

SECTION 52B

SRS AIRBAGS

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Caution
To ensure safety, carefully read through the service precautions before starting work.

General

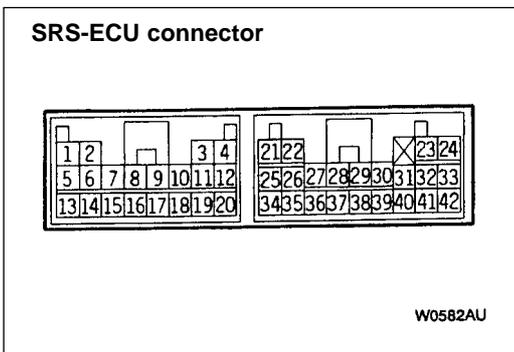
New servicing information has been established with the following changes. Apart from the information below, servicing is the same as in the previous model.

- Front impact sensors added (vehicles not fitted with front passenger's seat airbag module)
- Clock springs and seat belt pre-tensioners have been changed

Service Precautions

Precautions relating to the front impact sensors have been added. With the exception of the following, precautions are the same as those for the previous model.

1. If there is a fault in a front impact sensor, then it must always be replaced by a new sensor.



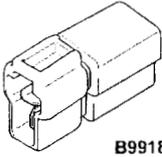
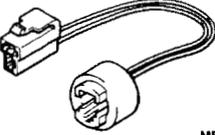
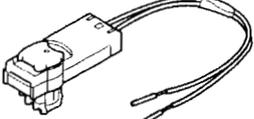
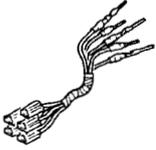
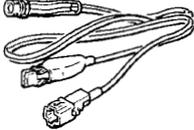
2. If there is an abnormality in the SRS airbag harness connector, then this must be replaced by a new one. If there is an abnormality in the harness, then it must be repaired or replaced, in accordance with the following table.

SRS-ECU Terminal No.	Harness connection point	Measure
1, 2	Instrument panel harness → Front harness (RH) → Front impact sensor (RH)	Repair or replace respective harnesses
3, 4	Instrument panel harness → Front harness (LH) → Front impact sensor (LH)	Repair or replace respective harnesses

3. When painting, if the temperature is likely to rise to 93°C or above, the front impact sensors should be removed in advance.

Special Tools

Tool	Number	Name	Use
<p>A</p> <p>MB991824</p> <p>B</p> <p>MB991827</p> <p>C</p> <p>MB991910</p> <p>D</p> <p>MB991911</p> <p>E</p> <p>MB991825</p> <p>F</p> <p>MB991826</p> <p>MB991955</p>	<p>MB991502</p> <p>A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826</p>	<p>MUT-III Assembly</p> <p>A: V.C.I (Vehicle Communication Interface)</p> <p>B: USB cable</p> <p>C: MUT-III main harness A (for vehicles fitted with CAN communications)</p> <p>D: MUT-III main harness B (for vehicles not fitted with CAN communications)</p> <p>E: Measurement adapter</p> <p>F: Trigger harness</p>	<p>Reading and erasing diagnosis codes</p>
<p>B991502</p>	<p>MB991502</p>	<p>MUT-II sub-assembly</p>	<ul style="list-style-type: none"> • Reading and erasing diagnosis codes • Reading problem duration time • Reading no. of memory erasure operations
<p>B991613</p>	<p>MB991606 or MB991613</p>	<p>SRS check harness</p>	<p>Checking SRS airbag electrical circuits</p>

Tool	Number	Name	Use
 B991865	MB991865	Dummy resistor	Checking electrical circuits of SRS airbags and seat belt pre-tensioners
 MB991884	MB991884	Resistance harness (for pre-tensioners)	Checking electrical circuits of seat belt pre-tensioners
 MB991885	MB991885	Seat belt pre-tensioner harness adapter	Operating seat belt pre-tensioners from inside or outside vehicle
<p>A </p> <p>B </p> <p>C </p> <p>D </p> <p>C991223</p>	<p>MB991223</p> <p>A: MB991219 B: MB991220 C: MB991221 D: MB991222</p>	<p>Harness set</p> <p>A: Check harness B: LED harness C: LED harness adapter D: Probe</p>	Checking connectivity and measuring voltage at SRS-ECU harness connectors

Test equipment

Device	Name	Use
 13R0746	Digital circuit tester	Checking SRS airbag circuits (use a meter which has a maximum test current of 2 mA or less in the minimum resistance value range)

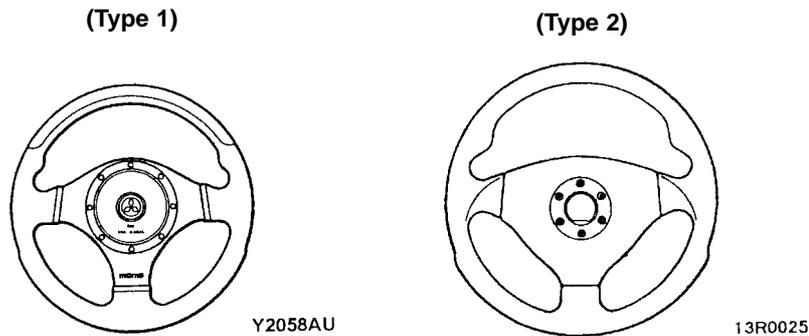
Troubleshooting

With the exception of the following points, servicing follows the same procedure as in the previous model.

Remarks

In the Inspection procedure, based on the diagnosis code, the driver's airbag module (squib) system is set up differently depending on the type of steering wheel, as indicated below.

1. Type 1: Separate systems for steering wheel and airbag module system (fitted as standard in GSR, optional in RS)
2. Type 2: Integrated system for steering wheel and airbag module (fitted as standard in RS)



1. Basic procedure for fault diagnosis

Refer to Chapter 00 – How to Use Troubleshooting / Service Inspection Points.

2. Diagnosis function

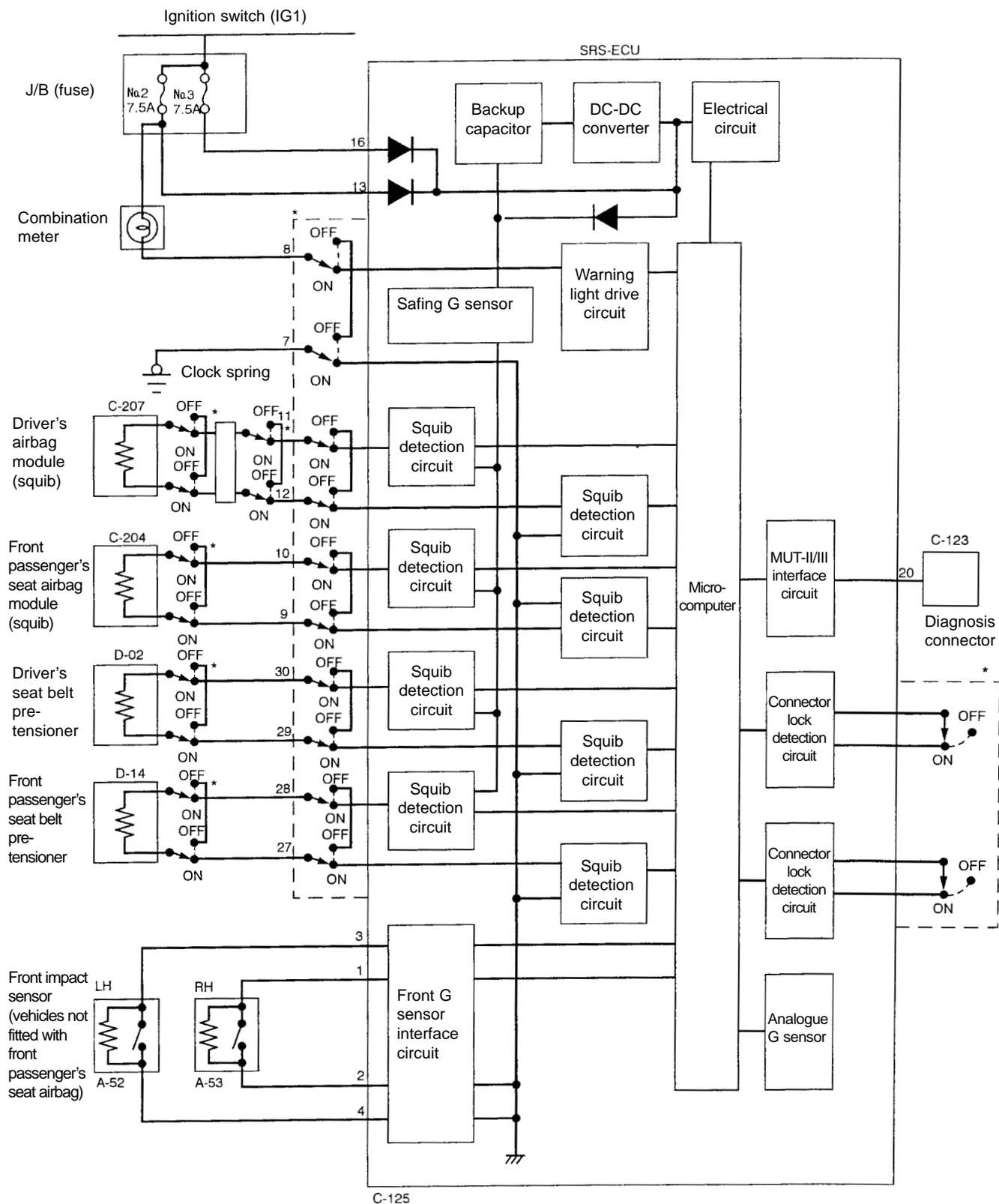
2-1 Reading diagnosis codes

Connect the MUT-II/III to the 16-pin diagnosis connector and read out the diagnosis codes.
(Refer to Chapter 00 – How to Use Troubleshooting / Service Inspection Points.)

2-2 Erasing diagnosis codes

Connect the MUT-II/III to the 16-pin diagnosis connector and erase the diagnosis codes.
(Refer to Chapter 00 – How to Use Troubleshooting / Service Inspection Points.)

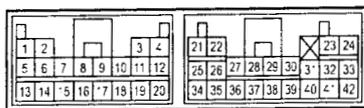
3. SRS System Circuit Diagram



C-125

Remarks : *Connector lock switch
(Connector engaged: ON
Connector disengaged: OFF)

SRS-ECU connector



4. Chart of Diagnosis Codes

Code No.	Diagnostic Item		Page
1A	Front impact sensor LH system	Shorting between sensor terminals	52B-7
1B	Front impact sensor LH system	Disconnection of sensor circuit	
1C	Front impact sensor LH system	Shorting of power supply to sensor circuit	
1D	Front impact sensor LH system	Shorting of earth to sensor circuit	
2A	Front impact sensor RH system	Shorting between sensor terminals	
2B	Front impact sensor RH system	Disconnection of sensor circuit	
2C	Front impact sensor RH system	Shorting of power supply to sensor circuit	
2D	Front impact sensor RH system	Shorting of earth to sensor circuit	
21 ^{*1}	Driver's airbag module (squib) system	Shorting between terminals of squib circuit	52B-8
22 ^{*1}	Driver's airbag module (squib) system	Disconnection of squib circuit	52B-12
26 ^{*1}	Driver seat belt pre-tensioner (squib) system	Shorting between terminals of squib circuit	52B-15
27 ^{*1}	Driver seat belt pre-tensioner (squib) system	Disconnection of squib circuit	52B-17
28 ^{*1}	Front passenger's seat belt pre-tensioner (squib) system	Shorting between terminals of squib circuit	52B-18
29 ^{*1}	Front passenger's seat belt pre-tensioner (squib) system	Disconnection of squib circuit	52B-20
39	All airbags deployed		52B-21
46 ^{*2}	SRS-ECU assembled incorrectly		52B-21
61	Driver's airbag module (squib) system	Short-circuited to power supply	52B-22
62	Driver's airbag module (squib) system	Short-circuited to earth	52B-22
66	Driver seat belt pre-tensioner (squib) system	Short-circuited to power supply	52B-25
67	Driver seat belt pre-tensioner (squib) system	Short-circuited to earth	52B-25
68	Front passenger's seat belt pre-tensioner (squib) system	Short-circuited to power supply	52B-26
69	Front passenger's seat belt pre-tensioner (squib) system	Short-circuited to earth	52B-26

Remarks

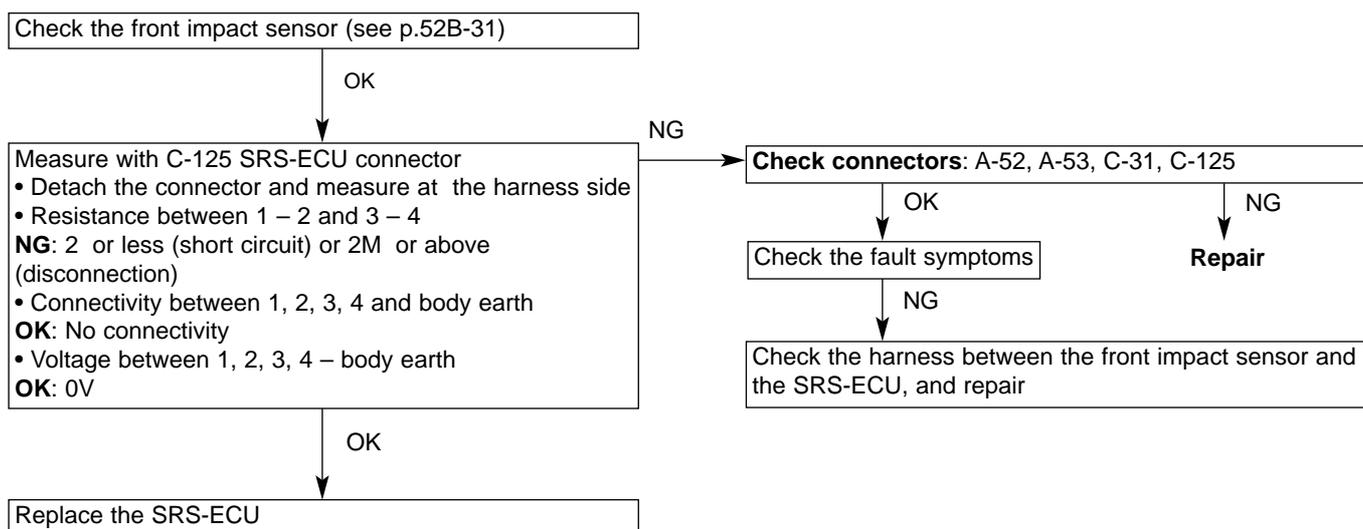
- *1 : When system reverts to normal, diagnosis code will remain stored in diagnosis code memory when the SRS warning light switches off.
- *2 : When system reverts to normal, diagnosis code will be automatically erased when the SRS warning light switches off.

5. Inspection Procedure Classified by Diagnosis Code

Code No. 1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D Front impact sensor system	Possible cause
These codes are output whenever the resistance between the input terminals of the front impact sensors of the SRS-ECU differs from the normal value. Refer to the table below for the fault cause for each code number.	<ul style="list-style-type: none"> • Harness, contactor malfunction • Front impact sensor malfunction • SRS-ECU malfunction

Table 1

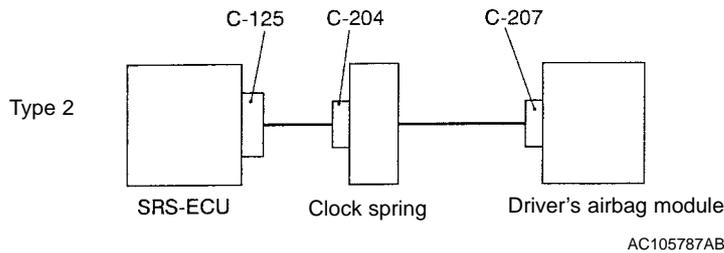
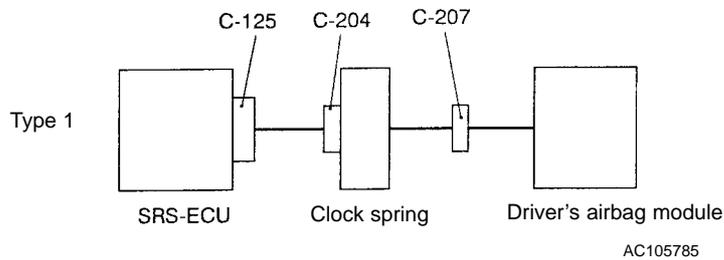
Code No.	Cause of fault
1A	Shorting of left-side front impact sensor or harness short-circuit
1B	Disconnection of left-wide front impact sensor or disconnection of harness
1C	Harness of left-side front impact sensor shorted to power supply
1D	Harness of left-side front impact sensor shorted to vehicle earth
2A	Shorting of right-side front impact sensor or harness short-circuit
2B	Disconnection of right-wide front impact sensor or disconnection of harness
2C	Harness of right-side front impact sensor shorted to power supply
2B	Harness of right-side front impact sensor shorted to vehicle earth



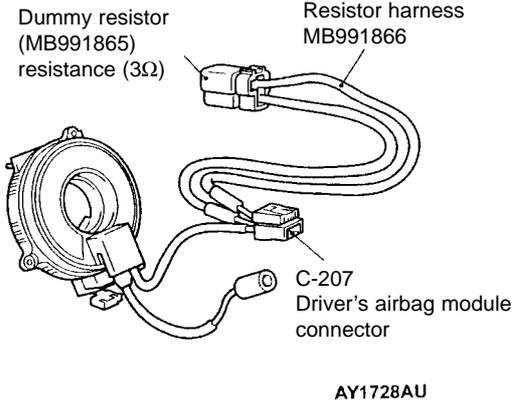
Code No. 21 Driver's airbag module (squib) system	Possible cause
<p>This code is output when shorting occurs between the terminals of the driver's airbag module (squib) circuit of the SRS-ECU.</p> <p>When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)</p>	<ul style="list-style-type: none"> • Fault in the connector fitting or fault in the short bar* • Shorting in the clock spring • Shorting between the terminals of the driver's airbag module (squib) circuit • Connector fault • SRS-ECU fault

Remarks:

*The connector of the squib circuit contains a short bar (which shorts the (+) cable to the (-) cable of the squib circuit when the connector is not connected, in order to avoid erroneous deployment due to static electricity, or the like). Therefore, when a connector is connected, the short bar may not be released if there is a fault in the connector fitting or a malfunction in the connector itself, as illustrated below. Before proceeding to the troubleshooting steps on the next page, disconnect the connector as shown below, and then reconnect it. If no diagnosis code is output, then it can be assumed that the code was previously output due to poor fitting of the connector.



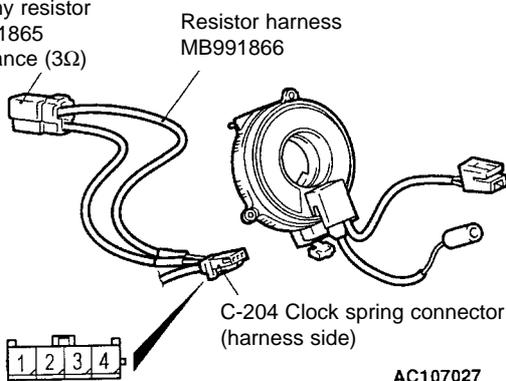
(Type 1)

 <p>Dummy resistor (MB991865) resistance (3Ω)</p> <p>Resistor harness MB991866</p> <p>C-207 Driver's airbag module connector</p> <p>AY1728AU</p>	<p>(Checking the driver's airbag module (squib)) MUT-II/III diagnosis code</p> <ul style="list-style-type: none"> • Detach the (-) terminal of the battery • Detach the driver's airbag module connector C-207 • Connect the dummy resistor (MB991865) to the resistor harness (MB 991866) • Insert the probe of the resistor harness (MB991866) behind the driver's airbag module connector C-207 of the clock spring <p>Caution Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.</p> <ul style="list-style-type: none"> • Connect the (-) terminal of the battery. • After erasing the diagnosis code memory, reconfirm the diagnosis code. <p>Is Code No.21 output?</p>
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YES

NO

Replace the driver's airbag module (squib)

 <p>Dummy resistor MB991865 resistance (3Ω)</p> <p>Resistor harness MB991866</p> <p>C-204 Clock spring connector (harness side)</p> <p>AC107027</p>	<p>(Checking the clock spring) MUT-II/III diagnosis code</p> <ul style="list-style-type: none"> • Detach the (-) terminal of the battery • Detach the clock spring connector (4 pin) C-204 • Connect the dummy resistor (MB991865) to the resistor harness (MB991866) • Insert the probe of the resistor harness (MB991866) between terminal 3 and 4, behind the clock spring connector C-204 (harness side) <p>Caution Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.</p> <ul style="list-style-type: none"> • Connect the (-) terminal of the battery. • After erasing the diagnosis code memory, reconfirm the diagnosis code. <p>Is Code No.21 output?</p>
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YES

NO

To next page

Replace the clock spring

From previous page

YES

(Checking the circuit between the SRS-ECU and the clock spring)

Measure at the SRS-ECU connector C-125

- Detach the SRS-ECU connector C-125
- Detach the clock spring connector C-204

Caution

In the following operation, detach the SRS-ECU connector and short the squib circuit before releasing the short bar of the connector.

- Insert insulating material, such as cable bands (3mm wide, 0.5mm thick), between the short bar and the terminals 11, 12 of the SRS-ECU connector (harness side) C-125. Release the short bar. (See Fig. A)

Caution

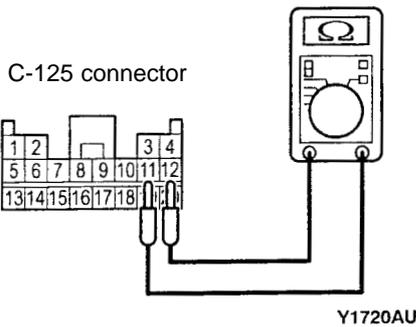
If the insulating material is not inserted sufficiently, then it may be impossible to release the short bar. Ensure that the insulating material is inserted to a depth of at least 4mm.

- Check connectivity between 11 and 12

Caution

Do not insert the probe, etc. directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK : No connectivity



OK

Replace the SRS-ECU

Check connectors: C-125, C-204

OK

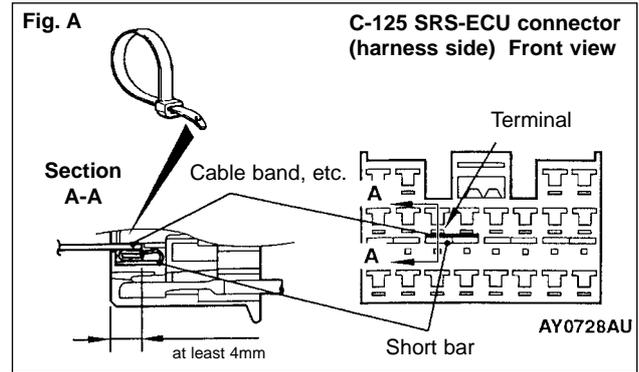
NG

Confirm the symptoms

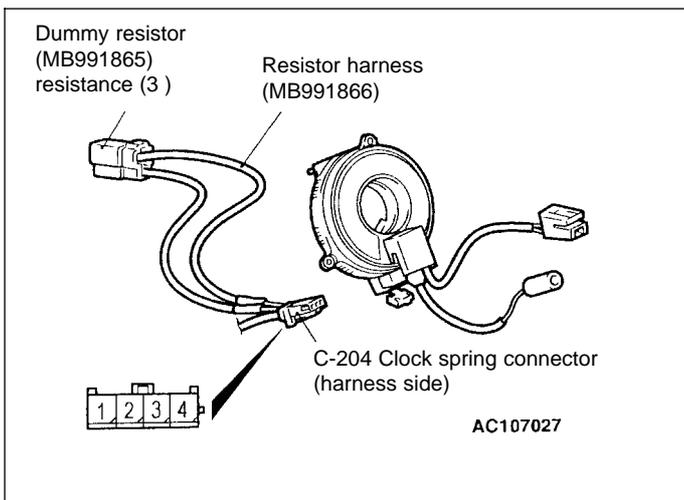
Repair

NG

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



(Type 2)



(Checking the driver's airbag and clock spring)
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the clock spring connector (4-pin) C-204
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991866)
- Insert the probe of the resistor harness (MB991866) between terminals 3 and 4, behind clock spring connector C-204 (harness side)

Caution
Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

- Connect the (-) terminal of the battery.
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.21 output?

YES

NO

(Checking the circuit between the SRS-ECU and the clock spring)
 Measure at the SRS-ECU connector C-125

- Detach the SRS-ECU connector C-125
- Detach the clock spring connector C-203

Caution
In the following operation, detach the SRS-ECU connector and short the squib circuit before releasing the short bar of the connector.

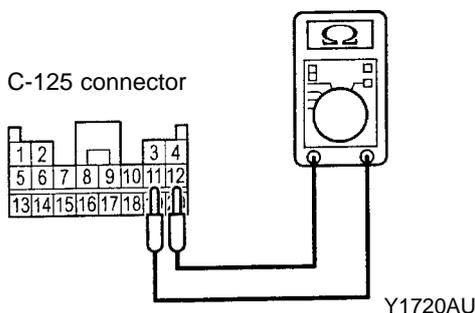
- Insert insulating material, such as cable bands (3mm wide, 0.5mm thick), between the short bar and the terminals 11, 12. Release the short bar. (See Fig. A)

Caution
If the insulating material is not inserted sufficiently, then it may be impossible to release the short bar. Ensure that the insulating material is inserted to a depth of at least 4mm.

- Measure at the harness side
- Check connectivity between 11 and 12

Caution
Do not insert the probe, etc. directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: No connectivity



OK

Replace the SRS-ECU

Check the clock spring (see p.52B-33)

OK

NG

Replace the driver's airbag module (squib)

Replace the clock spring

NG

Check connectors: C-125, C-203

OK

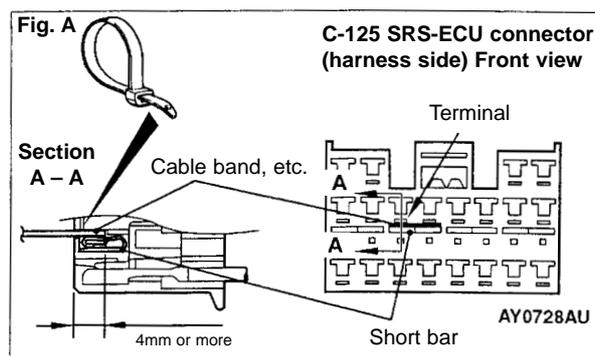
NG

Confirm the fault symptoms

Repair

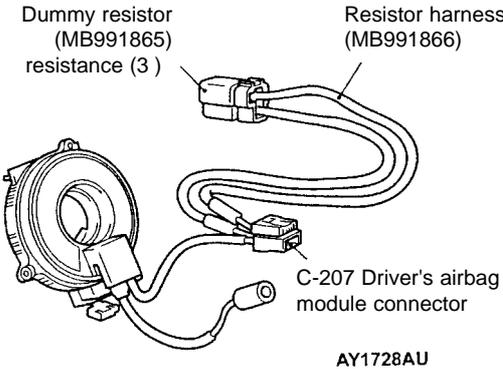
NG

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



Code No. 22 Driver's airbag module (squib) system	Possible cause
<p>This code is output when there is a disconnection in the driver's airbag module (squib) circuit of the SRS-ECU. When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)</p>	<ul style="list-style-type: none"> • Disconnection of the clock spring • Half-disconnection due to incorrect neutral positioning of the clock spring • Disconnection in the driver's airbag module (squib) circuit • Detachment of the driver's airbag module (squib) connector • Connector contact fault • SRS-ECU fault

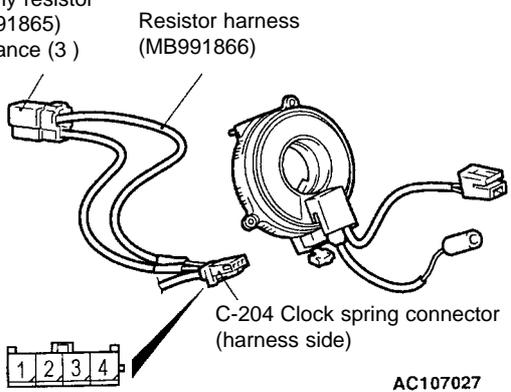
(Type 1)

 <p>Dummy resistor (MB991865) resistance (3)</p> <p>Resistor harness (MB991866)</p> <p>C-207 Driver's airbag module connector</p> <p>AY1728AU</p>	<p>(Checking the driver's airbag module (squib)) MUT-II/III diagnosis code</p> <ul style="list-style-type: none"> • Detach the (-) terminal of the battery • Detach the driver's airbag module connector C-207 • Connect the dummy resistor (MB991865) to the resistor harness (MB 991866) • Insert the probe of the resistor harness (MB991866) behind the driver's airbag module connector C-207 of the clock spring. <p>Caution Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.</p> <ul style="list-style-type: none"> • Connect the (-) terminal of the battery. • After erasing the diagnosis code memory, reconfirm the diagnosis code. <p>Is Code No.22 output?</p>
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YES

NO

Replace the driver's airbag module (squib)

 <p>Dummy resistor (MB991865) resistance (3)</p> <p>Resistor harness (MB991866)</p> <p>C-204 Clock spring connector (harness side)</p> <p>AC107027</p>	<p>(Checking the clock spring) MUT-II/III diagnosis code</p> <ul style="list-style-type: none"> • Detach the (-) terminal of the battery • Detach the clock spring connector (4-pin) C-204 • Connect the dummy resistor (MB991865) to the resistor harness (MB 991866) • Insert the probe of the resistor harness (MB991866) between terminals 3 and 4, behind clock spring connector C-204 (harness side) <p>Caution Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.</p> <ul style="list-style-type: none"> • Connect the (-) terminal of the battery. • After erasing the diagnosis code memory, reconfirm the diagnosis code. <p>Is Code No.22 output?</p>
---	---

YES

NO

To next page

Replace the clock spring

From previous page

YES

(Checking the circuit between the SRS-ECU and the clock spring)

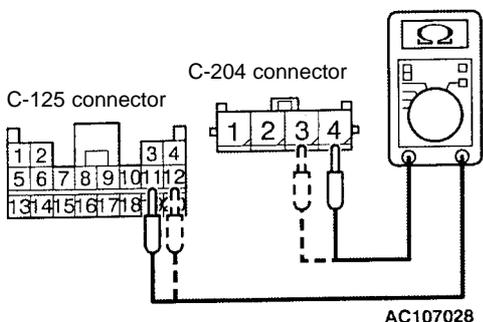
Measure at SRS-ECU connector C-125 and clock spring connector C-204

- Detach the SRS-ECU connector C-125 and the clock spring connector C-125 and measure at the harness side
 - Check connectivity between the following terminals
- | C-125 connector | C-204 connector |
|-----------------|-----------------|
| 11 | 4 |
| 12 | 3 |

Caution

Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: Connectivity (2 max.)



OK

Replace the SRS-ECU

NG

Check connectors : C-125, C-205

OK

NG

Confirm the fault symptoms

Repair

NG

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

(Type 2)

Dummy resistor (MB991865) resistance (3)

Resistor harness (MB991866)

C-204 Clock spring connector (harness side)

AC107027

(Checking the driver's airbag and clock spring)
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the clock spring connector (4-pin) C-204
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991866)
- Insert the probe of the resistor harness (MB991866) between terminals 3 and 4, behind clock spring connector C-204 (harness side)

Caution
Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

- Connect the (-) terminal of the battery.
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.22 output?

(Checking the circuit between the SRS-ECU and the clock spring)
Measure at SRS-ECU connector C-125 and clock spring C-203

- Detach the SRS-ECU connector C-125 and the clock spring connector C-203 and measure at the harness side
- Check connectivity between the following terminals

C-125 connector	C-203 connector
11	2
12	1

Caution
Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK : Connectivity (2 max.)

C-125 connector

C-204 connector

AC107028

YES

NO

Check the clock spring (see p.52B-34)

OK → Replace the driver's airbag module (squib)

NG → Replace the clock spring

NG → Check connectors: C-125, C-203

OK → Confirm the fault symptoms

NG → Repair

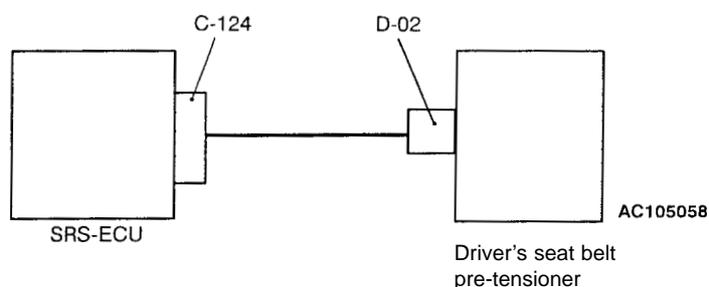
NG → Check the harness between the clock spring and the SRS-ECU, and repair.

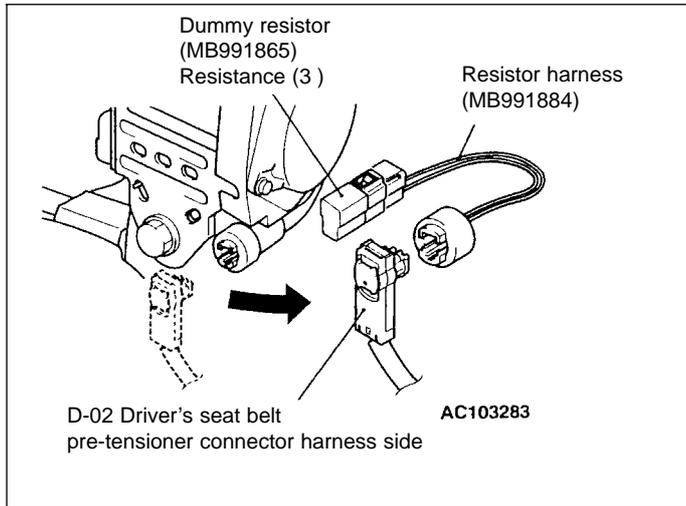
OK → Replace the SRS-ECU

Code No. 26 Driver's seat belt pre-tensioner (squib) system	Possible cause
<p>This code is output when shorting occurs between the terminals of the driver's seat belt pre-tensioner (squib) circuit of the SRS-ECU. When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)</p>	<ul style="list-style-type: none"> • Fault in the connector fitting or fault in the short bar* • Shorting between the terminals of the driver's seat belt pre-tensioner (squib) circuit • Connector fault • SRS-ECU fault

Remarks:

* The connector of the squib circuit contains a short bar (which shorts the (+) cable to the (-) cable of the squib circuit when the connector is not connected, in order to avoid erroneous deployment due to static electricity, or the like). Therefore, when a connector is connected, the short bar may not be released if there is a fault in the connector fitting or a malfunction in the connector itself, as illustrated below. Before proceeding to the troubleshooting steps on the next page, disconnect the connector as shown below, and then reconnect it. If no diagnosis code is output, then it can be assumed that the code was previously output due to poor fitting of the connector.





(Checking the driver's seat belt pre-tensioner (squib))
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the driver's seat belt pre-tensioner connector D-02 (see p.52B-34)
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Connect the resistor harness (MB991884) to the harness side of the driver's seat belt pre-tensioner connector D-02
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.26 output?

YES

NO

(Checking the circuit between the SRS-ECU and the driver's seat belt pre-tensioner)

Measure at the SRS-ECU connector C-124

- Detach the SRS-ECU connector C-124
- Detach the driver's seat belt pre-tensioner connector D-02 (see p.52B-34)

Caution

In the following operation, detach the SRS-ECU connector and short the squib circuit before releasing the short bar of the connector.

- Insert insulating material, such as cable bands (3mm wide, 0.5mm thick), between the short bar and the terminals 29, 30 of the SRS-ECU connector (harness side) C-124. Release the short bar. (See Fig. A)

Caution

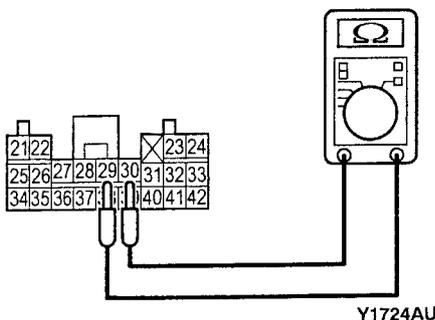
If the insulating material is not inserted sufficiently, then it may be impossible to release the short bar. Ensure that the insulating material is inserted to a depth of at least 4mm.

- Check connectivity between 29 and 30

Caution

Do not insert the probe, etc. directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: No connectivity



OK

Replace the SRS-ECU

Replace the driver's seat belt pre-tensioner

NG

Check connectors: C-124, D-02, C-116

OK

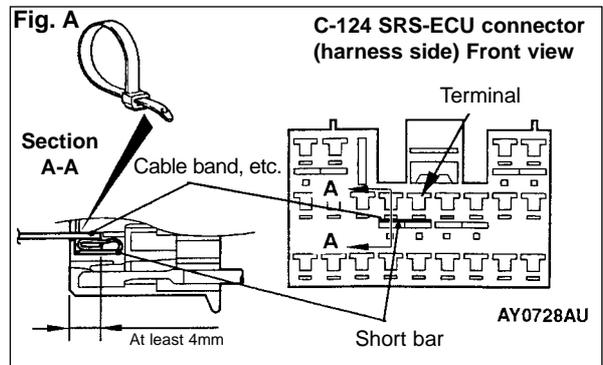
NG

Confirm the symptoms

Repair

NG

Check the harness between the driver's seat belt pre-tensioner and the SRS-ECU, and repair.



Code No. 27 Driver's seat belt pre-tensioner (squib) system	Possible cause
seat belt pre-tensioner (squib) circuit of the SRS-ECU. When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)	<ul style="list-style-type: none"> • Connector contact fault • Disconnection in the driver's seat belt pre-tensioner (squib) circuit • SRS-ECU fault

Dummy resistor (MB991865)
Resistance (3)

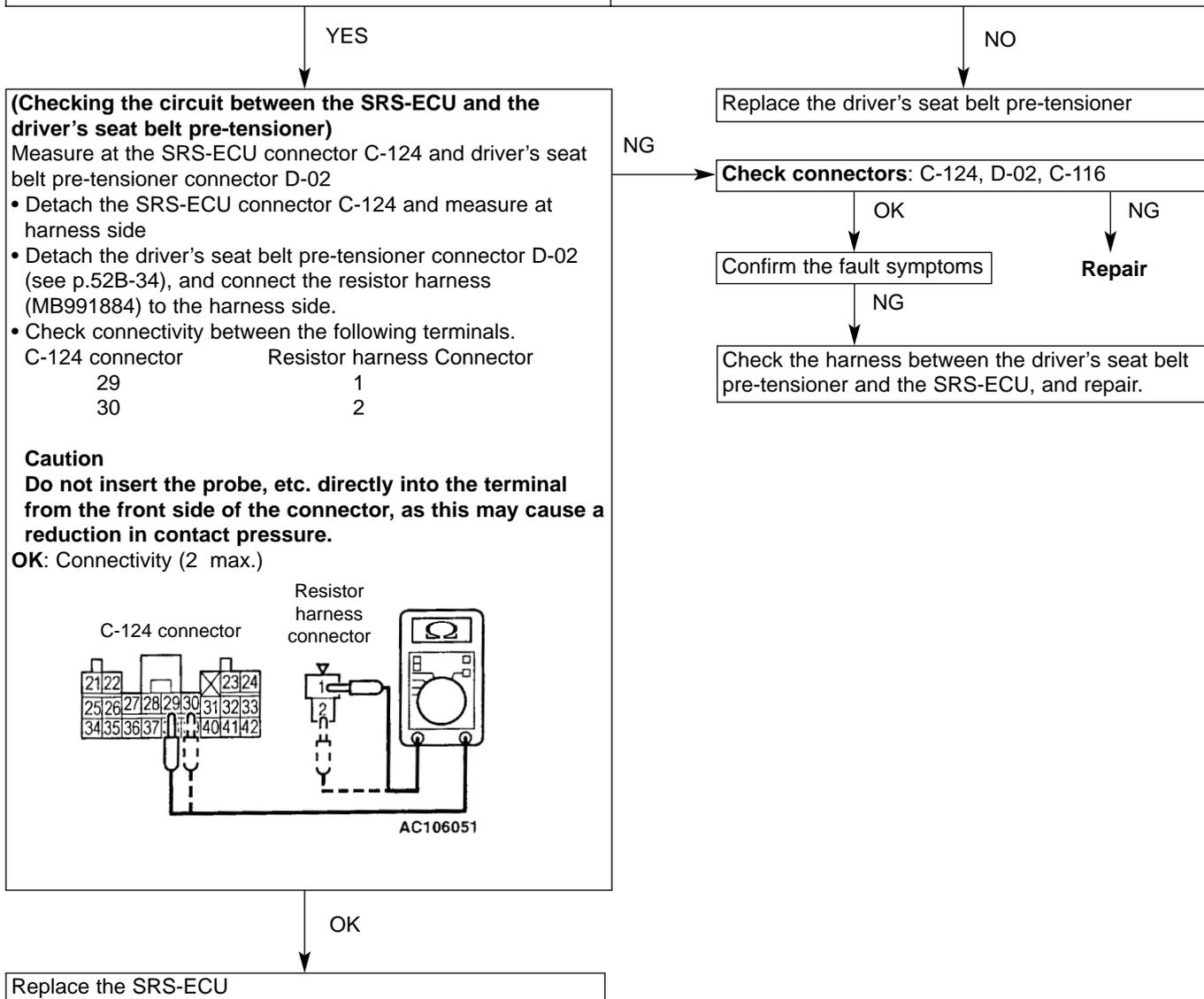
Resistor harness (MB991884)

D-02 Driver's seat belt pre-tensioner connector harness side AC103283

(Checking the driver's seat belt pre-tensioner (squib) MUT-II/III diagnosis code)

- Detach the (-) terminal of the battery
- Detach the driver's seat belt pre-tensioner connector D-02 (see p.52B-34)
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Connect the resistor harness (MB991884) to the harness side of the driver's seat belt pre-tensioner connector D-02
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

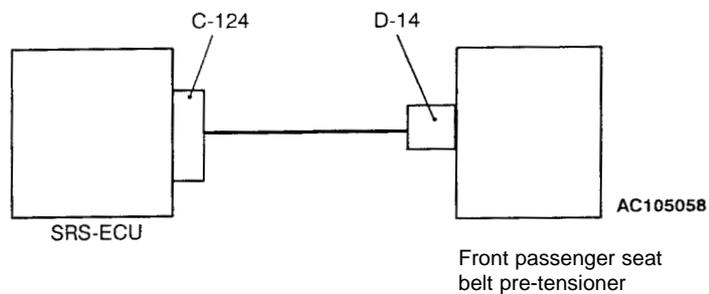
Is Code No.27 output?

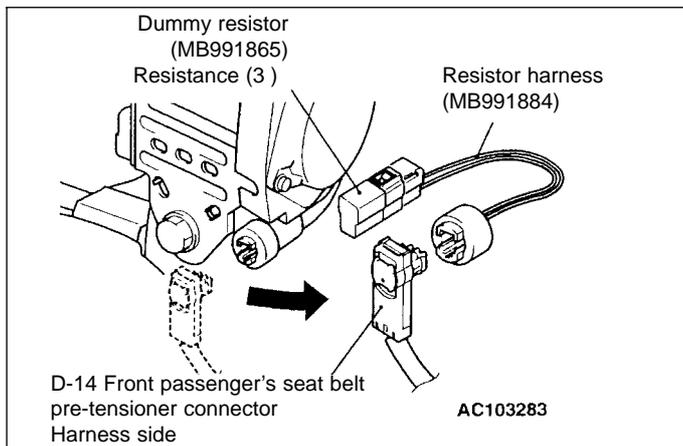


Code No. 28 Front passenger's seat belt pre-tensioner (squib) system	Possible cause
<p>This code is output when shorting occurs between the terminals of the front passenger's seat belt pre-tensioner (squib) circuit of the SRS-ECU. When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)</p>	<ul style="list-style-type: none"> • Fault in the connector fitting or fault in the short bar* • Shorting between the terminals of the front passenger's seat belt pre-tensioner (squib) circuit • Connector fault • SRS-ECU fault

Remarks:

* The connector of the squib circuit contains a short bar (which shorts the (+) cable to the (-) cable of the squib circuit when the connector is not connected, in order to avoid erroneous deployment due to static electricity, or the like). Therefore, when a connector is connected, the short bar may not be released if there is a fault in the connector fitting or a malfunction in the connector itself, as illustrated below. Before proceeding to the troubleshooting steps on the next page, disconnect the connector as shown below, and then reconnect it. If no diagnosis code is output, then it can be assumed that the code was previously output due to poor fitting of the connector.





(Checking the front passenger's seat belt pre-tensioner (squib))
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the front passenger's seat belt pre-tensioner connector D-14 (see p.52B-34)
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Connect the resistor harness (MB991884) to the harness side of the front passenger's seat belt pre-tensioner connector D-14
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.28 output?

YES

NO

(Checking the circuit between the SRS-ECU and the front passenger's seat belt pre-tensioner)
 Measure at the SRS-ECU connector C-124

- Detach the SRS-ECU connector C-124
- Detach the front passenger's seat belt pre-tensioner connector D-14 (see p.52B-34)

Caution
 In the following operation, detach the SRS-ECU connector and short the squib circuit before releasing the short bar of the connector.

- Insert insulating material, such as cable bands (3mm wide, 0.5mm thick), between the short bar and the terminals 27, 28 of the SRS-ECU connector (harness side) C-124. Release the short bar. (See Fig. A)

Caution
 If the insulating material is not inserted sufficiently, then it may be impossible to release the short bar. Ensure that the insulating material is inserted to a depth of at least 4mm.

- Check connectivity between 27 and 28

Caution
 Do not insert the probe, etc. directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: No connectivity

Y1726AU

Replace the SRS-ECU

Replace the front passenger's seat belt pre-tensioner

NG

Check connectors: C-124, D-14, C-29

OK

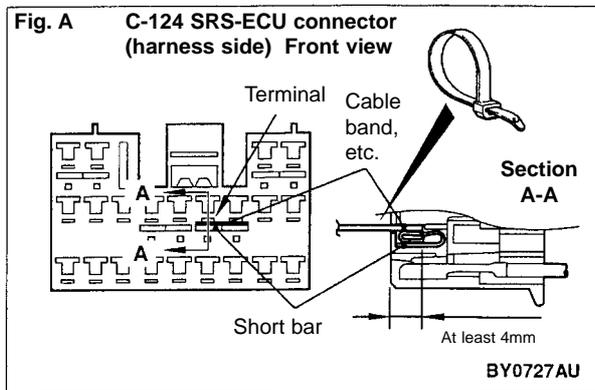
NG

Confirm the symptoms

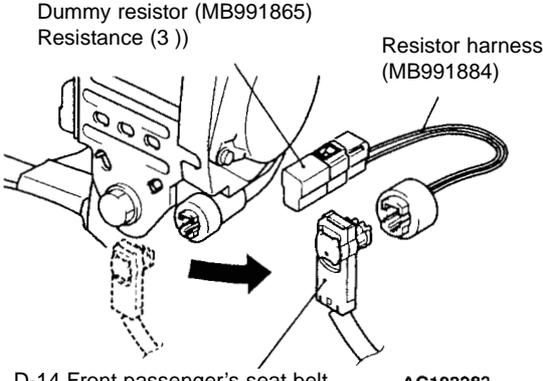
Repair

NG

Check the harness between the front passenger's seat belt pre-tensioner and the SRS-ECU, and repair.



Code No. 29 Front passenger's seat belt pre-tensioner (squib) system	Possible cause
This code is output when there is a disconnection in the front passenger's seat belt pre-tensioner (squib) circuit of the SRS-ECU. When normal operation is resumed, the SRS warning light goes out. (The diagnosis code is not erased.)	<ul style="list-style-type: none"> • Disconnection in the driver's seat belt pre-tensioner (squib) circuit • Connector contact fault • SRS-ECU fault



Dummy resistor (MB991865)
Resistance (3 Ω)

Resistor harness (MB991884)

D-14 Front passenger's seat belt pre-tensioner connector harness side

AC103283

(Checking the front passenger's seat belt pre-tensioner (squib))
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the front passenger's seat belt pre-tensioner connector D-14 (see p.52B-34)
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Connect the resistor harness (MB991884) to the harness side of the front passenger's seat belt pre-tensioner connector D-14
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.
- Is Code No.29 output?

YES

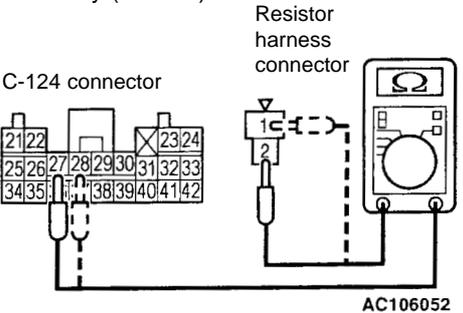
(Checking the circuit between the SRS-ECU and the front passenger's seat belt pre-tensioner)
 Measure at the SRS-ECU connector C-124 and front passenger's seat belt pre-tensioner connector D-14

- Detach the SRS-ECU connector C-124 and measure at harness side
- Detach the front passenger's seat belt pre-tensioner connector D-14 (see p.52B-34), and connect the resistor harness (MB991884) to the harness side.
- Check connectivity between the following terminals.

C-124 connector	Resistor harness Connector
27	2
28	1

Caution
 Do not insert the probe, etc. directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: Connectivity (2 max.)



C-124 connector

Resistor harness connector

AC106052

NO

Replace the front passenger's seat belt pre-tensioner

NG

Check connectors: C-124, D-02, C-116

OK

Confirm the fault symptoms

OK

Check the harness between the front passenger's seat belt pre-tensioner and the SRS-ECU, and repair.

NG

Repair

OK

Replace the SRS-ECU

Code No. 39 All airbags deployed system	Possible cause
This code is output after an operation in which all the airbags have deployed. If this code is output before all the airbags have deployed, then this indicates that there is an internal malfunction in the SRS-ECU.	SRS-ECU fault

If the Code No. above is output, then replace the SRS-ECU.

Code No. 46 Incorrect SRS-ECU installation	Possible cause
This code is output if an SRS-ECU compatible with driver airbag only, is mistakenly installed in a vehicle fitted with front passenger airbag.	Installation of incorrect SRS-ECU

If the Code No. above is output, then replace the SRS-ECU with one which is compatible with a front passenger airbag.

<p>Code No. 61 Driver's airbag module (squib) system (shorted to power supply)</p>	<p>Possible cause</p>
<p>Code No. 62 Driver's airbag module (squib) system (shorted to earth)</p>	
<p>This code is output when the driver's airbag module (squib) circuit of the SRS-ECU is shorted to the power supply (Code No. 61) or shorted to earth (Code No. 62).</p>	<ul style="list-style-type: none"> • Clock spring fault • Harness or connector fault • Shorting of driver's airbag module (squib) harness to power supply (Code No. 61) or to earth (Code No. 62) • SRS-ECU fault

(Type 1)

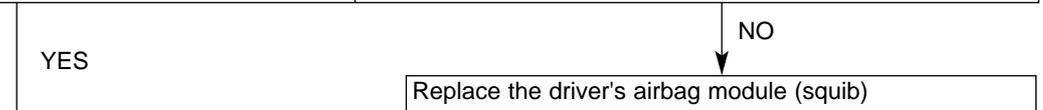
(Checking the driver's airbag module (squib))
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the driver's airbag module connector C-207
- Connect the dummy resistor (MB991865) to the resistor harness (MB 991866)
- Insert the probe of the resistor harness (MB991866) behind the driver's airbag module connector C-207 of the clock spring.

Caution
Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

- Connect the (-) terminal of the battery.
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.61 or No. 62 output?



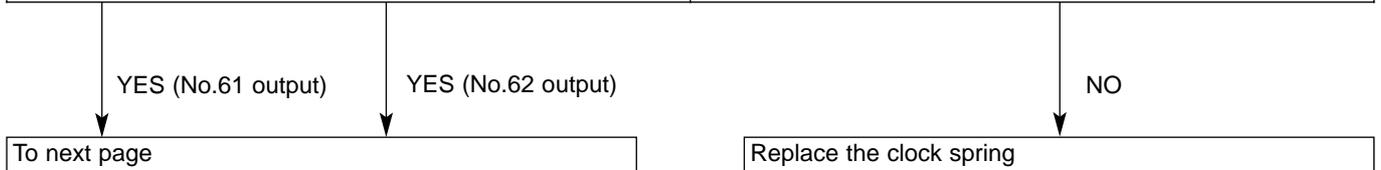
(Checking the clock spring)
MUT-II/III diagnosis code

- Detach the (-) terminal of the battery
- Detach the clock spring connector (4-pin) C-204
- Connect the dummy resistor (MB991865) to the resistor harness
- Insert the probe of the resistor harness (MB991866) between terminals 3 and 4, behind clock spring connector C-204 (harness side)

Caution
Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

- Connect the (-) terminal of the battery.
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No.61 or No.62 output?



From previous page

YES (No.61 output)

YES (No.62 output)

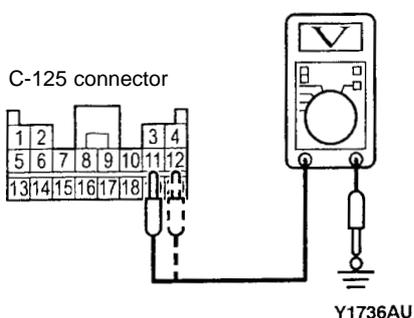
(Checking the circuit between the SRS-ECU and the clock spring)

- Measure at SRS-ECU connector C-125
- Detach the SRS-ECU connector C-125
 - Detach the clock spring connector C-204
 - Ignition switch ON
 - Measure at harness side of C-125 SRS-ECU connector
 - Voltage between 11, 12 and body earth

Caution

Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: 0V



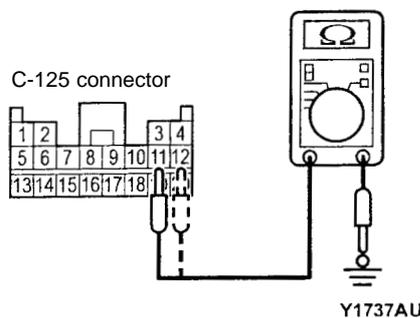
(Checking the circuit between the SRS-ECU and the clock spring)

- Measure at SRS-ECU connector C-125
- Detach the SRS-ECU connector C-125
 - Detach the clock spring connector C-204
 - Measure at harness side of C-125 SRS-ECU connector
 - Connectivity between 11, 12 and body earth

Caution

Do not insert the probe directly into the terminal from the front side of the connector, as this may cause a reduction in contact pressure.

OK: No connectivity



OK

Replace the SRS-ECU

OK

NG

NG

NG

Check connectors: C-125, C-204

Repair

OK

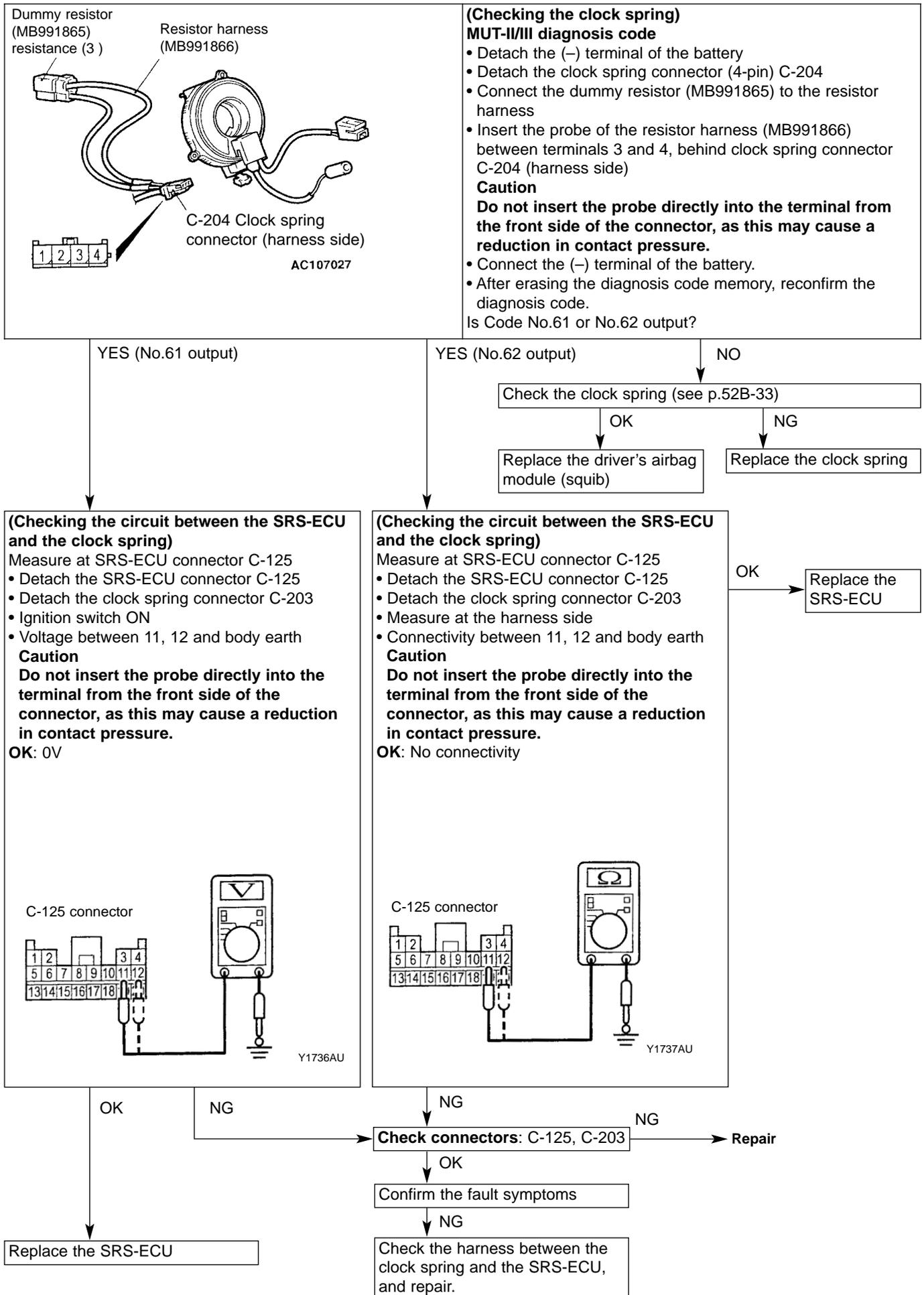
Confirm the fault symptoms

NG

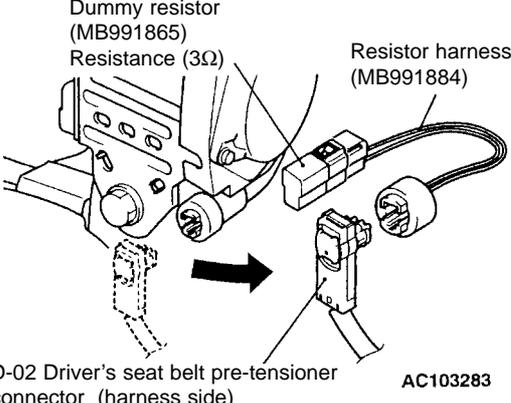
Check the harness between the clock spring and the SRS-ECU, and repair

Replace the SRS-ECU

(Type 2)



<p>Code No. 66 Driver's seat belt pre-tensioner (squib) system (shorted to power supply)</p>	<p>Possible cause</p> <ul style="list-style-type: none"> • Harness or connector fault • Shorting of driver's seat belt pre-tensioner (squib) harness to power supply (Code No. 66) or to earth (Code No. 67) • SRS-ECU fault
<p>Code No. 67 Driver's seat belt pre-tensioner (squib) system (shorted to earth)</p>	
<p>This code is output when the driver's seat belt pre-tensioner (squib) circuit of the SRS-ECU is shorted to the power supply (Code No. 66) or shorted to earth (Code No. 67).</p>	



Dummy resistor (MB991865)
Resistance (3Ω)

Resistor harness (MB991884)

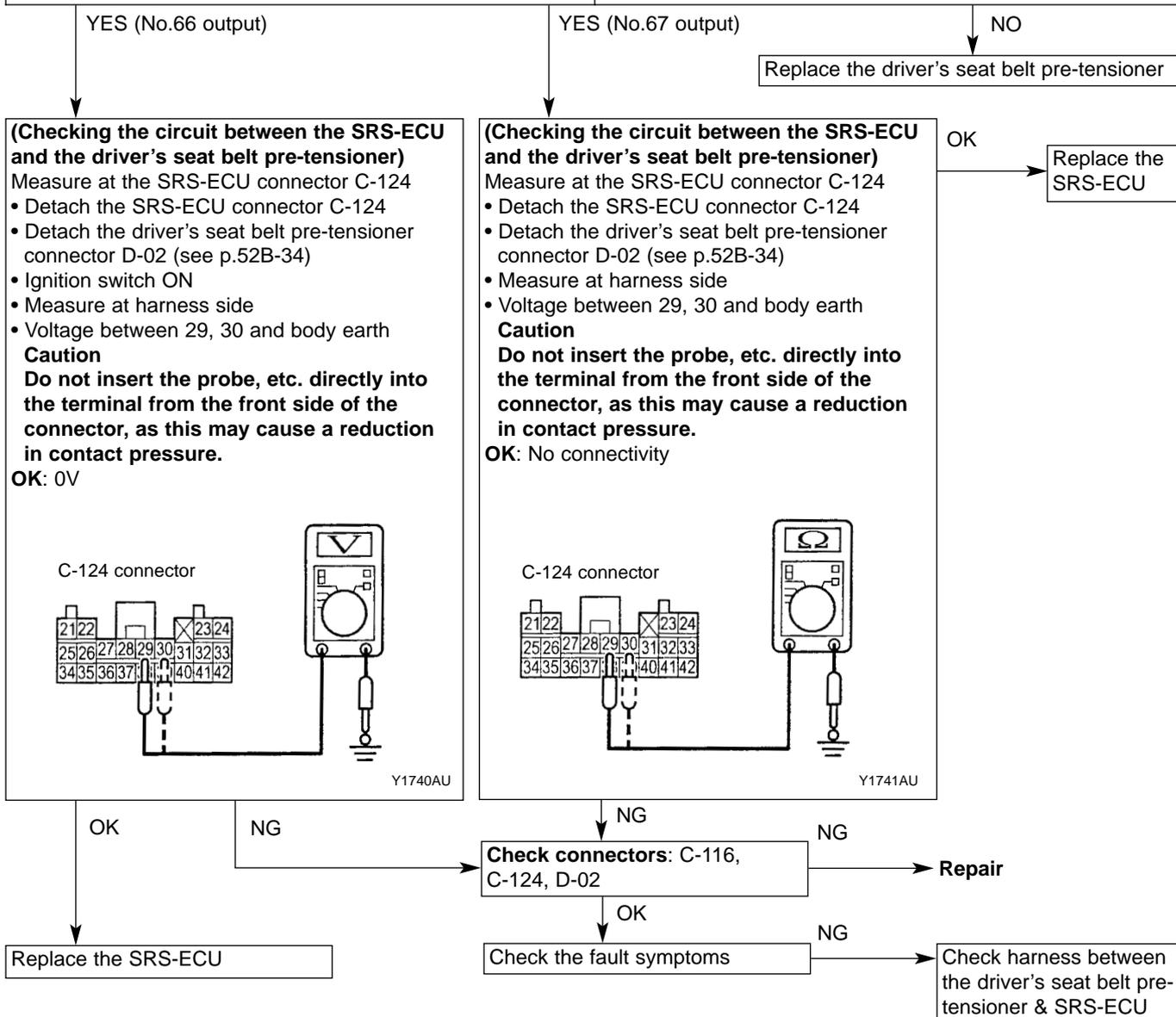
D-02 Driver's seat belt pre-tensioner connector (harness side)

AC103283

(Checking the driver's seat belt pre-tensioner (squib) MUT-II/III diagnosis code)

- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Detach the driver's seat belt pre-tensioner connector D-02 (see p.52B-34)
- Connect the resistor harness (MB991884) to the harness side of the driver's seat belt pre-tensioner connector D-02
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No. 66 or 67 output?



<p>Code No. 68 Front passenger's seat belt pre-tensioner (squib) system (shorted to power supply)</p>	<p>Possible cause</p> <ul style="list-style-type: none"> • Harness or connector fault • Shorting of front passenger's seat belt pre-tensioner (squib) harness to power supply (Code No. 68) or to earth (Code No. 69) • SRS-ECU fault
<p>Code No. 69 Front passenger's seat belt pre-tensioner (squib) system (shorted to earth)</p>	
<p>This code is output when the front passenger's seat belt pre-tensioner (squib) circuit of the SRS-ECU is shorted to the power supply (Code No. 68) or shorted to earth (Code No. 69).</p>	

Dummy resistor (MB991865)
Resistance (3)

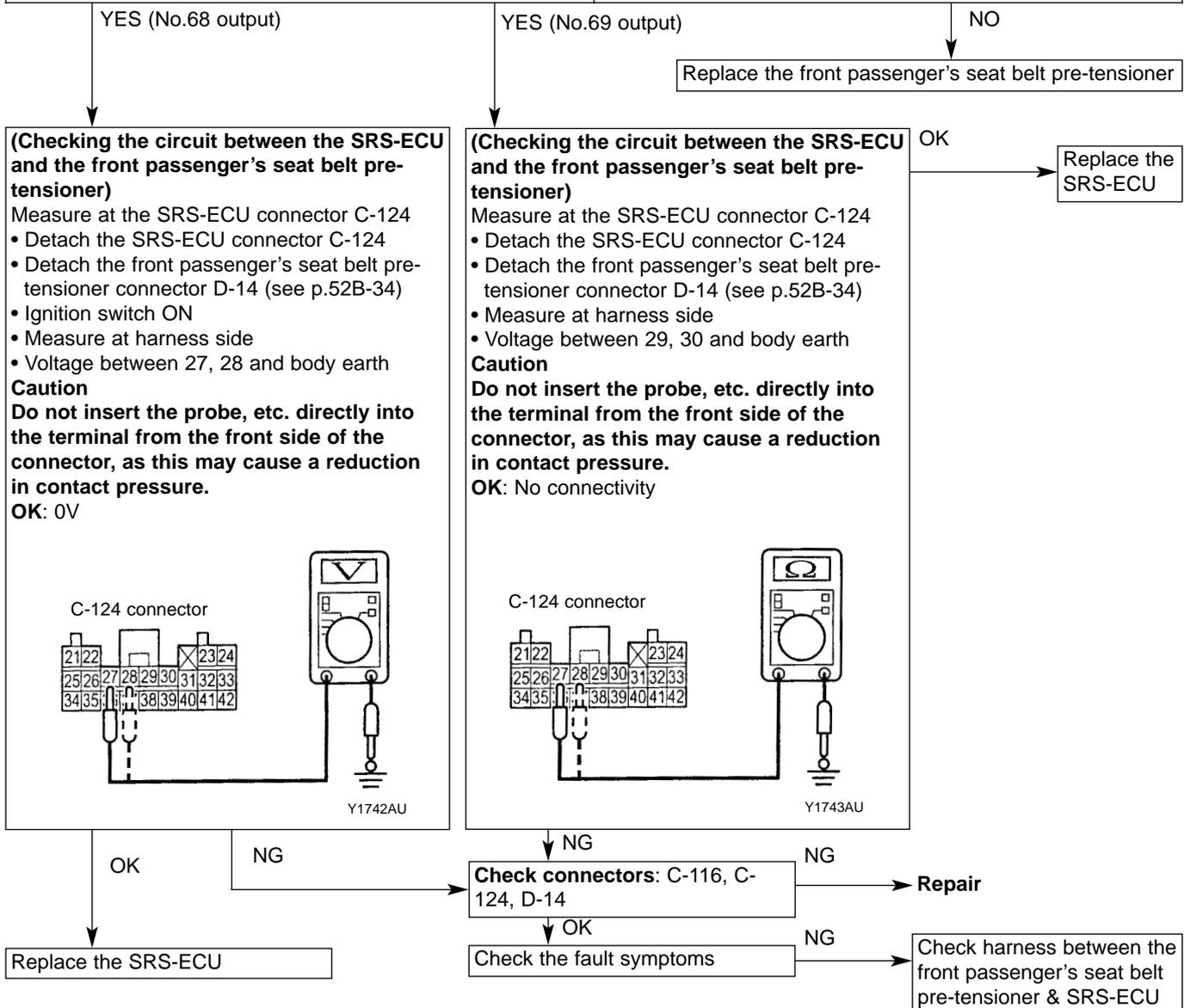
Resistor harness (MB991884)

D-14 Front passenger's seat belt pre-tensioner connector (harness side)

(Checking the front passenger's seat belt pre-tensioner (squib))
MUT-II/III diagnosis code

- Connect the dummy resistor (MB991865) to the resistor harness (MB 991884)
- Detach the front passenger's seat belt pre-tensioner connector D-14 (see p.52B-34)
- Connect the resistor harness (MB991884) to the harness side of the front passenger's seat belt pre-tensioner connector D-14
- Connect the (-) terminal of the battery
- After erasing the diagnosis code memory, reconfirm the diagnosis code.

Is Code No. 68 or 69 output?



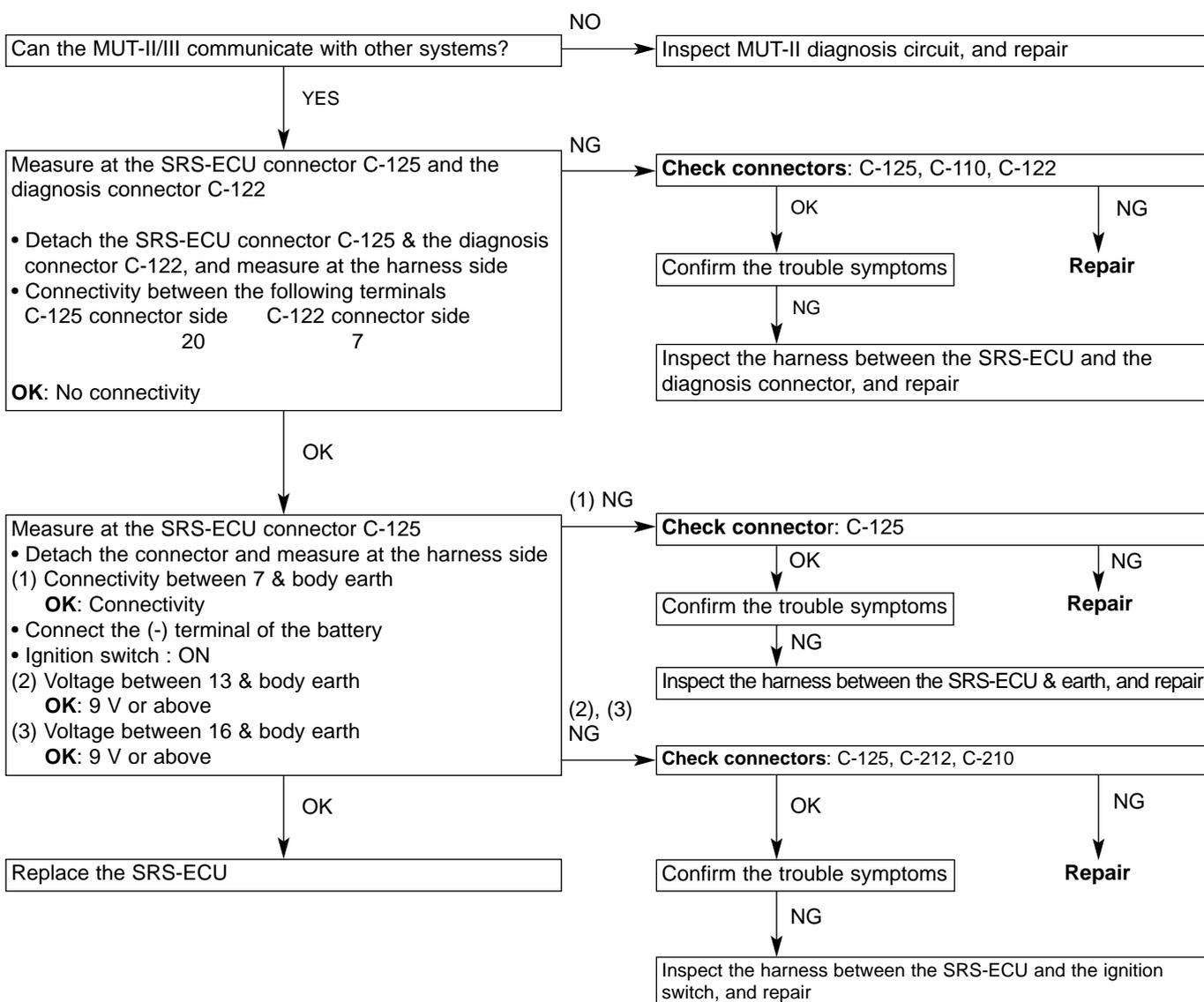
6. Trouble Symptoms Category Chart

Symptom	Symptom Inspection Procedure No.	Reference page
Cannot communicate with MUT-II/III	1	52B-27

7. Trouble Symptoms Inspection Procedures

Inspection Procedure 1

Cannot communicate with MUT-II/III	Possible cause
If there is no communication with any other parts of the system, then there is a high probability that the diagnosis circuit is malfunctioning. If communication is only possible with the SRS airbags, then it may be that there is a disconnection in the SRS-ECU diagnosis output circuit or power supply circuit (including earth circuit).	<ul style="list-style-type: none"> • Harness or connector fault • SRS-ECU fault • Incompatible MUT ROM pack



Post-Collision Diagnosis

The following procedure must be used to check and service the vehicle after a collision, regardless of whether or not the airbags have been deployed. Apart from the items listed below, servicing is the same as that for the previous model.

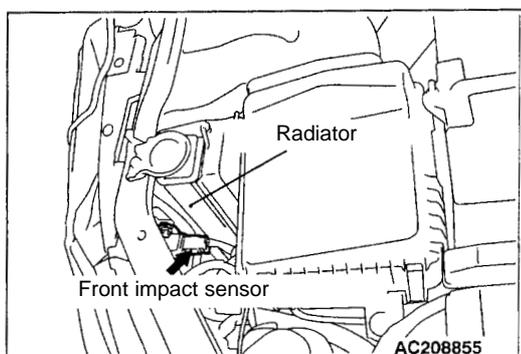
1. Repair procedure

1-1 When the SRS airbags have deployed

- (1) Replace the front impact sensors with new sensors. (See p.52B-30)
- (2) Check for pinching of the harness, damage to the connectors and deformation of the terminals.

1-2 When the airbags have not deployed, in a low-speed collision

- (1) Inspect the front impact sensors.
- (2) If a visual inspection of the front impact sensors reveals any dents, fractures, deformation, or the like, then the sensors must be replaced with new ones.
- (3) For information on removing and reinstalling front impact sensors, see "Servicing SRS airbag and seat belt pre-tensioner components" (p.52B-29-31).



Front impact sensors

- (1) Check for any deformation or corrosion of the headlight support panel
- (2) Check for any dents, fractures or deformations in the front impact sensors.
- (3) Check for any pinching of the centre harness, damage to the connectors, or deformation of the terminals.

Servicing of SRS airbags and seat belt pre-tensioner components

SRS airbag and seat belt pre-tensioner components must be removed and installed by means of the following procedure. (p.52B-29 – 33). Apart from the items described below, servicing is the same as that for the previous model.

Caution

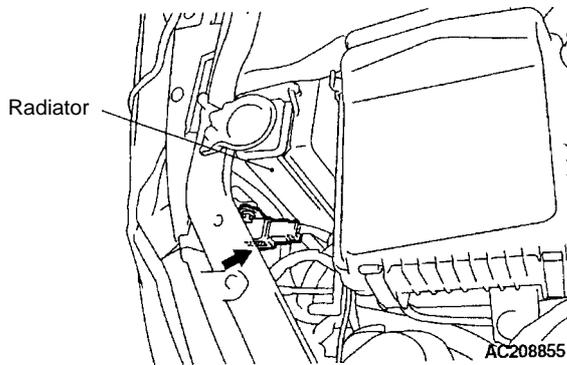
1. If temperatures in excess of 93°C are likely to be reached during painting work, then the front impact sensors must be removed in advance.
2. The removed front impact sensors must be stored in a clean and dry place.

Caution labels

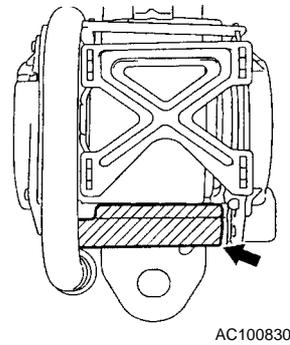
Labels indicating caution items relating to the handling or servicing of SRS airbags are located in the positions indicated below.

If the labels are damaged or soiled, they should be replaced with new labels.

Front impact sensors



Seat belt pre-tensioner



Front Impact Sensors

(Vehicle not fitted with front passenger's seat airbag)

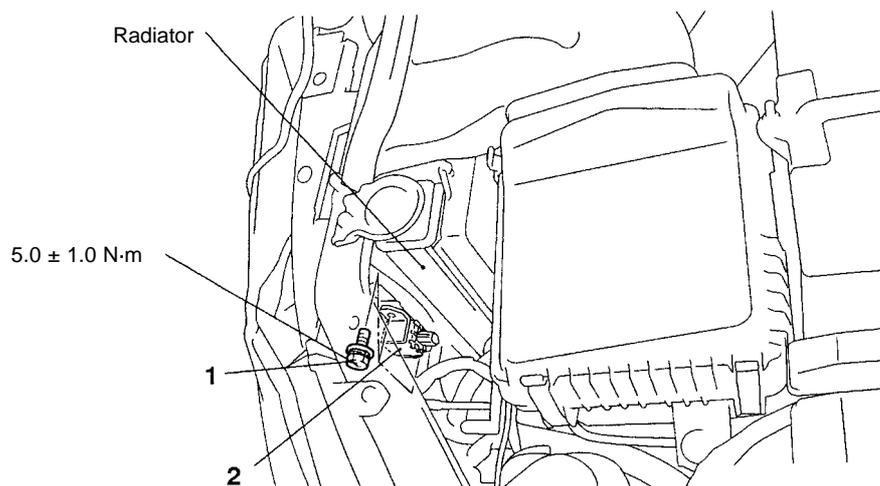
Caution

1. After disconnecting the (-) terminal of the battery, wait for at least 60 seconds before starting work. Isolate the disconnected (-) terminal by winding tape around it.
2. The front impact sensors must never be taken apart or repaired. In the event of a fault, they must be replaced with a new front impact sensor.
3. Handle the front impact sensors with care, and avoid dropping them or subjecting them to vibrations or shocks. If there is any dent, fracture, or deformation, etc. in a front impact sensor, then it must be replaced with a new one.
4. The front impact sensors must always be replaced after the airbags have deployed.

Removal and Installation

Steps prior to removal

- Turn the ignition switch to the LOCK (OFF) position.
- Disconnect the (-) terminal of the battery.



AAC211681

Removal procedure

1. Earth bolt
2. Front impact sensor

Installation procedure

- ▶ A ◀ • Pre-installation check
- ▶ B ◀ 2. Front impact sensor
 1. Earth bolt
 - Connect (-) terminal of battery
- ▶ C ◀ • Post-installation check

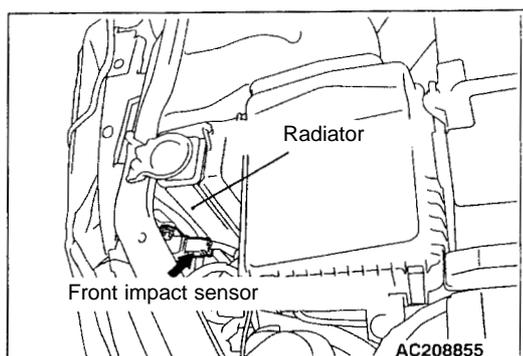
Remarks

The diagram above shows the left-side front impact sensor.

Installation Service Points

▶ A ◀ Pre-installation check

When installing a new front impact sensor, a check must be carried out before installation. (see Check items)

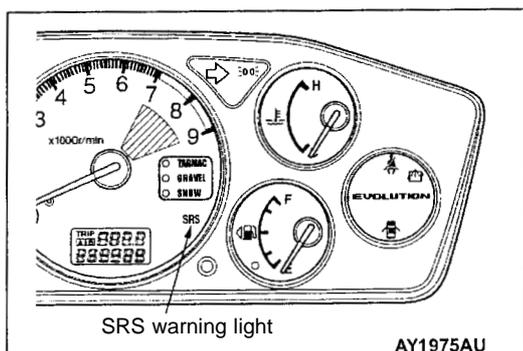


▶ B ◀ Installing front impact sensors

1. Attach the connectors securely.
2. Place the arrow indicated on the front impact sensor label towards the front of the vehicle, and install securely.

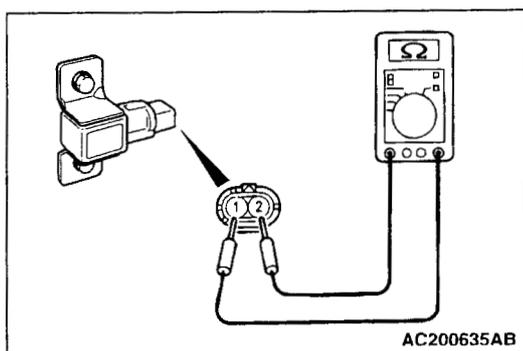
Caution

Insecure or inaccurate installation of a front impact sensor will impede proper operation of the front airbags.



▶ C ◀ Post-installation check

1. Set the ignition switch to the ON position.
2. Verify that the SRS warning light lights up for 6 – 8 seconds and then switches off for at least 5 seconds.
3. If the light does not switch off, then troubleshooting must be performed. (See p.52B-4)



Check procedures

1. Dents, fractures, deformations or corrosion in front impact sensors

Caution

In the event of any dents, fractures, deformations, or the like, the sensor must be replaced with a new one.

2. Checking for shorting or disconnection between front impact sensor terminals

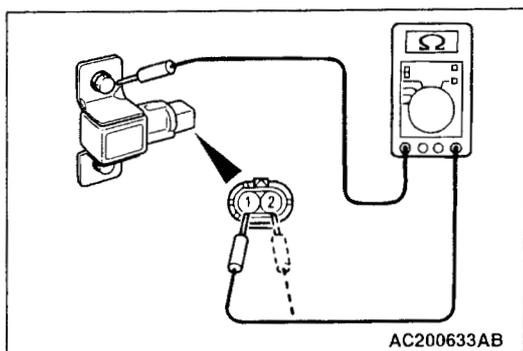
If shorted : 2 or lower

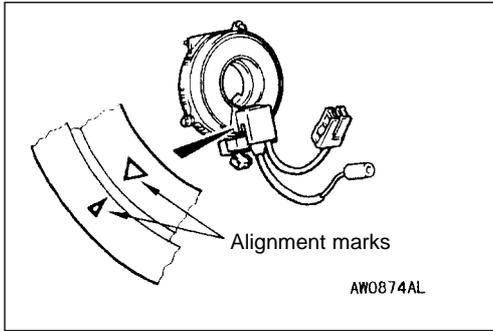
If disconnected : 2M or above

Caution

If the resistance value indicates shorting or a disconnection, then the front impact sensor must be replaced with a new sensor.

3. Checking connectivity between terminal and bracket
If there a current is flowing, then this indicates an insulation fault in the sensor. Replace the sensor with a new one.
4. Deformation and corrosion of headlight support panel





Airbag module and clock spring

Apart from the following items, removal, installation and inspection procedures are the same as those for the previous model.

Installation service points

► B ◀ Installation of clock spring

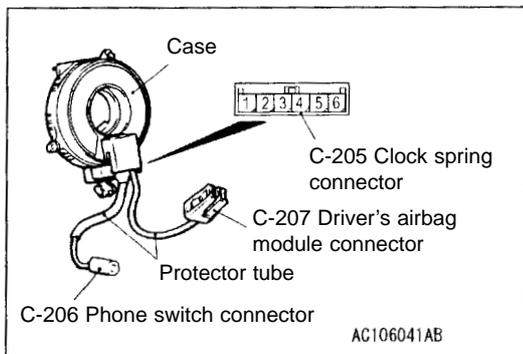
1. Check that the steering wheel is in the straight ahead position.
2. Perform centre alignment of the clock spring as instructed below, and then install the clock spring on the column switch.

Centre alignment of clock spring

Turn the clock spring fully in the clockwise direction, then turn it back in the opposite direction by about 3 3/4 turns, to line up the alignment marks.

Caution

If the clock spring is not centre aligned, then problems may occur, such as jamming of the steering wheel during use, or severing of the internal cables of the clock spring, thus impeding the proper operation of the SRS airbag.



Check procedure

Apart from the following items, servicing is the same as in the previous model.

Clock spring

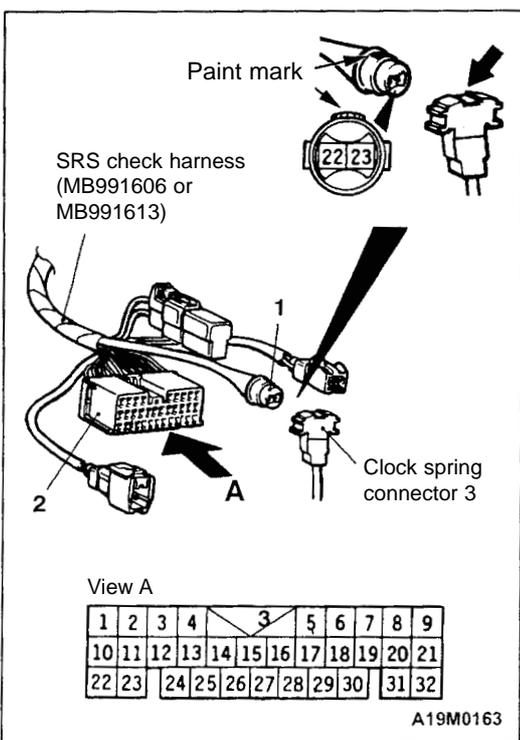
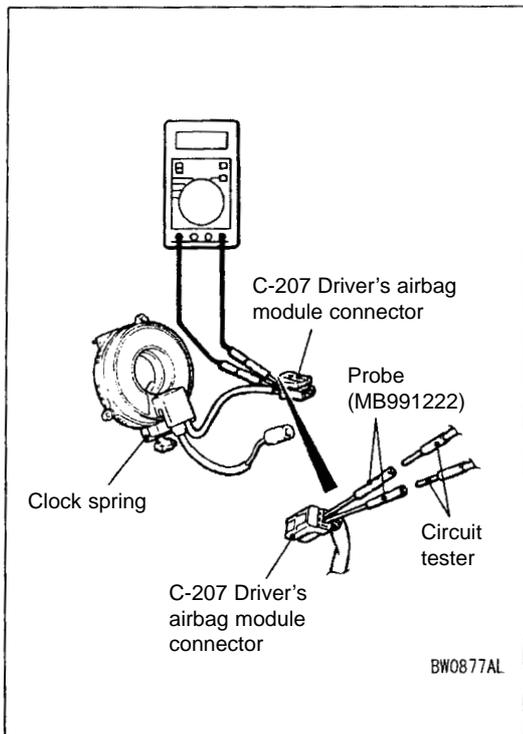
If any of the following checks reveals a non-conformity, then the clock spring must be replaced with a new one.

- (1) Damage to the connectors or protector tube, or deformation of the terminals
- (2) Damage to the case
- (3) Check that there is connectivity between the C-205 clock spring connector terminal 1 and the C-206 phone switch connector.
- (4) (Vehicle with integrated airbag module)
Insert the special probe (MB991222) behind the Driver's airbag module connector C-207.

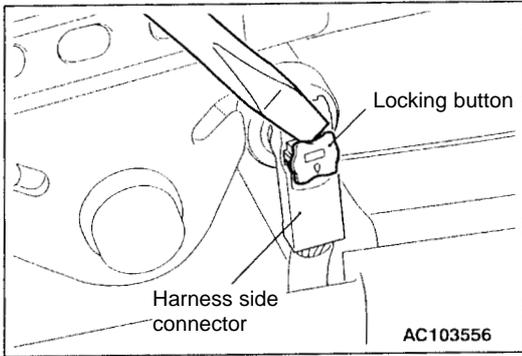
Caution

Do not insert the probe directly into the terminal from the front side of the connector.

- (5) Connect the circuit tester to the special tool, as illustrated in the diagram, and check that there is connectivity between the terminals.



- (4) (Vehicle with separate airbag module)
Align the paint mark of the No.1 connector of the special SRS check harness (MB991606 or MB991613) with the arrow on the No.3 connector of the clock spring. Couple the connectors together.
- (5) (Using SRS check harness (MB199606))
Check that there is connectivity between the terminals 25 – 26 of the No.2 connector of the SRS check harness.
(Using SRS check harness MB991613)
Check that there is connectivity between the terminals 22 – 23 of the No.2 connector of the SRS check harness.



Seat belt Pre-Tensioner

Apart from the following items, servicing is the same as for the previous model.

Removal service points

Removal of seat belt pre-tensioner

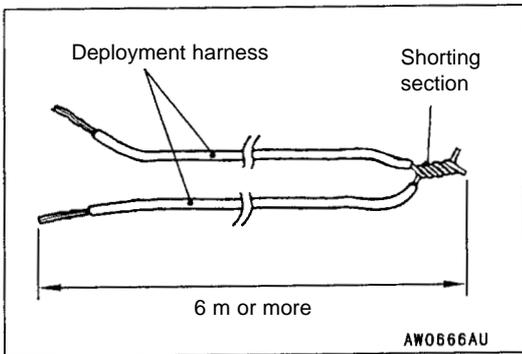
Using a flathead screwdriver, pull the locking button of the harness side connector two steps towards you, release the lock and remove the connector.

Disposal procedures for airbag module and seat belt pre-tensioner

When disposing of an airbag module or seat belt pre-tensioner, or when disposing of a vehicle fitted with airbag modules and seat belt pre-tensioners, the following procedures must be observed so that the airbag module and/or pre-tensioner are actuated before disposal.

Disposal of airbag module

Apart from the deployment harnesses shown below which are used to deploy the driver’s airbag module in the vehicle, servicing information is the same as that for the previous model.

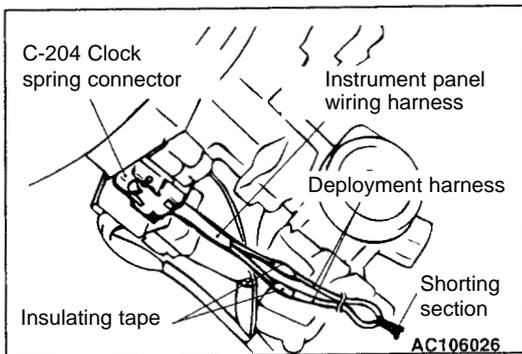


• Deployment harness

- (1) Prepare two deployment harnesses at least 6m long, and connect together (short) the terminal sections on either side. This will prevent accidental deployment of the driver’s airbag due to static electricity, etc.
- (2) Touch the vehicle body with your bare hand to eliminate any accumulated static electricity.

Caution

The procedure above is designed to prevent malfunction due to static electricity, and must be carried out in all cases.



- (3) Detach the clock spring connector C-204.
- (4) Using a clipper, or the like, cut the instrument panel wiring harnesses as illustrated in the diagram.

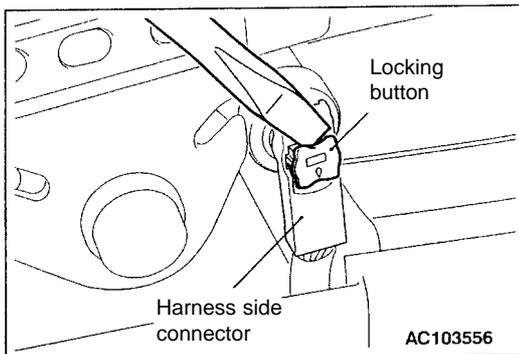
Remarks

In this step, the harnesses should be cut at a sufficient distance from the clock spring connector, taking into account the connection position of the deployment harnesses.

- (5) Connect the deployment harnesses respectively to the two cut harnesses, and seal the connected sections with insulating tape. Trail the deployment harnesses outside of the vehicle.
- (6) Take the connector which is coupled to the deployment harnesses, and connect it to the clock spring connector C-204.

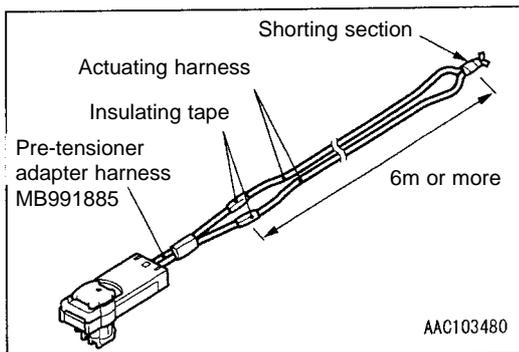
Disposal of seat belt pre-tensioner

Apart from the pre-tensioner connector removal information and the pre-tensioner adapter harness described below, servicing is the same as that for the previous model.



• Removal of pre-tensioner connector

Using a flathead screwdriver, pull the locking button of the harness side connector two steps towards you, release the lock and remove the connector.



• Pre-tensioner adapter harness

When actuating the pre-tensioner, both inside and outside the vehicle, a special tool, the Pre-tensioner adapter harness (MB991885), is used.