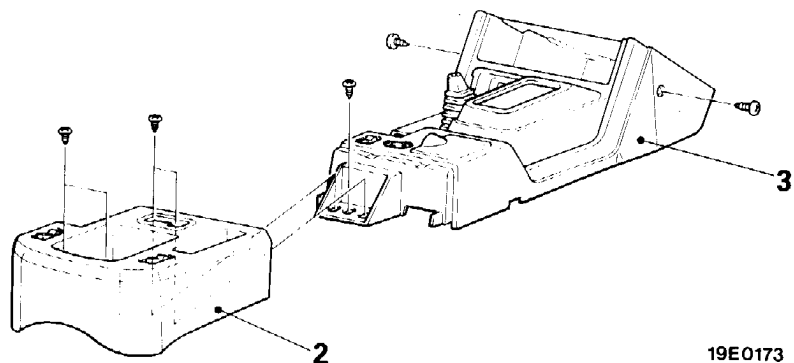
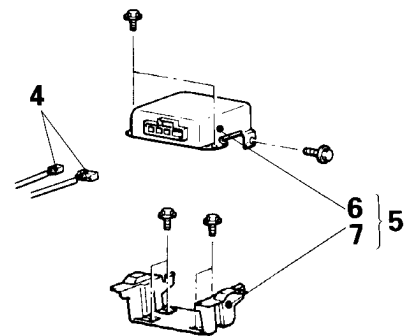
- Turn the ignition key to the "LOCK" position.

Removal steps

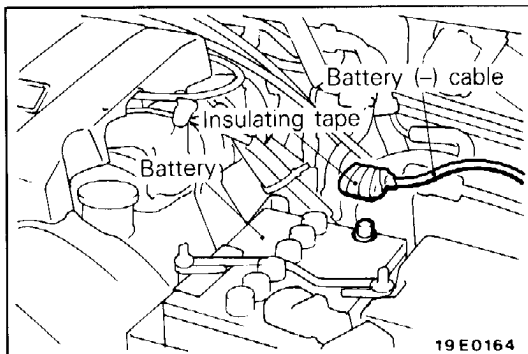
- Post-installation inspection
- ◀▶ 1. Connection for the negative (-) battery cable
- 2. Rear console assembly
- 3. Front console assembly
- ◀▶ ▶▶ 4. Connection of the SDU and each harness connector
- 5. SRS diagnosis unit assembly
- ▶▶ 6. SRS diagnosis unit (SDU)
- 7. Bracket



19E0167



19E0173



19E0164

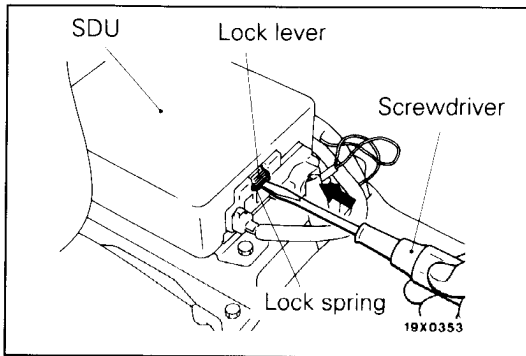
SERVICE POINTS OF REMOVAL

1. DISCONNECTION OF THE NEGATIVE (-) BATTERY CABLE FROM THE BATTERY

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

Caution

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



4. DISCONNECTION OF THE SDU AND EACH HARNESS CONNECTOR

- (1) Place a flat-tipped (–) screwdriver against the lock spring (metal portion) of the SDU connector lock lever, and push the spring horizontally toward the inside of the unit.

Caution

1. Do not use excessive force to raise the lock lever (green).
2. Do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion.)

- (2) While pushing the locks of each connector downwards, remove each connector from the SDU.

Caution

Because a double lock mechanism is employed for the SDU connectors, be careful not to exert undue force to remove the connectors, as this will damage them.

INSPECTION

E52BH02AA

- Check the SDU case and brackets for dents, cracks or deformities.
- Check connectors and lock lever for damage, and terminals for deformities.

Caution

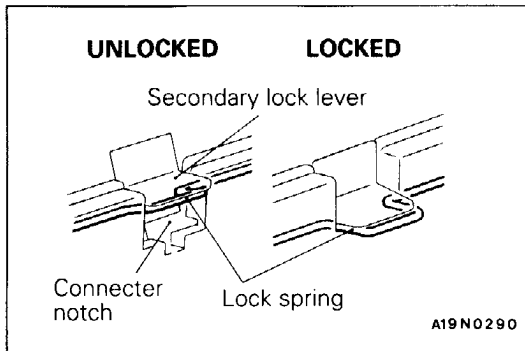
If a dent, cracks, deformation or rust discovered, replace the SDU with a new one.

NOTE

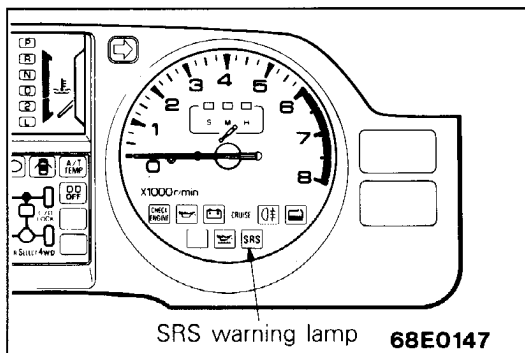
For checking of the SDU other than described above, refer to the section concerning troubleshooting. (Refer to P.52B-7.)

SERVICE POINTS OF INSTALLATION**6. INSTALLATION OF SRS DIAGNOSIS UNIT (SDU)****Caution**

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

**4. CONNECTION OF THE SDU AND EACH HARNESS CONNECTOR**

After connecting each harness connector securely and correctly to the SDU, be sure to press down the lock lever of the SDU.

**POST INSTALLATION INSPECTION**

Reconnect the negative battery terminal. Turn the ignition key to the "ON" position. Does the "SRS" warning lamp illuminated for about 7 seconds, turn OFF and then remain extinguished for at least 45 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.)

AIR BAG MODULES AND CLOCK SPRING

N52B100AA

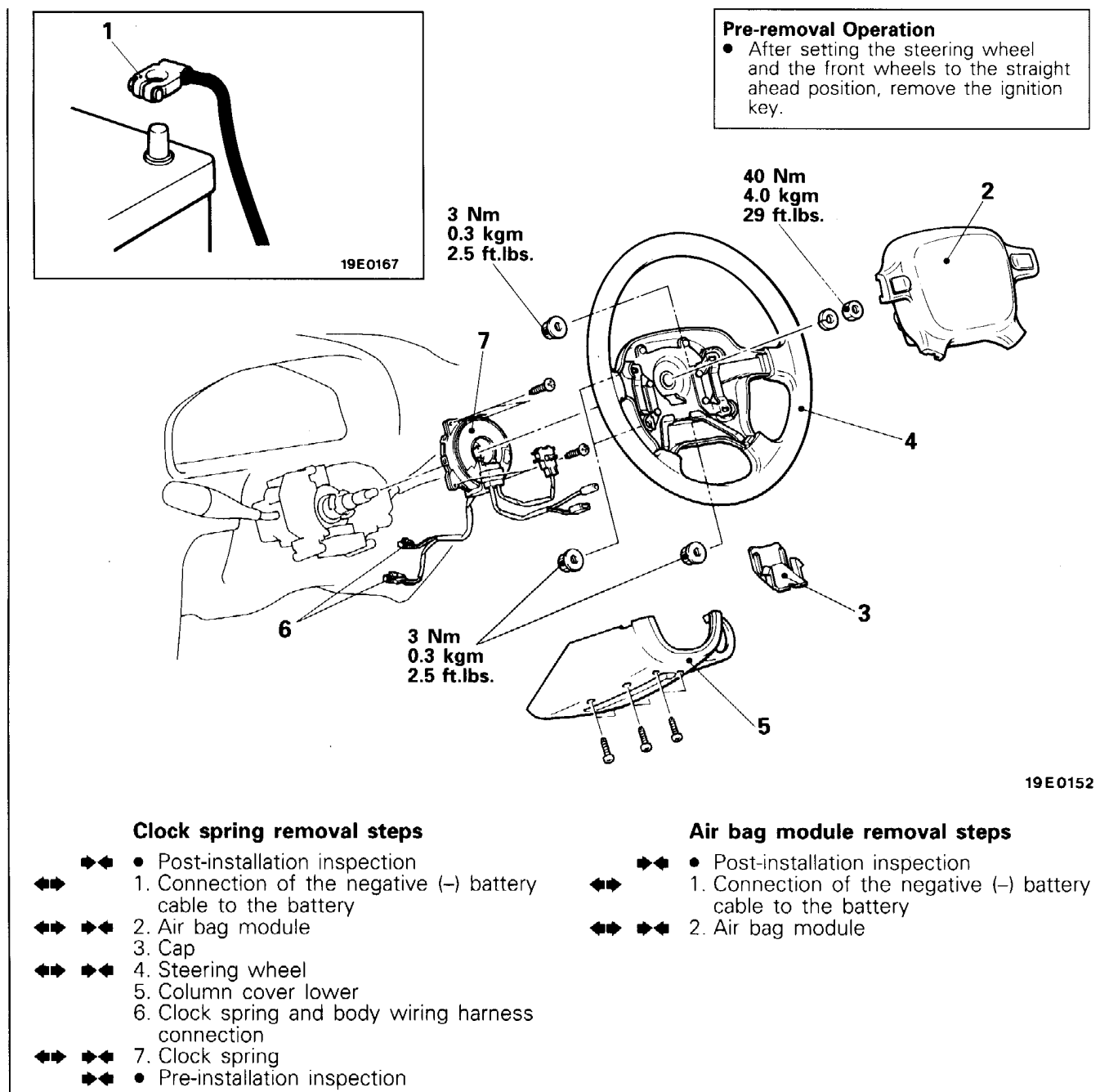
Caution

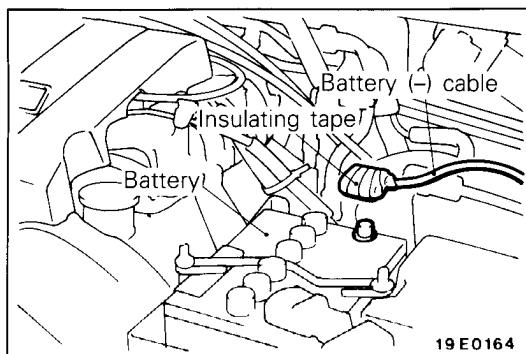
1. Never attempt to disassemble or repair the air bag module or clock spring. If faulty, replace it.
2. Do not drop the air bag module or clock spring or allow contact with water, grease or oil. Replace it if a dent, crack, deformation or rust are detected.
3. The air bag modules should be stored on a flat surface and placed so that the pad surface is facing upward.

Do not place anything on top of the air bag modules.

4. Do not expose the air bag module to temperature over 93°C (200°F).
5. After deployment of an air bag, replace the clock spring with a new one.
6. Wear gloves and safety glasses when handling an air bag that has deployed.
7. An undeployed air bag module should only be disposed of in accordance with the procedures P.52B-44 – P.52B-47.

REMOVAL AND INSTALLATION





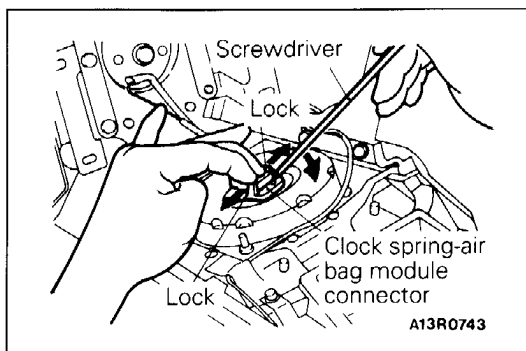
SERVICE POINTS OF REMOVAL

1. DISCONNECTION OF THE NEGATIVE (-) BATTERY CABLE FROM THE BATTERY

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.)

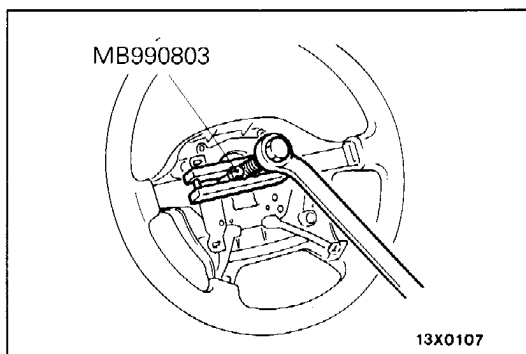
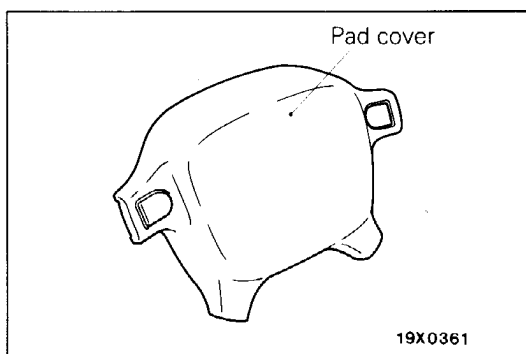


2. REMOVAL OF AIR BAG MODULE

- (1) Remove the air bag module mounting nut using a socket wrench from the back side.
- (2) When disconnecting the connector of the clock spring from the air bag module, press the air bag's lock toward the outer side to spread it open. Use a screwdriver, as shown in the figure at the left, to pry so as to remove the connector gently.

Caution

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



4. REMOVAL OF STEERING WHEEL

Caution

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

INSPECTION

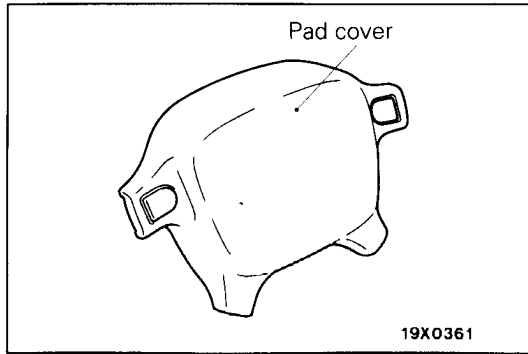
E52BI02AA

AIR BAG MODULE

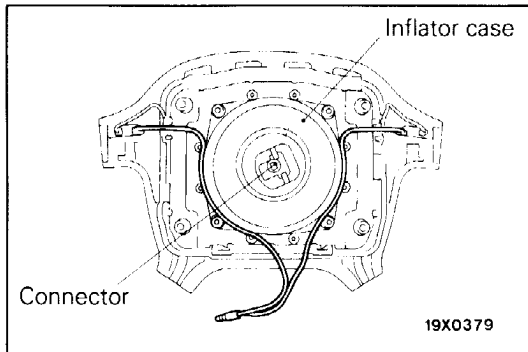
If any improper part is found during the following inspection, replace the air bag module with a new one. Dispose of the old one according to the specified procedure. (Refer to P.52B-44.)

Caution

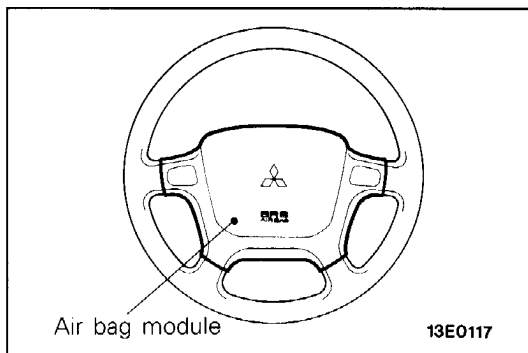
Never attempt to measure the circuit resistance of the air bag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental air bag deployment will result in serious personal injury.



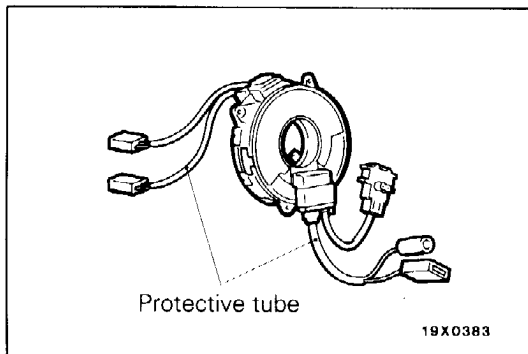
(1) Check pad cover for dents, cracks or deformities.



- (2) Check the air bag module for denting, cracking or deformation.
- (3) Check hooks and connectors for damage, terminals for deformities, and harness for binds.
- (4) Check air bag inflator case for dents, cracks or deformities.



(5) Install the air bag module to steering wheel to check fit or alignment with the wheel.

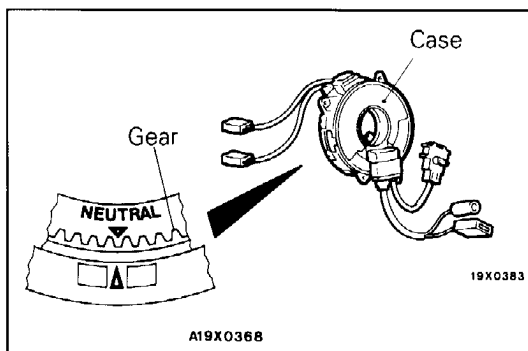


CLOCK SPRING

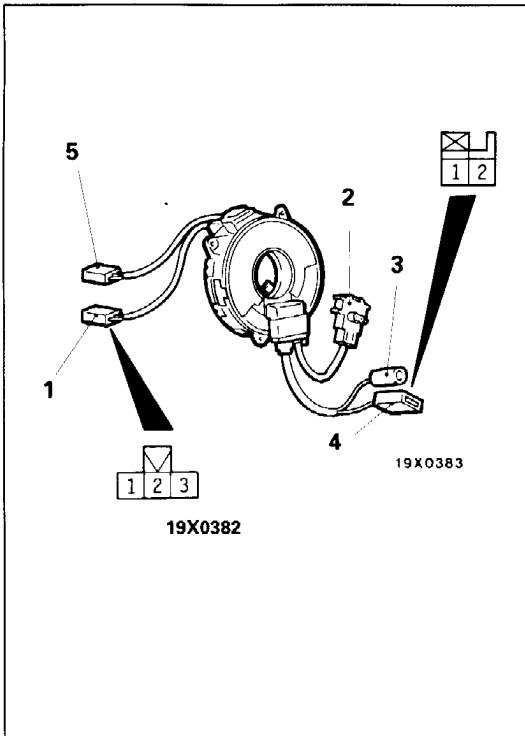
E52BI028A

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

(1) Check connectors and protective tube for damage, and terminals for deformities.



(2) Visually check the case and the gears for damage.

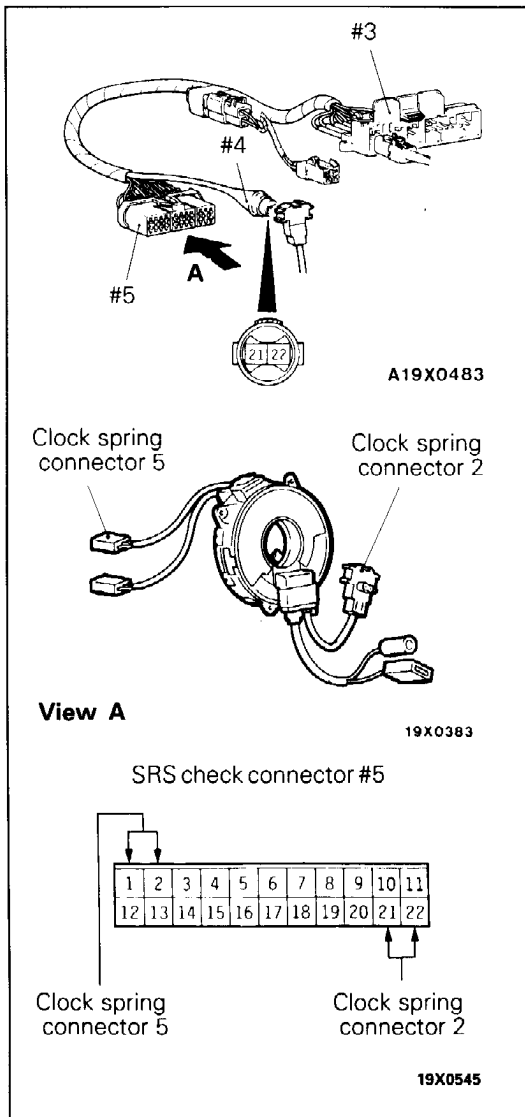


(3) Check for continuity between the No.1 connector of the clock spring and connectors No.3 and 4

No.1 connector			No.3 connector	No.4 connector	
Terminal 1	Terminal 2	Terminal 3		Terminal 1	Terminal 2
○	○	○	○	○	○
To auto-cruise control unit	To ACC power	To horn relay	To horn switch	To auto-cruise control switch	

NOTE

○—○ indicates that there is continuity between the terminal.



(4) Check of resistance between the terminals.

- a. Joint the No. 2 connector and No. 5 connector of the clock spring to connector # 4 and connector # 3, respectively, of the SRS Check Harness.

NOTE

When joining SRS Check Harness connector # 4, align its white paint with the hollow portion of the No.2 connector of the clock spring.

- b. Check for continuity between terminal 1 and terminal 22, and terminal 2 and terminal 21, of SRS Check Harness connector # 5, using a digital multi-meter.

Standard value: less than 0.4 Ω

SERVICE POINTS OF INSTALLATION

E52B104AA

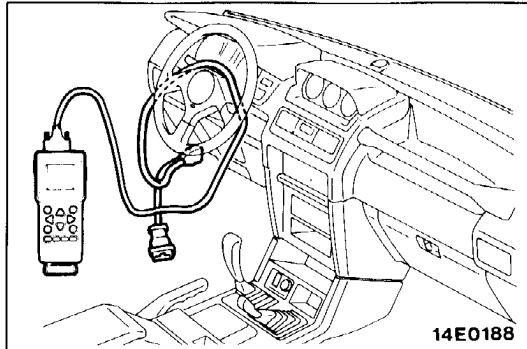
PRE-INSTALLATION INSPECTION

- (1) When installing the new air bag module and clock spring, refer to "INSPECTION"

Caution

Dispose of an air bag module only according to the specified procedure. (Refer to P.52B-44.)

- (2) Connect the battery (-) terminal.

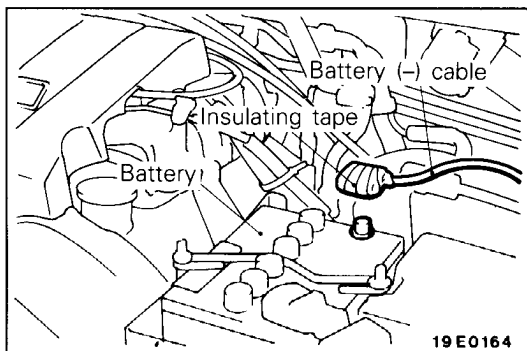


- (3) Connect the MUT-II to the diagnosis connector (16-pin) located at the right or left side of the junction block.

Caution

Make certain that the ignition switch is OFF when the MUT-II is connected or disconnected.

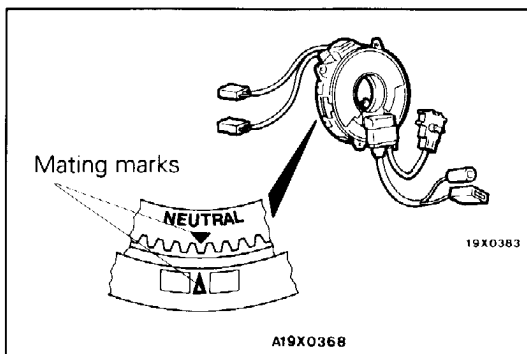
- (4) Reconnect negative terminal of battery, and turn the ignition key to the "ON" position.
 (5) Conduct self-diagnosis using the MUT-II to ensure entire SRS operates properly, except open circuit of air bag module (Diagnosis code No.22). (Refer to P.52B-7.)



- (6) Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

Caution

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

**7. INSTALLATION OF CLOCK SPRING**

Align the mating mark and "NEUTRAL" position indicator of the clock spring, and, after turning the front wheels to the straight-ahead position, install the clock spring to the column switch.

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.

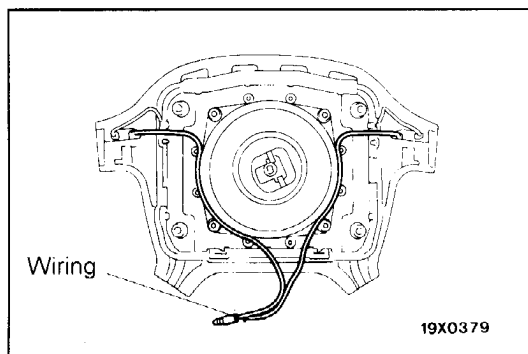
4. INSTALLATION OF STEERING WHEEL

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

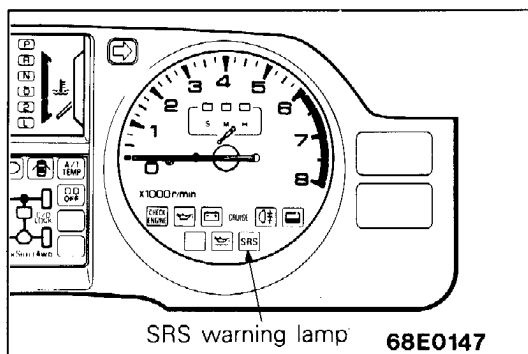
Caution

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

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

**2. INSTALLATION OF AIR BAG MODULE**

Install the air bag module, taking care that no wiring is caught by it.

**POST-INSTALLATION INSPECTION**

- (1) After installing the clock spring, the steering wheel, the column covers and the air bag module, check steering wheel of noise, binds or difficult operation.
- (2) 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 45 seconds? If yes, SRS system is functioning properly. If no, consult page 52B-7.)

AIR BAG MODULE DISPOSAL PROCEDURES

E52BF50AA

Before either disposing of a vehicle equipped with an air bag, or prior to disposing of the air bag module,

be sure to first follow the procedures described below to and deploy the air bag.

UNDEPLOYED AIR BAG MODULE DISPOSAL

E52BF51AA

Caution

1. If the vehicle is to be scrapped, or otherwise disposed of, deploy the air bag inside the vehicle. If the vehicle will continue to be operated and only the air bag module is to be disposed of, deploy the air bag outside the vehicle.
2. Since a large amount of smoke is produced when the air bag is deployed, select a well-ventilated site. Moreover, never attempt the test near a smoke sensor.
3. Since there is a loud noise when the air bag is deployed, avoid residential areas Whenever possible. If anyone is nearby, give warning of the impending noise.

DEPLOYMENT INSIDE THE VEHICLE

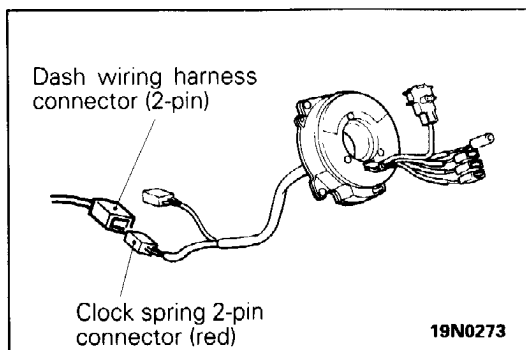
E52BF51BA

(when disposing a vehicle)

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

Caution

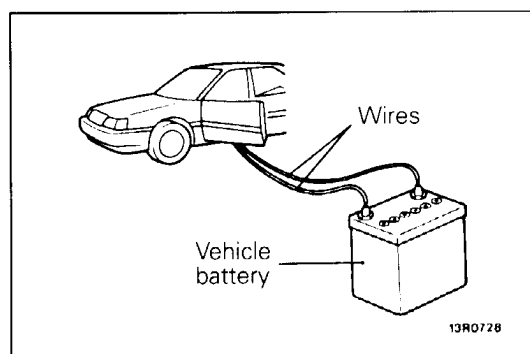
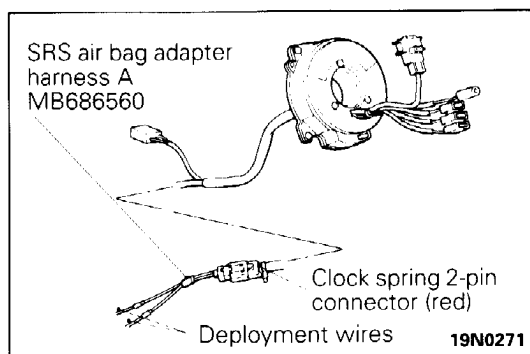
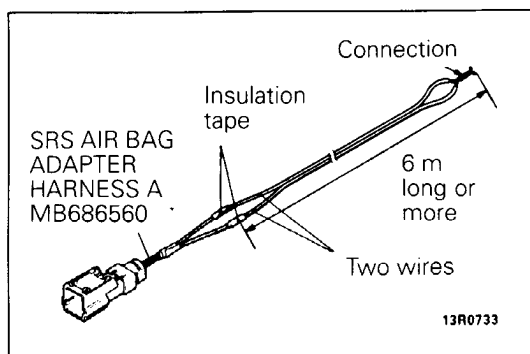
Wait at least 60 seconds after disconnecting the battery cables before doing any further work. (Refer to P.52B-4.)



- (3) Remove the steering column cover lower.
- (4) Remove the connection between the clock spring 2-pin connector (red) and the dash wiring harness connector.

NOTE

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



- (5) Connect two wires, each six meters long or more, to the two leads of SRS AIR BAG ADAPTER HARNESS A and cover the connections with insulation tape. The other ends of the two wires should be connected to each other (short-circuited), to prevent sudden unexpected deployment of the air bag.

- (6) Connect the clock spring 2-pin connector (red) to SRS air bag adapter harness A and pass the deployment wires out of the vehicle.

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

Caution

1. Before deploying the air bag in this manner, first check to be sure that there is no one in or near the vehicle. Wear safety glasses.
2. The inflator will be quite hot immediately following the deployment, so wait at least 30 minutes to allow it to cool before attempting to handle it.

Although not poisonous, do not inhale gas from air bag deployment.

See Deployed Air Bag Module Disposal Procedures (P.52B-47.) for post-deployment handling instructions.

3. If the air bag module fails to deploy when the procedures above are followed, do not go near the module.

Contact your local distributor.

- (8) Dispose of the air bag module after deployment according to the Deployed Air Bag Module Disposal Procedures. (Refer to P.52B-47.)

DEPLOYMENT OUTSIDE THE VEHICLE

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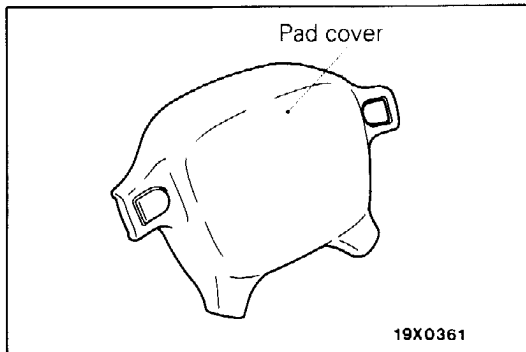
Caution

1. Should be carried out in a wide, flat area at least 6 m away from obstacles and other people.
2. Do not perform deployment outside, if a strong wind is blowing, and if there is even a slight breeze, the air bag module should be placed and deployed downwind from the battery.

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

Caution

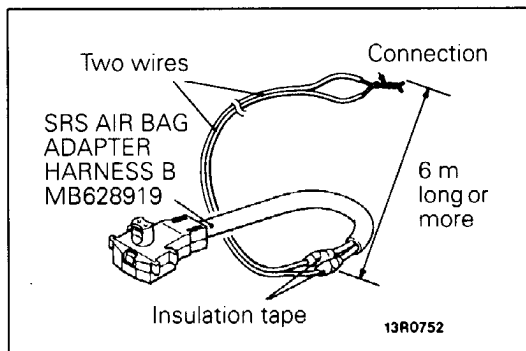
Wait at least 60 seconds after disconnecting the battery cables before doing any further work. (Refer to P.52B-4.)



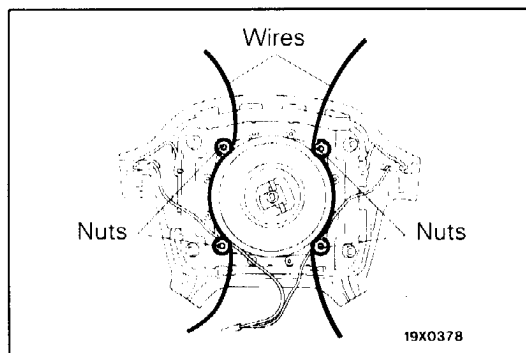
- (2) Remove the air bag module from the vehicle. (Refer to P.52B-38.)

Caution

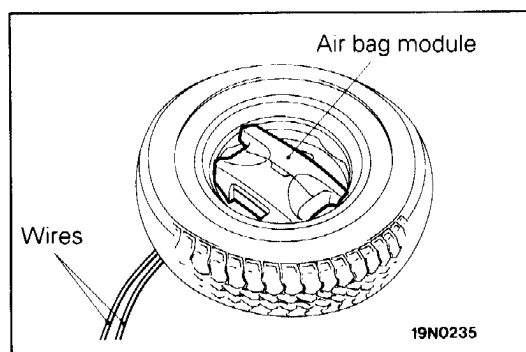
The air bag module should be stored on a flat surface and placed so that the pad cover face up. Do not place anything on top of it.



- (3) Connect two wires, each six meters long or more, to the two leads of SRS AIR BAG ADAPTER HARNESS B, and cover the connections with insulation tape. The other ends of the two wires should be connected to each other (short-circuited), to prevent sudden unexpected deployment of the air bag.



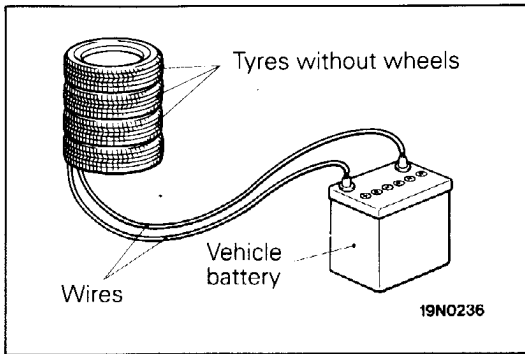
- (4) Install nuts that are no longer needed to the four bolts on the rear side of the air bag module, and tie on some thick wire to secure to the wheel.
 (5) Take the SRS air bag adaptor harness B that is connected to the wires, pass it beneath the old tyre that is attached to the wheel, and connect it to the air bag module.



- (6) Insert the air bag module into the wheel on which the old tyre has been installed, and secure it with the wires that are tied to the bolts, with the air bag facing upward.

Caution

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



- (7) Place three old tyres with no wheels on top of the tyre secured to the air bag module.
- (8) At a location as far away from the air bag module as possible, and from a shielded position, if possible, disconnect the two connected wires from each other and connect them to the two terminals of the battery (removed from the vehicle) to deploy the air bag.

Caution

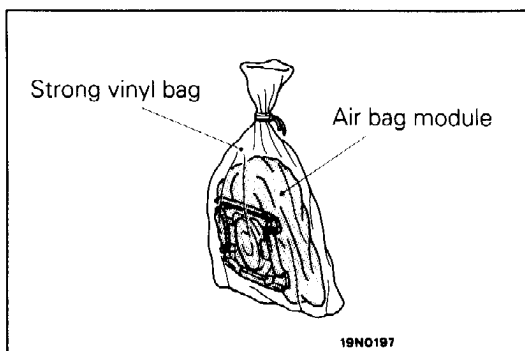
1. **Before deployment, check carefully to be sure that no one is nearby.**
 2. **The inflator will be quite hot immediately following deployment, so wait at least 30 minutes to allow it to cool before attempting to handle it. Although not poisonous, do not inhale gas from air bag deployment. See Deployed Air Bag Module Disposal Procedures (as shown below) for post-deployment handling instructions.**
 3. **If the air bag module fails to deploy when the procedures above are followed, do not go near the module. Contact your local distributor.**
- (9) Dispose of the air bag module after deployment according to the Deployed Air Bag Module Disposal Procedures.

DEPLOYED AIR BAG MODULE DISPOSAL PROCEDURES

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

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



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