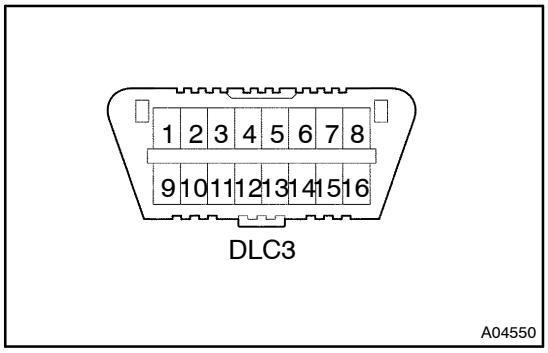
05INB–01

DIAGNOSIS SYSTEM



1. CHECK DLC3

(a) The HV ECU uses the ISO 14230 and ISO 9141–2 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J15031–3 and matches the ISO 14230 and ISO 9141–2 format.

Symbols (Terminals No.)	Terminal Description	Condition	Specified condition
SIL (7) – SG (5)	Bus " +" line	During transmission	Pulse generation
CG (4) – Body ground	Chassis ground	Always	Below 1 Ω
SG (5) – Body ground	Signal ground	Always	Below 1 Ω
BAT (16) – Body ground	Battery positive	Always	11 to 14 V
CANH (6) – CANL (14)	HIGH–level CAN bus line	Power switch is off	54 to 67 Ω
CANH (6) – Battery positive	HIGH–level CAN bus line	Power switch is off	1 MΩ or Higher
CANH (6) – CG (4)	HIGH–level CAN bus line	Power switch is off	3 kΩ or Higher
CANL (14) – Battery positive	LOW–level CAN bus line	Power switch is off	1 MΩ or Higher
CANL (14) – CG (4)	LOW–level CAN bus line	Power switch is off	3 kΩ or Higher

HINT:

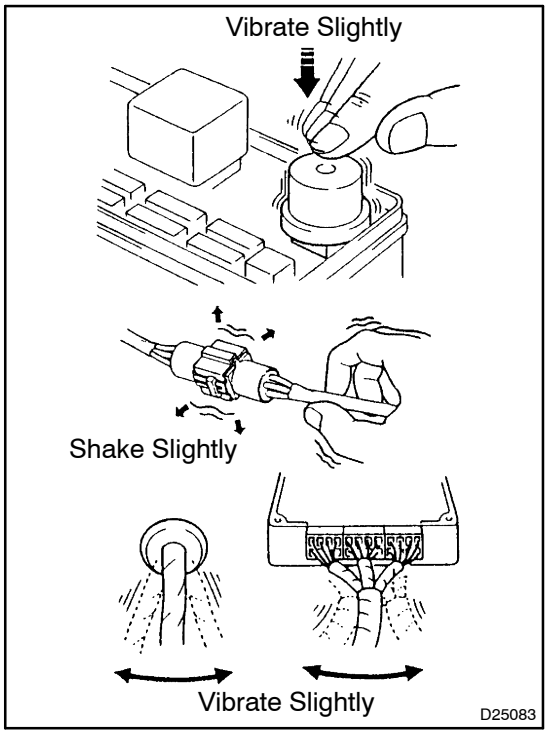
If the display shows UNABLE TO CONNECT TO VEHICLE after connecting the cable of the intelligent tester II to the DLC3, turning the power switch on (IG) and operating the intelligent tester II, there is a problem on the vehicle side or tool side.

- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still not possible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.

2. SYMPTOM SIMULATION

HINT:

The most difficult case in troubleshooting is when no symptoms occur. In such cases, a thorough customer problem analysis must be carried out. Then the same or similar conditions and environment in which the problem occurred in the customer's vehicle should be simulated. No matter how experienced or skilled a technician may be, if he proceeds to troubleshoot without confirming the problem symptoms, he will likely overlook something important and make a wrong guess at some points in the repair operation. This leads to a standstill in troubleshooting.



(a) Vibration method: When vibration seems to be the major cause.

HINT:

Perform the simulation method only during the primary check period (for approximately 6 seconds after the power switch on (IG)).

(1) Slightly vibrate the part of the sensor considered to be the problem cause with your fingers and check whether the malfunction occurs.

HINT:

Shaking the relays too strongly may result in open relays.

(2) Slightly shake the connector vertically and horizontally.

(3) Slightly shake the wire harness vertically and horizontally.

The connector joint and fulcrum of the vibration are the major areas to be checked thoroughly.

3. FUNCTION OF SRS WARNING LIGHT

(a) Primary check

(1) Turn the power switch off. Wait for at least 2 seconds, then turn the power switch on (IG). The SRS warning light comes on for approximately 6 seconds and the diagnosis of the SRS airbag system (including the seat belt) is performed.

HINT:

If trouble is detected during the primary check, the SRS warning light remains on even after the primary check period (for approximately 6 seconds after the power switch is turned on (IG)) has elapsed.

(b) Constant check

(1) After the primary check, the airbag ECU assy monitors the SRS airbag system for trouble.

HINT:

If trouble is detected during the constant check, the airbag ECU assy functions as follows:

- The SRS warning light comes on.
- The SRS warning light goes off and then comes on. This blinking pattern indicates the source voltage drop. The SRS warning light goes off 10 seconds after the source voltage returns to normal.

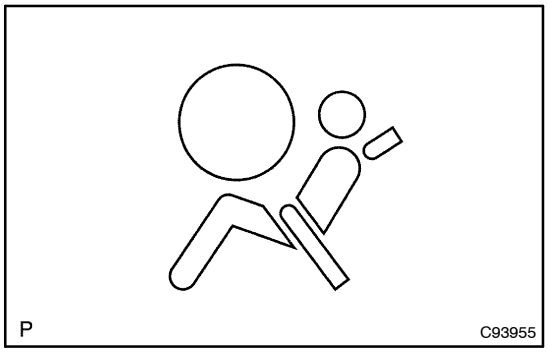
(c) Review

(1) When the SRS airbag system is normal:

The SRS warning light comes on only during the primary check period (for approximately 6 seconds after the power switch is turned on (IG)).

(2) When the SRS airbag system has trouble:
- The SRS warning light remains on.
- The SRS warning light goes off after the primary check, but comes on again during the constant check.
- The SRS warning light does not come on when turning the power switch from off to on (IG).

HINT:
The airbag ECU assy keeps the SRS warning light on if one of the airbags has been deployed.



4. SRS WARNING LIGHT CHECK

(a) Turn the power switch on (IG) and check that the SRS warning light comes on for approximately 6 seconds (primary check).

(b) Check that the SRS warning light goes off approximately 6 seconds after the power switch is turned on (IG) (constant check).

HINT:
When any of the following symptoms occur, refer to the "Problem Symptoms Table" (see page 05–1162):
- The SRS warning light comes on occasionally even after the primary check period has elapsed, there may be an open or short in the SRS warning light circuit.
- The SRS warning light comes on even when a DTC or normal system code is not output.
- The SRS warning light does not come on when the power switch is turned from off to on (IG).

5. ACTIVATION PREVENTION MECHANISM

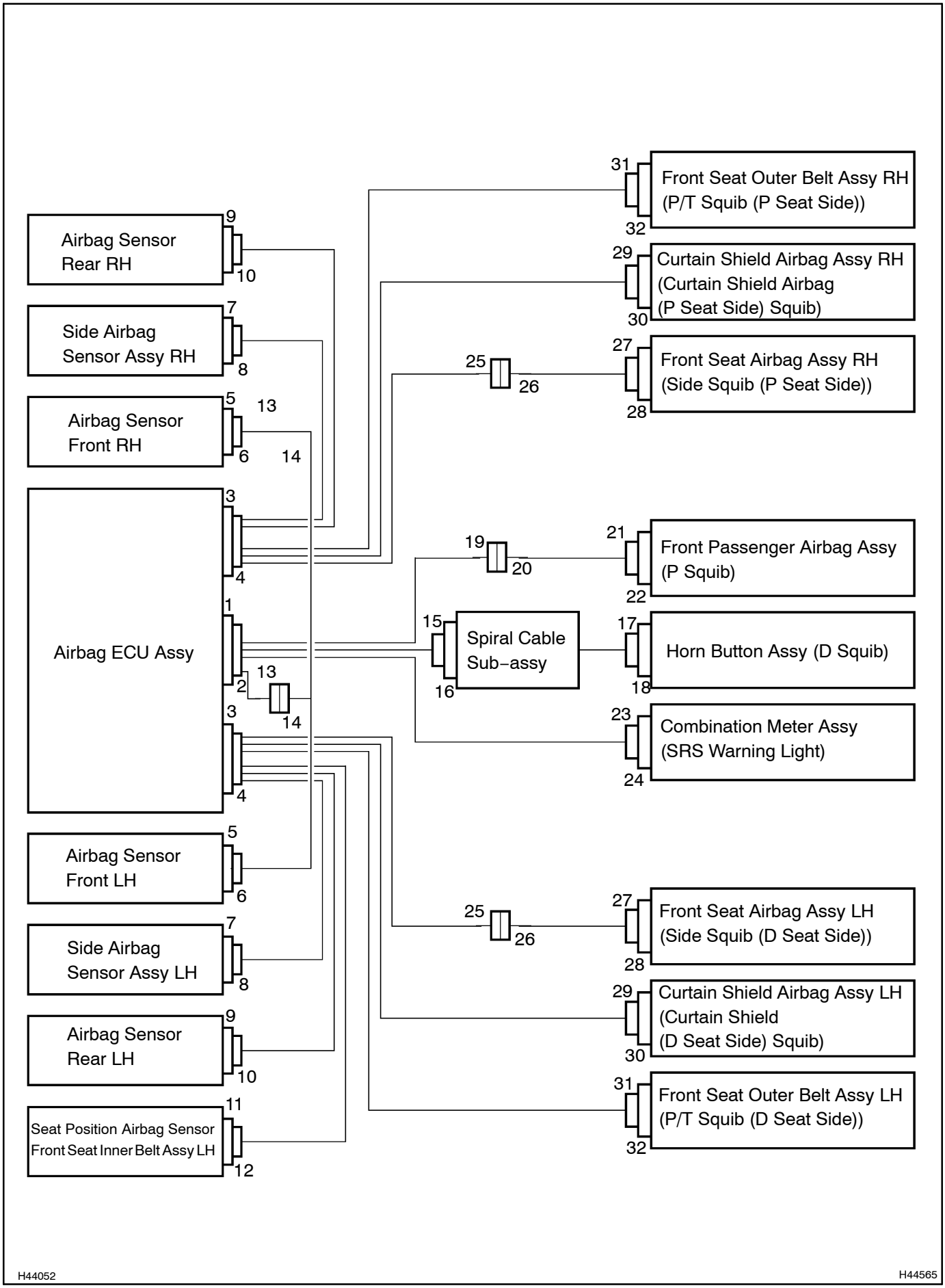
(a) An activation prevention mechanism is built into the connector (airbag ECU assy side) of the SRS airbag system squib circuit to prevent accidental airbag activation.

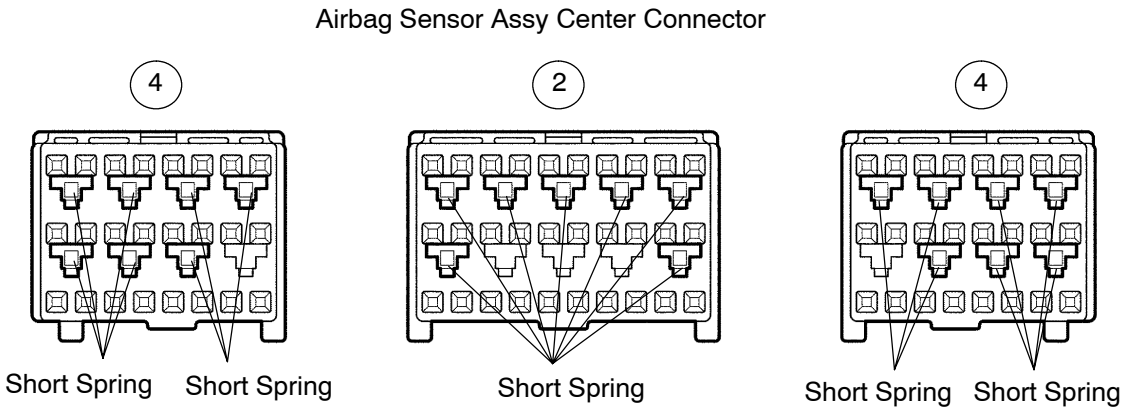
(b) This mechanism closes the circuit when the connector is disconnected by bringing the short spring into contact with the terminal and shutting off external electricity of prevent accidental SRS airbag activation.

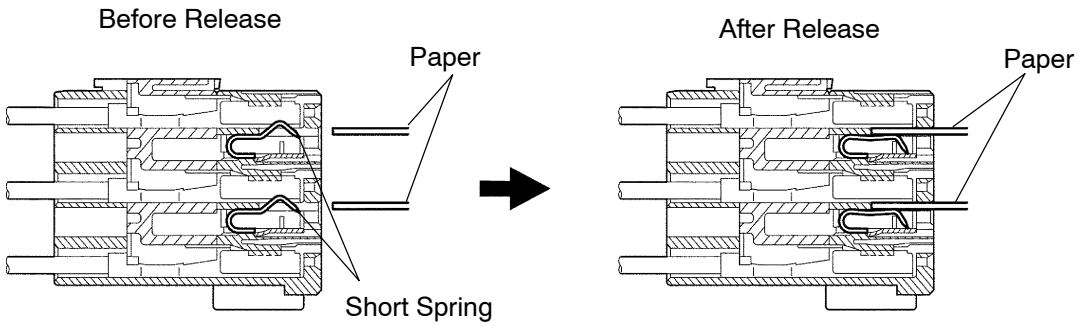
(c) To release the activation prevention mechanism, insert a piece of paper with the same thickness as the male terminal between the terminal and the short spring to break the connection.

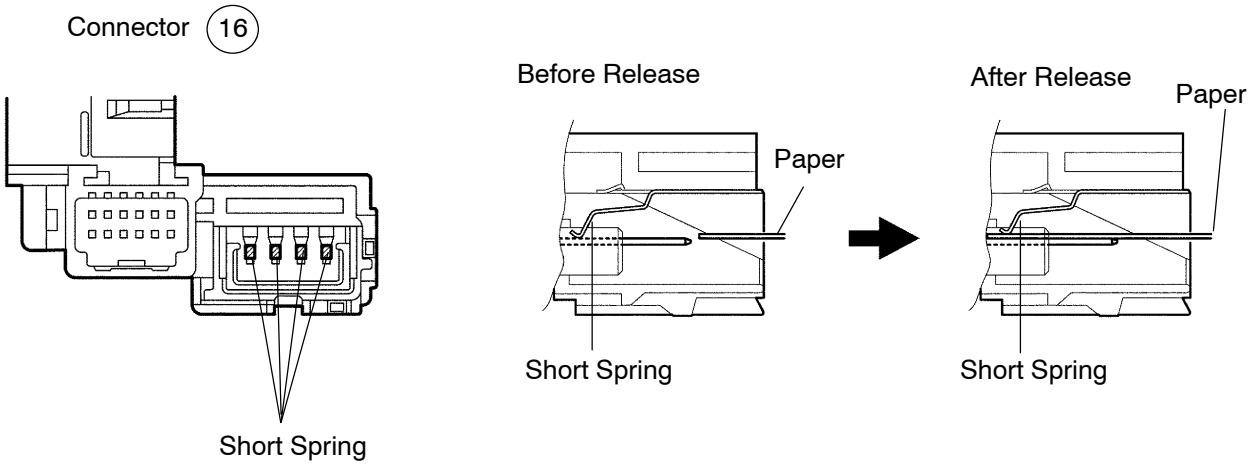
(d) Refer to the illustrations on the next 2 pages concerning connectors utilizing the activation prevention mechanism and its release method.

CAUTION:
Never release the activation prevention mechanism on the squib connector.
NOTICE:
- **Do not release the activation prevention mechanism unless specifically directed by the troubleshooting procedure.**
- **To prevent the terminal and the short spring from being damaged, always use a piece of paper with the same thickness as the male terminal.**


Airbag Sensor Rear RH
9
10
Side Airbag Sensor Assy RH
7
8
Airbag Sensor Front RH
5
13
6
14
Airbag ECU Assy
3
4
1
2
13
14
3
4
Airbag Sensor Front LH
5
6
Side Airbag Sensor Assy LH
7
8
Airbag Sensor Rear LH
9
10
Seat Position Airbag Sensor Front Seat Inner Belt Assy LH
11
12
31
Front Seat Outer Belt Assy RH (P/T Squib (P Seat Side))
32
29
Curtain Shield Airbag Assy RH (Curtain Shield Airbag (P Seat Side) Squib)
30
27
Front Seat Airbag Assy RH (Side Squib (P Seat Side))
28
25
26
19
20
21
Front Passenger Airbag Assy (P Squib)
22
15
Spiral Cable Sub–assy
16
17
Horn Button Assy (D Squib)
18
23
Combination Meter Assy (SRS Warning Light)
24
25
26
27
Front Seat Airbag Assy LH (Side Squib (D Seat Side))
28
29
Curtain Shield Airbag Assy LH (Curtain Shield (D Seat Side) Squib)
30
31
Front Seat Outer Belt Assy LH (P/T Squib (D Seat Side))
32
H44052
H44565


Airbag Sensor Assy Center Connector
4
2
4
Short Spring
Short Spring
Short Spring
Short Spring
Short Spring


Before Release
Paper
Short Spring
After Release
Paper


Connector
16
Short Spring
Before Release
Paper
Short Spring
After Release
Paper
Short Spring

P

H44051