

TROUBLESHOOTING

How To Proceed With Troubleshooting

Malfunction symptoms of the airbag system are difficult to confirm, so the diagnostic trouble codes become the most important source of information when troubleshooting.

Perform troubleshooting of the airbag system in accordance with the following procedure:

HINT: Do not disconnect the battery negative (–) terminal cable until step (3) , Diagnostic Trouble Code Check and Recording, has been completed.

(1) CUSTOMER PROBLEM ANALYSIS

Using the CUSTOMER PROBLEM ANALYSIS CHECK SHEET (See page [AB-28](#)) for reference, ask the customer in as much detail as possible about the problem.

(2) WARNING LIGHT CHECK

Check the airbag warning light. If the light remains on, a malfunction is stored in the center airbag sensor assembly, so proceed to step (3). If the airbag warning light is not on, a malfunction has occurred in the airbag warning light circuit, so perform troubleshooting for code 22.

HINT: Code 22 is recorded when a malfunction occurs in the airbag warning light system.

If an open malfunction occurs in the airbag warning light system, the airbag warning light does not light up, so that until the malfunction is repaired, the diagnostic trouble codes (including code 22) cannot be confirmed.

(3) DIAGNOSTIC TROUBLE CODE CHECK AND RECORDING

Check the diagnostic trouble codes and make a note of any malfunction codes which are output. If a normal code is output, an abnormality in the power source circuit may have occurred, so perform troubleshooting for source voltage in step (8) .

If code 22 is output, skip steps (4) and (5) and proceed to step (7) .

(4) CLEARING OF MALFUNCTION CODE (EXCEPT CODE 41)

Clear the malfunction code.

HINT: The malfunction code output in step 3 indicates that a malfunction has occurred in the circuit designated by the malfunction code, but does not indicate whether the malfunction is still occurring or whether it was in the past.

Accordingly, it is necessary to find out the present condition of the malfunction occurrence by clearing the malfunction code and performing the diagnostic trouble code check again. If this operation is neglected and troubleshooting is performed using only the malfunction code confirmed in step (3) , isolating the problem component becomes difficult and invites mistaken diagnosis.

(5) DIAGNOSTIC TROUBLE CODE CHECK AND RECORDING (6) SYMPTOM SIMULATION

After repeating ignition switch ON – OFF operation (ON: wait 20 secs., OFF: wait 20 secs.) 5 times, check the diagnostic trouble code. If any code other than code 41 is output, the malfunction is still occurring, so proceed to step (7) .

If code 41 only is output, the following three cases are possible:

- Intermittent trouble occurred previously, but it is now normal.
- The problem has been corrected, but clearing of code 41 has been forgotten.
- There is a malfunction in the circuit for code 41.

Focusing on the circuit of the malfunction code stored in step (3) , use the simulation method in step (6) in order to simulate the malfunction. If the malfunction occurs, proceed to step (7) ; if not, proceed to step (12) .

NOTICE: When connecting the battery after clearing the malfunction code, always do it with the ignition switch in LOCK position.

When the battery has been reconnected, turn the ignition switch to ACC or ON position after at least 2 seconds have elapsed.

If the battery is reconnected with the ignition switch in ACC or ON position, or the ignition switch is turned to ACC or ON within 2 seconds of connecting the battery, it is possible that the diagnosis system will not operate normally.

HINT: Determine the malfunction in the airbag system in step (6) by whether or not a malfunction code other than code 41 is output.

(7) DIAGNOSTIC TROUBLE CODE CHART

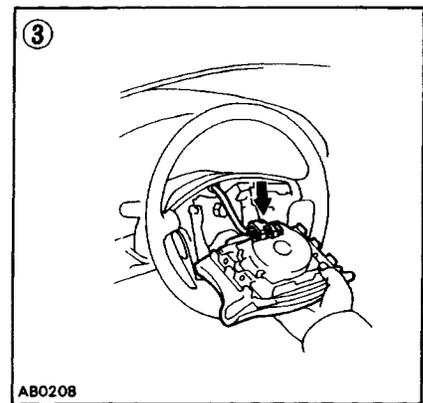
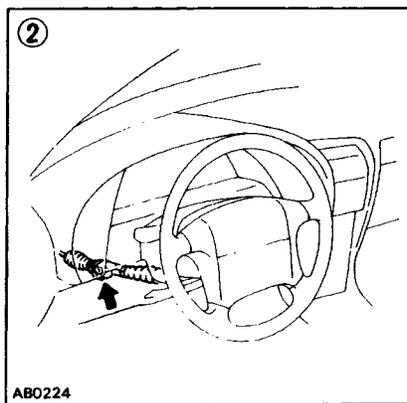
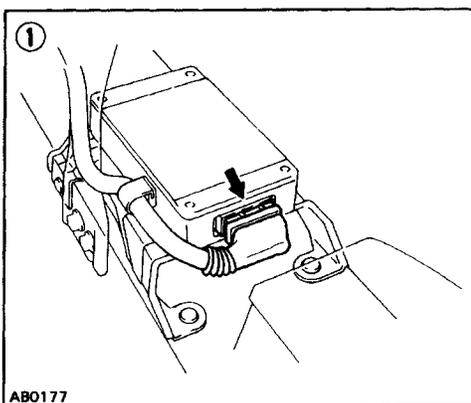
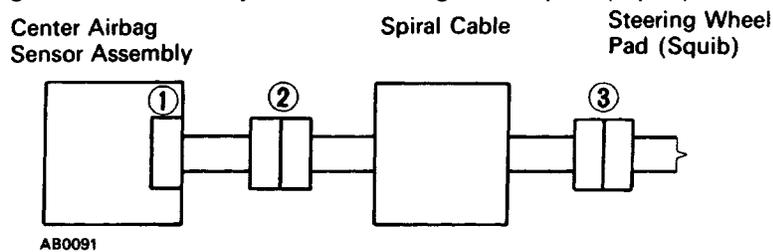
Proceed to the appropriate flow chart in step 8 in accordance with the malfunction code found in step (5) or (6) .

(8) CIRCUIT INSPECTION (9) REPAIR

Find out if the problem lies in a sensor, actuator or wire harness and connector, and repair the problem. After the problem part is repaired, reinstall the disassembled parts. Do not start work until at least 20 seconds after the ignition switch is turned to the LOCK position and the negative (-) terminal cable is disconnected.

CAUTION: If incorrect procedure is used, a malfunction may occur in the system or there is the danger that the airbag may be accidentally activated during the repair operation. Carefully read the GENERAL DESCRIPTION (See page AB-2) and the cautions for each operation, and perform repairs in the correct order using the correct methods.

HINT: The following illustration for the CIRCUIT INSPECTION shows each connector for the circuit from the center airbag sensor assembly to the steering wheel pad (squib).



10 CLEARING OF MALFUNCTION CODE (EXCEPT CODE 41)

When all the malfunction codes found in steps 5 and 6 have been repaired, clear the malfunction codes.

(11) DIAGNOSTIC TROUBLE CODE CHECK

After repeating ignition switch ON – OFF operation (ON: wait 20 secs., OFF: wait 20 secs.) 5 times, check the diagnostic trouble codes. If only code 41 is displayed, proceed to step (12) . If a code other than 41 is displayed, return to step (7) and troubleshoot the displayed malfunction code.

NOTICE: When connecting the battery after clearing the malfunction code, always do it with the ignition switch in LOCK position.

When the battery has been reconnected, turn the ignition switch to ACC or ON position after at least 2 seconds have elapsed.

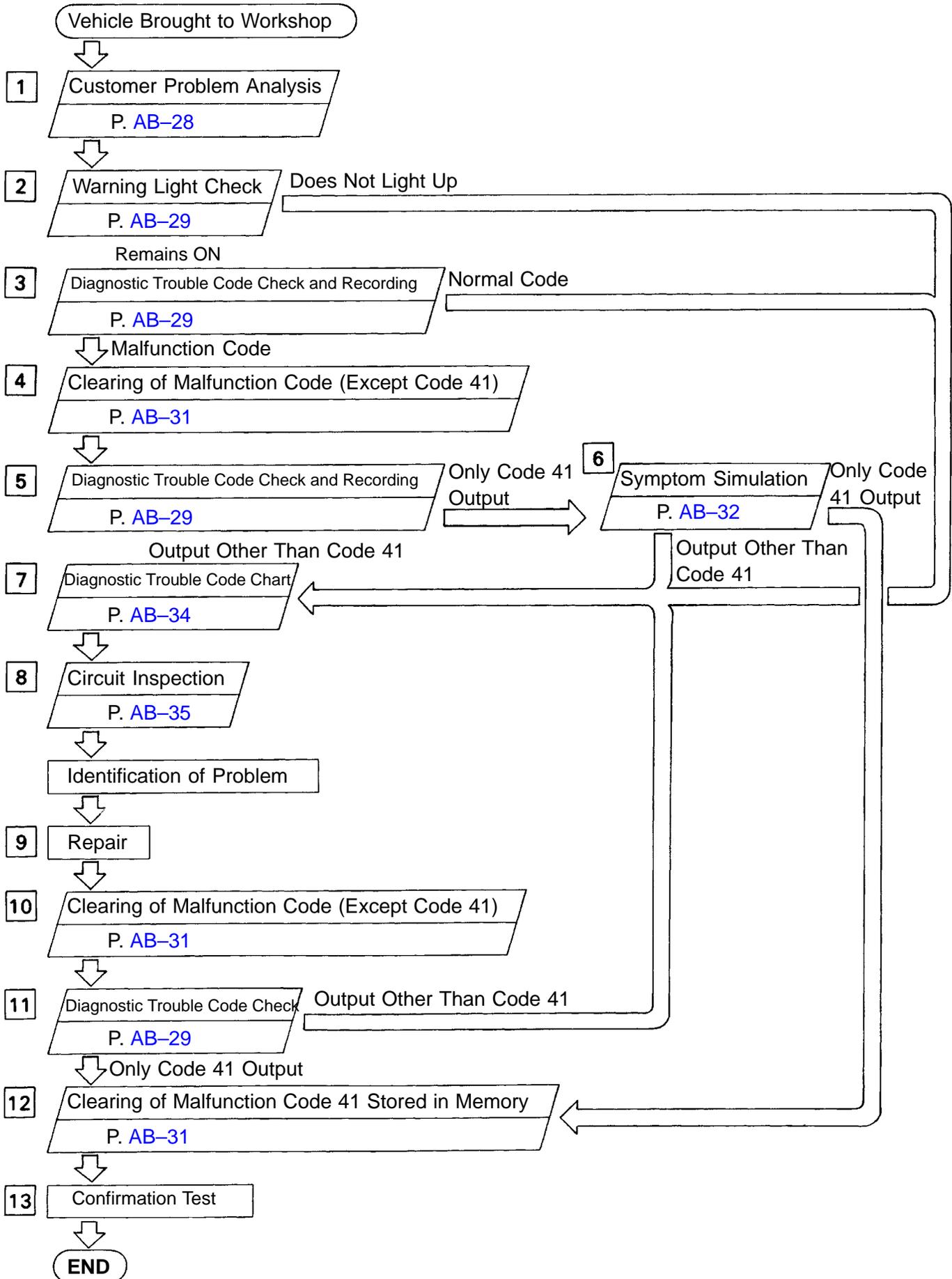
If the battery is reconnected with the ignition switch in ACC or ON position, or the ignition switch is turned to ACC or ON within 2 seconds of connecting the battery, it is possible that the diagnosis system will not operate normally.

(12) CLEARING OF MALFUNCTION CODE 41 STORED IN MEMORY

Clear malfunction code 41 stored in memory. This operation is not necessary only in case that the power source voltage returns to normal.

(13) CONFIRMATION TEST

Check the warning light again and confirm that all the malfunctions have been repaired. If the warning light indicates an abnormality, repeat the operation again from step (2) . If code 41 is output at step (3) , skip steps (4) and (5) and proceed to step (7) .



Customer Problem Analysis Check Sheet

SRS AIRBAG System Check Sheet

Inspector's Name _____

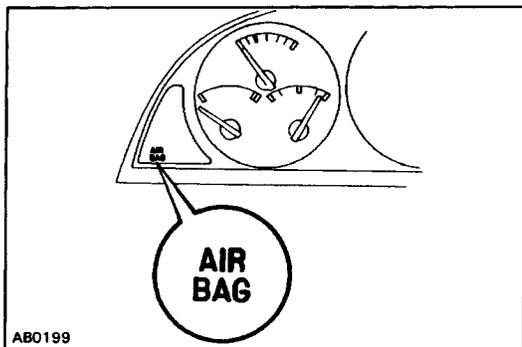
Customer's Name		Registration No.	
		Registration Year	/ /
		Frame No.	
Date Vehicle Brought In	/ /	Odometer Reading	Miles

Date of Problem Occurrence		/ /
Conditions at Time of Problem Occurrence	Weather	<input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Various/Other
	Outdoor Temperature	<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold (Approx. °C (°F))
	Vehicle Operation	<input type="checkbox"/> Starting <input type="checkbox"/> Idling <input type="checkbox"/> Driving [<input type="checkbox"/> Constant speed <input type="checkbox"/> Acceleration <input type="checkbox"/> Deceleration <input type="checkbox"/> Other ()]
	Condition of road	

Details of Problem	
Vehicle Inspection, Repair History Prior to Occurrence of Malfunction (Including Airbag System)	

(Diagnosis System Inspection)

Airbag Warning Light Inspection	1st Time	<input type="checkbox"/> Remains On <input type="checkbox"/> Sometimes Lights Up <input type="checkbox"/> Does Not Light Up
	2nd Time	<input type="checkbox"/> Remains On <input type="checkbox"/> Sometimes Lights Up <input type="checkbox"/> Does Not Light Up
Diagnostic Trouble Code Inspection	1st Time	<input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code [Code.]
	2nd Time	<input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code [Code.]



Diagnosis Inspection

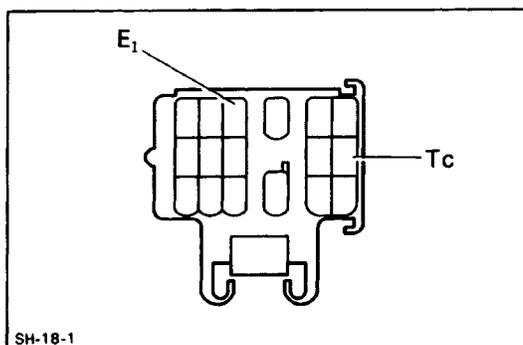
AIRBAG WARNING LIGHT CHECK

- (a) Turn the ignition switch to ACC or ON and check that the airbag warning light lights up.
- (b) Check that the airbag warning light goes out after approx. 6 seconds.

HINT:

- When the ignition switch is at ACC or ON and the airbag warning light remains on, the center airbag sensor assembly has detected a malfunction code.
- If, after approx. 6 seconds have elapsed, the airbag warning light sometimes lights up or the airbag warning light lights up even when the ignition switch is OFF, a short in the airbag warning light circuit can be considered likely.

Proceed to "Airbag warning light system (always lit up)" on page [AB-75](#).



DIAGNOSTIC TROUBLE CODE CHECK

1. OUTPUT DIAGNOSTIC TROUBLE CODE

- (a) Turn the ignition switch to ACC or ON position and wait approx. 20 seconds.
- (b) Using SST, connect terminals Tc and E1 of the data link connector 1.

SST 09843-18020

NOTICE: Never make a mistake with the terminal connection position as this will cause a malfunction.

2. READ DIAGNOSTIC TROUBLE CODE

Read the diagnostic trouble code as indicated by the number of times the airbag warning light blinks.

- **Normal code indication**

The light will blink 2 times per second.

- **Malfunction code indication**

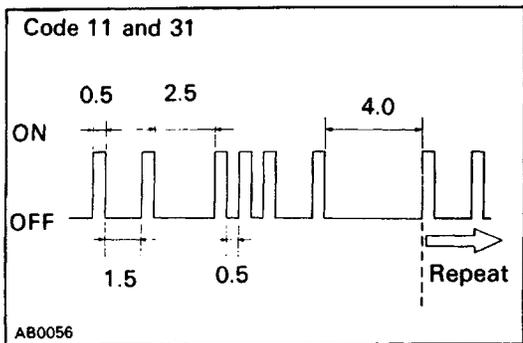
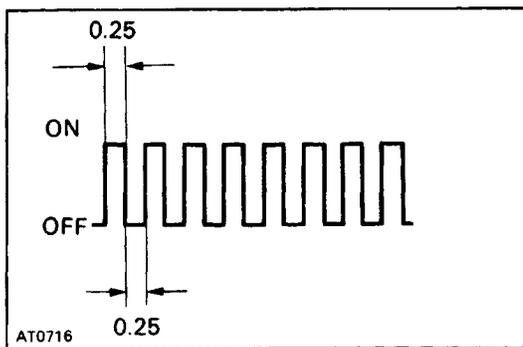
In the event of a malfunction, the light will blink.

The first number of the code No. will equal the first digit of a 2-digit diagnostic trouble code, and after a 1.5 second pause, the 2nd number of the code No. will equal the 2nd digit. If there are two or more codes, there will be a 2.5 second pause between each.

After all the codes have been output, there will be a 4.0 second pause and they will all be repeated.

HINT:

- In the event of a number of trouble codes, indication will begin from the smaller numbered code to the larger.
- If a diagnostic trouble code is not output or is continuously output, proceed to the Te terminal circuit inspection on page [AB-77](#).

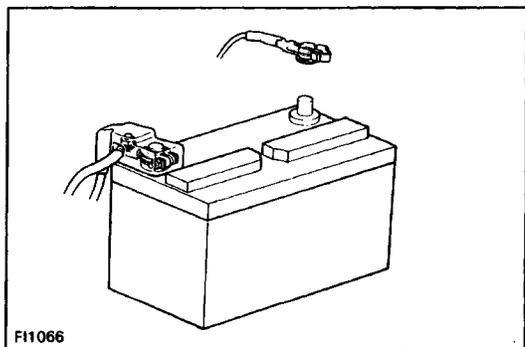


DIAGNOSTIC TROUBLE CODES

Code No.	Blink Pattern	Diagnosis	Trouble Area	AIRBAG Warning Light
(Normal)	 FI1401	<ul style="list-style-type: none"> System normal Source voltage drop 	<ul style="list-style-type: none"> Battery Center airbag sensor assembly 	OFF
11	 AB0057	<ul style="list-style-type: none"> Short in squib circuit or front airbag sensor circuit (to ground) 	<ul style="list-style-type: none"> Steering wheel pad (squib) Front airbag sensor Spiral cable Center airbag sensor assembly Wire harness 	ON
12	 FI1389	<ul style="list-style-type: none"> Short in squib circuit or front airbag sensor circuit (to B+) 	<ul style="list-style-type: none"> Steering wheel pad (squib) Front airbag sensor Spiral cable Center airbag sensor assembly Wire harness 	ON
13	 FI1390	<ul style="list-style-type: none"> Short in squib circuit (between D+ wire harness and D- wire harness) 	<ul style="list-style-type: none"> Steering wheel pad (squib) Spiral cable Center airbag sensor assembly Wire harness 	ON
14	 FI1391	<ul style="list-style-type: none"> Open in squib circuit 	<ul style="list-style-type: none"> Steering wheel pad (squib) Spiral cable Center airbag sensor assembly Wire harness 	ON
15	 AB0058	<ul style="list-style-type: none"> Open in front airbag sensor circuit 	<ul style="list-style-type: none"> Front airbag sensor Center airbag sensor assembly Wire harness 	ON
22	 FI1392	<ul style="list-style-type: none"> Airbag warning light system malfunction 	<ul style="list-style-type: none"> Airbag warning light Center airbag sensor assembly Wire harness 	ON
31	 FI1394	<ul style="list-style-type: none"> Center airbag sensor assembly malfunction 	<ul style="list-style-type: none"> Center airbag sensor assembly 	ON
41	 FI1396	<ul style="list-style-type: none"> Malfunction stored in memory 	<ul style="list-style-type: none"> (Center airbag sensor assembly) 	ON

HINT:

- When the airbag warning light remains lit up and the diagnostic trouble code is the normal code, this means a source voltage drop.
This malfunction is not stored in memory by the center airbag sensor assembly and if the power source voltage returns to normal, after approx.10 seconds the airbag warning light will automatically go out.
- Code 22 is recorded when a malfunction occurs in the airbag warning light system.
If an open malfunction occurs in the airbag warning light system, the airbag warning light does not light up, so that until the malfunction is repaired, the diagnostic trouble codes (including code 22) cannot be confirmed.
- When a malfunction occurs in the airbag system, malfunction codes 11 to 31 are output. After repairing the malfunction indicated by malfunction codes 11 to 31, codes 11 to 31 are cleared from the memory but code 41 is output instead.
Once the malfunction has been detected, the airbag warning light will remain lit up until code 41 is cleared, even though the malfunction has been repaired.
- When two or more codes are indicated, the lowest numbered code will appear first.
- If a code not listed on the chart is displayed, then the center airbag sensor assembly is faulty.



CLEARING OF DIAGNOSTIC TROUBLE CODE

1. CLEARING OF MALFUNCTION CODE (EXCEPT CODE 41)

Remove the battery negative terminal or ECU-13 fuse for 10 seconds or more with the ignition switch OFF.

NOTICE: When connecting the battery after can-celling the malfunction code, always do it with the ignition switch in LOCK position. If the battery is connected with the ignition switch in ACC or ON position, there are cases when the diagnosis system does not operate normally.

HINT:

- Code 41 cannot be cleared by this method.
- The lower the temperature, the longer the battery negative terminal must be left off.
- Other memory systems (clock, audio system) will also be cancelled out (See page AB-2).

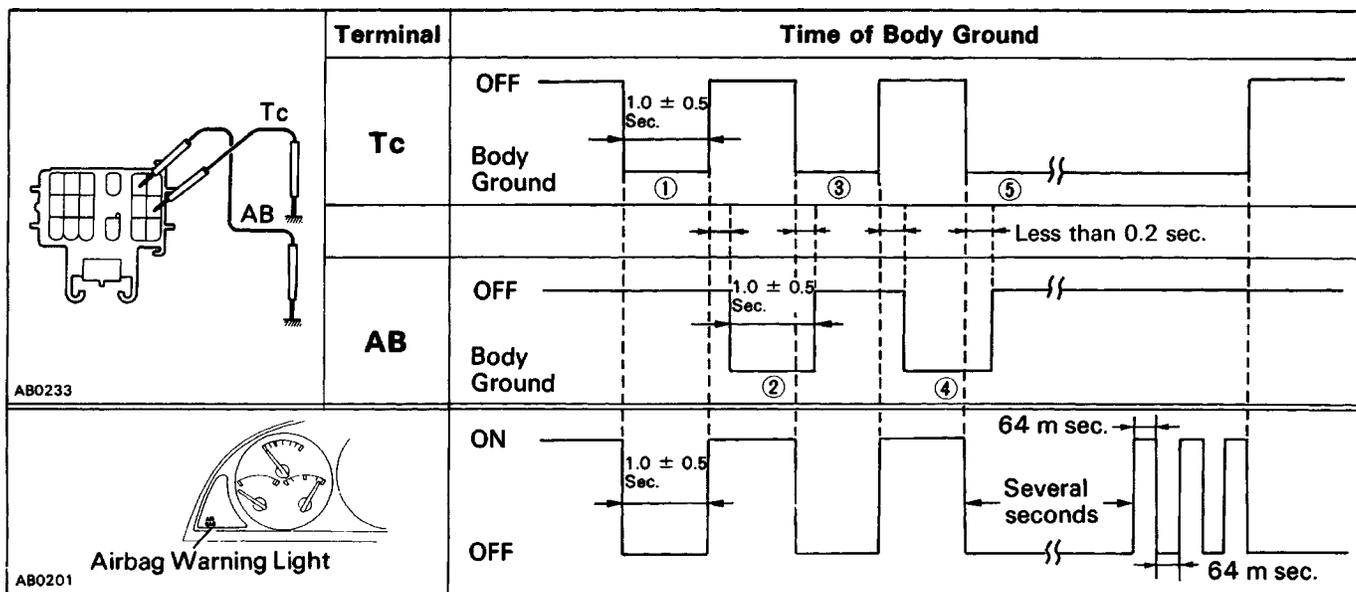
2. CLEARING OF MALFUNCTION CODE 41 STORED IN MEMORY

(a) Connect service wires to terminals Tc and AB of the data link connector 1.

(b) Turn the ignition switch ACC or ON and wait approx. 6 seconds.

(c) Starting with the Te terminal, apply body ground alternately to terminal Te and terminal AB twice each in cycles of 1.0 ± 0.5 seconds. Finally, keep applying body ground to terminal Te.

HINT: When alternating between body ground of terminals Te and AB release one from body ground while applying it to the other terminal. The time interval in between must be within the following conditions. If it is out of the conditions, code 41 will not be cleared.



(d) After several seconds, when the airbag warning light starts to blink in a 64 msec. cycle, cancellation is completed.

HINT: This method clears not only code 41, but also other malfunction codes all at once.

Except when instructed by the troubleshooting procedure, use this method only when the repair procedure is completed (See page AB-24).

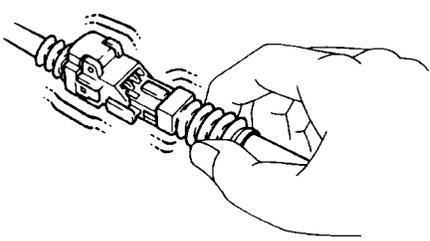
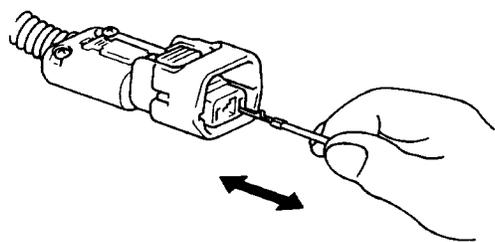
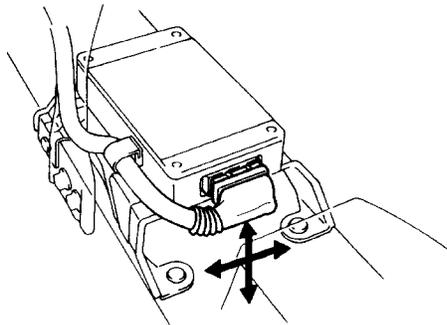
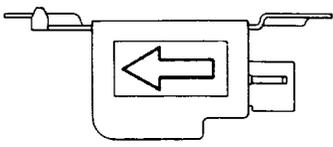
Symptom Simulation

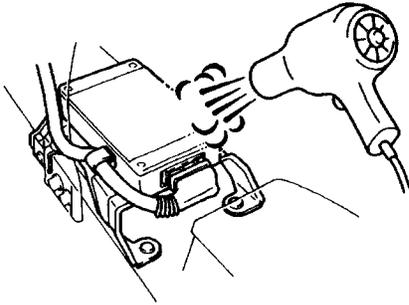
"Intermittent troubles or problems" are the malfunctions about which the customer has a complaint, but which do not occur and can not be confirmed in the workshop. The intermittent problems also include complaints about the airbag warning light going on and off erratically.

The self-diagnostic system stores the circuit of the intermittent problem in memory even if the ignition switch is turned off.

And, for accurate diagnosis of the problems, ask the customer to obtain information as much as possible following the customer problem analysis check sheet (See page AB-28), and try to reproduce the intermittent problem.

The problem simulation methods described below are the effective ways for this nature of problem to produce the problem conditions by applying vibration, heat, and humidity.

<p>1</p>	<p>VIBRATION METHOD: When vibration seems to be the major cause.</p>
 <p>AB0245</p>  <p>K9464</p>	<p>CONNECTORS Slightly shake the connector vertically and horizontally.</p> <p>(Inspection of connectors) (a) Does the wire harness connecting with its corresponding part have insufficient slack? (b) Are the terminals dirty? (c) Are the terminals making loose contact due to terminals spread?</p>
 <p>AB0177</p>	<p>WIRE HARNESS Slightly shake the wire harness vertically and horizontally. The connector joint, fulcrum of the vibration, and body through portion are the major areas to be checked thoroughly.</p>
 <p>AB0018</p>	<p>PARTS AND SENSORS Apply vibration slightly by a finger to the part or sensor considered to be the problem cause and check if the malfunction will occur.</p> <p>CAUTION: Do not apply vibration to the center airbag sensor.</p>

2**HEAT METHOD:** When the problem seems to occur when the suspect area is heated.

AB0247

Heat the component that is likely the cause of the malfunction with a hair dryer or similar object. Check to see if the malfunction will occur.

NOTICE:

- Do not heat to more than 60°C (140°F) (Temperature limit that the component can be touched with a hand.).
- Do not apply heat directly to part in the ECU.

3**WATER SPRINKLING METHOD:**

When the malfunction seems to occur on a rainyday or in a high-humidity condition.



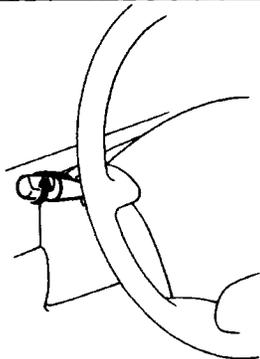
AB0246

Sprinkle water onto the vehicle and check to see if the malfunction will occur.

NOTICE: Never apply water directly onto the electronic components.

HINT:

- If a vehicle is subject to water leakage, the leaked water may contaminate the ECU. When testing a vehicle with a water leakage problem, special caution must be paid.

4**OTHER:** When a malfunction seems to occur when electrical load is excessive.

AB0234

Turn on all electrical loads including the heater blower, headlights, rear window defogger, etc. and check to see if the malfunction will occur.

Diagnostic Trouble Code Chart

If a malfunction code is displayed during the diagnostic trouble code check, check the circuit listed for that code in the table below (Proceed to the page given for that circuit).

Code No.	Diagnosis	Page
(Normal) *1	<ul style="list-style-type: none"> Source voltage drop 	AB-35
11	<ul style="list-style-type: none"> Short in squib circuit or front airbag sensor circuit (to ground) 	AB-37
12	<ul style="list-style-type: none"> Short in squib circuit or front airbag sensor circuit (to B+) 	AB-43
13	<ul style="list-style-type: none"> Short in squib circuit (between D+ wire harness and D- wire harness) 	AB-48
14	<ul style="list-style-type: none"> Open in squib circuit 	AB-55
15	<ul style="list-style-type: none"> Open in front airbag sensor circuit 	AB-60
22 *2	<ul style="list-style-type: none"> Airbag warning light system malfunction 	AB-65
31	<ul style="list-style-type: none"> Center airbag sensor assembly malfunction 	AB-71
41 *3	<ul style="list-style-type: none"> Malfunction stored in memory 	AB-73

HINT:

*1 When the airbag warning light remains lit up and the diagnostic trouble code is the normal code, this means a source voltage drop.

*2 Code 22 is recorded when a malfunction occurs in the airbag warning light system.

If an open malfunction occurs in the airbag warning light system, the airbag warning light does not light up, so that until the malfunction is repaired, the diagnostic trouble codes (including code 22) cannot be confirmed.

*3 When a malfunction occurs in the airbag system, malfunction codes 11 to 31 are output. After repairing the malfunction indicated by malfunction codes 11 to 31, codes 11 to 31 are cleared from the memory, but code 41 is output instead.

Once the malfunction has been detected, the airbag warning light will remain lit up until code 41 is cleared, even though the malfunction has been repaired.

Problem Symptom Chart

Proceed with troubleshooting of each circuit in the table below.

Problem Symptom	Inspection Item	Page
<ul style="list-style-type: none"> With the ignition switch at ACC or ON, the airbag warning light sometimes light up after approx. 6 seconds have elapsed. Airbag warning light lights up even when ignition switch is in the LOCK position. 	<ul style="list-style-type: none"> Airbag warning light system (Always lit up) 	AB-75
<ul style="list-style-type: none"> Diagnostic trouble code not displayed. Diagnostic trouble code continuously displayed. 	<ul style="list-style-type: none"> Tc terminal circuit 	AB-77

Circuit Inspection

Diag. Trouble Code (Normal) Source Voltage Drop

CIRCUIT DESCRIPTION

The airbag system is equipped with a voltage-increase circuit (DC-DC converter) in the center airbag sensor assembly in case the source voltage drops.

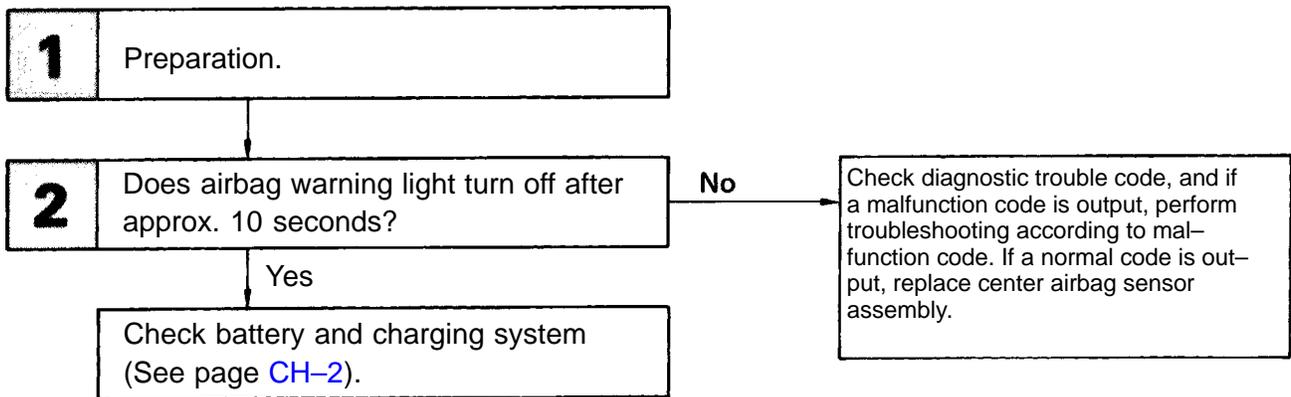
When the battery positive voltage drops, the voltage-increase circuit (DC-DC converter) functions to increase the voltage of the airbag system to normal voltage.

The diagnosis system malfunction display for this circuit is different to other circuits - when the airbag warning light remains lit up and the diagnostic trouble code is a normal code, source voltage drop is indicated.

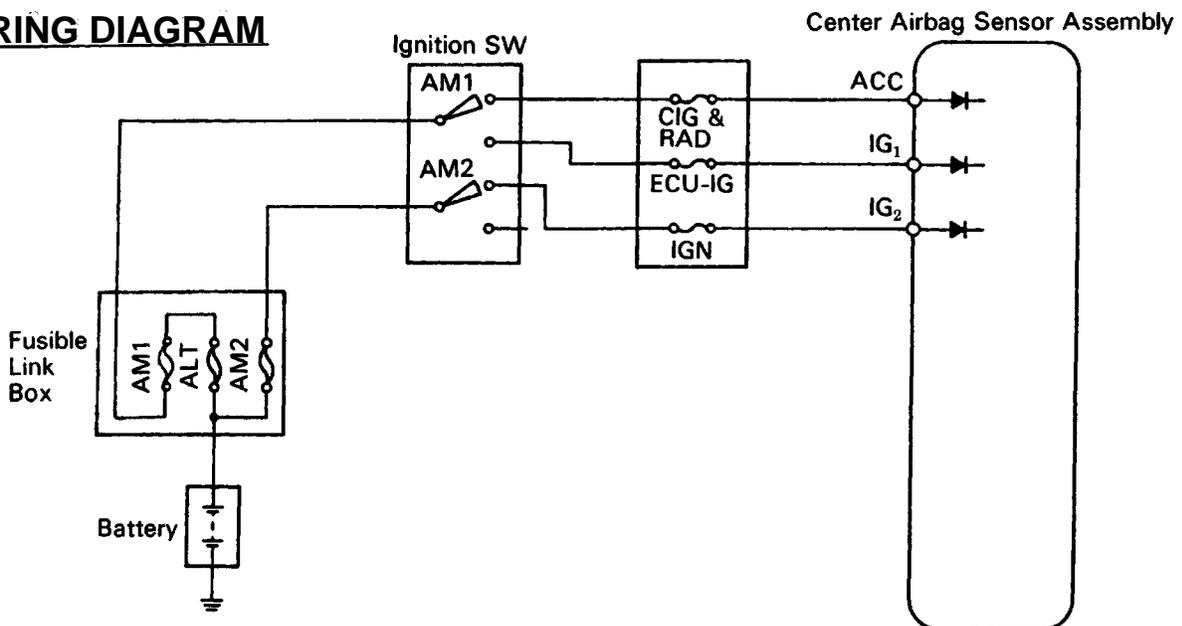
Malfunction in this circuit is not recorded in the center airbag sensor assembly, and approx. 10 seconds after the source voltage returns to normal, the airbag warning light automatically goes off.

Code No.	Diagnosis
(Normal)	Source voltage drop.

DIAGNOSTIC CHART

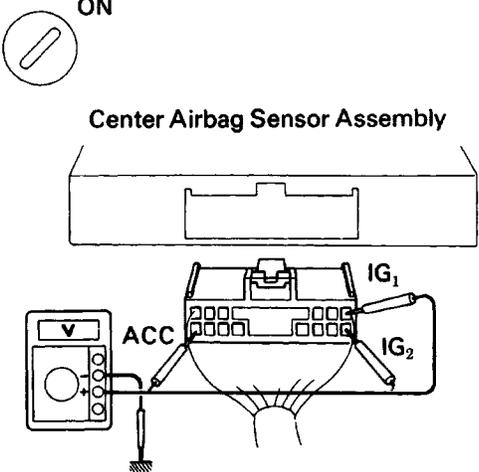


WIRING DIAGRAM

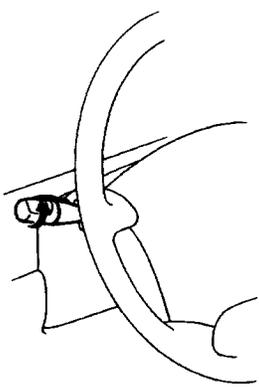


INSPECTION PROCEDURE

P Preparation **C** Check

1	<p>Preparation.</p> <div style="text-align: center;"> <p>ON</p>  <p>Center Airbag Sensor Assembly</p> </div> <p style="font-size: small;">AB0119 AB0029</p>	<p>P (1) Turn ignition switch LOCK. (2) Disconnect center airbag sensor assembly connector. (3) Turn ignition switch ON. But do not start engine. (4) Measure voltage at IG₁, IG₂ or ACC on connector wire harness side of center airbag sensor assembly and operate electric system (defogger, wiper, headlight, heater blower, etc.). Voltage: 6V – 11.5V at IG₁, IG₂ and ACC. (5) Turn electric system switch OFF. (6) Turn ignition switch LOCK. (7) Remove voltmeter and connect center airbag sensor assembly connector.</p>
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2	<p>Does airbag warning light turn off after approx. 10 seconds?</p> <div style="text-align: center;"> <p>ON</p>  </div> <p style="font-size: small;">AB0119 AB0234</p>	<p>P Turn ignition switch ON.</p> <p>C Operate electric system checked in [1] (4) and check that airbag warning light goes off after approx. 10 seconds.</p>
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YES

NO

Check diagnostic trouble code, and if a malfunction code is output, perform troubleshooting according to malfunction code. If a normal code is output, replace center airbag sensor assembly.

Check battery and charging system
(See page [CH-2](#)).

Diag. Trouble Code 11 Short in Squib Circuit or Front Airbag Sensor Circuit (to Ground)

CIRCUIT DESCRIPTION

The squib circuit consists of the center airbag sensor assembly, spiral cable and the steering wheel pad (squib). It causes the airbag to deploy when the airbag deployment conditions are satisfied.

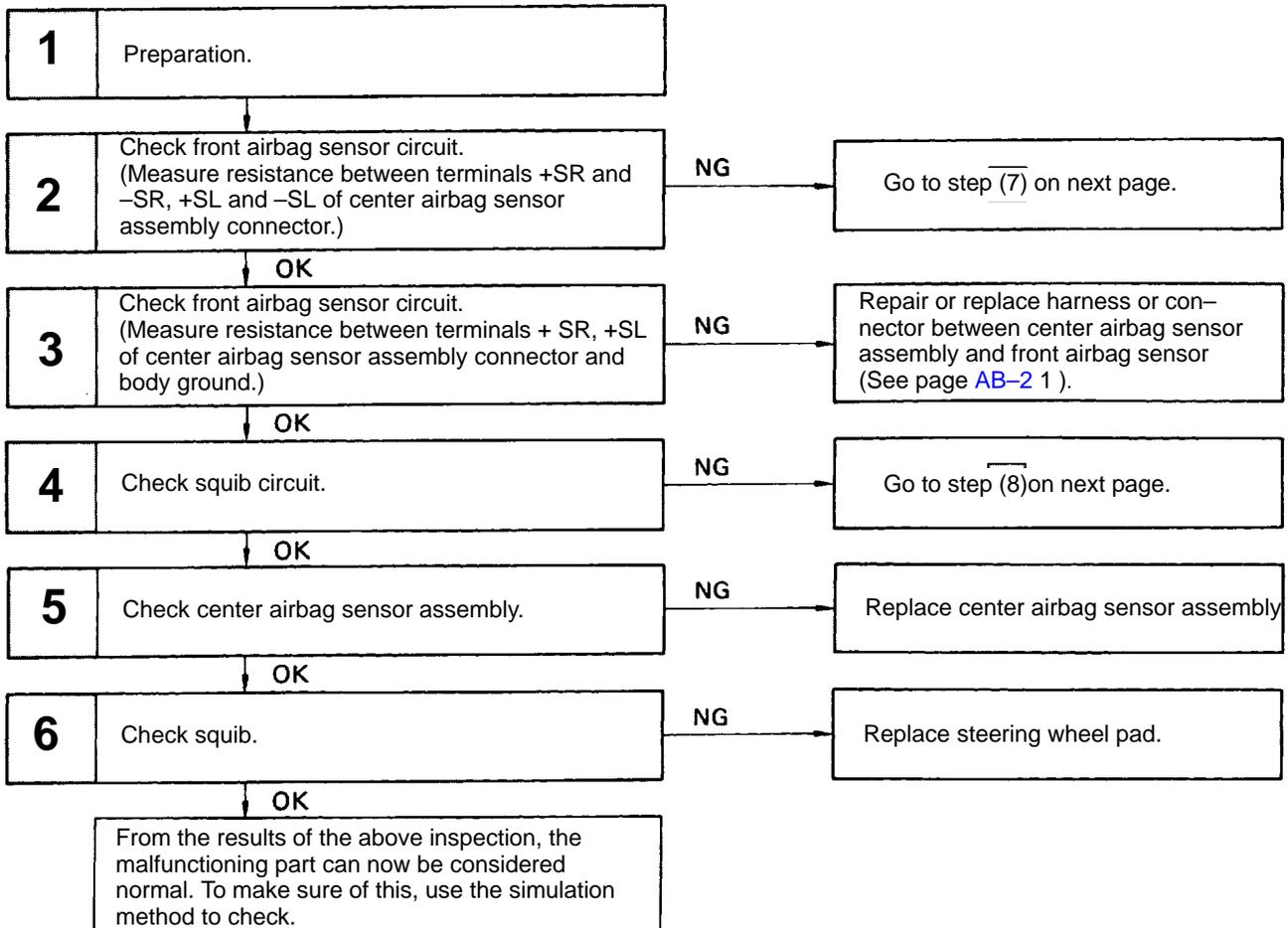
The front airbag sensor detects the deceleration force in a frontal collision and is located in the front fender on the left and right sides.

For details of the function of each component, see FUNCTION OF COMPONENTS on page AB-7.

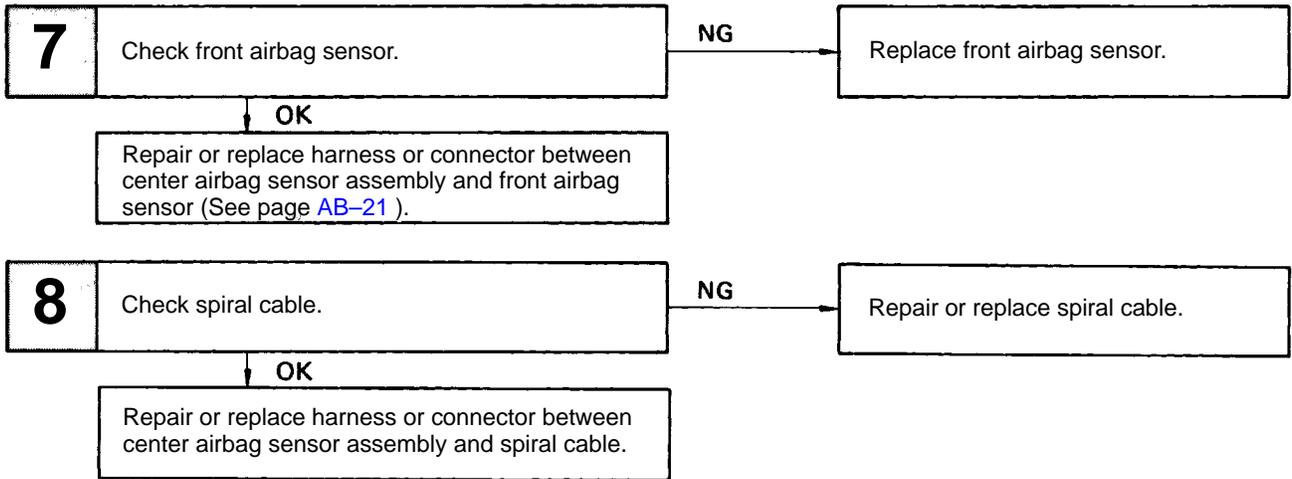
Diagnostic trouble code 11 is recorded when occurrence of ground short is detected in the squib circuit or front airbag sensor circuit.

Code No.	Diagnosis
11	<ul style="list-style-type: none"> • Short circuit in squib wire harness (to ground). • Squib malfunction. • Short circuit in front airbag sensor +S wire harness (to ground). • Front airbag sensor malfunction. • Short circuit between +S wire harness and -S wire harness of front airbag sensor. • Spiral cable malfunction. • Center airbag sensor assembly malfunction.

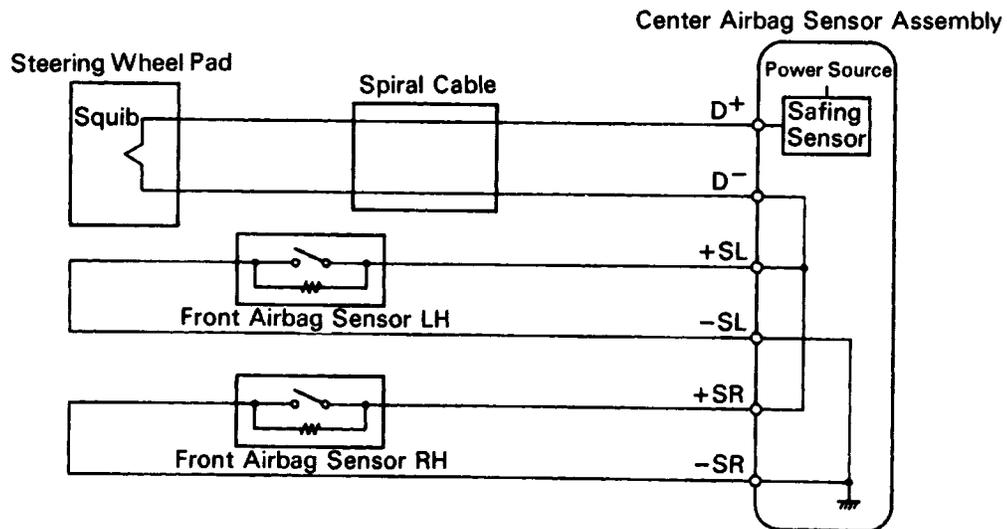
DIAGNOSTIC CHART



DIAGNOSTIC CHART (Cont'd).

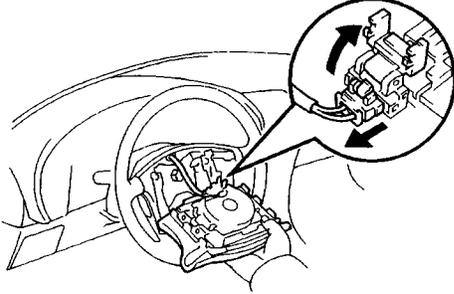


WIRING DIAGRAM

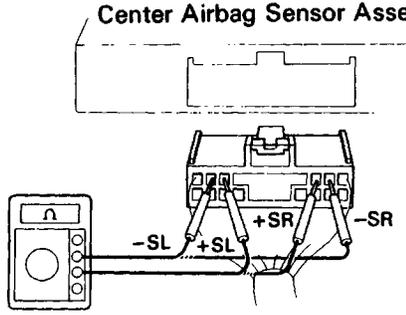


INSPECTION PROCEDURE

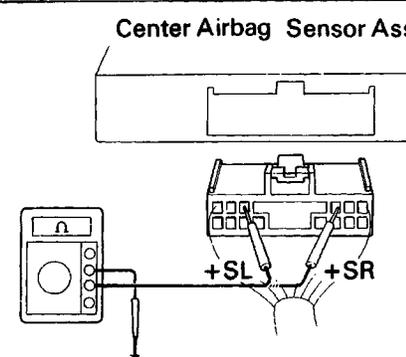
P Preparation **C** Check

1	Preparation.
 LOCK	
<p>P (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds. (2) Remove steering wheel pad (See page AB-15).</p> <p>Caution</p> <p>When storing steering wheel pad, keep upper surface of the pad facing upward.</p>	
<p>AB0117 SR3485</p>	



2	Check front airbag sensor circuit. (Measure resistance between terminals +SR and -SR, +SL and -SL of center airbag sensor assembly connector.)
	<p>P Disconnect center airbag sensor assembly connector.</p> <p>C Measure resistance between terminals +SR and -SR, +S L and -SL of harness side connector of center airbag sensor assembly.</p> <p>OK Resistance: 755Ω - 885Ω</p>
<p>AB0032</p>	<p>OK</p> <p>NG Go to step 7.</p>



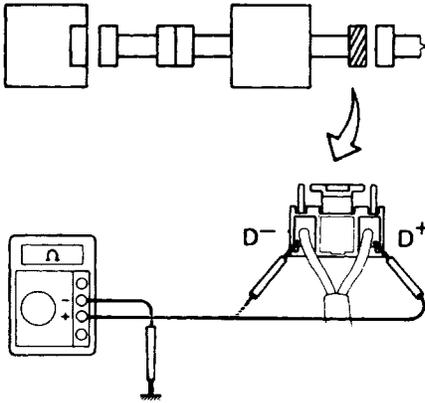
3	Check front airbag sensor circuit. (Measure resistance between terminals +SR, +SL of center airbag sensor assembly connector and body ground.)
	<p>C Measure resistance between terminals +SR, +SL of harness side connector of center airbag sensor assembly and body ground.</p> <p>OK Resistance: ∞ Ω</p>
<p>AB0033</p>	<p>OK</p> <p>NG Repair or replace harness or connector between center airbag sensor assembly and front airbag sensor (See page AB-21).</p>



4

Check squib circuit.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0072
AB0070

C Measure resistance between D+, D- on spiral cable side of connector between spiral cable and steering wheel pad and body ground.

OK Resistance: $\infty \Omega$

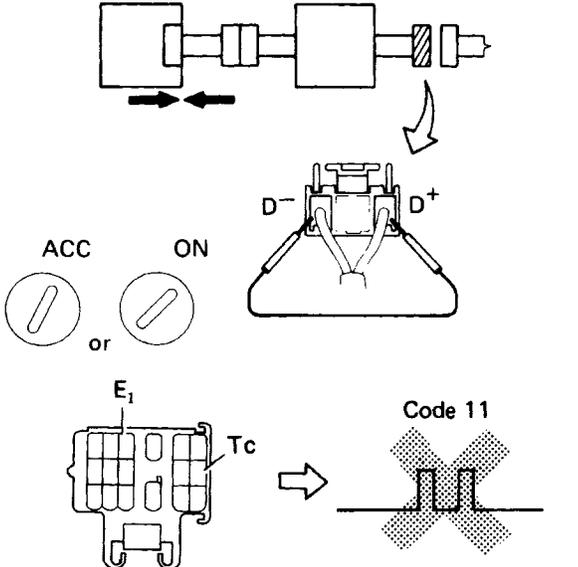
OK

NG Go to step (8)

5

Check center airbag sensor assembly.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0074
AB0069
AB0118 AB0119
SH-18-1 AB0057

P (1) Connect connector to center airbag sensor assembly.
(2) Using a service wire, connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
(3) Connect negative H terminal cable to battery, and wait at least 2 seconds.

C (1) Turn ignition switch ACC or ON and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E¹ of data link connector 1.
SST 09843-18020

(3) Check diagnostic trouble code.

OK Diagnostic trouble code 11 is not output.

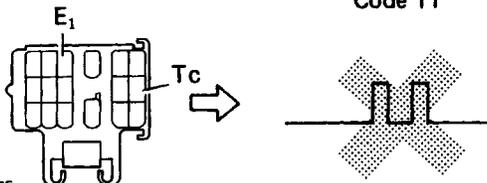
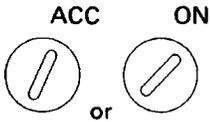
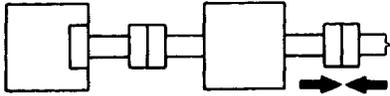
Hint Codes other than code 11 may be output at this time, but this is not relevant to this check.

OK

NG Replace center airbag sensor assembly.

6 Check squib.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0075
AB0118 AB0119
SH-18-1 AB0057

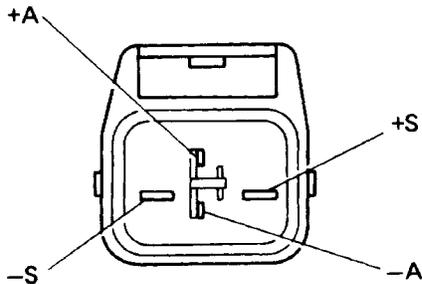
- P** (1) Turn ignition switch LOCK.
(2) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
(3) Connect steering wheel pad (squib) connector.
(4) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E₁ of data link connector 1.
SST 09843-18020
(3) Check diagnostic trouble code.
- OK** **Diagnostic trouble code 11 is not output.**
- Hint** Codes other than code 11 may be output at this time, but this is not relevant to this check.



NG Replace steering wheel pad.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

7 Check front airbag sensor.



AB0034

- P** Disconnect front airbag sensor connector.
- C** Measure resistance between each terminal of front airbag sensor.

OK

Terminal	Resistance
(+) S - (+) A	755Ω - 885Ω
(+) S - S(-)	∞
⊖ S - ⊖ A	Less than 1Ω

Notice

- Do not touch ohmmeter probes strongly against terminals of front airbag sensor.
- Make sure the front airbag sensor connector is properly connected.

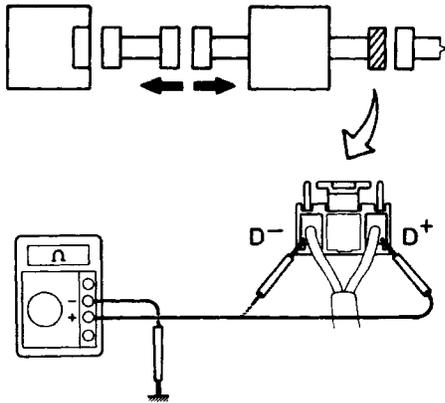


NG Replace front airbag sensor.

Repair or replace harness or connector between center airbag sensor assembly and front airbag sensor (See page AB-21).

8**Check spiral cable.**

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



A80071
A80070

- P** Disconnect connector between center airbag sensor assembly and spiral cable.
- C** Measure resistance between D+, D- on spiral cable side of connector between spiral cable and steering wheel pad and body ground.
- OK** Resistance: $\infty \Omega$

OK**NG****Repair or replace spiral cable.**

Repair or replace harness or connector between center airbag sensor assembly and spiral cable.

Diag. Trouble Code 12 Short in Squib Circuit or Front Airbag Sensor Circuit (to B+)

CIRCUIT DESCRIPTION

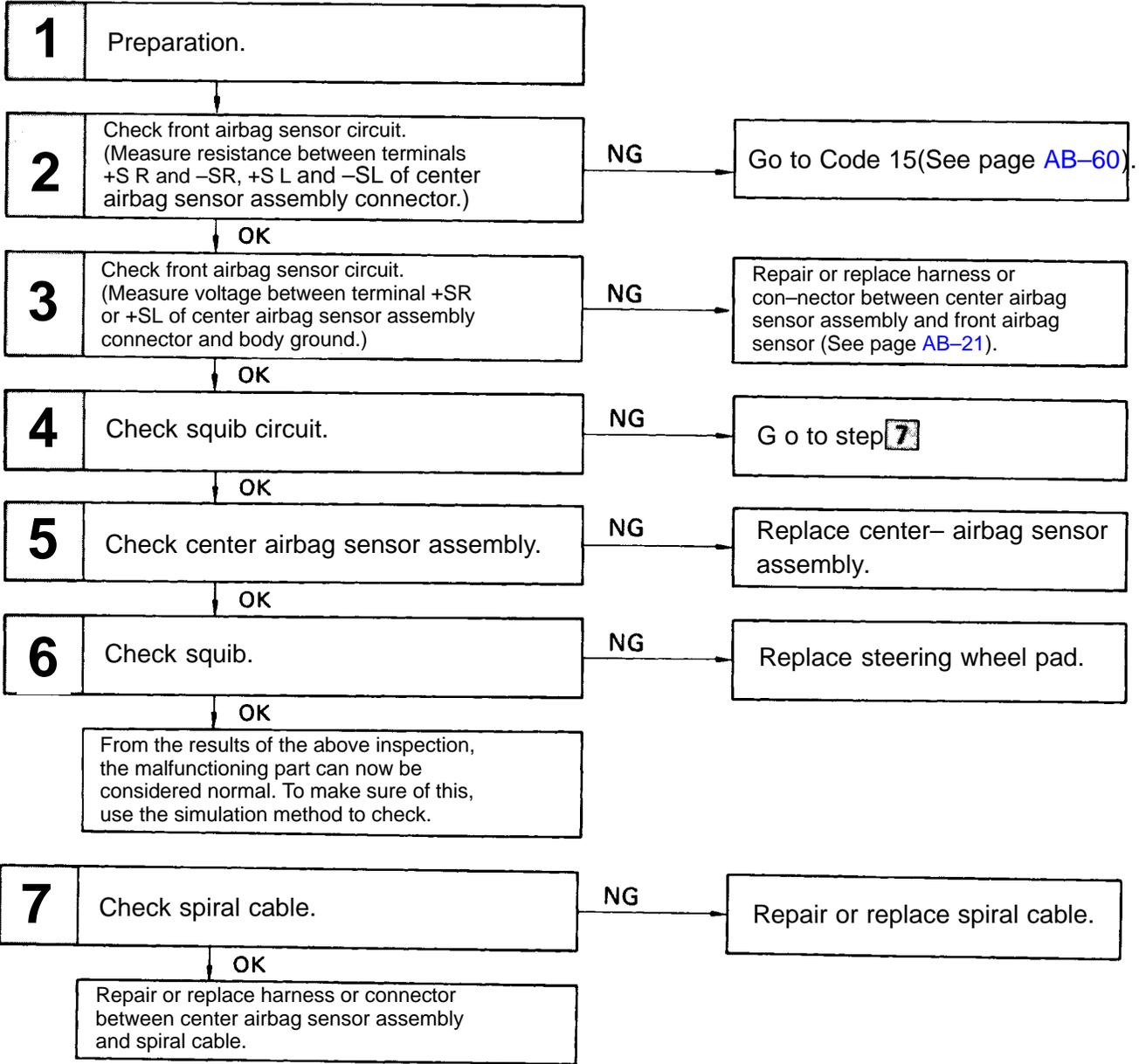
The squib circuit consists of the center airbag sensor assembly, spiral cable and the steering wheel pad (squib). It causes the airbag to deploy when the airbag deployment conditions are satisfied. The front airbag sensor detects the deceleration force in a frontal collision and is located in the front fender on the left and right sides.

For details of the function of each component, see FUNCTION OF COMPONENTS on page [AB-7](#).

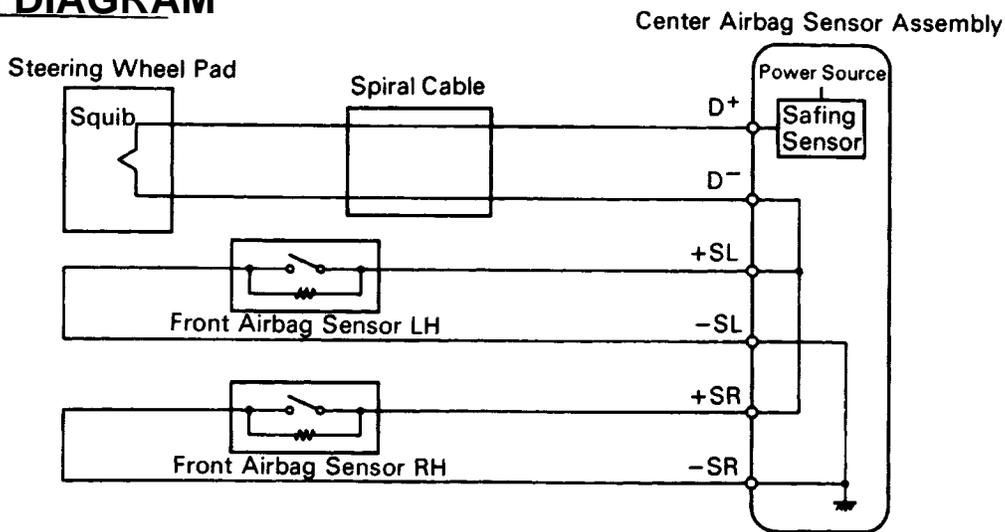
Diagnostic trouble code 12 is recorded when a B+ short is detected in the squib circuit or the front airbag sensor circuit.

Code No.	Diagnosis
12	Short circuit in squib wire harness (to B+). Squib malfunction. Short circuit in front airbag sensor +S wire harness (to B+). Open circuit in RH and LH front airbag sensor harness. Spiral cable malfunction. Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART



WIRING DIAGRAM



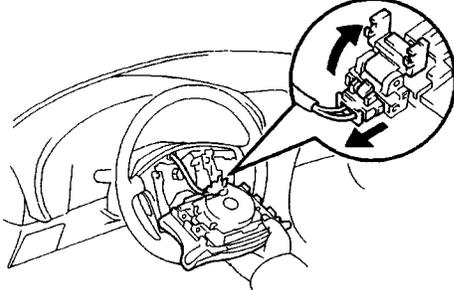
INSPECTION PROCEDURE

P Preparation **C** Check

1

 Preparation.

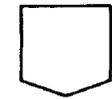

LOCK

AB0117
SR3485

- P** (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
(2) Remove steering wheel pad (See page [AB-15](#)).

Caution

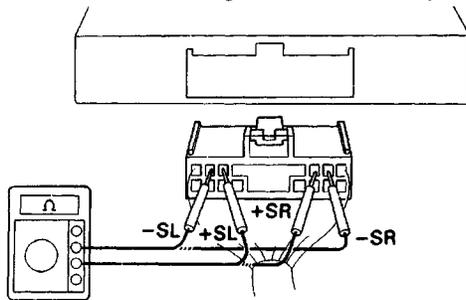
When storing steering wheel pad, keep upper surface of the pad facing upward.



2

 Check front airbag sensor circuit. (Measure resistance between terminals +SR and -SR, +SL and -SL of center airbag sensor assembly connector.)

Center Airbag Sensor Assembly



AB0032

- P** Disconnect center airbag sensor assembly connector.

- C** Measure resistance between terminals +SR and -SR, +SL and -SL of harness side connector of center airbag sensor assembly.

OK Resistance: 755Ω - 885Ω

OK

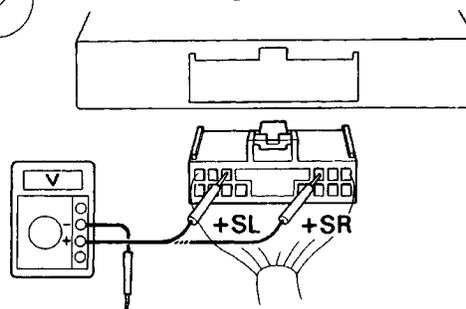
NG Go to Code 15 (See page [AB-60](#)).

3

 Check front airbag sensor circuit. (Measure voltage between terminal +SR or +SL of center airbag sensor assembly connector and body ground.)


ON

Center Airbag Sensor Assembly

AB0119
AB0036

- P** (1) Connect negative (-) terminal cable to battery.
(2) Turn ignition switch ON.

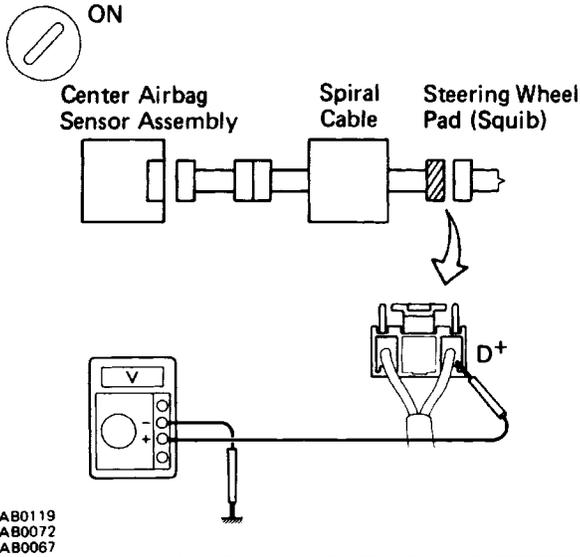
- C** Measure voltage between terminals +SR or +SL of harness side connector of center airbag sensor assembly and body ground.

OK Voltage: 0 V

OK

NG Repair or replace harness or connector between center airbag sensor assembly and front airbag sensor (See page [AB-21](#)).

4 Check squib circuit.

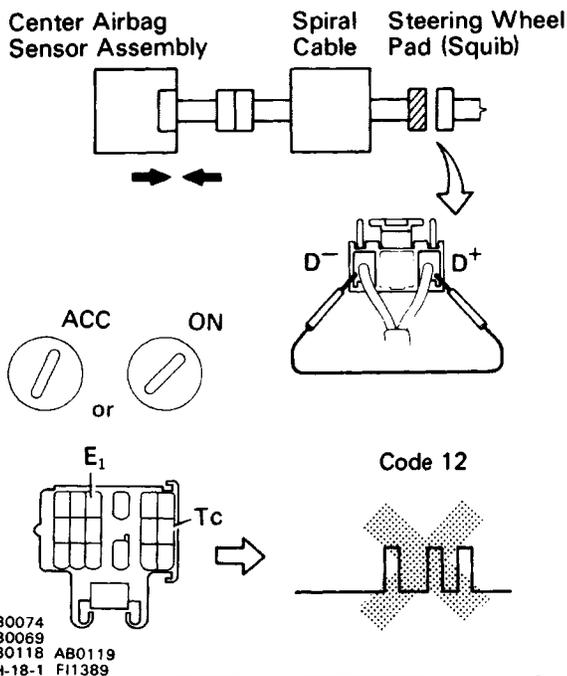


- C** Measure voltage at D+ on spiral cable side of connector between spiral cable and steering wheel pad.
- OK** Voltage: 0 v

OK

NG Go to step **7** .

5 Check center airbag sensor assembly.



- P**
 - (1) Turn ignition switch LOCK.
 - (2) Disconnect negative (-) terminal cable from battery.
 - (3) Connect connector to center airbag sensor assembly.
 - (4) Using a service wire, connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
 - (5) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C**
 - (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
 - (2) Using SST, connect terminals Tc and E I of data link connector 1.
SST 09843-18020
 - (3) Check diagnostic trouble code.

OK Diagnostic trouble code 12 is not output.

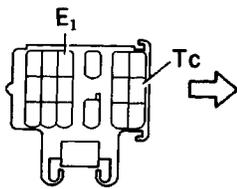
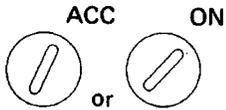
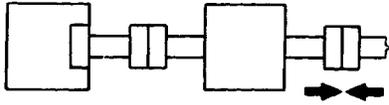
Hint Codes other than code 12 may be output at this time, but this is not relevant to this check.

OK

NG Replace center airbag sensor assembly.

6 Check squib .

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



Code 12



AB0075
AB0118 AB0119
SH-18-1 FI1389

- P** (1) Turn ignition switch LOCK.
(2) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
(3) Connect steering wheel pad (squib) connector.
(4) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E₁ of data link connector 1.
SST 09843-18020
(3) Check diagnostic trouble code.
- OK** **Diagnostic trouble code 12 is not output.**
- Hint** Codes other than code 12 may be output at this time, but this is not relevant to this check.

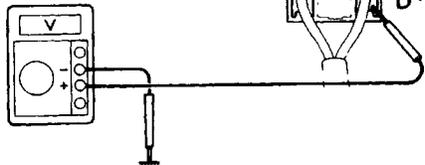
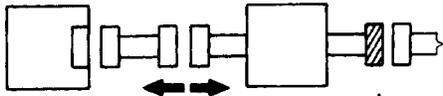
OK

NG Replace steering wheel pad.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

7 Check spiral cable .

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0071
AB0119 AB0067

- P** (1) Turn ignition switch LOCK.
(2) Disconnect connector between center airbag sensor assembly and spiral cable.
(3) Turn ignition switch ON.
- C** Measure voltage at D+ on spiral cable side of connector between spiral cable and steering wheel pad.
- OK** **Voltage: 0 V**

OK

NG Repair or replace spiral cable.

Repair or replace harness or connector between center airbag sensor assembly and spiral cable.

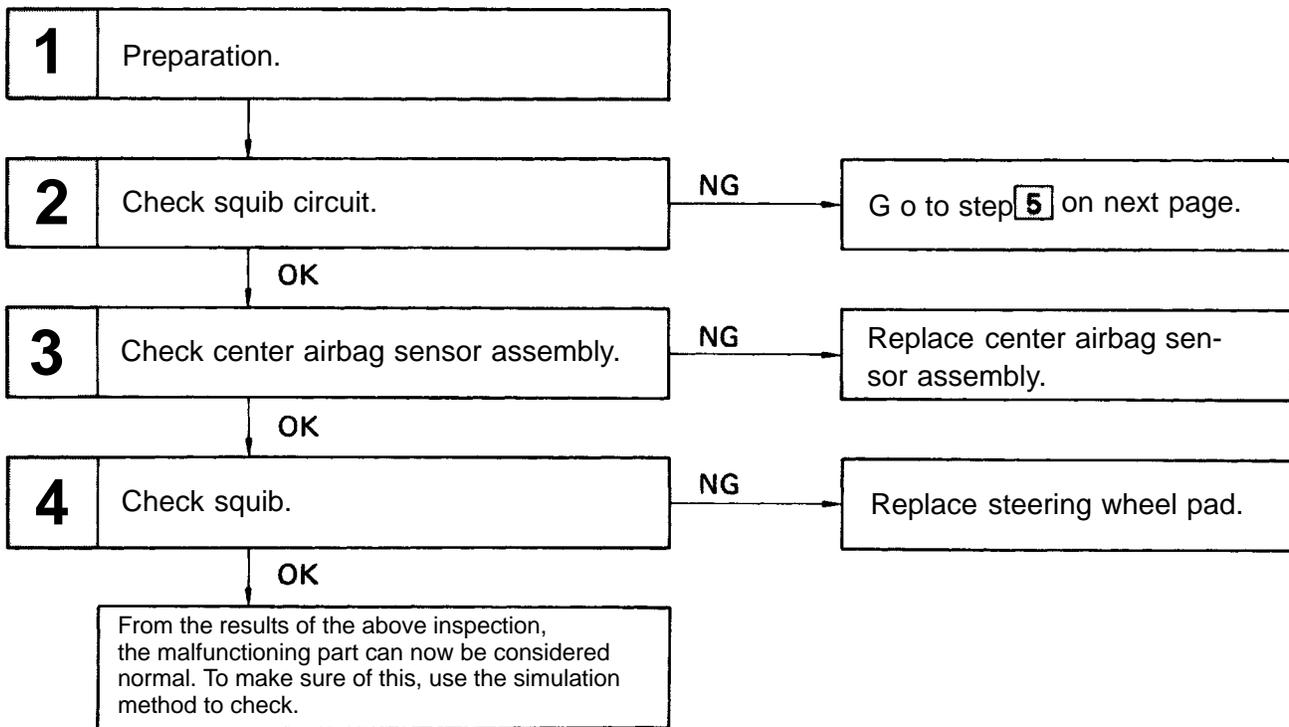
Diag. Trouble Code Short in Squib Circuit (Between D+ Wire Harness and D- Wire Harness)

CIRCUIT DESCRIPTION

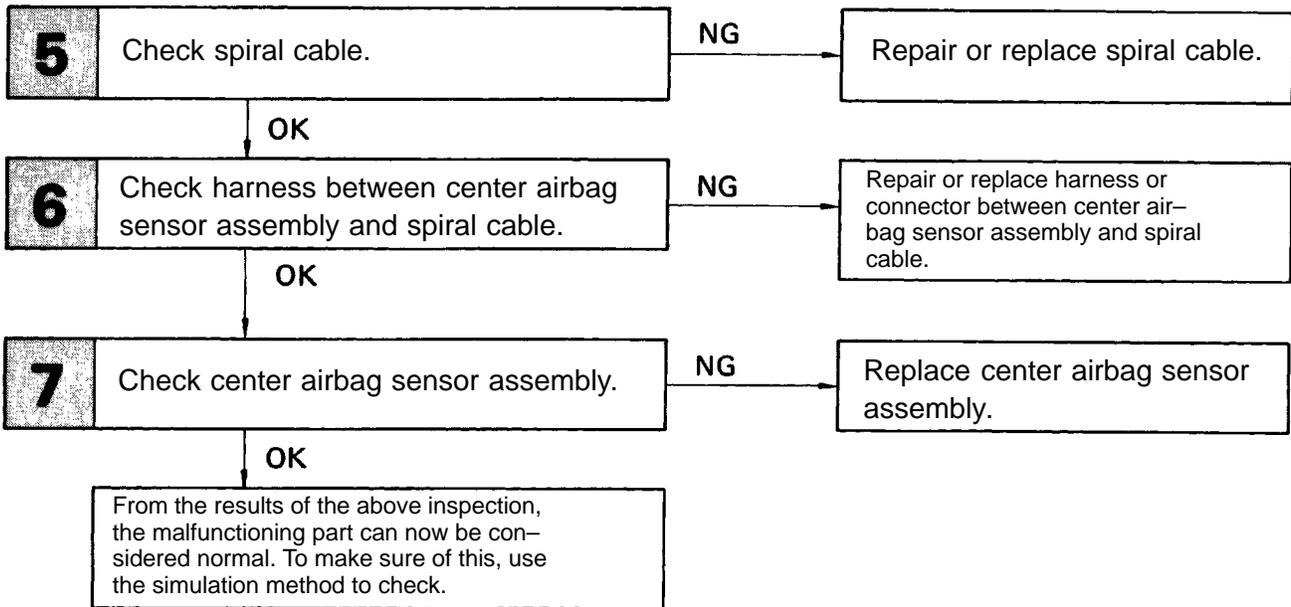
The squib circuit consists of the center airbag sensor assembly, spiral cable and the steering wheel pad (squib). It causes the airbag to deploy when the airbag deployment conditions are satisfied. For details of the function of each component, see FUNCTION OF COMPONENTS on page AB-7. Diagnostic trouble code 13 is recorded when a short is detected in the D+ wire harness and D- wire harness of the squib circuit.

Code. No.	Diagnosis
13	<ul style="list-style-type: none"> -Short circuit between D+ wire harness and D- wire harness of squib. -Squib malfunction. -Spiral cable malfunction. -Center airbag sensor assembly malfunction.

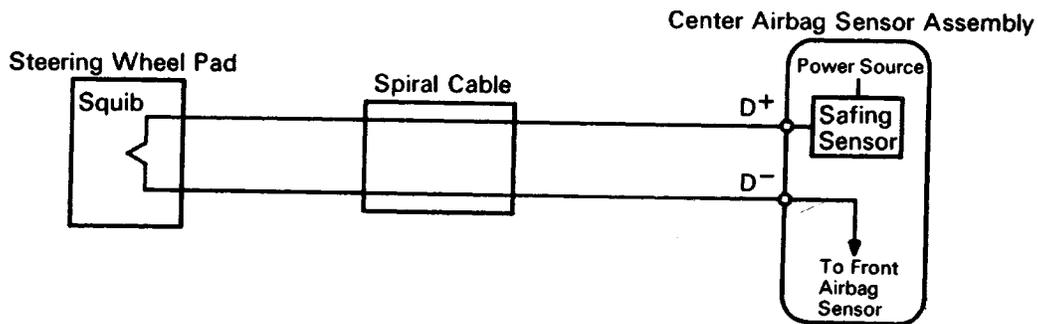
DIAGNOSTIC CHART



DIAGNOSTIC CHART (Cont'd)

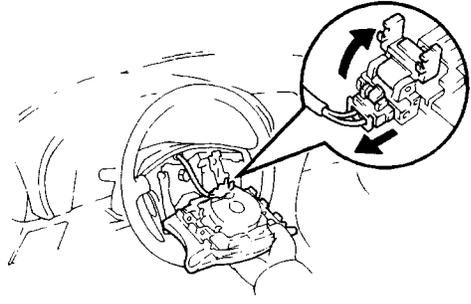


WIRING DIAGRAM

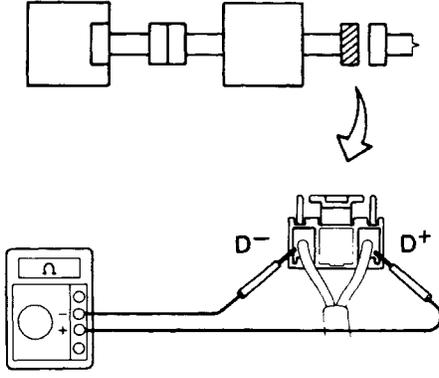


INSPECTION PROCEDURE

P Preparation **C** Check

1	Preparation.
	<p>LOCK</p> <div style="text-align: center;">  </div>
<p>P (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds. (2) Remove steering wheel pad (See page AB-15).</p> <p>Caution</p> <p>When storing steering wheel pad, keep upper surface of the pad facing upward.</p>	
<p><small>AB0117 SR3485</small></p>	



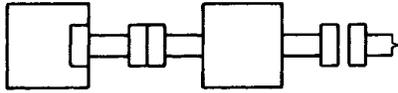
2	Check squib circuit.			
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; padding: 5px;">Center Airbag Sensor Assembly</td> <td style="text-align: center; padding: 5px;">Spiral Cable</td> <td style="text-align: center; padding: 5px;">Steering Wheel Pad (Squib)</td> </tr> </table> <div style="text-align: center; margin-top: 10px;">  </div>	Center Airbag Sensor Assembly	Spiral Cable	Steering Wheel Pad (Squib)	<p>C Measure resistance between D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.</p> <p>OK Resistance: 1 kΩ or more</p>
Center Airbag Sensor Assembly	Spiral Cable	Steering Wheel Pad (Squib)		
<p><small>AB0074 AB0068</small></p>				



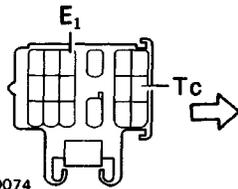
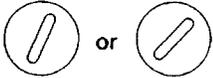
NG Go to step **5** .

3**Check center airbag sensor assembly .**

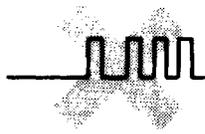
Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



ACC ON



Code 13



AB0074
AB0118 AB0119
SH-18-1 FI1390

OK

P

(1) Connect negative (-) terminal cable to battery.
(2) Clear malfunction code 41 stored in memory (See page AB-31).

C

(1) Turn ignition switch LOCK, and wait at least 2 seconds.

(2) Turn ignition switch ACC or ON, and wait at least 20 seconds.

(3) Using SST, connect terminals Tc and E₁ of data link connector 1.

SST 09843-18020

(4) Check diagnostic trouble code.

OK

Diagnostic trouble code 13 is not output.

Hint

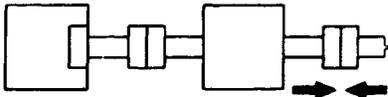
Codes other than code 13 may be output at this time, but this is not relevant to this check.

NG

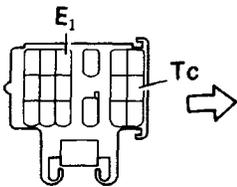
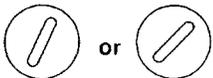
Replace center airbag sensor assembly.

4**Check squib.**

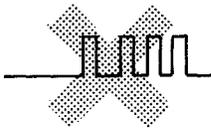
Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



ACC ON



Code 13



AB0075
AB0118 AB0119
SH-18-1 FI1390

OK

P

(1) Turn ignition switch LOCK.

(2) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.

(3) Connect steering wheel pad (squib) connector.

(4) Connect negative (-) terminal cable to battery.

(5) Clear malfunction code 41 stored in memory (See page AB-31).

C

(1) Turn ignition switch LOCK, and wait at least 2 seconds.

(2) Turn ignition switch ACC or ON, and wait at least 20 seconds.

(3) Using SST, connect terminals Tc and E₁ of data link connector 1.

SST 09843-18020

(4) Check diagnostic trouble code.

OK

Diagnostic trouble code 13 is not output.

Hint

Codes other than code 13 may be output at this time, but this is not relevant to this check.

NG

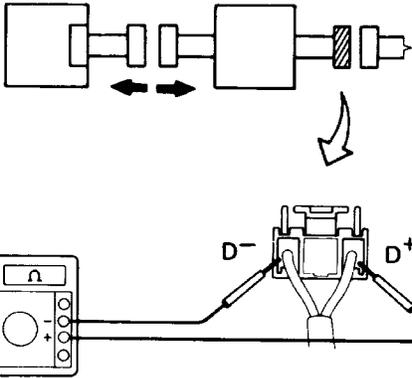
Replace steering wheel pad.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

5

Check spiral cable.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0073
AB0068

- P** (1) Disconnect connector between center airbag sensor assembly and spiral cable.
(2) Release airbag activation prevention mechanism on center airbag sensor assembly side of spiral cable connector (See page AB-54).
- C** Measure resistance between D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
- OK** Resistance: $\infty \Omega$

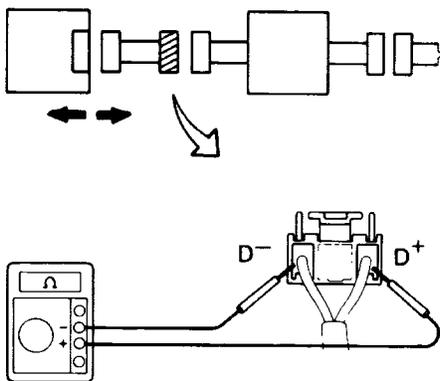
OK

NG Repair or replace spiral cable.

6

Check harness between center airbag sensor assembly and spiral cable.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0071
AB0068

- P** (1) Disconnect center airbag sensor assembly connector.
(2) Release airbag activation prevention mechanism on center airbag sensor assembly connector (See page AB-54).
- C** Measure resistance between D+ and D- on center airbag sensor assembly side of connector between center airbag sensor assembly and spiral cable.
- OK** Resistance: $\infty \Omega$

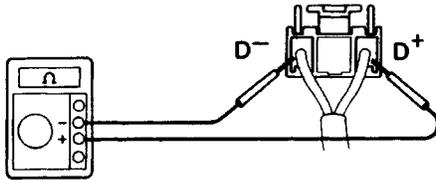
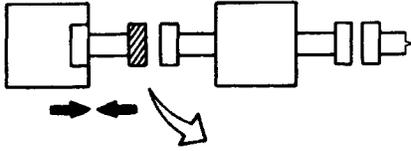
OK

NG

Repair or replace harness or connector between center airbag sensor assembly and spiral cable.

7**Check center airbag sensor assembly.**

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0073
AB0068

- P** Connect center airbag sensor assembly connector.
- C** Measure resistance between D+ and D- on center airbag sensor assembly side of connector between center airbag sensor assembly and spiral cable.
- OK** Resistance: 1 kΩ or more

OK**NG** Replace center airbag sensor assembly.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

RELEASE METHOD OF AIRBAG ACTIVATION PREVENTION MECHANISM

An airbag activation prevention mechanism is built into the connector for the squib circuit of the airbag system. When release of the airbag activation prevention mechanism is directed in the troubleshooting procedure, as shown in the illustration of the connectors 0 and

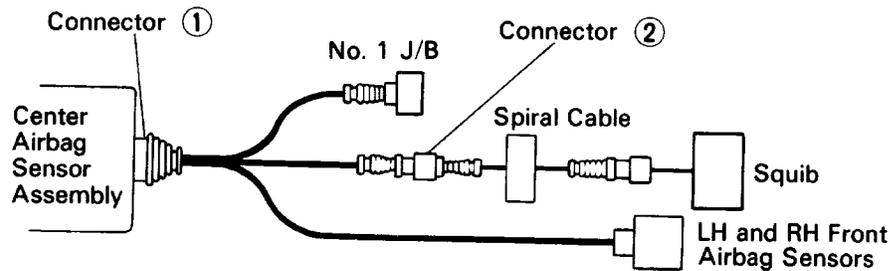
(1) below, insert paper which is the same thickness as the male terminal, between the terminal and the short spring.

CAUTION;

- **NEVER RELEASE** the airbag activation prevention mechanism on the steering wheel pad connector.

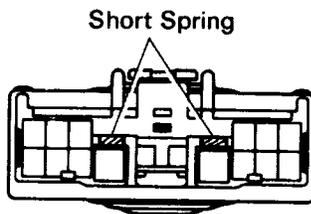
NOTICE:

- Do not release the airbag activation prevention mechanism unless specifically directed by the troubleshooting procedure.
- If the paper inserted is too thick the terminal and short spring may be damaged, so always use paper the same thickness as the male terminal.

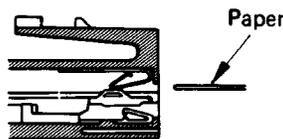


AB0027

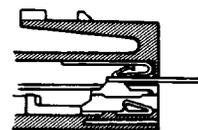
Center Airbag Sensor Assembly Connector (Connector T)



Before Release



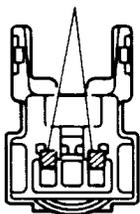
After Release



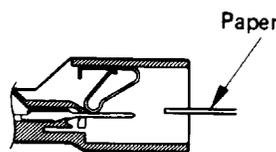
AB0131 AB0042 AB0043

Spiral Cable Connector (Connector T)

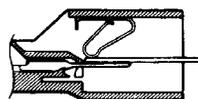
Short Spring



Before Release



After Release



AB0130 AB0045 AB0046

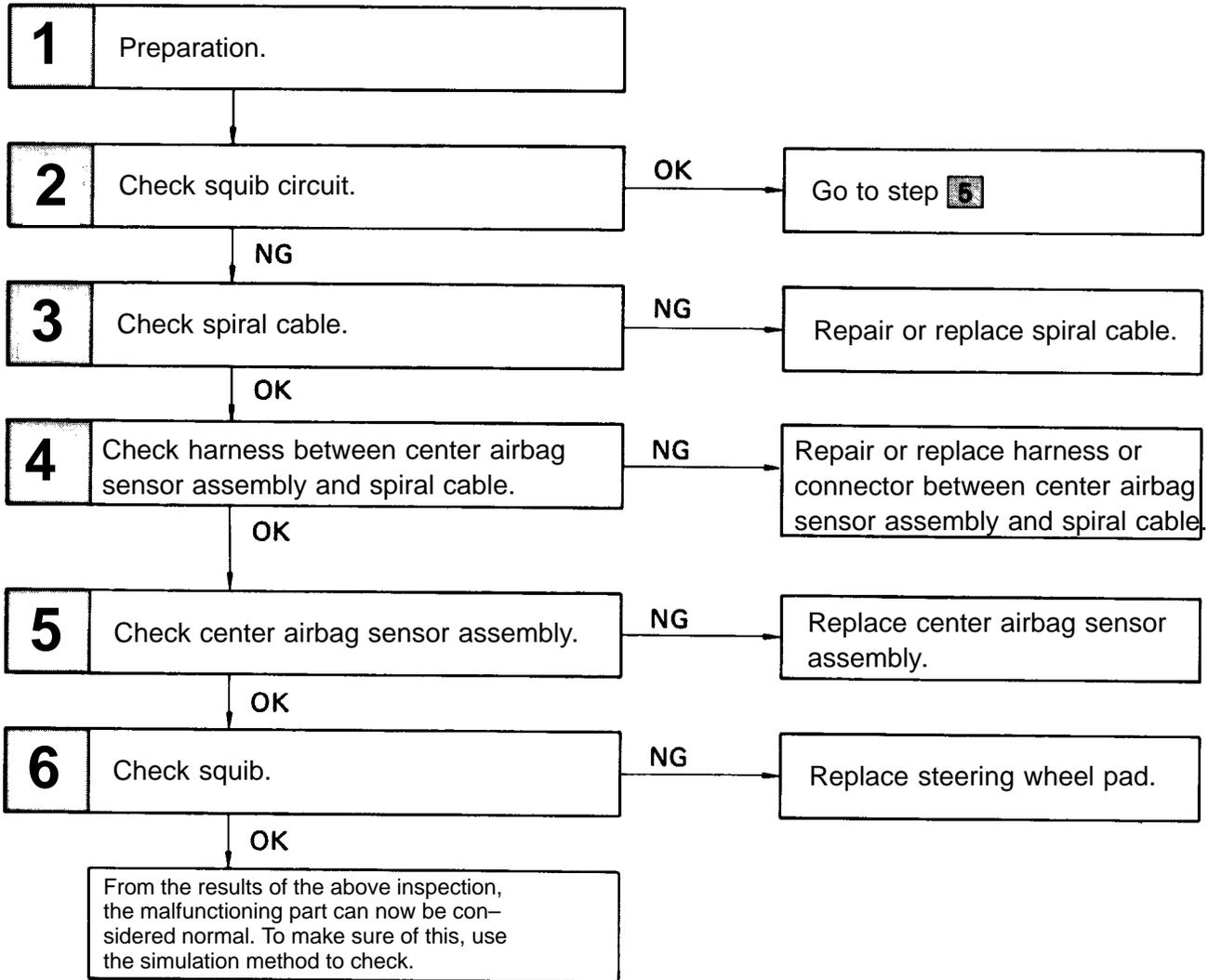
Diag. Trouble 14 Code Open in Squib Circuit

CIRCUIT DESCRIPTION

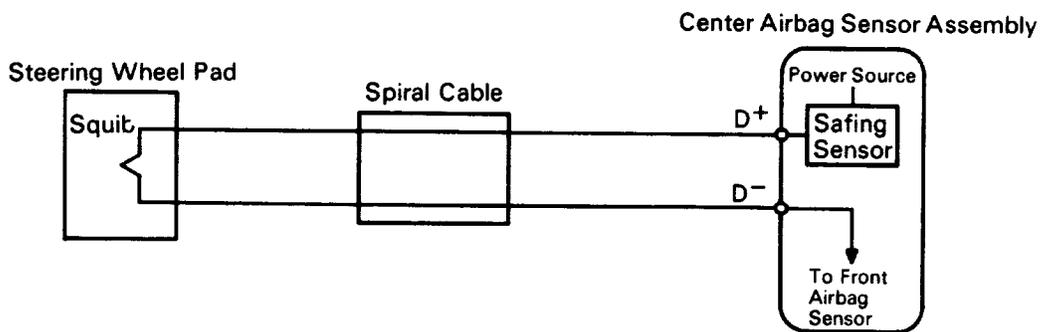
The squib circuit consists of the center airbag sensor assembly, spiral cable and the steering wheel pad (squib). It causes the airbag to deploy when the airbag deployment conditions are satisfied. For details of the function of each component, see FUNCTION OF COMPONENTS on page AB-7. Diagnostic trouble code 14 is recorded when an open is detected in the squib circuit.

Code. No.	Diagnosis
14	<ul style="list-style-type: none">• Open circuit in D+ wire harness or D- wire harness of squib.• Squib malfunction.• Spiral cable malfunction.• Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART



WIRING DIAGRAM



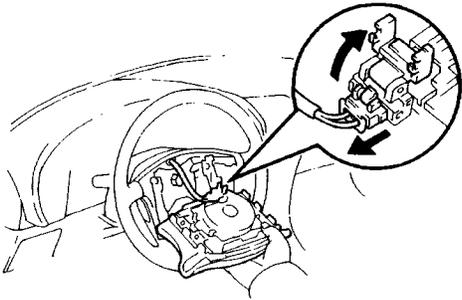
INSPECTION PROCEDURE

P Preparation **C** Check

1 Preparation.



LOCK



AB0117
SR3485

- P** (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
- (2) Remove steering wheel pad (See page AB-15).

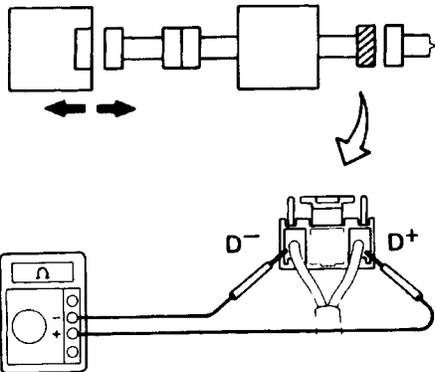
Caution

When storing steering wheel pad, keep upper surface of the pad facing upward.



2 Check squib circuit.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0072
AB0068

- P** Disconnect center airbag sensor assembly connector.
- C** Measure resistance between D+ and D- on spiral cable side of connector- between spiral cable and steering wheel pad.

OK Resistance: Less than 1 Ω

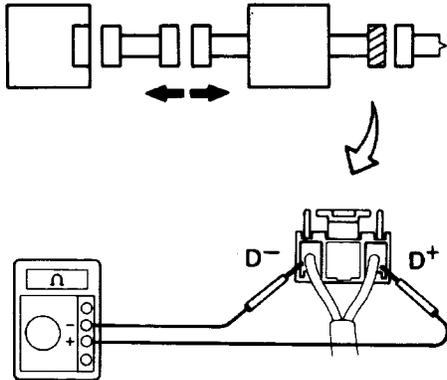


OK Go to step **5** .

3

Check spiral cable.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0071
AB0068

- P** Disconnect connector between center airbag sensor assembly and spiral cable.
- C** Measure resistance between D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
- OK** Resistance: Less than 1 Ω

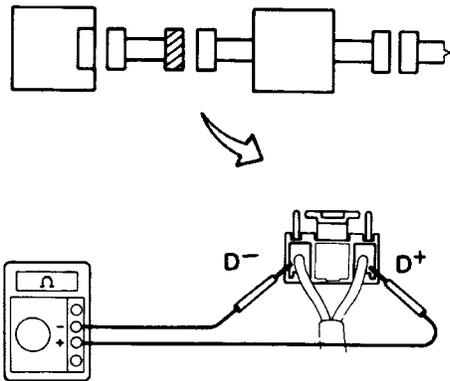
OK

NG Repair or replace spiral cable.

4

Check harness between center airbag sensor assembly and spiral cable.

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0071
AB0068

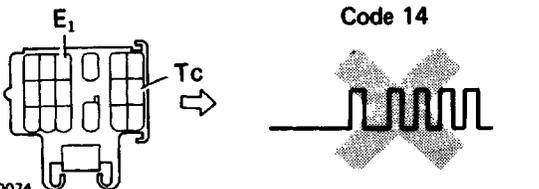
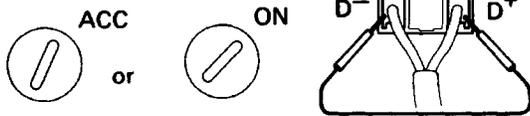
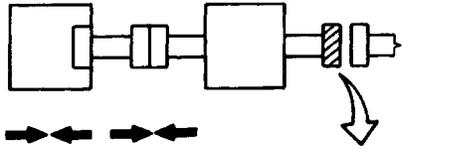
- C** Measure resistance between D+ and D- on center airbag sensor assembly side of connector between center airbag sensor assembly and spiral cable.
- OK** Resistance: Less than 1Ω

OK

NG Repair or replace harness or connector between center airbag sensor assembly and spiral cable.

5 Check center airbag sensor assembly .

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0074
AB0069
AB0118 AB0119
SH-18-1 FI1391

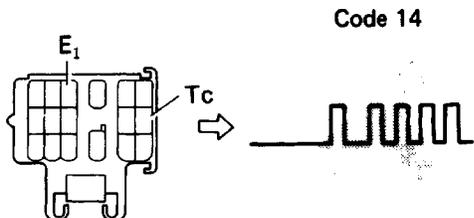
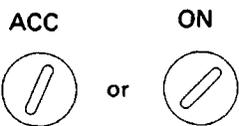
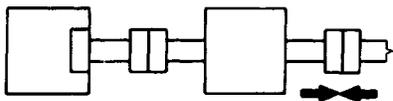
- P** (1) Connect connector to center airbag sensor assembly.
(2) Connect connector between center airbag sensor assembly and spiral cable.
(3) Using a service wire, connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
(4) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E I of data link connector 1.
SST 09843-18020
(3) Check diagnostic trouble code.
- OK** **Diagnostic trouble code 14 is not output.**
- Hint** Codes other than code 14 may be output at this time, but this is not relevant to this check.

OK

NG Replace center airbag sensor assembly.

6 Check squib .

Center Airbag Sensor Assembly Spiral Cable Steering Wheel Pad (Squib)



AB0075
AB0118 AB0119
SH-18-1 FI1391

- P** (1) Turn ignition switch LOCK.
(2) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
(3) Connect steering wheel pad (squib) connector.
(4) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E₁ of data link connector 1.
SST 09843-18020
(3) Check diagnostic trouble code.
- OK** **Diagnostic trouble code 14 is not output.**
- Hint** Codes other than code 14 may be output at this time, but this is not relevant to this check.

OK

NG Replace steering wheel pad.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

Diag. Trouble Code 15 Open in Front Airbag Sensor Circuit

CIRCUIT DESCRIPTION

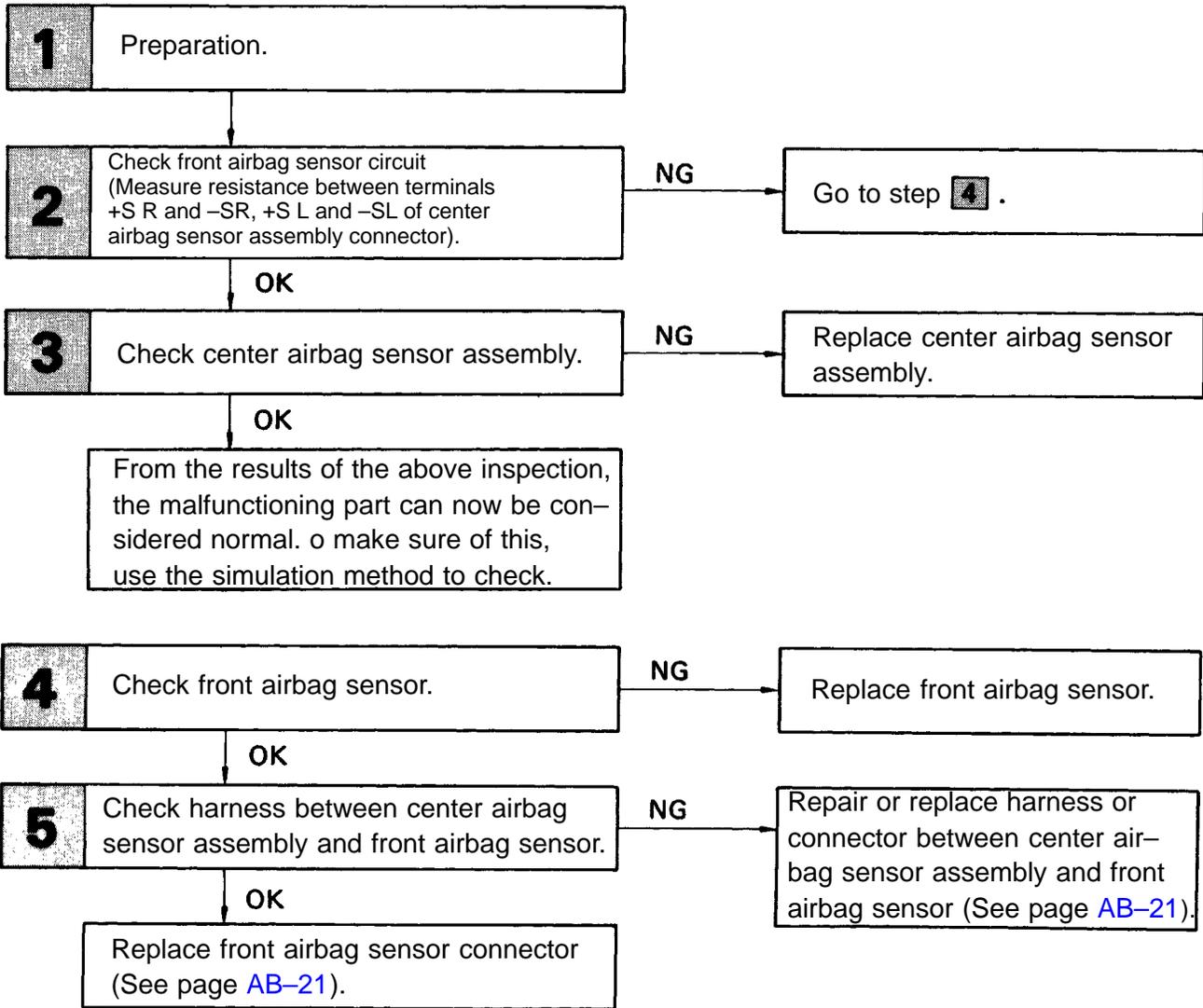
The front airbag sensor detects the deceleration force in a frontal collision and is located in the front fender on the left and right sides.

For details of the function of each component, see FUNCTION OF COMPONENTS on page AB-7. Diagnostic trouble code 15 is recorded when an open is detected in the front airbag sensor circuit.

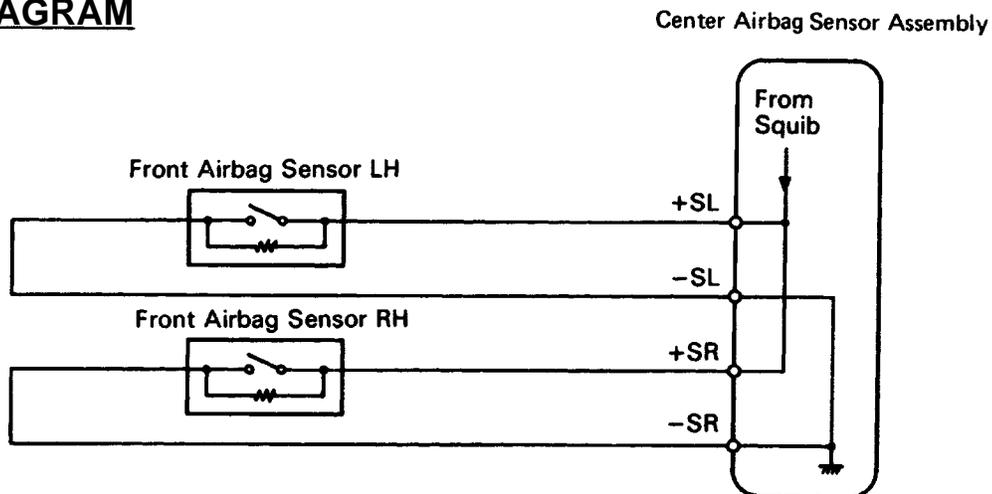
NOTICE: The front airbag sensor connector is equipped with an electrical connection check mechanism for the purpose of detecting an open in the front airbag sensor (See page AB-9). This mechanism is constructed so that when the terminals of the front airbag sensor have been connected (when the connector housing lock is in the locked condition), the connection detection pin on the wire harness side connects with the terminals for diagnosis use on the sensor side. If the connector is not properly connected, the diagnosis system may detect only a malfunction code, even though the airbag system is functioning normally. When connecting the front airbag sensor connector, make sure it is connected properly. If diagnostic trouble code 15 is displayed after the front airbag sensor connector has been connected, check again that it is properly connected.

Code No.	Diagnosis
15	<ul style="list-style-type: none">• Open circuit in +S wire harness or –S wire harness of front airbag sensor.• Front airbag sensor malfunction.• Malfunction of electrical connection check mechanism of front airbag sensor.• Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART



WIRING DIAGRAM



INSPECTION PROCEDURE

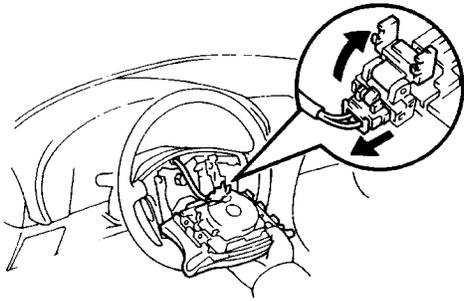
P Preparation **C** Check

1

Preparation .



LOCK



AB0117
SR3485

- P** (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds.
- (2) Remove steering wheel pad
(See page [AB-15](#)).

Caution

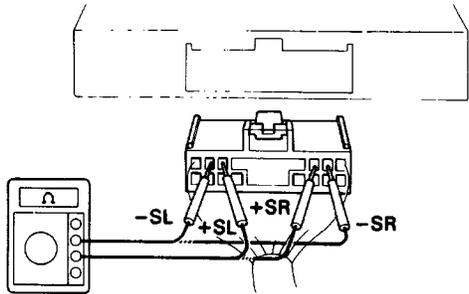
When storing steering wheel pad, keep upper surface of pad facing upward.



2

Check front airbag sensor circuit (Measure resistance between terminals +SR and -SR, +SL and -SL of center airbag sensor assembly connector.)

Center Airbag Sensor Assembly



AB0032

- P** Disconnect center airbag sensor assembly connector.
- C** Measure resistance between terminals + SR and -S R, +S L and -S L of harness side connector of center airbag sensor assembly.

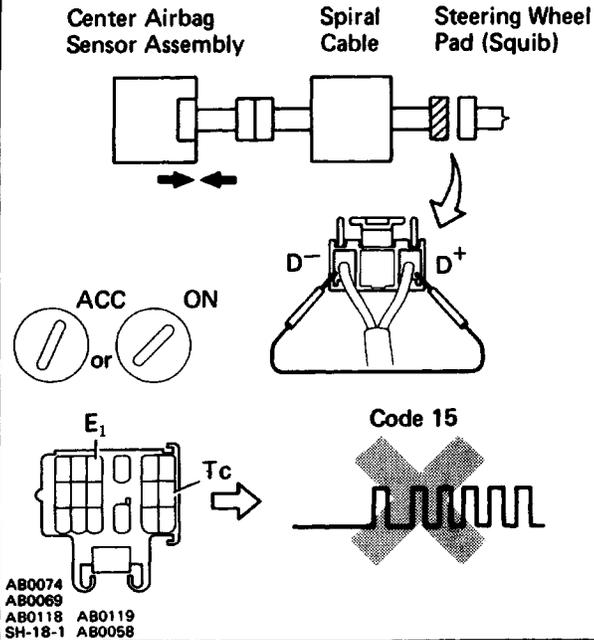
OK Resistance: 755Ω - 885Ω



NG Go to step **4** .

3

Check center airbag sensor assembly.



- P** (1) Connect connector to center airbag sensor assembly.
 (2) Using a service wire, connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad.
 (3) Connect negative (-) terminal cable to battery, and wait at least 2 seconds.
- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
 (2) Using SST, connect terminals Tc and E₁ of data link connector 1.
 SST 09843-18020
 (3) Check diagnostic trouble code.
- OK** **Diagnostic trouble code 15 is not output.**
- Hint** Codes other than code 15 may be output at this time, but this is not relevant to this check.

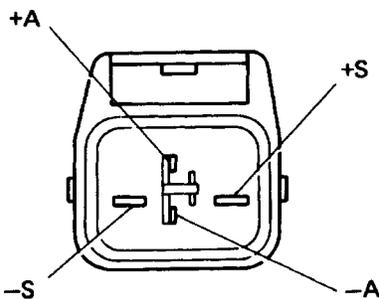
OK

NG Replace center airbag sensor assembly.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

4

Check front airbag sensor.



- P** Disconnect front airbag sensor connector.
- C** Measure resistance between each terminal of front airbag sensor.

OK

Terminal	Resistance
(+) S - (-) A	755Ω - 885 Ω
(+) S - (-) S	∞
(-) S - (-) A	Less than 1 Ω

Notice

- Do not touch ohmmeter probes strongly against terminals of front airbag sensor.
- Make sure the front airbag sensor connector is properly connected.

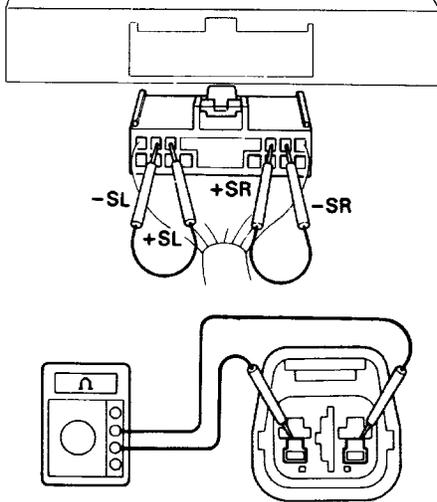
AB0034

OK

NG Replace front airbag sensor.

5**Check harness between center airbag sensor assembly and front airbag sensor.**

Center Airbag Sensor Assembly

AB0038
AB0039

- P** (1) Disconnect center airbag sensor assembly connector.
 (2) Using service wires, connect +SR and -SR, +SL and -SL on the wire harness side of the center airbag sensor assembly connector.
- C** Measure resistance between terminals +SR and -SR, +S L and -SL of harness side connector of front airbag sensor.

OK Resistance: Less than 1 Ω **Notice**

- Lightly touch ohmmeter probes at position shown in illustration.
- Make sure the front airbag sensor connector is properly connected.

OK**NG**

Repair or replace harness or connector between center airbag sensor assembly and front airbag sensor (See page [AB-21](#)).

Replace front airbag sensor connector (See page [AB-21](#)).

Diag. Trouble Code 22 Airbag Warning Light System Malfunction

CIRCUIT DESCRIPTION

The airbag warning light is located on the combination meter.

When the airbag system is normal, the airbag warning light lights up for approx.6 seconds after the ignition switch is turned from LOCK position to ACC or ON position, and then turns off automatically. If there is a malfunction in the airbag system, the airbag warning light lights up to inform the driver of the abnormality.

When terminals Tc and E₁ of the data link connector 1 are connected, the diagnostic trouble code is displayed by the blinking of the airbag warning light.

The airbag warning light circuit is equipped with an electrical connection check mechanism which detects when the connector to the center airbag sensor assembly is not properly connected.

If the connector to the center airbag sensor assembly is not properly connected, the airbag warning light will not light up.

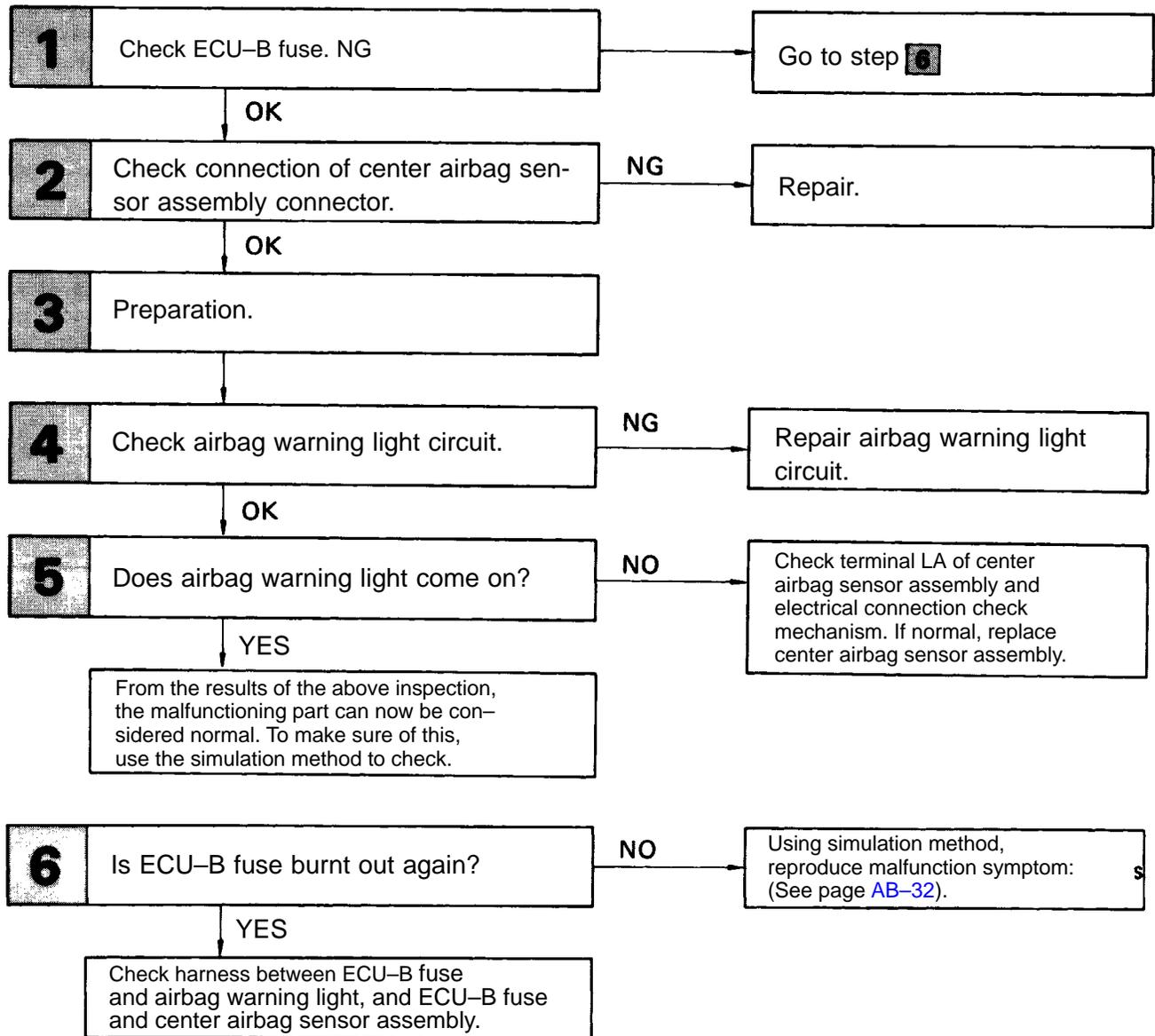
Diagnostic trouble code 22 is recorded when a malfunction occurs in the airbag warning light system. If an OPEN malfunction occurs in the airbag warning light system, the airbag warning light does not light up, so that until the malfunction is repaired, the diagnostic trouble codes (including code 22) cannot be confirmed.

Code No.	Diagnosis
22	<ul style="list-style-type: none">• Open circuit in airbag warning light system.• Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART

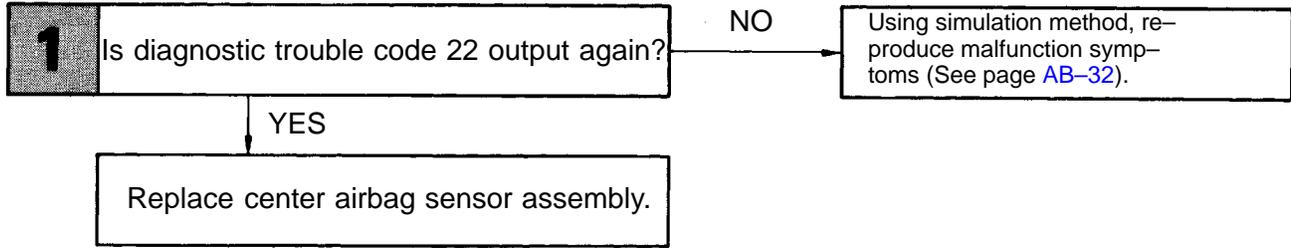
Troubleshooting for this system is different for when the airbag warning light does not light up and for when diagnostic trouble code 22 is output. Confirm the problem symptoms first before selecting the appropriate troubleshooting procedure.

HINT: If airbag warning light does not light up, perform the following troubleshooting:

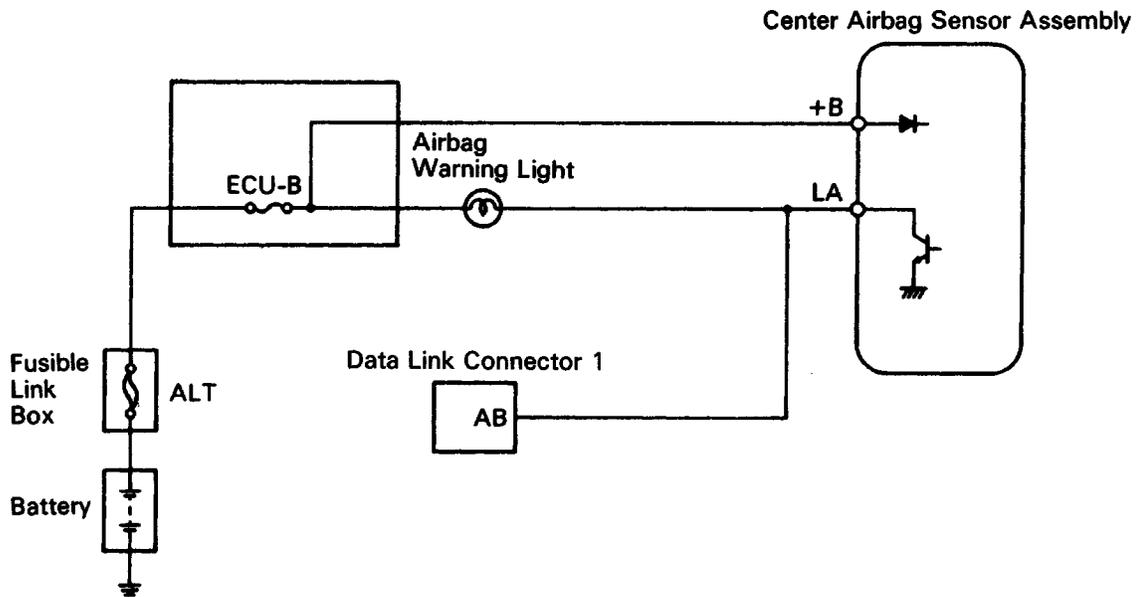


DIAGNOSTIC CHART

HINT: If diagnostic trouble code 22 is output, perform the following troubleshooting:



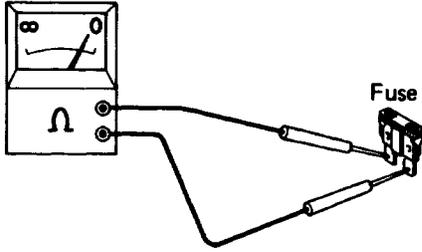
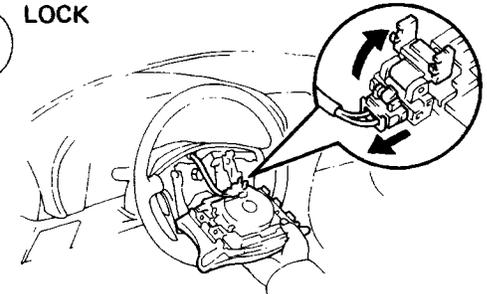
WIRING DIAGRAM



INSPECTION PROCEDURE

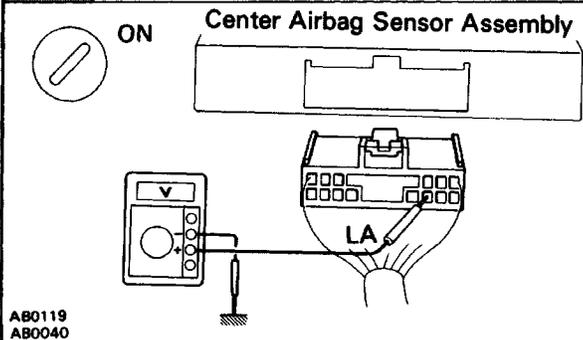
P Preparation **C** Check

HINT: If airbag warning light does not light up, perform the following troubleshooting:

<p>1</p>	<p>Check ECU-B fuse.</p>	<p>P Remove ECU-B fuse. C Check continuity of ECU-B fuse. OK Continuity. Hint Fuse may be burnt out even if it appears to be OK during visual inspection. If fuse is OK, install it.</p>
 <p>F10044</p>		
<p>OK</p>		<p>NG Go to step (6).</p>
<p>2</p>	<p>Check connection of center airbag sensor assembly connector.</p>	
<p>OK</p>		<p>NG Repair.</p>
<p>3</p>	<p>Preparation.</p>	
 <p>A80117 SR3485</p>		<p>P (1) Disconnect battery negative (-) terminal cable, and wait at least 20 seconds. (2) Remove steering wheel pad (See page AB-15) . Caution When storing steering wheel pad, keep upper surface of pad facing upward.</p>



4 Check airbag warning light circuit.

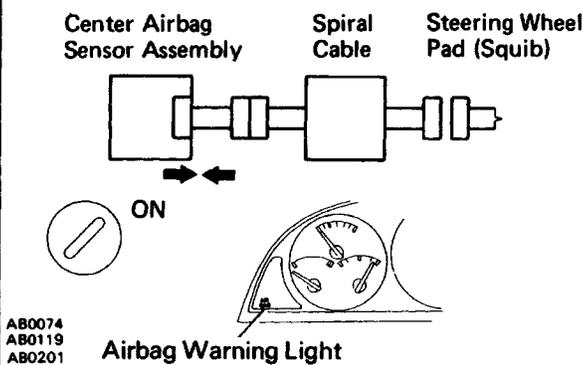


- P** (1) Disconnect center airbag sensor assembly connector.
(2) Connect negative (-) terminal cable to battery.
(3) Turn ignition switch ACC or ON.
- C** Measure voltage LA terminal of harness side connector of center airbag sensor assembly.
- OK** Voltage: Battery positive voltage.

OK

NG Repair airbag warning light circuit.

5 Does airbag warning light come on ?



- P** (1) Disconnect negative (-) terminal cable from battery.
(2) Connect center airbag sensor assembly connector.
(3) Connect negative (-) terminal cable to battery.
(4) Turn ignition switch ACC or ON.
- C** Check operation of airbag warning light.

YES

NO Check terminal LA of center airbag sensor assembly and electrical connection check mechanism. If normal, replace center airbag sensor assembly.

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

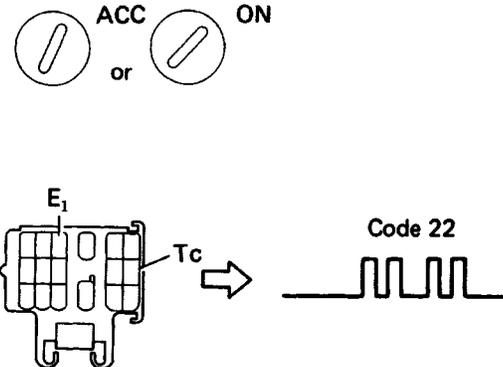
6 Is new ECU-B fuse burnt out again ?

YES

NO Using simulation method, reproduce malfunction symptoms (See page [AB-32](#)).

Check harness between ECU-B fuse and airbag warning light, and ECU-B fuse and center airbag sensor assembly.

HINT: If diagnostic trouble code 22 is output, perform the following troubleshooting:

1	Is diagnostic trouble code 22 output again?	
 <p style="font-size: small; margin-top: 10px;">AB0118 AB0119 SH-18-1 F11392</p>	<p>P Clear malfunction code 41 stored in memory. See page AB-31).</p> <p>C (1) Turn ignition switch LOCK, and wait at least 2 seconds. (2) Turn ignition switch ACC or ON, and wait at least 20 seconds. (3) Using SST, connect terminals Tc and E I of data link connector 1. SST 09843-18020 (4) Check diagnostic trouble code.</p>	
YES	NO	Using simulation method, reproduce malfunction symptoms (See page AB-32).
Replace center airbag sensor assembly.		

Diag. Trouble Code 31 Center Airbag Sensor Assembly Malfunction

CIRCUIT DESCRIPTION

The center airbag sensor assembly consists of a center airbag sensor, safing sensors, ignition control and drive circuit, diagnosis circuit, etc.

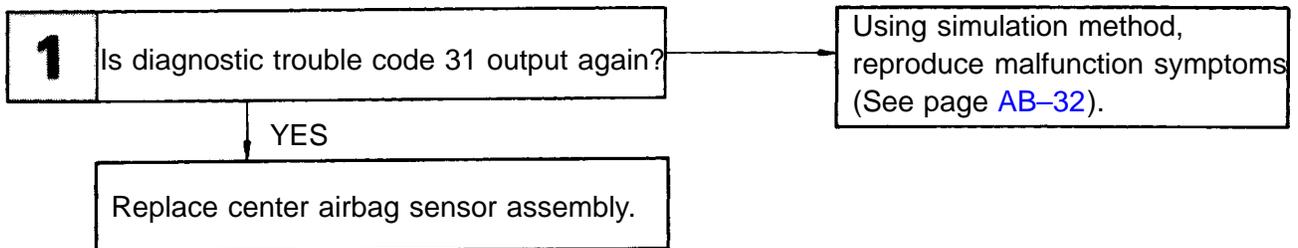
It receives signals from the airbag sensors, judges whether or not the airbag must be activated, and diagnoses system malfunction.

Diagnostic trouble code 31 is recorded when occurrence of a malfunction in the center airbag sensor assembly is detected.

Code No.	Diagnosis
31	• Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART

HINT: When a malfunction code other than code 31 is displayed at the same time, first repair the malfunction indicated by the malfunction code other than code 31.

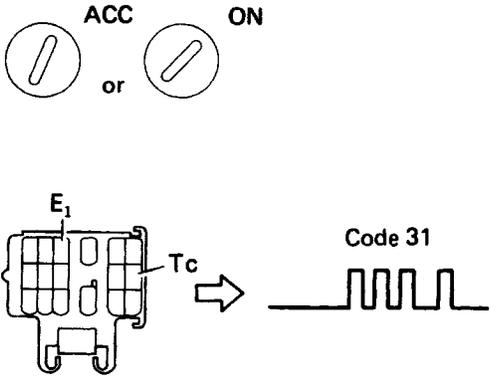


INSPECTION PROCEDURE

HINT: When a malfunction code other than code 31 is displayed at the same time, first repair the malfunction indicated by the malfunction code other than code 31.

Preparation

P Preparation **C** Check

1	Is diagnostic trouble code 31 output again?
 <p style="font-size: small; margin-top: 10px;">AB0118 AB0119 SH-18-1 FI1394</p>	<p>P Clear malfunction code 41 stored in memory (See page AB-31).</p> <p>C</p> <ol style="list-style-type: none"> (1) Turn ignition switch LOCK, and wait at least 20 seconds. (2) Turn ignition switch ACC or ON, and wait at least 20 seconds. (3) Repeat operation in step (1) and (2) at least 5 times. (4) Using SST, connect terminals Tc and E I of data link connector 1. SST 09843-18020 (5) Check diagnostic trouble code.
YES	NO
	Using simulation method, reproduce malfunction symptoms (See page AB-32).

Replace center airbag sensor assembly.

Diag. Trouble Code 41 Malfunction Stored in Memory

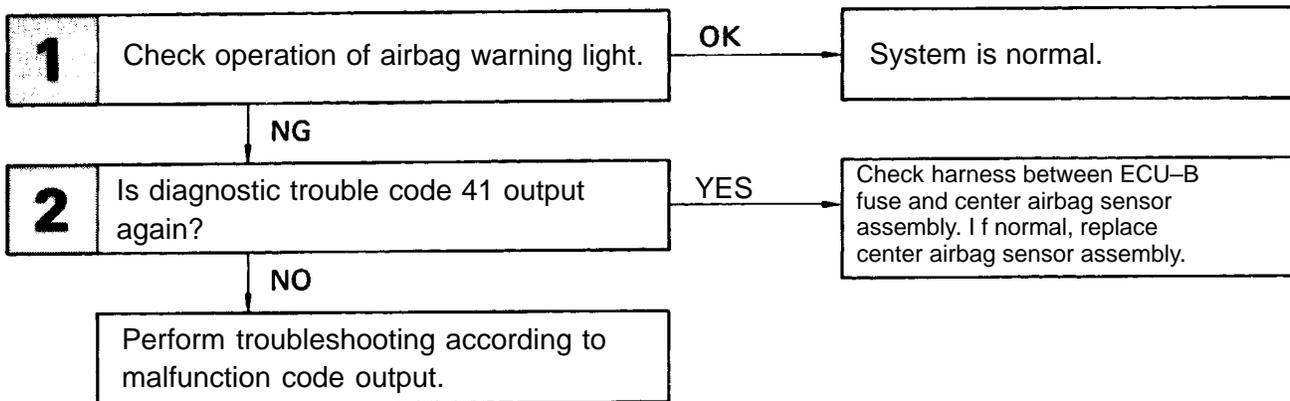
CIRCUIT DESCRIPTION

If a malfunction occurs in the airbag system, malfunction codes 11 to 31 may be output, and when the battery is disconnected after the malfunction is repaired, malfunction codes 11 to 31 will be cleared, but code 41 will be output instead.

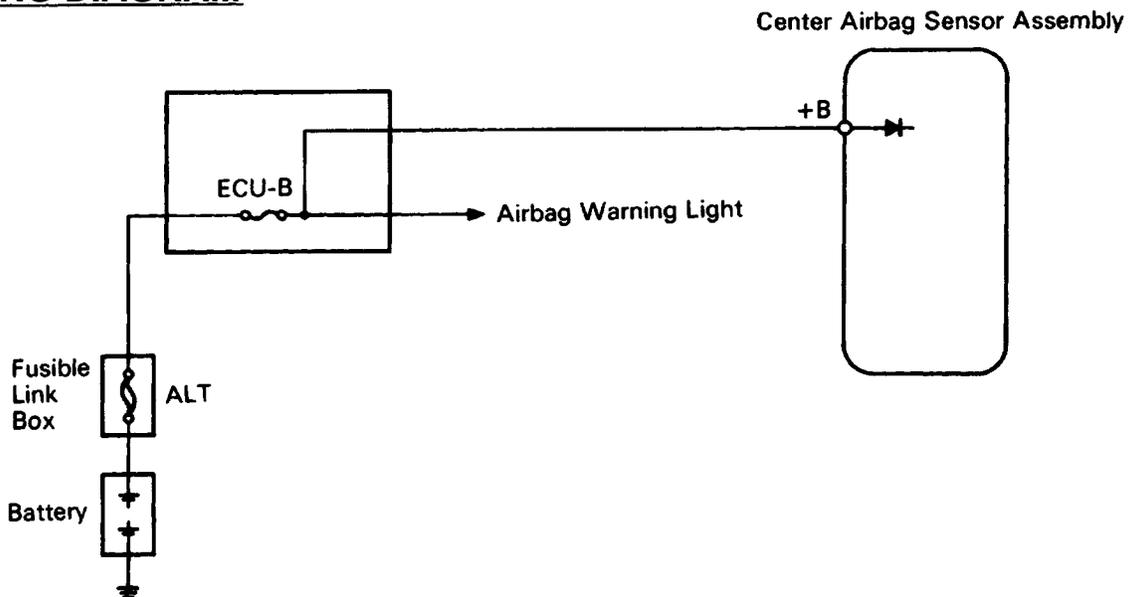
So long as the cancellation operation for a malfunction recorded in memory (See page AB-31) is not performed, code 41 recorded in the center airbag sensor assembly and the airbag warning light remains lit up.

Code No.	Diagnosis
41	-Malfunction recorded in memory. -Center airbag sensor assembly malfunction.

DIAGNOSTIC CHART



WIRING DIAGRAM



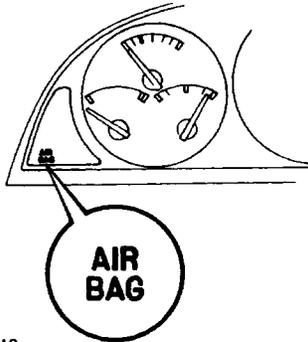
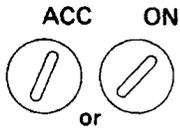
INSPECTION PROCEDURE

P Preparation

C Check

1

Check operation of airbag warning light.



AB0118 AB0119
AB0199

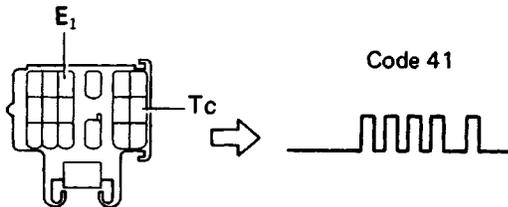
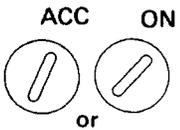
- P** Clear malfunction code 41 stored in memory (See page AB-31).
- C** (1) Turn ignition switch LOCK, and wait at least 2 seconds.
(2) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(3) Check operation of airbag warning light.
- OK** Airbag warning light turns off.

NG

OK System is normal.

2

Is diagnostic trouble code 41 output again?



AB0118 AB0119
SH-18-1 FI1396

- C** (1) Turn ignition switch ACC or ON, and wait at least 20 seconds.
(2) Using SST, connect terminals Tc and E₁ of data link connector 1.
SST 09843-18020
(3) Check diagnostic trouble code.

NO

YES Check harness between ECU-B fuse and center airbag sensor assembly. If normal, replace center airbag sensor assembly.

Perform troubleshooting according to malfunction code output.

Airbag Warning Light System (Always Lit Up)

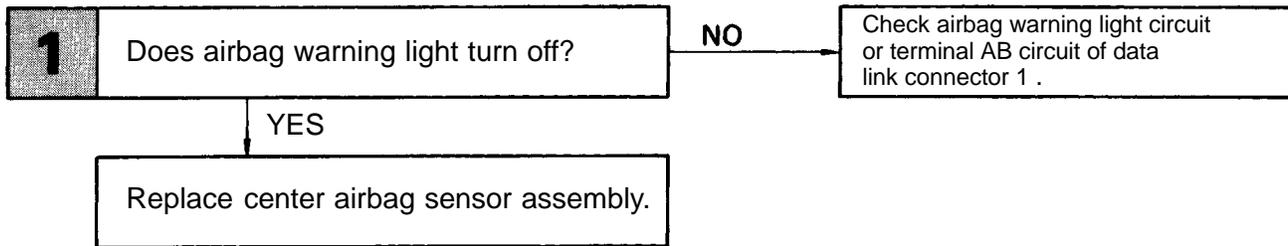
CIRCUIT DESCRIPTION

The airbag warning light is located on the combination meter.

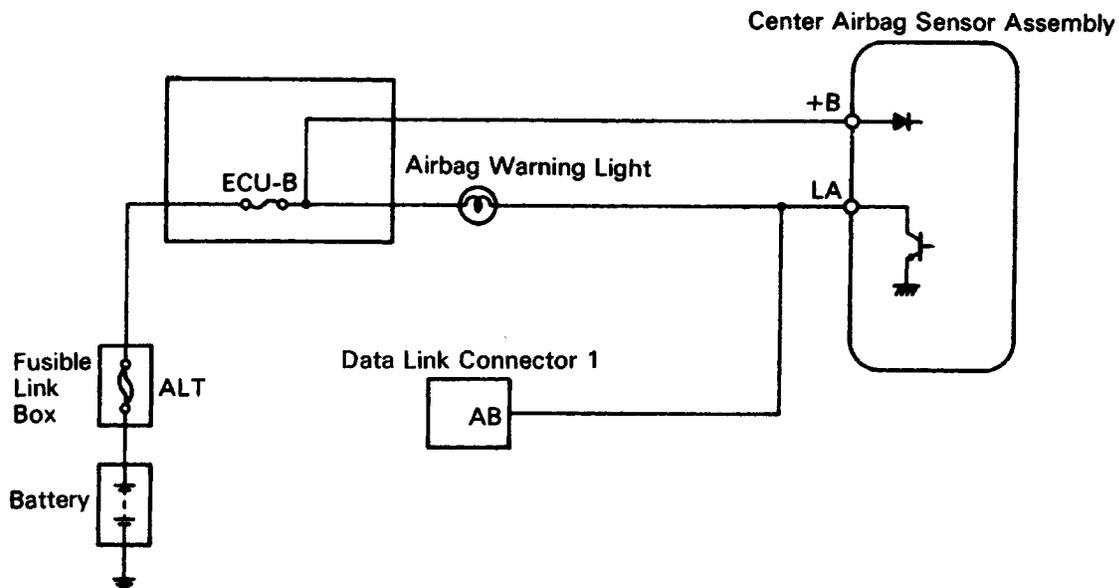
When the airbag system is normal, the airbag warning light lights up for approx. 6 seconds after the ignition switch is turned from LOCK position to ACC or ON position, and then turns off automatically. If there is a malfunction in the airbag system, the airbag warning light lights up to inform the driver of the abnormality.

When terminals Tc and E₁ of the data link connector 1 are connected, the diagnostic trouble code is displayed by the blinking of the airbag warning light.

DIAGNOSTIC CHART



WIRING DIAGRAM



INSPECTION PROCEDURE

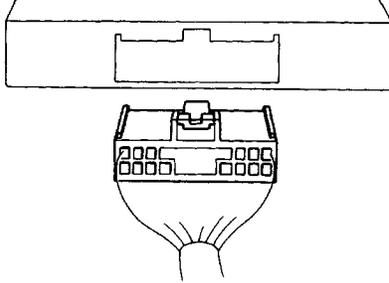
P Preparation **C** Check

1 Does airbag warning light turn off ?



LOCK

Center Airbag Sensor Assembly



A80117
A80041

- P** (1) Turn ignition switch LOCK.
- (2) Disconnect negative (-) terminal cable from battery.
- (3) Disconnect center airbag sensor assembly connector.
- (4) Connect negative (-) terminal cable to battery.
- C** Check operation of airbag warning light.

YES

NO Check airbag warning light circuit or terminal AB circuit of data link connector 1.

Replace center airbag sensor assembly.

Tc Terminal Circuit

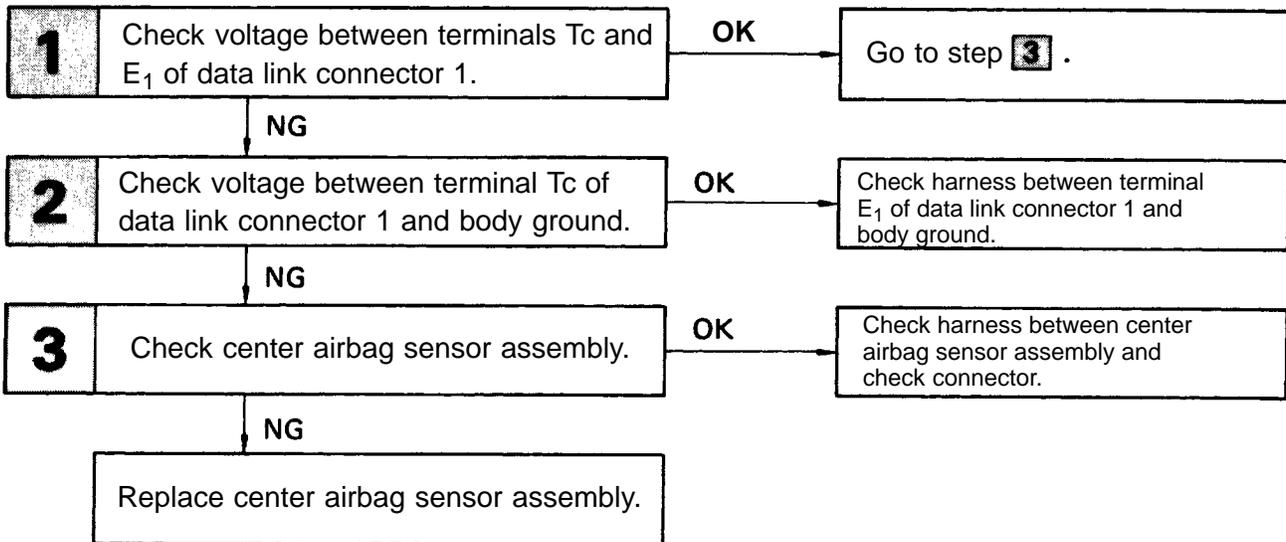
CIRCUIT DESCRIPTION

By connecting terminals Tc and E₁ of the data link connector 1, the center airbag sensor assembly is set in the diagnostic trouble code output mode. The diagnostic trouble codes are displayed by the blinking of the airbag warning light.

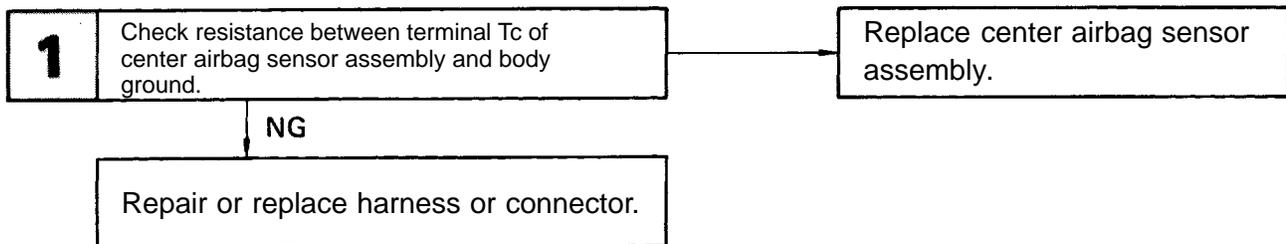
DIAGNOSTIC CHART

Troubleshooting for this system is different depending on whether the diagnostic trouble code is not displayed or is continuously displayed. Confirm the problem symptoms first before selecting the appropriate troubleshooting procedure.

HINT: If the diagnostic trouble code is not displayed, perform the following troubleshooting:

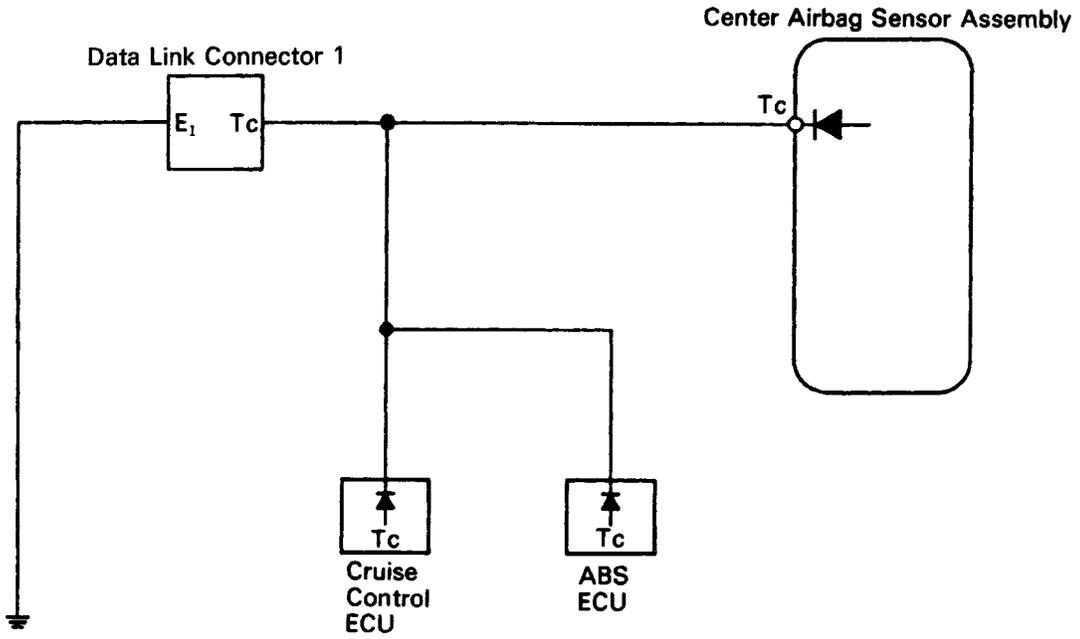


HINT: If the diagnostic trouble code is continuously displayed, perform the following troubleshooting:



DIAGNOSTIC CHART

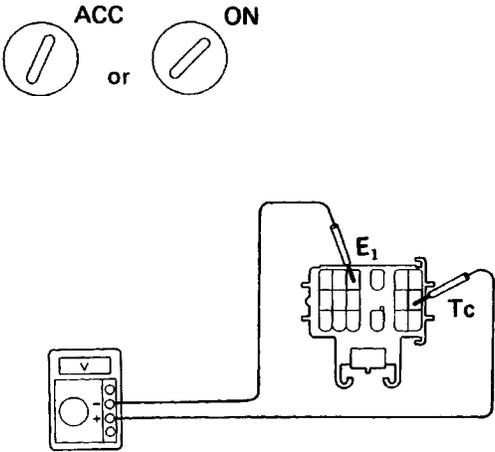
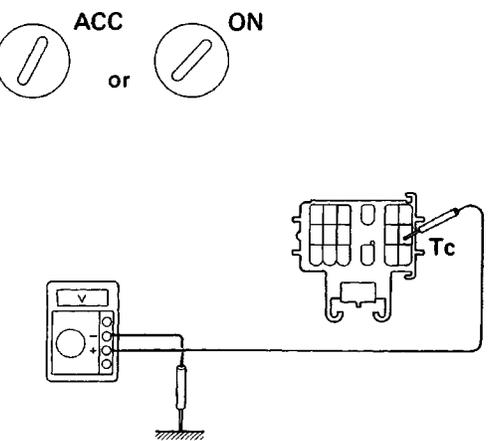
WIRING DIAGRAM



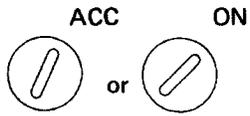
INSPECTION PROCEDURE

P Preparation **C** Check

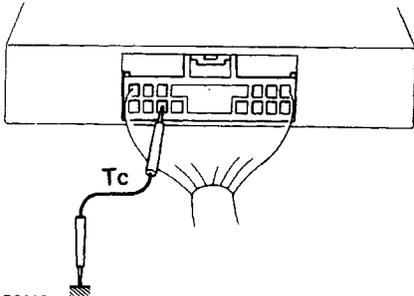
HINT: If the diagnostic trouble code is not displayed, perform the following troubleshooting:

<h2>1</h2>	<h3>Check voltage between terminals Te and E₁ of data link connector 1</h3>
<p>ACC ON</p> <p></p> <p>AB0118 AB0119 AB0221</p>	<p>P Turn ignition switch ACC or ON.</p> <p>C Measure voltage between terminals Tc and E₁ of data link connector 1.</p> <p>OK Voltage: Battery positive voltage</p>
<p>NG</p>	<p>OK Go to step 3 .</p>
<h2>2</h2>	<h3>Check voltage between terminal Te of data link connector 1 and body ground.</h3>
<p>ACC ON</p> <p></p> <p>AB0118 AB0119 AB0222</p>	<p>C Measure voltage between terminal Tc of data link connector 1 and body ground.</p> <p>OK Voltage: Battery positive voltage</p>
<p>NG</p>	<p>OK Check harness between terminal E₁ of data link connector 1 and body ground.</p>

3 Check center airbag sensor assembly.



Center Airbag Sensor Assembly



AB0118 AB0119
AB0186

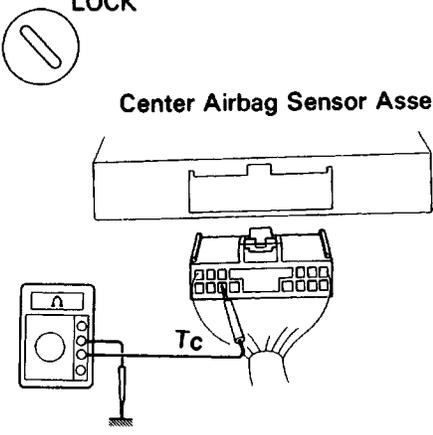
- P** Using a service wire, connect terminal Tc of center airbag sensor assembly connector to body ground.
- C** Check operation of airbag warning light.
- OK** Airbag warning light comes on.

NG

OK Check harness between center airbag sensor assembly and check connector.

Replace center airbag sensor assembly.

HINT: If the diagnostic trouble code is continuously displayed, perform the following troubleshooting:

<p>1 Check resistance between terminal Tc of center airbag sensor assembly and body ground.</p> <p>LOCK</p>  <p>Center Airbag Sensor Assembly</p> <p>Tc</p> <p>AB0117 AB0187</p>	<p>P (1) Turn ignition switch LOCK. (2) Disconnect center airbag sensor assembly connector.</p> <p>C Check resistance between terminal Tc of center airbag sensor assembly and body ground.</p> <p>OK Resistance: $\infty \Omega$</p>
<p>NG</p>	<p>OK Replace center airbag sensor assembly.</p>
<p>Repair or replace harness or connector.</p>	