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Service Category: Vehicle Interior	Section: Supplemental Restraint Systems	
Model Year: 2008	Model: LX570	Doc ID: RM000002P5E00KX
Title: SUPPLEMENTAL RESTRAINT SYSTEMS: AIRBAG SYSTEM: DESCRIPTION (2008 LX570)		

DTC	B1638/82	Rear Airbag Sensor Assembly LH Initialization Incomplete
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DTC	B1643/81	Side Satellite Sensor Bus RH Initialization Incomplete
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DTC	B1648/82	Side Satellite Sensor Bus LH Initialization Incomplete
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DTC	B1693/81	Door Side Airbag Sensor RH Initialization Incomplete
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DESCRIPTION

HINT:

"Door side airbag sensor RH" refers to the side airbag sensor RH.

- The circuit for the side collision sensor LH or RH (to determine deployment of the front seat side airbag LH or RH, rear seat side airbag LH or RH and curtain shield airbag LH or RH) is composed of the center airbag sensor, side airbag sensor LH or RH, and rear airbag sensor LH or RH.

The side airbag sensor LH or RH and rear airbag sensor LH or RH detect impacts to the vehicle and send signals to the center airbag sensor to determine if the airbag should be deployed.

DTC B1693/81 or B1648/82 is stored when a malfunction is detected in the circuit for the side collision sensor LH or RH (to determine deployment of the front seat side airbag LH or RH and curtain shield airbag LH or RH).

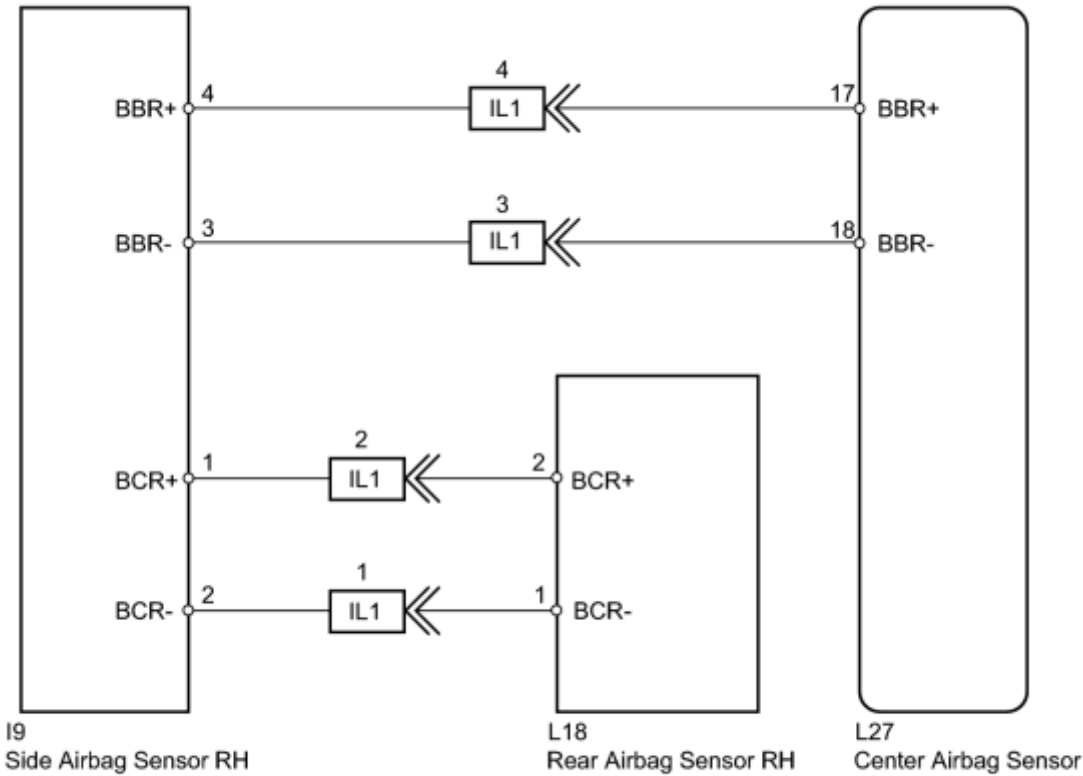
DTC B1643/81 or B1638/82 is stored when a malfunction is detected in the circuit for the rear collision sensor LH or RH (to determine deployment of the rear seat side airbag LH or RH and curtain shield airbag LH or RH).

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
B1638/82	When one of the following conditions is met: - The center airbag sensor receives a line short circuit signal, an open circuit signal, a short circuit to ground signal or a short circuit to B+ signal in the circuit for the rear collision sensor LH (to determine deployment of the front seat rear airbag LH and curtain shield airbag LH) for 2 seconds. - A rear airbag sensor LH malfunction. - A side airbag sensor LH malfunction. - A center airbag sensor malfunction.	- Floor wire - Rear airbag sensor LH - Side airbag sensor LH - Center airbag sensor assembly
B1643/81	When one of the following conditions is met: The center airbag sensor receives a line short circuit signal, an open circuit signal, a short circuit to ground signal or a short	No. 2 floor wire

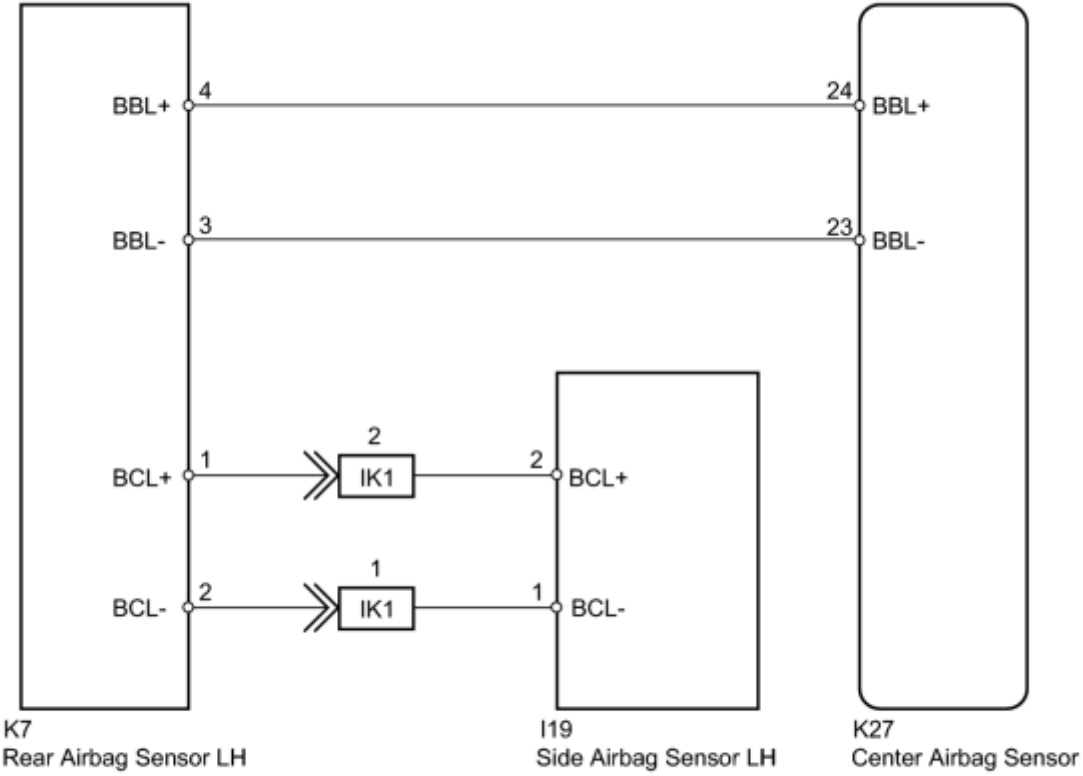
DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
	circuit to B+ signal in the circuit for the rear collision sensor RH (to determine deployment of the rear seat side airbag RH and curtain shield airbag RH) for 2 seconds. • A rear airbag sensor RH malfunction. • A side airbag sensor RH malfunction. • A center airbag sensor malfunction.	• Rear airbag sensor RH • Side airbag sensor RH • Center airbag sensor assembly
B1648/82	When one of the following conditions is met: • The center airbag sensor receives a line short circuit signal, an open circuit signal, a short circuit to ground signal or a short circuit to B+ signal in the circuit for the side collision sensor RH (to determine deployment of the front seat side airbag RH and curtain shield airbag RH) for 2 seconds. • A side airbag sensor RH malfunction. • A rear airbag sensor RH malfunction. • A center airbag sensor malfunction.	• No. 2 floor wire • Front door wire RH • Side airbag sensor RH • Rear airbag sensor RH • Center airbag sensor assembly
B1693/81	When one of the following conditions is met: • The center airbag sensor receives a line short circuit signal, an open circuit signal, a short circuit to ground signal or a short circuit to B+ signal in the circuit for the side collision sensor LH (to determine deployment of the front seat side airbag LH and curtain shield airbag LH) for 2 seconds. • A side airbag sensor LH malfunction. • A rear airbag sensor LH malfunction. • A center airbag sensor malfunction.	• Floor wire • Front door wire LH • Side airbag sensor LH • Rear airbag sensor LH • Center airbag sensor assembly

WIRING DIAGRAM

for RH Side:



for LH Side:



INSPECTION PROCEDURE

NOTICE:

- w/ Navigation system:

After the engine switch is turned off, the HDD navigation system requires approximately 6 minutes to record various types of memory and settings. As a result, after turning the engine switch off, wait 6 minutes or more before disconnecting the cable from the negative (-) battery terminal.
- When disconnecting the cable from the negative (-) battery terminal while performing repairs, some systems need to be initialized after the cable is reconnected INFO.

PROCEDURE

1.	CHECK PAST DTC
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- (a) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (b) Check for past DTCs INFO.

Result

RESULT	PROCEED TO
DTC B1637 or B1692 is output	A
DTC B1632 or B1697 is output	B
DTC B1632, B1637, B1692 and B1697 are not output	C

C

▼

2.	CHECK FOR DTC
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- (a) Turn the engine switch off.

HINT:

If a communication error occurs, DTCs for both the LH and RH sides will be stored simultaneously. The malfunctioning area can be identified by turning the engine switch off and then on (IG) again.

- (b) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (c) Check for DTCs INFO.

Result

RESULT	PROCEED TO
DTC B1638, B1643, B1648 and B1693 are not output	A
DTC B1638 or B1648 is output	B
DTC B1643 or B1693 is output	C

HINT:

Codes other than DTC B1638, B1643, B1648 and B1693 may be output at this time, but they are not related to this check.

C

3.	CHECK CONNECTION OF CONNECTORS
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- (a) Turn the engine switch off.
- (b) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (c) Check that the connectors are properly connected to the center airbag sensor and side airbag sensor RH.
 - OK:
The connectors are properly connected.

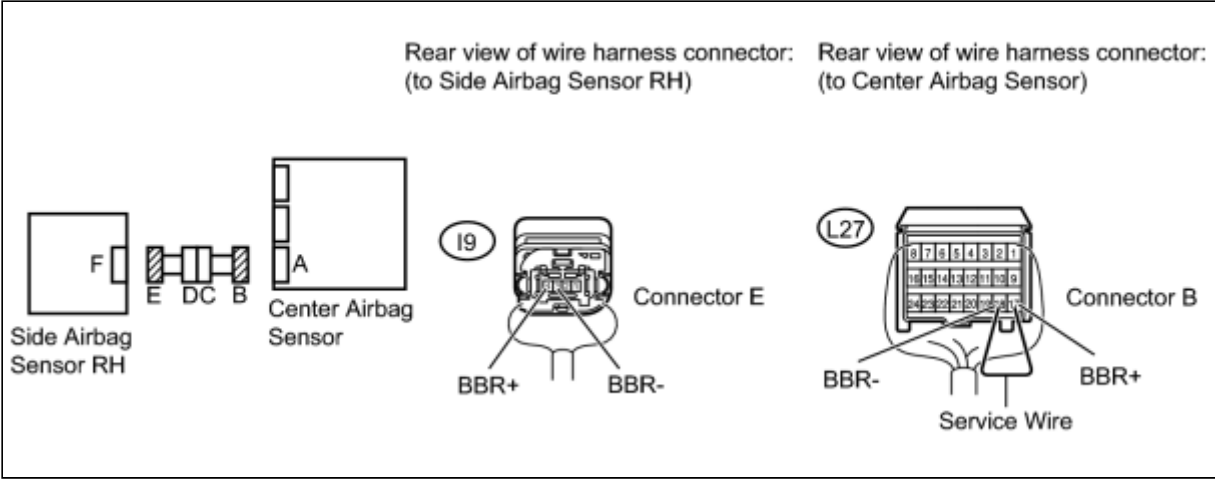
OK

4.	CHECK CONNECTORS
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- (a) Disconnect the connectors from the center airbag sensor and side airbag sensor RH.
- (b) Check that the connectors (on the center airbag sensor side and side airbag sensor RH side) are not damaged.
 - OK:
The connectors are not deformed or damaged.

OK

5.	CHECK SIDE AIRBAG SENSOR RH CIRCUIT
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- (a) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
I9-4 (BBR+) - Body ground	Engine switch on (IG)	Below 1 V
I9-3 (BBR-) - Body ground	Engine switch on (IG)	Below 1 V

- (c) Turn the engine switch off.
- (d) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (e) Using a service wire, connect terminals 17 (BBR+) and 18 (BBR-) of connector B.

NOTICE:

Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (f) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-4 (BBR+) - I9-3 (BBR-)	Always	Below 1 Ω

- (g) Disconnect the service wire from connector B.
- (h) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-4 (BBR+) - I9-3 (BBR-)	Always	1 MΩ or higher
I9-4 (BBR+) - Body ground	Always	1 MΩ or higher
I9-3 (BBR-) - Body ground	Always	1 MΩ or higher

OK

6.

CHECK CONNECTION OF CONNECTORS

(a) Check that the connector is properly connected to the rear airbag sensor RH.

OK:
The connector is properly connected.

OK

7.

CHECK CONNECTORS

(a) Disconnect the connectors from the side airbag sensor RH and rear airbag sensor RH.

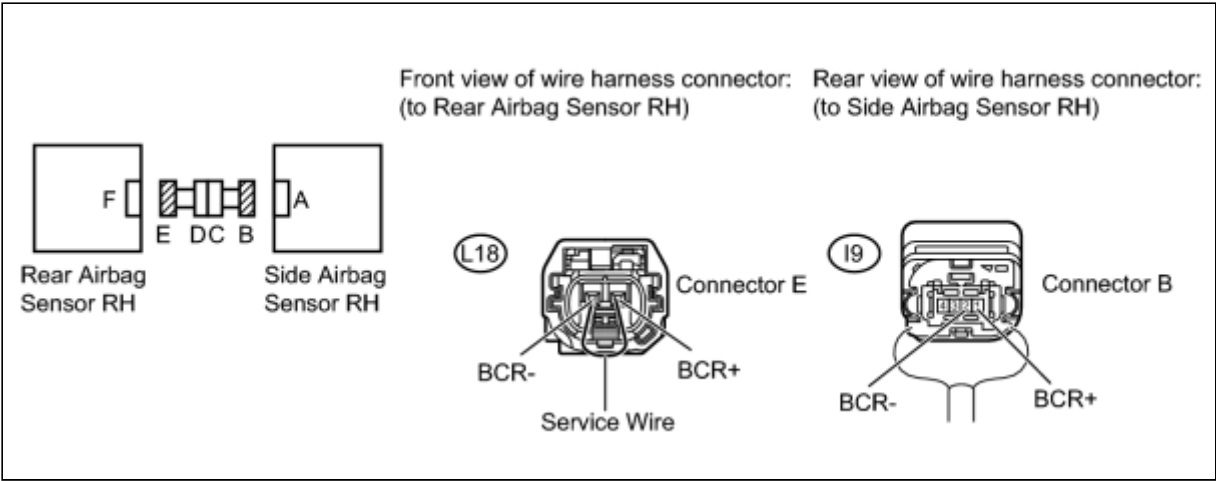
(b) Check that the connector (on the rear airbag sensor RH side) is not damaged.

OK:
The connector is not deformed or damaged.

OK

8.

CHECK REAR AIRBAG SENSOR RH CIRCUIT



(a) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - Body ground	Engine switch on (IG)	Below 1 V
I9-2 (BCR-) - Body ground	Engine switch on (IG)	Below 1 V

- (c) Turn the engine switch off.
- (d) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (e) Using a service wire, connect terminals 2 (BCR+) and 1 (BCR-) of connector E.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (f) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - I9-2 (BCR-)	Always	Below 1 Ω

- (g) Disconnect the service wire from connector E.
- (h) Measure the resistance according to the value(s) in the table below.

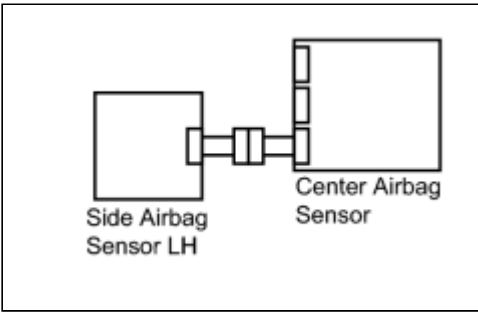
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - I9-2 (BCR-)	Always	1 MΩ or higher
I9-1 (BCR+) - Body ground	Always	1 MΩ or higher
I9-2 (BCR-) - Body ground	Always	1 MΩ or higher

OK
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9.

CHECK SIDE AIRBAG SENSOR RH



- (a) Connect the connector to the center airbag sensor.
- (b) Interchange the side airbag sensor LH with RH and connect the connectors to them.
- (c) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (d) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (e) Clear the DTCs stored in the memory **INFO** .
- (f) Turn the engine switch off.

(g) Turn the engine switch on (IG), and wait for at least 90 seconds.

(h) Check for DTCs INFO .

Result

RESULT	PROCEED TO
DTC B1643, B1693 and B1698 are not output	A
DTC B1698 is output	B
DTC B1643 and B1693 are output	C

HINT:

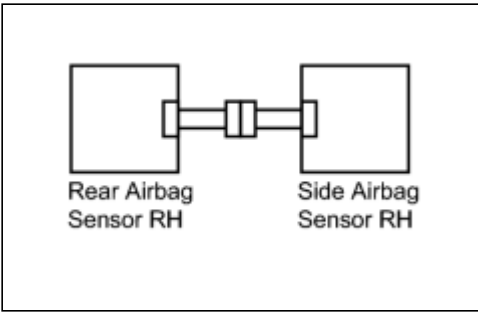
Codes other than DTC B1643, B1693 and B1698 may be output at this time, but they are not related to this check.

- (i) Turn the engine switch off.
- (j) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (k) Return the side airbag sensor LH and RH to their original positions and connect the connectors to them.

C

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10.	CHECK REAR AIRBAG SENSOR RH
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- (a) Temporarily replace the rear airbag sensor RH with a new one.
- (b) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (c) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (d) Clear the DTCs stored in the memory INFO .
- (e) Turn the engine switch off.
- (f) Turn the engine switch on (IG), and wait for at least 90 seconds.
- (g) Check for DTCs INFO .

OK:
DTC B1643 or B1693 is not output.

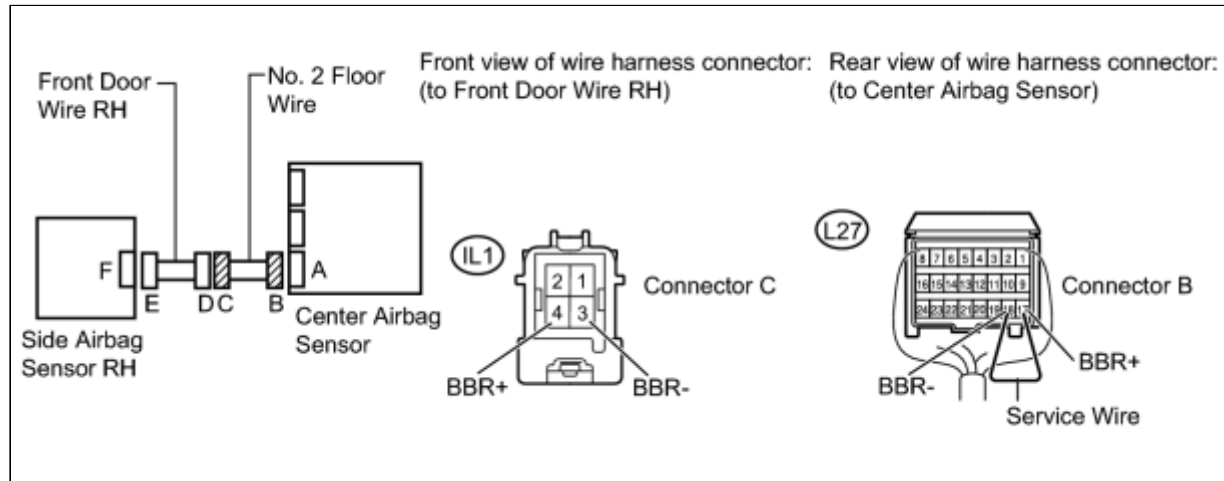
HINT:

Codes other than DTC B1643 and B1693 may be output at this time, but they are not related to this check.

- (h) Turn the engine switch off.
- (i) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.

OK

11. CHECK NO. 2 FLOOR WIRE (CENTER AIRBAG SENSOR - FRONT DOOR WIRE RH)



- (a) Disconnect the No. 2 floor wire connector from the front door wire RH.
- (b) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
IL1-4 (BBR+) - Body ground	Engine switch on (IG)	Below 1 V
IL1-3 (BBR-) - Body ground	Engine switch on (IG)	Below 1 V

- (d) Turn the engine switch off.
- (e) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (f) Using a service wire, connect terminals 17 (BBR+) and 18 (BBR-) of connector B.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (g) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
IL1-4 (BBR+) - IL1-3 (BBR-)	Always	Below 1 Ω

- (h) Disconnect the service wire from connector B.

(i) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

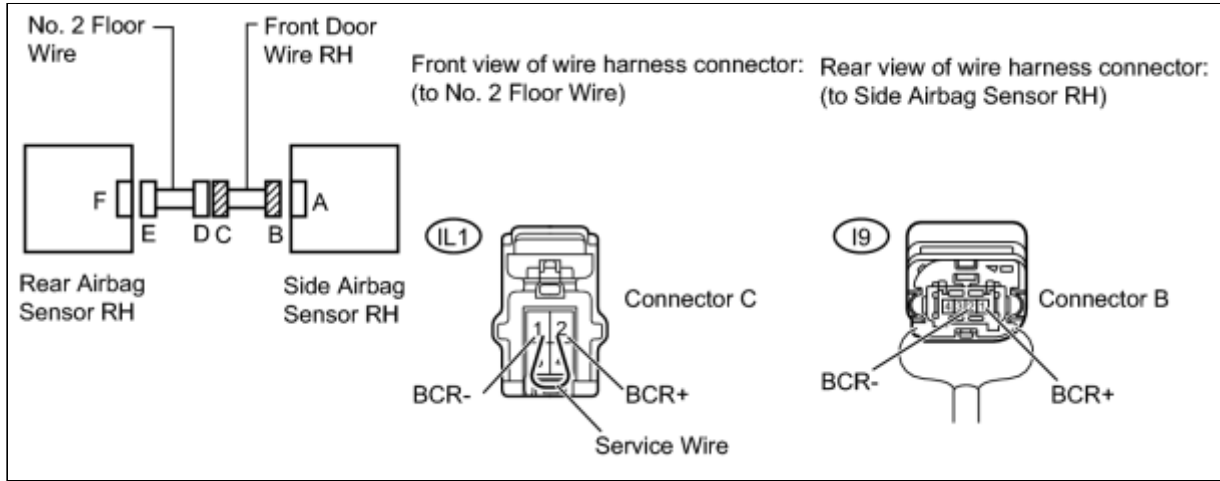
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
IL1-4 (BBR+) - IL1-3 (BBR-)	Always	1 MΩ or higher
IL1-4 (BBR+) - Body ground	Always	1 MΩ or higher
IL1-3 (BBR-) - Body ground	Always	1 MΩ or higher

OK

▼

12.

CHECK FRONT DOOR WIRE RH (SIDE AIRBAG SENSOR RH - NO. 2 FLOOR WIRE)



- (a) Disconnect the front door wire connector from the No. 2 floor wire.
- (b) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - Body ground	Engine switch on (IG)	Below 1 V
I9-2 (BCR-) - Body ground	Engine switch on (IG)	Below 1 V

- (d) Turn the engine switch off.
- (e) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (f) Using a service wire, connect terminals 2 (BCR+) and 1 (BCR-) of connector C.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

(g) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - I9-2 (BCR-)	Always	Below 1 Ω

(h) Disconnect the service wire from connector C.

(i) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I9-1 (BCR+) - I9-2 (BCR-)	Always	1 M Ω or higher
I9-1 (BCR+) - Body ground	Always	1 M Ω or higher
I9-2 (BCR-) - Body ground	Always	1 M Ω or higher

OK



13.	CHECK CONNECTION OF CONNECTORS
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(a) Turn the engine switch off.

(b) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.

(c) Check that the connectors are properly connected to the center airbag sensor and rear airbag sensor LH.

OK:

The connectors are properly connected.

OK



14.	CHECK CONNECTORS
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(a) Disconnect the connectors from the center airbag sensor and rear airbag sensor LH.

(b) Check that the connectors (on the center airbag sensor side and rear airbag sensor LH side) are not damaged.

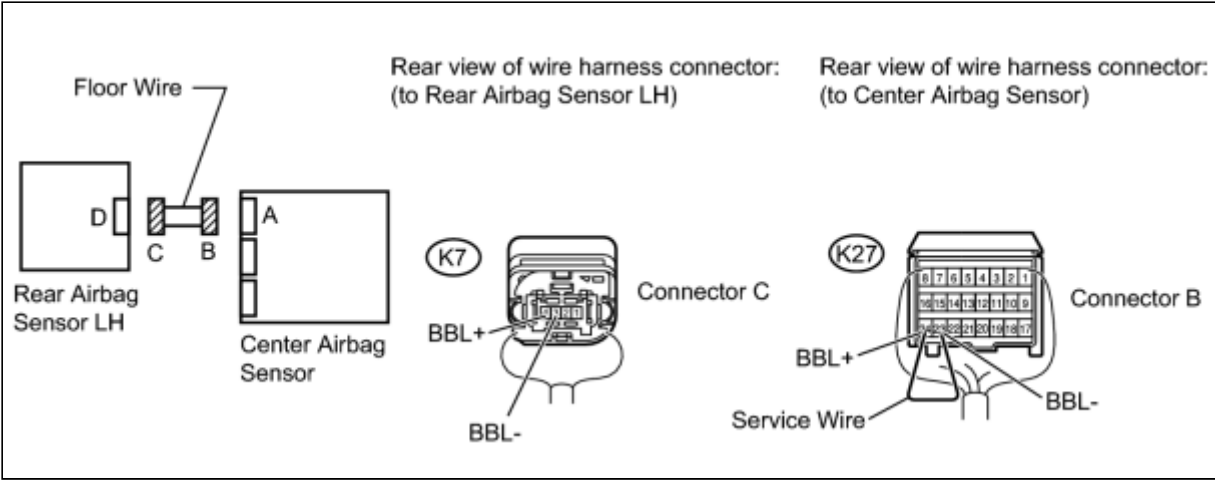
OK:

The connectors are not deformed or damaged.

OK



15.	CHECK FLOOR WIRE (CENTER AIRBAG SENSOR - REAR AIRBAG SENSOR LH)
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- (a) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (b) Measure the voltage according to the value(s) in the table below.
- Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
K7-4 (BBL+) - Body ground	Engine switch on (IG)	Below 1 V
K7-3 (BBL-) - Body ground	Engine switch on (IG)	Below 1 V

- (c) Turn the engine switch off.
- (d) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (e) Using a service wire, connect terminals 24 (BBL+) and 23 (BBL-) of connector B.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (f) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-4 (BBL+) - K7-3 (BBL-)	Always	Below 1 Ω

- (g) Disconnect the service wire from connector B.
- (h) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-4 (BBL+) - K7-3 (BBL-)	Always	1 MΩ or higher
K7-4 (BBL+) - Body ground	Always	1 MΩ or higher
K7-3 (BBL-) - Body ground	Always	1 MΩ or higher

OK
▼

16.

CHECK CONNECTION OF CONNECTOR

(a) Check that the connector is properly connected to the side airbag sensor LH.

OK:
The connector is properly connected.

OK

▼

17.

CHECK CONNECTORS

(a) Disconnect the connectors from the rear airbag sensor LH and side airbag sensor LH.

(b) Check that the connector (on the side airbag sensor LH side) is not damaged.

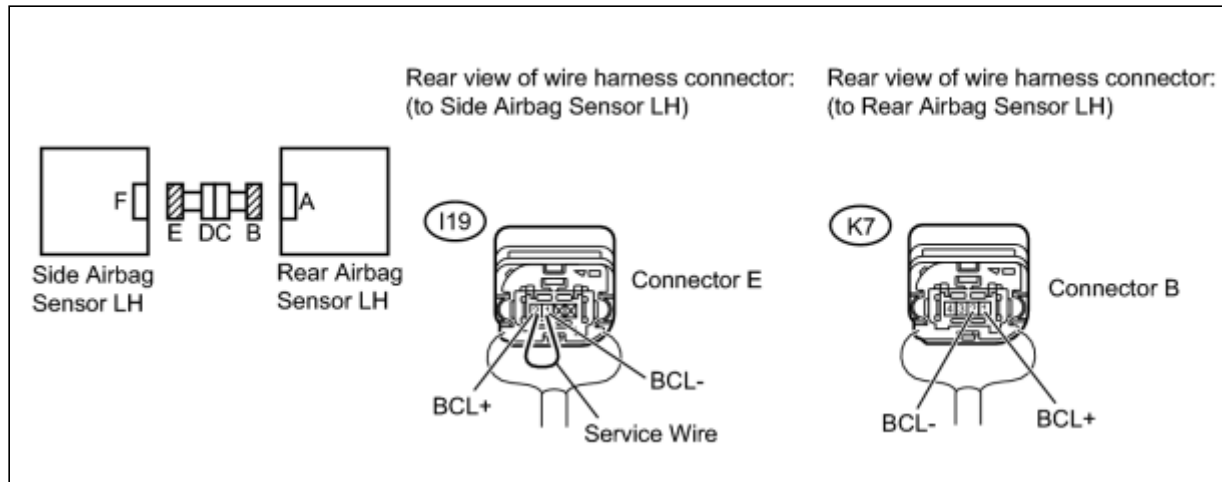
OK:
The connector is not deformed or damaged.

OK

▼

18.

CHECK SIDE AIRBAG SENSOR LH CIRCUIT



(a) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - Body ground	Engine switch on (IG)	Below 1 V
K7-2 (BCL-) - Body ground	Engine switch on (IG)	Below 1 V

- (c) Turn the engine switch off.
- (d) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (e) Using a service wire, connect terminals 2 (BCL+) and 1 (BCL-) of connector E.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (f) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - K7-2 (BCL-)	Always	Below 1 Ω

- (g) Disconnect the service wire from connector E.
- (h) Measure the resistance according to the value(s) in the table below.

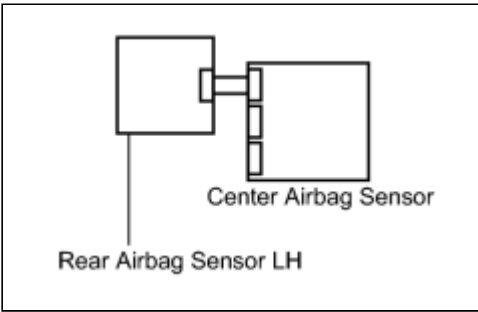
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - K7-2 (BCL-)	Always	1 MΩ or higher
K7-1 (BCL+) - Body ground	Always	1 MΩ or higher
K7-2 (BCL-) - Body ground	Always	1 MΩ or higher

OK
▼

19.

CHECK REAR AIRBAG SENSOR LH



- (a) Connect the connectors to the center airbag sensor.
- (b) Temporarily replace the side airbag sensor LH with a new one.
- (c) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (d) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (e) Clear the DTCs stored in the memory **INFO** .
- (f) Turn the engine switch off.

(g) Turn the engine switch on (IG), and wait for at least 90 seconds.

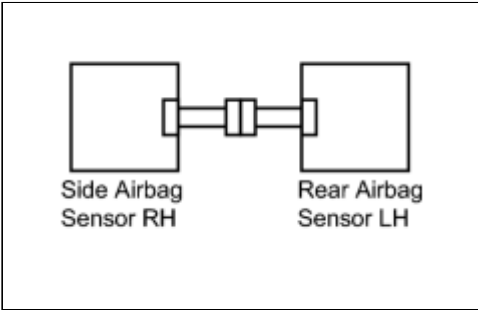
(h) Check for DTCs INFO .

OK:
DTC B1638 or B1648 is not output.

HINT:
Codes other than DTC B1638 and B1648 may be output at this time, but they are not related to this check.

OK
▼

20. CHECK SIDE AIRBAG SENSOR LH



- (a) Turn the engine switch off.
- (b) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (c) Interchange the side airbag sensor RH with LH and connect the connectors to them.
- (d) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (e) Turn the engine switch on (IG), and wait for at least 60 seconds.
- (f) Clear the DTCs stored in the memory INFO .
- (g) Turn the engine switch off.
- (h) Turn the engine switch on (IG), and wait for at least 90 seconds.
- (i) Check for DTCs INFO .

Result

RESULT	PROCEED TO
DTC B1638 or B1648 is output	A
DTC B1633 is output	B
DTC B1633, B1638 and B1648 are not output	C

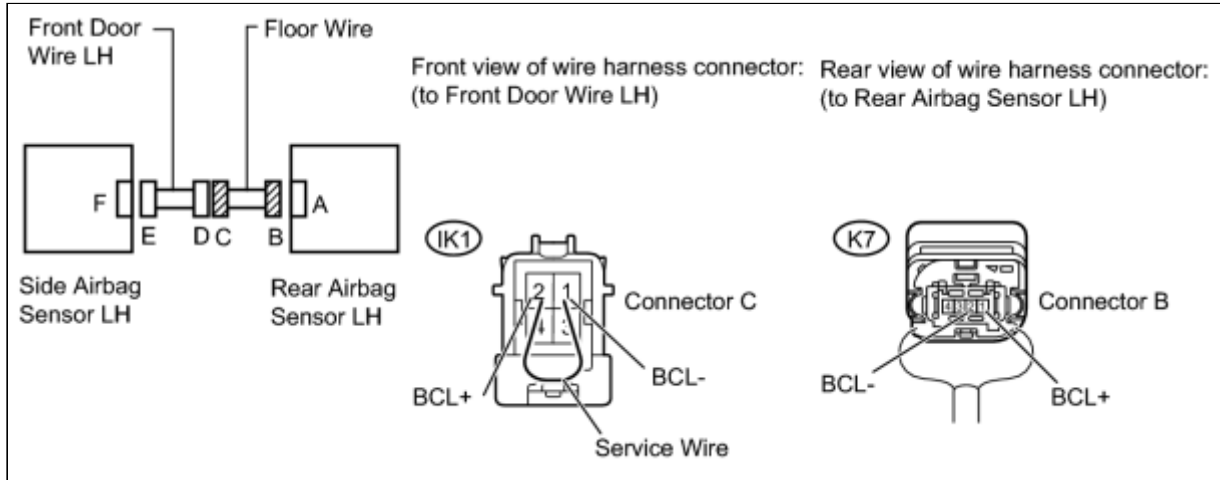
HINT:
Codes other than DTC B1633, B1638 and B1648 may be output at this time, but they are not related to this check.

- (j) Turn the engine switch off.
- (k) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (l) Return the side airbag sensor RH and LH to their original positions and connect the connectors to them.



21.

CHECK FLOOR WIRE (REAR AIRBAG SENSOR LH - FRONT DOOR WIRE LH)



- (a) Disconnect the floor wire connector from the front door wire LH.
- (b) Connect the cable to the negative (-) battery terminal, and wait for at least 2 seconds.
- (c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - Body ground	Engine switch on (IG)	Below 1 V
K7-2 (BCL-) - Body ground	Engine switch on (IG)	Below 1 V

- (d) Turn the engine switch off.
- (e) Disconnect the cable from the negative (-) battery terminal, and wait for at least 90 seconds.
- (f) Using a service wire, connect terminals 2 (BCL+) and 1 (BCL-) of connector C.

NOTICE:
Do not forcibly insert the service wire into the terminals of the connector when connecting a service wire.

- (g) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - K7-2 (BCL-)	Always	Below 1 Ω

- (h) Disconnect the service wire from connector C.
- (i) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K7-1 (BCL+) - K7-2 (BCL-)	Always	1 MΩ or higher
K7-1 (BCL+) - Body ground	Always	1 MΩ or higher
K7-2 (BCL-) - Body ground	Always	1 MΩ or higher

OK

▼

