



SERVICE BULLETIN

QUALITY INFORMATION ANALYSIS
OVERSEAS SERVICE DEPT. MITSUBISHI MOTORS CORPORATION

SERVICE BULLETIN		No.: MSB-97E52-001	
		Date: 1997-04-30	<Model> <M/Y> ALL MODELS 91-10
Subject: ADDITION OF SRS AIR BAG MAINTENANCE PROCEDURE			
Group: INTERIOR	Draftno: 96-AL-022		
INFORMATION	OVERSEAS SERVICE DEPT	 R. USAMI - MANAGER QUALITY INFORMATION ANALYSIS	

1. Description:

In the SRS air bag troubleshooting, items of cause of trouble in the inspection procedure for each diagnostic trouble code, have been added.

2. Applicable Vehicles:

- '91~'10 SIGMA
- '92~'10 3000GT
- '91~'10 COLT/LANCER
- '93~'10 GALANT
- '92~'10 SPACE RUNNER/SPACE WAGON
- '95~'10 L400
- '91~'10 PAJERO/MONTERO
- '97~'10 L200

3. Applicable Manuals:

Manual	Pub. No.	Language	Page(s)
SIGMA Workshop Manual chassis	PWGE9004-G	(English)	52B-14
	PWGS9005-F	(Spanish)	
	PWGF9006-F	(French)	
	PWGG9007-F	(German)	
	PWGD9008-F	(Dutch)	
	PWGW900-F	(Swedish)	
3000GT Workshop Manual chassis	PWUE9119-D	(English)	52B-12
'97 3000GT Workshop Manual chassis Supplement	PWUE9119-F	(English)	52B-6
COLT/LANCER Workshop Manual chassis	PWME9117-D	(English)	52B-12
	PWMS9118-D	(Spanish)	
	PWMF9119-D	(French)	
	PWMG9120-D	(German)	
	PWMD9121-D	(Dutch)	
	PWMW9122-D	(Swedish)	

Manual	Pub. No.	Language	Page(s)
95'COLT/LANCER Workshop Manual chassis Supplement	PWME9117-E	(English)	52B-7
	PWMS9118-E	(Spanish)	
	PWMF9119-E	(French)	
	PWMG9120-E	(German)	
	PWMD9121-E	(Dutch)	
	PWMW9122-E	(Swedish)	
'97 COLT/LANCER Workshop Manual chassis Supplement	PWME9117-F	(English)	52B-5
	PWMS9118-F	(Spanish)	
	PWMF9119-F	(French)	
	PWMG9120-F	(German)	
	PWMD9121-F	(Dutch)	
	PWMW9122-F	(Swedish)	
'96 COLT/LANCER Workshop Manual chassis	PWME9511	(English)	52B-8
	PWMS9512	(Spanish)	
	PWMF9513	(French)	
	PWMG9514	(German)	
	PWMD9515	(Dutch)	
	PWMW9516	(Swedish)	
GALANT Workshop Manual chassis	PWDE9211-B	(English)	52B-13
	PWDS9212-B	(Spanish)	
	PWDF9213-B	(French)	
	PWDG9214-B	(German)	52B-11
	PWDD9215-B	(Dutch)	52B-13
	PWDW9216-B	(Swedish)	
'96 GALANT Workshop Manual chassis Supplement	PWDE9211-D	(English)	52B-7
	PWDS9212-D	(Spanish)	
	PWDF9213-D	(French)	
	PWDG9214-D	(German)	
	PWDD9215-D	(Dutch)	
	PWDW9216-D	(Swedish)	
SPACE RUNNER/SPACE WAGON Workshop Manual chassis	PWDE9104-D	(English)	52B-9
	PWDS9105-D	(Spanish)	
	PWDF9106-D	(French)	
	PWDG9107-D	(German)	
	PWDD9108-D	(Dutch)	
	PWDW9109-D	(Swedish)	
'95 SPACE RUNNER/SPACE WAGON Workshop Manual chassis Supplement	PWDE9104-E	(English)	52B-8
	PWDS9105-E	(Spanish)	
	PWDF9106-E	(French)	
	PWDG9107-E	(German)	
	PWDD9108-E	(Dutch)	
	PWDW9109-E	(Swedish)	

Manual	Pub.No.	Language	Page(s)
'97 SPACE RUNNER/SPACE WAGON Workshop Manual chassis Supplement	PWDE9104-G	(English)	52B-6
	PWDS9105-G	(Spanish)	
	PWDF9106-G	(French)	
	PWDG9107-G	(German)	
	PWDD9108-G	(Dutch)	
	PWDW9109-G	(Swedish)	
'95 L400 Workshop Manual chassis	PWWE9410	(English)	52B-9
	PWWS9411	(Spanish)	
	PWWG9412	(French)	
	PWWG9413	(German)	
	PWWD9415	(Dutch)	
	PWWW9416	(Swedish)	
'97 L400 Workshop Manual chassis Supplement	PWWE9410-B	(English)	52B-5
	PWWS9411-B	(Spanish)	
	PWWG9412-B	(French)	
	PWWG9413-B	(German)	
	PWWD9415-B	(Dutch)	
	PWWW9416-B	(Swedish)	
PAJERO Workshop Manual chassis	PWJE9086-F	(English)	52B-10
MONTERO Workshop Manual chassis	PWJS9087-F	(Spanish)	
PAJERO Workshop Manual chassis	PWJF9088-F	(French)	
	PWJG9089-F	(German)	
	PWJD9090-F	(Dutch)	
	PWJW9091-F	(Swedish)	
'96 PAJERO Workshop Manual chassis Supplement	PWJE9086-G	(English)	52B-10
'96 MONTERO Workshop Manual chassis Supplement	PWJS9087-G	(Spanish)	
'96 PAJERO Workshop Manual chassis Supplement	PWJF9088-G	(French)	
	PWJG9089-G	(German)	
	PWJD9090-G	(Dutch)	
	PWJW9091-G	(Swedish)	
'97PAJERO Workshop Manual chassis Supplement	PWJE9086-H	(English)	52B-6, 52B-7
'97 MONTERO Workshop Manual chassis Supplement	PWJS9087-H	(Spanish)	
'97 PAJERO Workshop Manual chassis Supplement	PWJF9088-H	(French)	
	PWJG9089-H	(German)	
	PWJD9090-H	(Dutch)	52B-7
	PWJW9091-H	(Swedish)	52B-6, 52B-7
'97 L200 Workshop Manual chassis	PWTE96E1	(English)	52B-8

4. Details:

- SIGMA Workshop Manual chassis, Page 5
- 3000GT Workshop Manual chassis, Page 6
- '97 3000GT Workshop Manual chassis Supplement, Page 7
- COLT/LANCER Workshop Manual chassis, Page 8
- 95'COLT/LANCER Workshop Manual chassis Supplement, Page 9
- '97 COLT/LANCER Workshop Manual chassis Supplement, Page 10
- '96 COLT/LANCER Workshop Manual chassis Supplement, Page 11
- GALANT Workshop Manual chassis, Page 12
- '96 GALANT Workshop Manual chassis Supplement, Page 13
- SPACE RUNNER/SPACE WAGON Workshop Manual chassis, Page 14
- '95 SPACE RUNNER/SPACE WAGON Workshop Manual chassis, Page 15
- '97 SPACE RUNNER/SPACE WAGON Workshop Manual chassis, Page 16
- '95 L400 Workshop Manual chassis, Page 17
- '97 L400 Workshop Manual chassis Supplement, Page 18
- PAJERO Workshop Manual chassis, Page 19
- MONTERO Workshop Manual chassis, Page 19
- '96 PAJERO Workshop Manual chassis Supplement, Page 20
- '96 MONTERO Workshop Manual chassis Supplement, Page 20
- '97 PAJERO Workshop Manual chassis Supplement, Page 21
- '97 MONTERO Workshop Manual chassis Supplement, Page 22
- '97 L200 Workshop Manual chassis, Page 23

TEST 2

SRS WARNING LAMP DOES NOT ILLUMINATE

- (1) Read (and write down) all of the displayed diagnosis codes and service data (fault duration and how many times memories are erased) using the Multi- use Tester <vehicles without front passenger's air bag> or MUT-II <all models>

NOTE

- (1) if the Multi-use Tester or Mut-II displays "CAN'T COMM". check the Multi-use Tester or MUT-II and vehicle side diagnosis connector for poor connections (Refer to P.52B-12.) and perform TEST 4.
- (2) Maximum stored period: 9999 minutes (approximately 7 days)
- (3) Maximum number of times to be stored: 250
- (4) Check diagnosis codes against SELF-DIAGNOSIS QUICK REFERENCE CHART and perform service indicated there.

SELF-DIAGNOSIS QUICK REFERENCE CHART

After carrying out test 1 or 2, use the following table to repair.

Diagnosis code No.	Explanation	Service
-	Normal. The SRS is in good order	-
11	The circuits for the front impact sensor are shorted together, the (-) side of the harness between the air bag module and the SDU is shorted to the earth, or the (+) side of the harness between the front impact sensor and the SDU is shorted to the earth	Perform TEST 5 <Vehicles without front passenger's air bag> L.H. drive vehicles refer to P 52B-22
12	Right or left impact sensor circuit is open, or the wire from the sensor to the SDU is open-circuit.	R.H. drive vehicles: refer to P. 52B-26 <Vehicles with
13	Right and left impact sensor circuits are open or the wires from the sensors to the SDU are open-circuit	Front passenger's air bag> refer to P.52B-32
21	The circuits for the driver's side air bag module (squib) are shorted together other or the circuit is earthed.	Perform TEST 6 <Vehicles without front passenger's air
22	The driver's side air bag module (squib) circuit is open or the wire from the driver's side air bag module to the SDU (clock spring) is open circuit, the harness connection is defective, or the (+) side of the harness between the driver's side air bag module and the SDU is shorted to the earth. Disconnected connector in driver's side air bag module (squib). <Added> Open-circuit in clock spring due to inappropriate neutral position.	bag> L.H. drive vehicles: refer to P52B-35 R.H. drive vehicles refer to P.52B-39 <Vehicles with front passenger's air bag>: refer to P.52B-45
24	The circuits for the front passenger's side air bag module (squib) are shorted together other or the circuit is earthed.	Perform TEST 13 (Refer to P.52B-64)
25	The front passenger's side air bag module (squib) circuit is open or the wire from the front passenger's side air bag module to the SDU (clock spring) is open circuit, the harness connection is defective or the (+) side of the harness between the front passenger's side air bag module and the SDU is shorted to the earth.	

TEST 2	SRS WARNING LAMP DOES NOT ILLUMINATE
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- (1) Read (and write down) all of the displayed diagnosis codes and service data (fault duration and how many times memories are erased) using the Multi-use Tester <1993 models> or MUT-II <all models>

NOTE

- (1) if the Multi-use Tester or Mut-II displays "CAN'T COMM". check the Multi-use Tester or MUT-II and vehicle side diagnosis connector for poor connections (Refer to P.52B-10.) and perform TEST 4.
- (2) Maximum stored period: 9999 minutes (approximately 7 days)
- (3) Maximum number of times to be stored: 250
- (4) Check diagnosis codes against SELF-DIAGNOSIS QUICK REFERENCE CHART and perform service indicated there.

SELF-DIAGNOSIS QUICK REFERENCE CHART

After carrying out test 1 or 2, use the following table to repair.

Diagnosis code No.	Explanation	Service
-	Normal. The SRS is in good order	-
11	The circuits for the front impact sensor are shorted together, the (-) side of the harness between the air bag module and the SDU is shorted to the earth, or the (+) side of the harness between the front impact sensor and the SDU is shorted to the earth	Perform TEST 5 <Vehicles without front passenger's air bag> refer to P 52B-20 <Vehicles with Front passenger's air bag> refer to P.52B-24
12	Right or left impact sensor circuit is open, or the wire from the sensor to the SDU is open-circuit.	
13	Right and left impact sensor circuits are open or the wires from the sensors to the SDU are open-circuit	
21	The circuits for the driver's side air bag module (squib) are shorted together other or the circuit is earthed.	Perform TEST 6 <Vehicles without front passenger's air
22	The driver's side air bag module (squib) circuit is open or the wire from the driver's side air bag module to the SDU (clock spring) is open circuit, the harness connection is defective, or the (+) side of the harness between the driver's side air bag module and the SDU is shorted to the earth. Disconnected connector in driver's side air bag module (squib). Open-circuit in clock spring due to inappropriate neutral position.	bag> refer to P52B-27 <Vehicles with front passenger's air bag>: refer to P.52B-31
24	The circuits for the front passenger's side air bag module (squib) are shorted together other or the circuit is earthed.	Perform TEST 13 (Refer to P.52B-47)
25	The front passenger's side air bag module (squib) circuit is open or the wire from the front passenger's side air bag module to the SDU (clock spring) is open circuit, the harness connection is defective or the (+) side of the harness between the front passenger's side air bag module and the SDU is shorted to the earth.	

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

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

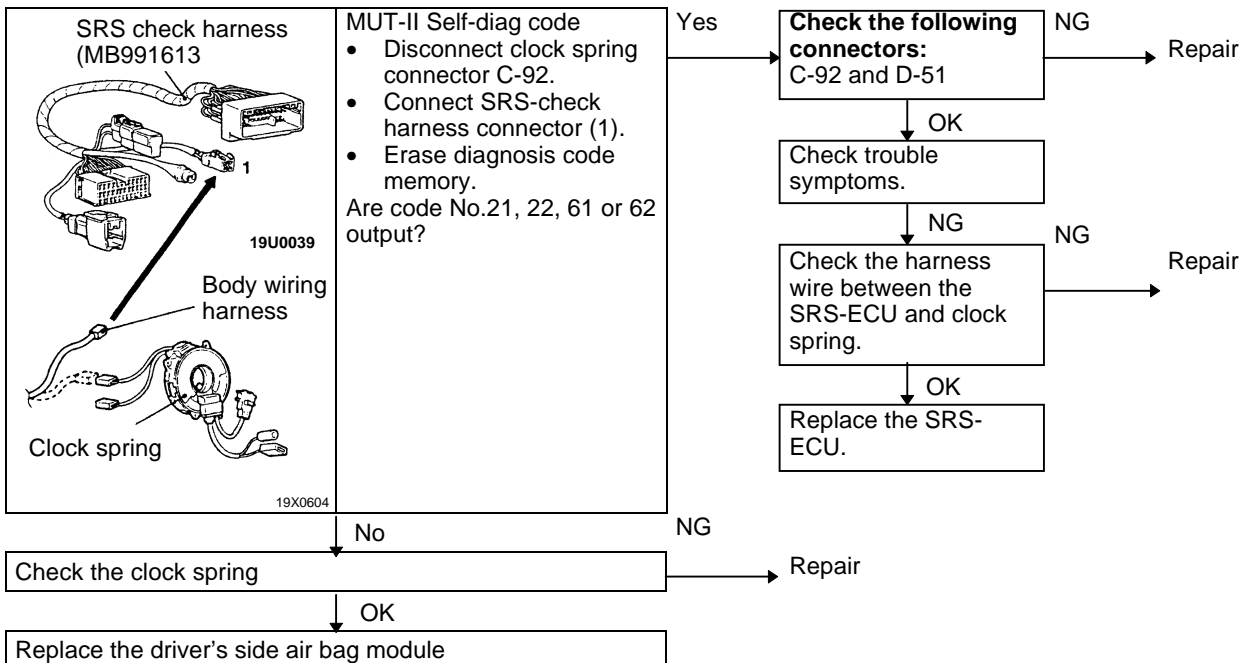
Replace the SRS-ECU

Code No. 21, 22, 61 or 62 Driver's side air bag module (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's side air bag module (squib). The trouble causes for each diagnosis code No. Are as follows.	<ul style="list-style-type: none"> Malfunction of clock spring Open-circuit in clock spring due to inappropriate neutral position Malfunction of wiring harness or connectors Malfunction of driver's side air bag module (squib) Malfunction of SRS-ECU

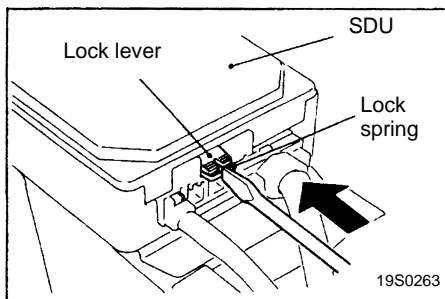
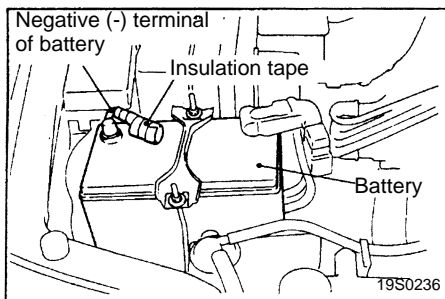
<Added>

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> Short in driver's side air bag module (squib) or harness short Short in clock spring
22	<ul style="list-style-type: none"> Open circuit in driver's side air bag module (squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact
61	<ul style="list-style-type: none"> Short in driver's side air bag module (squib) harness leading to the power supply
62	<ul style="list-style-type: none"> Short in driver's side air bag module (squib) harness leading to the earth

<Added>



Code No. 21, 22	Air bag module (squib) system	Probable cause of trouble
(Explanation)	These codes are output when the resistance value between the air bag module (squib) terminals in the SDU is out of the normal range. The probable causes of trouble associated with the respective code Nos. Are as follows.	<ul style="list-style-type: none"> Defective clock spring Open circuit in clock spring due to inappropriate neutral position Defective harness, connector Defective air bag module (squib) Defective SDU
Code No.	Probable cause of trouble	
21	<ul style="list-style-type: none"> Air bag module (squib) or harness short-circuited Clock spring short-circuited 	
22	<ul style="list-style-type: none"> Air bag module (squib) or harness open-circuited Clock spring open-circuited Disconnected connector in the driver's side air bag module (squib) Open-circuit in clock spring due to inappropriate neutral position Connector in loose contact 	<p><Added></p>



Caution

1. After the ignition switch has been placed at the LOCK position and the negative (-) terminal of the battery has been disconnected, wait for more than 60 seconds before starting work. Wind a tape around the disconnected (-) terminal for insulation. (Refer to P.52B-4, No. 5)
2. Do not attempt to measure the air bag module (squib) circuit resistance. Use of a tester in measuring the circuit resistance will supply current to the squib, or erroneous deployment due to static electricity could cause serious injury.
3. To unlock the SDU connector, place a flat-tipped screwdriver against the lock spring at the lock lever notch and push the spring toward the unit. In this case, do not force the lock lever up.

INSPECTION PROCEDURE FOR DIAGNOSIS CODES

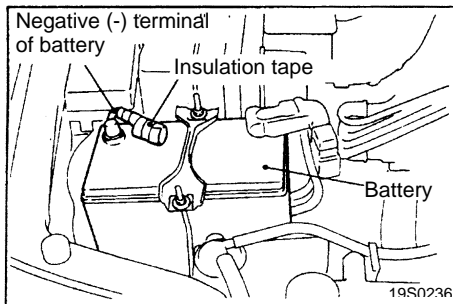
Code No. 21,22 Air bag module (Driver's side squib) system	Probable cause of trouble
(Explanation) These codes are output when the resistance value between the air bag module (squib) terminals in the SDU is out of the normal range. The probable causes of trouble associated with the respective codes Nos. are as follows. <Refer to the chart 1.>	Defective clock spring
	Open-circuit in clock spring due to inappropriate neutral position
	Defective harness, connector
	Defective air bag module (driver's side squib)
	Defective SDU

<Added>

CHART 1

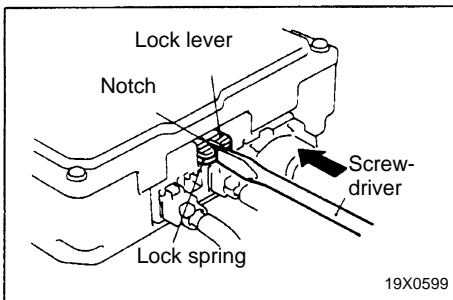
Code No.	Probable cause of trouble
21	<ul style="list-style-type: none"> Air bag module (driver's side squib) or harness short-circuited Clock spring short-circuited
22	<ul style="list-style-type: none"> Air bag module (driver's side squib) or harness open-circuited Clock spring open-circuited Disconnected connector in the driver's side air bag module (squib) Open-circuit in clock spring due to inappropriate neutral position Connector in loose contact

<Added>



Caution

1. After the ignition switch has been placed at the LOCK position and the negative (-) terminal of the battery has been disconnected, wait for more than 60 seconds before starting work. Wind a tape around the disconnected (-) terminal for insulation. (Refer to P.52B-4, No. 5)
2. Do not attempt to measure the air bag module (squib) circuit resistance. Use of a tester in measuring the circuit resistance will supply current to the squib, or erroneous deployment due to static electricity could cause serious injury
3. To unlock the SDU connector, place a flat-tipped screwdriver against the lock spring at the lock lever notch and push the spring toward the unit. In this case, do not force the lock lever up.



TROUBLESHOOTING

INSPECTION CHART FOR DIAGNOSIS CODES

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

Code No.	Diagnosis item		Reference page
14	Analog G-sensor system in the SRS-ECU		-
15, 16	Safing G-sensor system in the SRS-ECU		-
21, 22, 61, 62	Driver's side air bag module (squib) system		52B-5
24, 25, 64, 65	Front passenger's side air bag module (squib) system		52B-6
31, 32	SRS-ECU capacitor system		-
34*	Connector lock system		-
35	SRS-ECU capacitor system		-
41*	IG ₁ (A) power circuit system		52B-7
42*	IG ₁ (B) power circuit system		52B-7
43	SRS warning lamp drive circuit system	Lamp does not illuminate. *	52B-7
		Lamp does not switch off.	-
44	SRS warning lamp drive circuit system		-
45	SRS-ECU non volatile memory (EEPROM) and A/D converter system		-
51, 52	Driver's side air bag module (squib ignition drive circuit) system		-
54, 55	Front passenger's side sir bag module (squib ignition drive circuit) system		-

NOTE

- (1) *: if the vehicle condition return to normal, 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 DIAGNOSIS CODE

Code No. 21,22, 61 or 62 Driver's side air bag module (squib) system	Probable cause
<p>These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's side air bag module (squib). The trouble causes for each diagnosis code No. are as follows.</p> <p style="text-align: right;"><Added></p>	<ul style="list-style-type: none"> • Malfunction of clock spring • Open-circuit in clock spring due to inappropriate neutral position. • Malfunction of wiring harnesses or connectors • Malfunction of driver's side air bag module (squib) • Malfunction of SRS-ECU

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> • Short in driver's side air bag module (squib) or harness short • Short in clock spring
22	<ul style="list-style-type: none"> • Open circuit in driver's side air bag module (squib) or open harness • Open circuit in clock spring • Disconnected connector in the driver's side air bag module (squib). • Open circuit in clock spring due to inappropriate neutral position. • Malfunction of connector contact <p style="text-align: right;"><Added></p>
61	<ul style="list-style-type: none"> • Short in driver's side air bag module (squib) harness leading to the power supply
62	<ul style="list-style-type: none"> • Short in driver's side air bag module (squib) harness leading to the earth

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

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

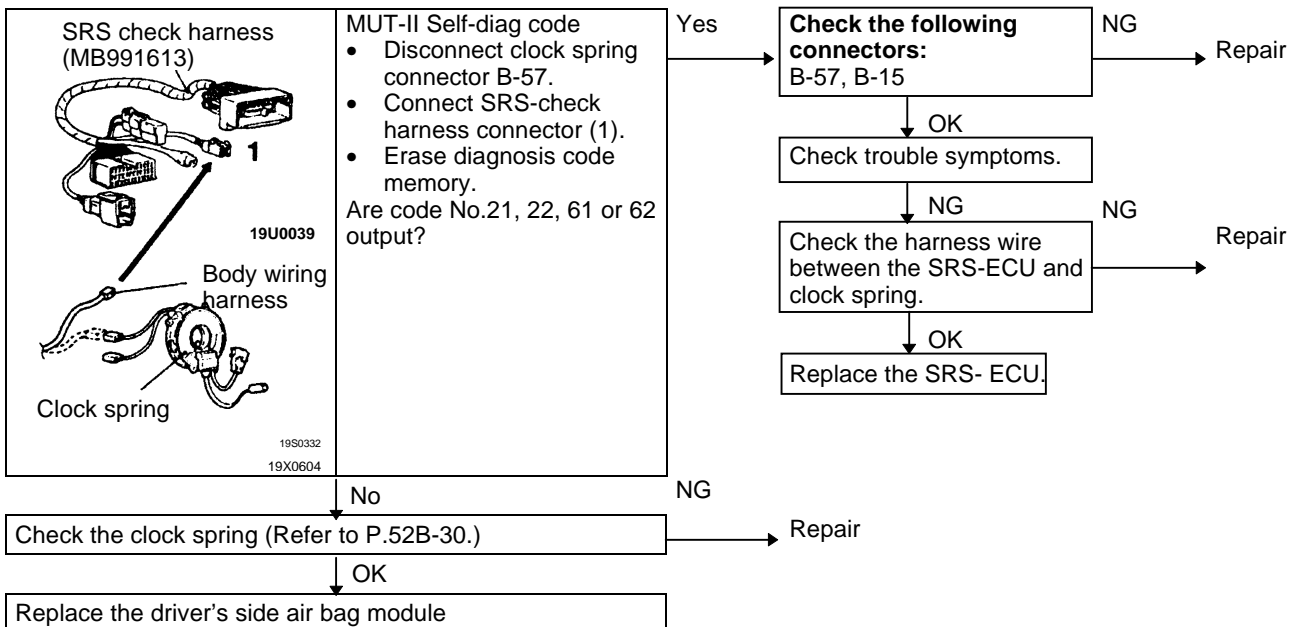
Replace the SRS-ECU

Code No. 21, 22, 61 or 62 Driver's side air bag module (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's side air bag module (squib). The trouble causes for each diagnosis code No. are as follows.	<ul style="list-style-type: none"> Malfunction of clock spring Open-circuit in clock spring due to inappropriate neutral position Malfunction of wiring harness or connectors Malfunction of driver's side air bag module (squib) Malfunction of SRS-ECU

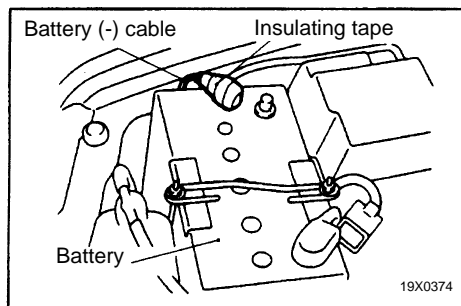
<Added>

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> Short in driver's side air bag module (squib) or harness short Short in clock spring
22	<ul style="list-style-type: none"> Open circuit in driver's side air bag module (squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact
61	Short in driver's side air bag module (squib) harness leading to the power supply
62	Short in driver's side air bag module (squib) harness leading to the earth

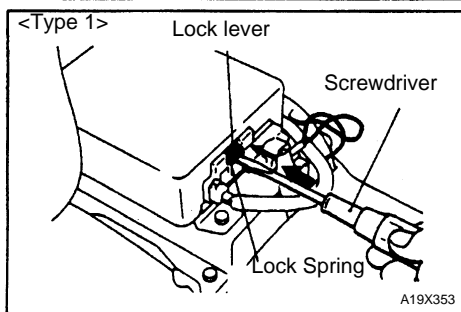
<Added>



Code No. 21 or 22	Air bag module (driver's side squib) system	Probable cause																
(Comment) (1) These codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each code No. are as follow		<ul style="list-style-type: none">• Malfunction of clock spring• Open circuit in clock spring due to inappropriate neutral position• Malfunction of harness or connectors• Malfunction of air bag module (driver's side squib)• Malfunction of SDU																
Code No.	Trouble Symptom																	
21	<ul style="list-style-type: none">• Short in air bag module (driver's side squib) or harness short• Short in clock spring• Short in air bag module (driver's side squib) or front impact sensor harnesses leading to the power supply																	
22	<ul style="list-style-type: none">• Open circuit in air bag module (driver's side squib) or open harness• Disconnected connector in the driver's side air bag module (squib)• Open-circuit in clock spring due to inappropriate neutral position• Malfunction of connector contact• Short in air bag module (driver's side 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 Nor. 11, 12 and 13), but sometimes only one should also be inspected at the same time. The relationships between the codes are as follows.																		
<table><tr><th colspan="2" rowspan="2"></th><th colspan="3">Front impact sensor</th></tr><tr><th>Short</th><th>Open circuit (1 sensor)</th><th>Open circuit (2 sensors)</th></tr><tr><td rowspan="2">Air bag module (driver's side squib)</td><td>Short</td><td>11 or 21</td><td>12 or 21</td><td>13 or 21</td></tr><tr><td>Open circuit</td><td>11 or 22</td><td>12 or 22</td><td>13 or 22</td></tr></table>				Front impact sensor			Short	Open circuit (1 sensor)	Open circuit (2 sensors)	Air bag module (driver's side squib)	Short	11 or 21	12 or 21	13 or 21	Open circuit	11 or 22	12 or 22	13 or 22
				Front impact sensor														
		Short	Open circuit (1 sensor)	Open circuit (2 sensors)														
Air bag module (driver's side squib)	Short	11 or 21	12 or 21	13 or 21														
	Open circuit	11 or 22	12 or 22	13 or 22														

**Caution**

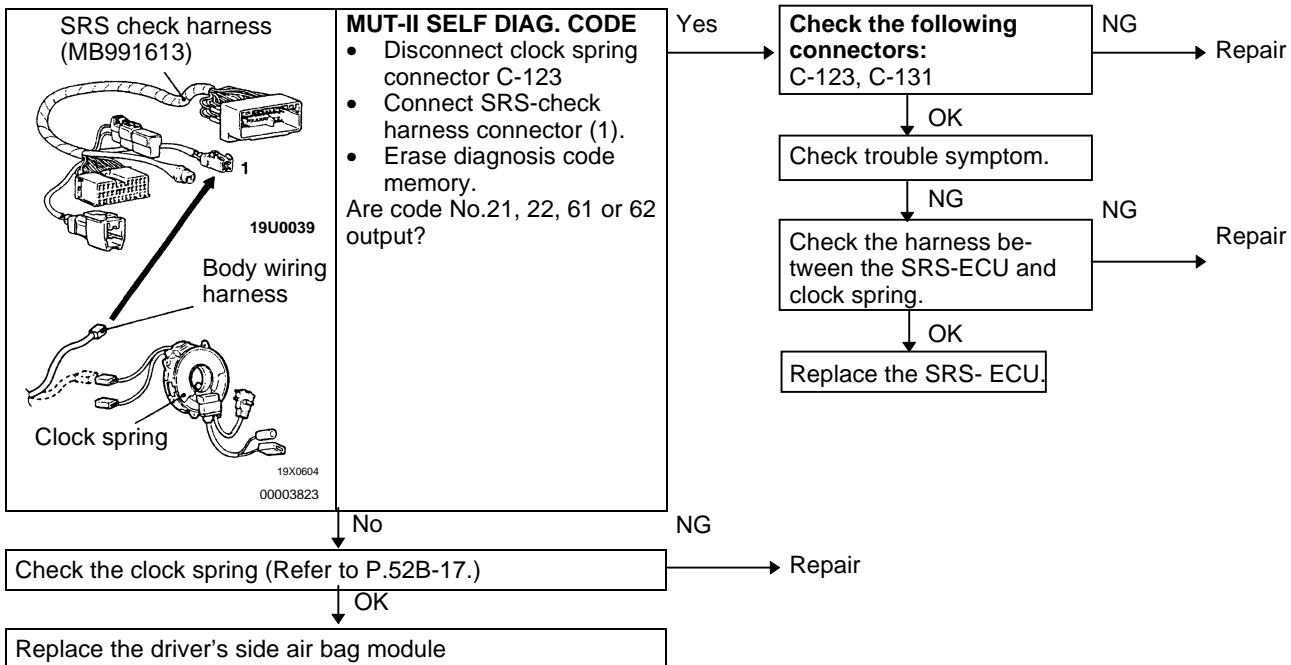
1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal. Wait at least 60 seconds after disconnecting the battery cable before doing any further work. (Refer to P. 52B-6)



2. Remove the SDU connector lock by the following procedure.
 If there is no notch in the connector lock lever (Type 1).
 Place a (-) screwdriver against the lock spring (metal section) of the connector lock lever as shown in the illustration, and push the spring horizontally toward the inside of the unit.
 (1) Do not use excessive force to raise the lock lever.
 (2) Do not insert the screwdriver into the gap between the lock lever and the lock spring.

Code No. 21,22 Air bag module (Driver's side squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each code No. are as follows	<ul style="list-style-type: none"> • Malfunction of clock spring • Open-circuit in clock spring due to inappropriate neutral position • Malfunction of harnesses or connectors • Malfunction of air bag module (driver's side squib) • Malfunction of SRS-ECU

Code No.	Trouble symptom
21	<ul style="list-style-type: none"> • Short in air bag module (driver's side squib) or harness short • Short in clock spring
22	<ul style="list-style-type: none"> • Open circuit in air bag module (driver's side squib) or open harness • Open circuit in clock spring • Disconnected connector in the driver's side air bag module (squib). <Added> • Open circuit in clock spring due to inappropriate neutral position. • Malfunction of connector contact
61	• Short in air bag module (driver's side squib) harness leading to the power supply
62	• Short in air bag module (driver's side squib) harness leading to the earth



TEST 2	SRS WARNING LAMP DOES NOT ILLUMINATE
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- (1) Read (and write down) all of the displayed diagnosis codes and service data (fault duration and how many times memories are erased) using the MUT or MUT-II

NOTE

- (1) if the MUT or MUT-II displays "CAN'T COMM". check the MUT or MUT-II and vehicle side diagnosis connector for poor connections (Refer to P.52B-7.) and perform TEST 6.
- (2) Maximum stored period: 9999 minutes (approximately 7 days)
- (3) Maximum number of times to be stored: 250
- (4) Check diagnosis codes against SELF-DIAGNOSIS QUICK REFERENCE CHART and perform service indicated there.

SELF-DIAGNOSIS QUICK REFERENCE CHART

After carrying out test 2 or 3, use the following table to repair.

Diagnosis code No.	Explanation	Service
-	Normal. The SRS is in good order	-
14	Analog G sensor output signal is abnormal Analog G sensor does not function or its characteristic is abnormal	Replace the SDU (Refer to P.52B-34.)
15	The circuits for the safing impact sensor are shorted together or the circuit is earthed	
16	The safing input sensor circuit is open or the wire from the air module to the SDU is open circuit	
21	The circuits for the air bag module (squib) are shorted together other or the circuit is earthed.	Perform TEST 7
22	The air bag module (squib) circuit is open or the wire from the air bag module to the SDU (clock spring) is open circuit, the harness connection is defective, or the (+) side of the harness between the air bag module and the SDU is shorted to the earth. <div>Disconnected connector in driver's side air bag module (squib). Open-circuit in clock spring due to inappropriate neutral position</div> <Added>	
31	The DC/DC converter (integrated in the SDU) terminal voltage is higher than the specified value for 5 seconds.	Replace the SDU (Refer to P.52B-34.)

INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSTIC TROUBLE

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

The cause is probably a malfunction of the analog G-sensor inside the SDU, so replace the SDU

Code No. 15 or 16 Safing G-sensor system in the SDU	Probable cause
(Comment) This code is output if the resistance between the terminals of the safing G sensor inside the SDU is different from normal. The trouble causes for each diagnosis code No. are as follows	<ul style="list-style-type: none"> • Malfunction of SDU

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

Code No. 21 or 22 Driver's side Air bag module (squib) system	Probable cause
(Comment) These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each code No. are as follows	<ul style="list-style-type: none"> • Malfunction of clock spring • Open-circuit in clock spring due to inappropriate neutral position • Malfunction of harnesses or connectors • Malfunction of air bag module (driver's side squib) • Malfunction of SRS-ECU

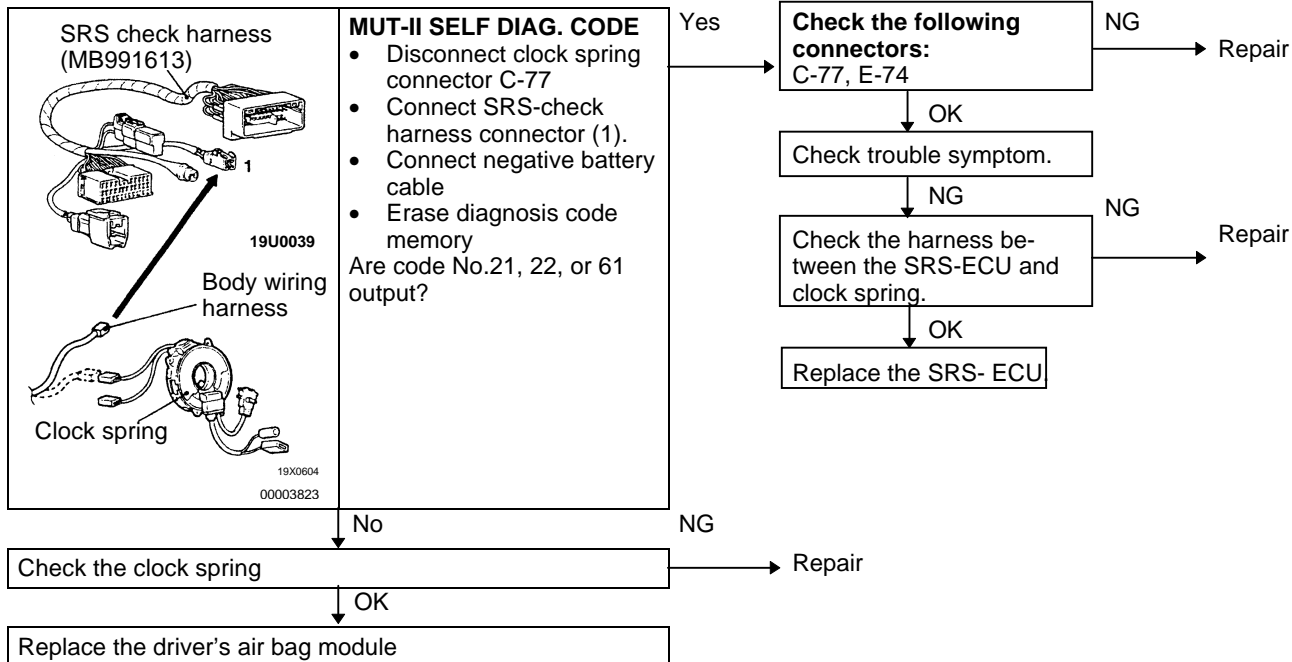
<Added>

Code No.	Trouble Symptom
21	<ul style="list-style-type: none"> • Short in air bag module (driver's side squib) or harness short • Short in clock spring
22	<ul style="list-style-type: none"> • Open circuit in Air bag module (driver's side squib) or harness • Open circuit in clock spring • Disconnected connector in the driver's side air bag module (squib) • Open-circuit in clock spring due to inappropriate neutral position • Malfunction of connector contact

<Added>

Code No. 21,22, or 61 Air bag module (driver's side squib) system	Probable cause
<p>These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each diagnosis code No. are as follows.</p> <p style="text-align: right;"><Added></p>	<ul style="list-style-type: none"> • Malfunction of clock spring • Open-circuit in clock spring due to inappropriate neutral position. • Malfunction of harnesses or connectors • Malfunction of air bag module (driver's side squib) • Malfunction of SRS-ECU

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> • Short in air bag module (driver's side squib) or harness short • Short in clock spring
22	<ul style="list-style-type: none"> • Open circuit in air bag module (driver's side squib) or open harness • Open circuit in clock spring • Disconnected connector in the driver's side air bag module (squib). • Open circuit in clock spring due to inappropriate neutral position. • Malfunction of connector contact <p style="text-align: right;"><Added></p>
61	<ul style="list-style-type: none"> • Short in air bag module (driver's side squib) harness leading to the power supply



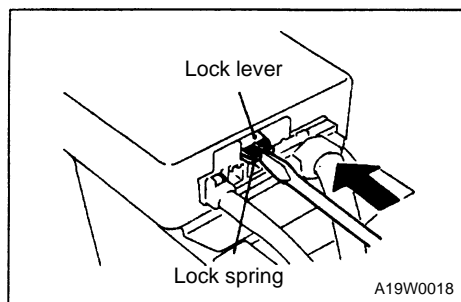
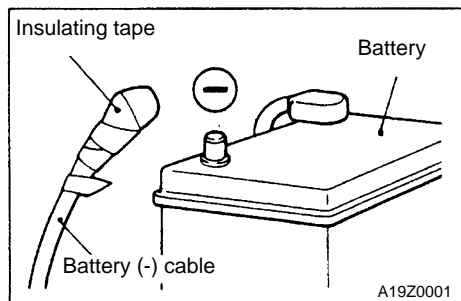
Code No. 21 or 22 Air bag module (Driver's side squib) system	Probable cause
<p>(Comment)</p> <p>(1) These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each code No. are as follows</p> <p>(2) 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 relationship between the codes are as follows. (Refer to chart 2.)</p>	<ul style="list-style-type: none"> Malfunction of clock spring Open-circuit in clock spring due to inappropriate neutral position Malfunction of harnesses or connectors Malfunction of air bag module (driver's side squib) Malfunction of SDU <p style="text-align: right;"><Added></p>

Chart 1

Code No.	Trouble symptom
21	<ul style="list-style-type: none"> Short in air bag module (driver's side squib) or harness short Short in clock spring
22	<ul style="list-style-type: none"> Open circuit in air bag module (driver's side squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact <p style="text-align: right;"><Added></p>

Chart 2

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

**Caution**

- After the ignition switch has been placed at the LOCK position and the negative (-) terminal of the battery has been disconnected, wait for more than 60 seconds before starting work. Wind a tape around the disconnected (-) terminal for insulation. (Refer to P.52B-3, No.5)
- do not attempt to measure the air bag module (squib) circuit resistance. Use of a tester in measuring the circuit resistance will supply current to the squib, or erroneous deployment due to static electricity could cause serious injury
- To unlock the SDU connector, place a flat-tipped screwdriver against the lock spring at the lock lever notch and push the spring toward the unit. In this case, do not force the lock lever up.

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

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

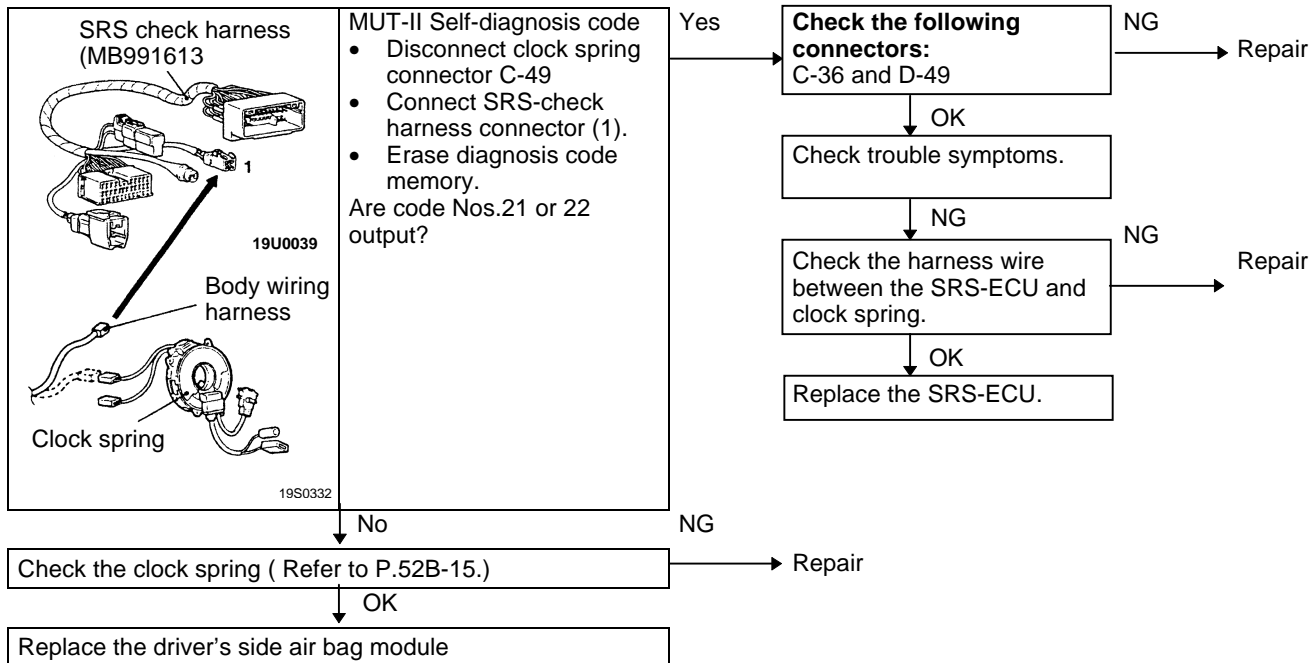
Replace the SRS-ECU

Code No. 21 or 22 Driver's side air bag module (squib) system	Probable cause
These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's side air bag module (squib). The trouble causes for each diagnosis code No. Are as follows.	<ul style="list-style-type: none"> Malfunction of clock spring Open-circuit in clock spring due to inappropriate neutral position Malfunction of wiring harness or connectors Malfunction of driver's side air bag module (squib) Malfunction of SRS-ECU

<Added>

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> Short in driver's side air bag module (squib) or harness short Short in clock spring
22	<ul style="list-style-type: none"> Open circuit in driver's side air bag module (squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact

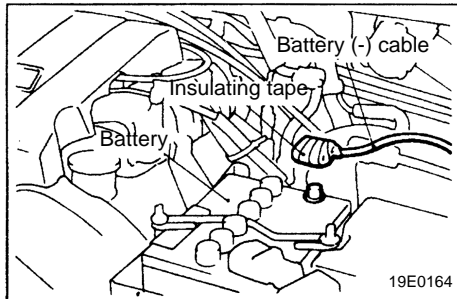
<Added>



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 air bag module (squib). The trouble causes for each code No. are as follow		<ul style="list-style-type: none"> • Malfunction of clock spring • Open circuit in clock spring due to inappropriate neutral position • Malfunction of harness or connectors • Malfunction of air bag module (squib) • Malfunction of SDU
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 	<div style="text-align: right;"><Added></div>
22	<ul style="list-style-type: none"> • Open circuit in air bag module (driver's side squib) or open harness • Open circuit in clock spring • Disconnected connector in the driver's side air bag module (squib) • Open-circuit in clock spring due to inappropriate neutral position • 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 Nor. 11, 12 and 13), but sometimes only one 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

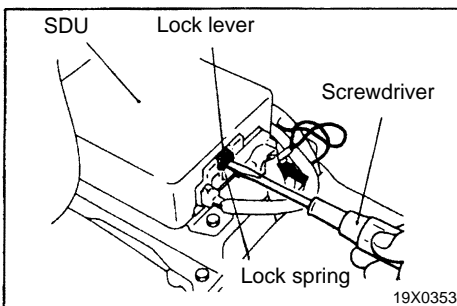


1. Turn the ignition key to the "LOCK" position, disconnect the negative battery cable and tape the terminal.

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

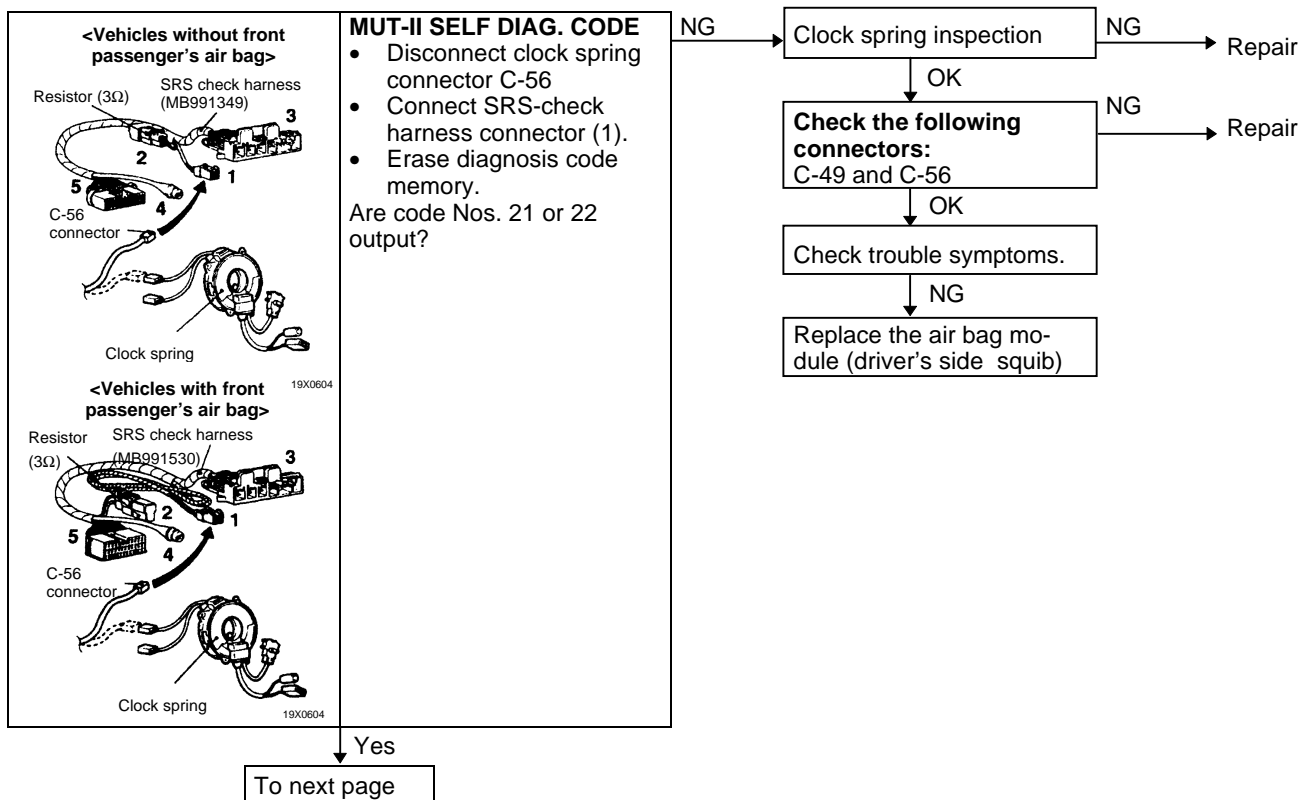
1. Do not use excessive force to raise the lock lever (green)
2. do not insert the screwdriver into the gap between the lock lever (green) and the lock spring (metal portion).

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

Code No. 21 or 22 Driver's air bag module (squib) system	Probable cause
<p>(1) These diagnosis codes are output if there is abnormal resistance between the input terminals of the driver's air bag module (squib) . Refer to table 1 for the conditions for output of each diagnosis code.</p> <p>(2) Diagnosis codes 21 and 22 are sometimes generated in combination with diagnosis 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. Refer to table 2 for the failure mode combinations.</p>	<ul style="list-style-type: none"> malfunction of clock spring Open-circuit in clock spring due to inappropriate neutral position Malfunction of harnesses or connectors Malfunction of air bag module (driver's side squib) Malfunction of SDU <p style="text-align: right;"><Added></p>

TABLE 1: CONDITIONS FOR OUTPUT OF EACH DIAGNOSIS CODE

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> Short in air bag module (driver's side squib) or harness short Short in clock spring Short in driver's side 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 (driver's side squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact Short in driver's air bag module (squib) or front impact sensor harnesses leading to the power supply <p style="text-align: right;"><Added></p>



INSPECTION PROCEDURE CLASSIFIED BY DIAGNOSTIC TROUBLE

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

Replace the SRS-ECU

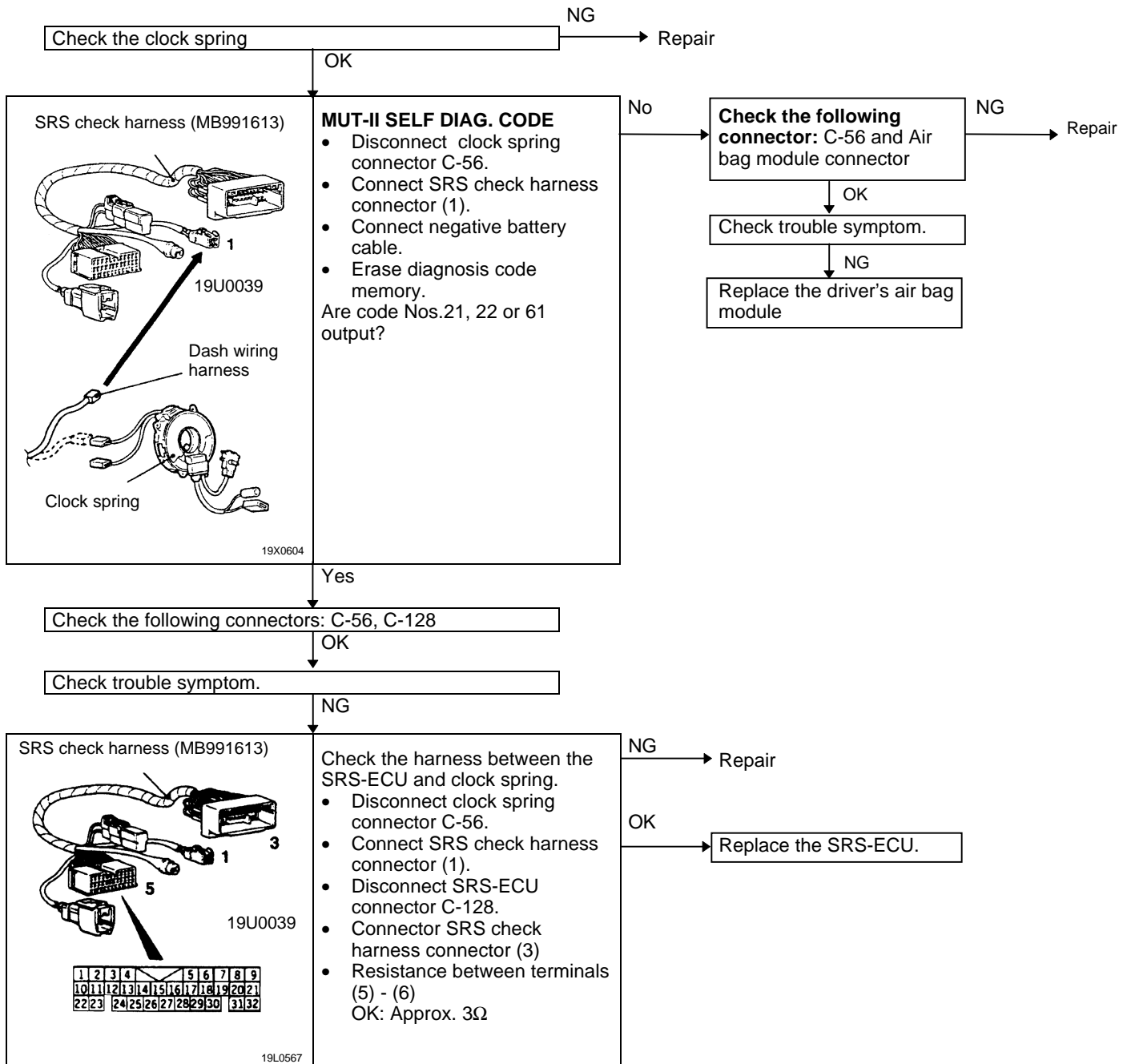
Code No.15 or 16 Safing G-sensor system in the SRS-ECU	Probable cause
<p>This code is output if there is a short or open circuit between the terminals of the safing G-sensor inside the SRS-ECU. The trouble causes for each diagnosis code No. Are as follows</p>	<ul style="list-style-type: none"> • Malfunction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

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

Replace the SRS-ECU

Code No. 21, 22 or 61 Air bag module (driver's side squib) system	Probable cause
<p>These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (driver's side squib). The trouble causes for each code No. are as follows</p> <p style="text-align: center;"><Added></p>	<ul style="list-style-type: none"> • Malfunction of clock spring • Open-circuit in clock spring due to inappropriate neutral position • Malfunction of harnesses or connectors • Malfunction of air bag module (driver's side squib) • Malfunction of SRS-ECU

Code No.	Trouble symptoms
21	<ul style="list-style-type: none"> Short in air bag module (driver's side squib) or harness short Short in clock spring
22	<ul style="list-style-type: none"> Open circuit in air bag module (driver's side squib) or open harness Open circuit in clock spring Disconnected connector in the driver's side air bag module (squib). <Added> Open circuit in clock spring due to inappropriate neutral position. Malfunction of connector contact
61	<ul style="list-style-type: none"> Short in air bag module (driver's side squib) harness leading to the power supply



Code No. 21 or 22 Air bag module (squib) system	Probable cause
<p>(1) These diagnosis codes are output if there is abnormal resistance between the input terminals of the air bag module (squib). The trouble causes for each code No. are as follows (Refer to chart 1.)</p> <p>(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 relationship between the codes are as follows. (Refer to chart 2.)</p>	<ul style="list-style-type: none"> • Malfunction of clock spring • Disconnected connector in the driver's side air bag module (squib) • Open-circuit in clock spring due to inappropriate neutral position • Malfunction of harnesses or connectors • Malfunction of air bag module (squib) • Malfunction of SDU <p style="text-align: right;">↑ <Added></p>

Chart 1

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 • Disconnected connector in the driver's side air bag module (squib). • Open circuit in clock spring due to inappropriate neutral position. • Malfunction of connector contact • Short in air bag module (squib) or front impact sensor harnesses leading to the power supply <p style="text-align: right;"><Added></p>

Chart 2

Item		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

Caution

Do not attempt to measure the air bag module (squib) circuit resistance. Use of a tester in measuring the circuit resistance will supply current to the squib, or erroneous deployment due to static electricity could cause serious injury.