DTC	B1790	AIRBAG SENSOR ASSY CENTER COMMUNICATION CIRCUIT MALFUNCTION

CIRCUIT DESCRIPTION

The airbag sensor assy center communication circuit consists of the occupant classification ECU and the airbag sensor assy center.

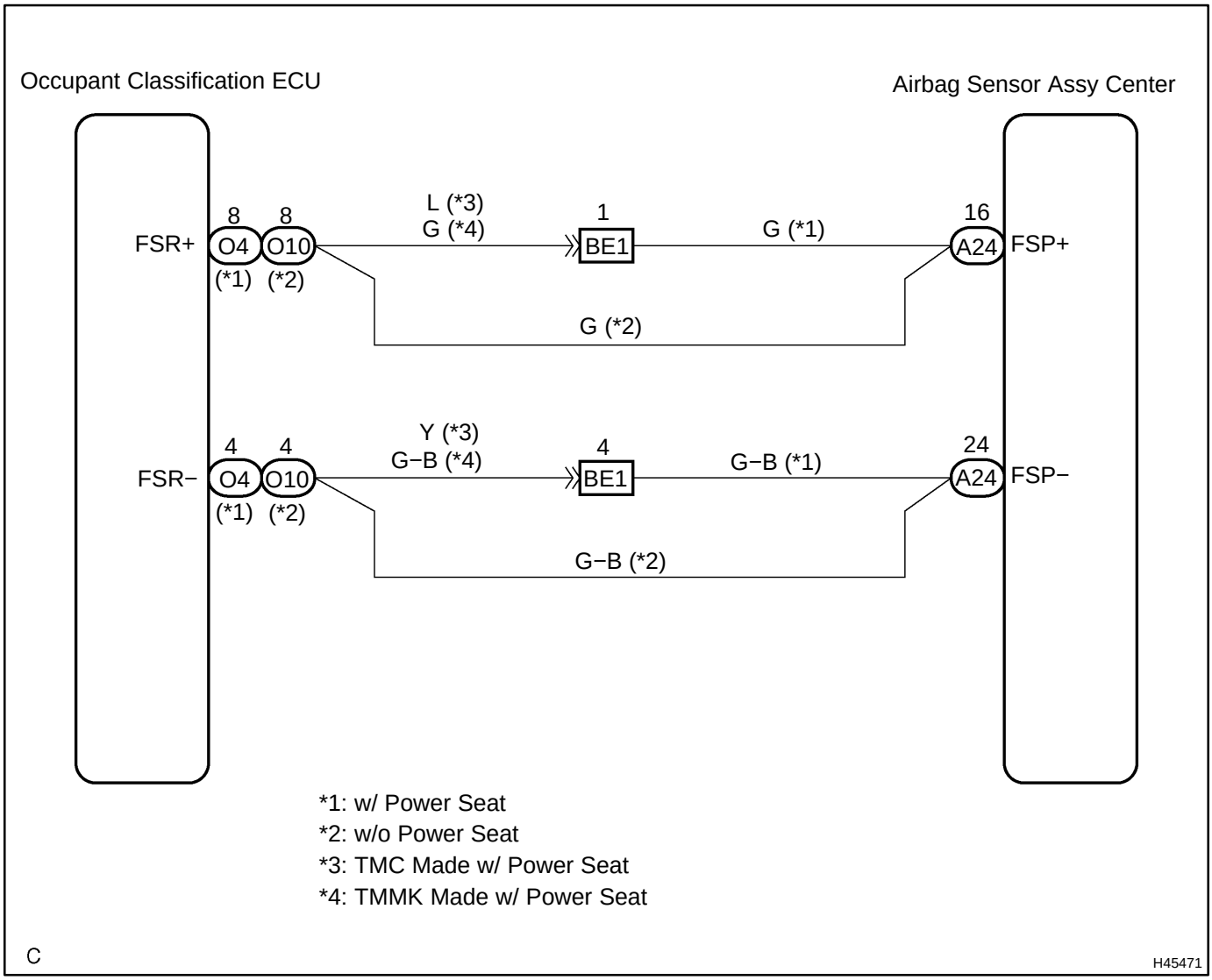
DTC B1790 is recorded when a malfunction is detected in the airbag sensor assy center communication circuit.

DTC No.	DTC Detecting Condition	Trouble Area
B1790	• The occupant classification ECU 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 airbag sensor assy center communication circuit for 2 seconds. • Airbag sensor assy center malfunction • Occupant classification ECU malfunction	• Occupant classification ECU • Airbag sensor assy center • Floor wire No.2 • Front seat wire RH (w/ Power seat)

HINT:

- When DTC B1630/32 is detected as a result of troubleshooting for the supplemental restraint system, perform troubleshooting for DTC B1790 of the occupant classification system.
- Use the hand−held tester to check the DTC of the occupant classification ECU, otherwise the DTC cannot be read.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If troubleshooting (wire harness inspection) is difficult to perform, remove the front RH seat assy installation bolts to see the under surface of seat cushion.
- In the above case, hold the seat so that it does not fall down. Holding the seat for a long period of time may cause a problem, such as seat rail deformation. Hold the seat only as necessary.

1	CHECK DTC

(a) Turn the ignition switch to the ON position.
(b) Clear the DTCs stored in memory (see page 05−1464).

HINT:

- First clear DTCs stored in the occupant classification ECU and then in the airbag sensor assy center.
- Use the hand−held tester to clear the DTC of the occupant classification ECU, otherwise the DTC cannot be cleared.

(c) Turn the ignition switch to the LOCK position.
(d) Turn the ignition switch to the ON position.
(e) Using the hand−held tester, check the DTCs of the occupant classification ECU (see page 05−1464).
OK:
DTC B1790 is not output.

HINT:

Codes other than code B1790 may be output at this time, but they are not related to this check.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05−1456)

2	CHECK CONNECTION OF CONNECTORS

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Check that the connectors are properly connected to the occupant classification ECU and the airbag sensor assy center.
OK:
The connectors are connected.

NG → **CONNECT CONNECTORS, THEN GO TO STEP 1**

OK

3	CHECK VEHICLE CONDITION

(a) Check the front seat type.
Result:
A: w/o Power seat
B: w/ Power seat

B	Go to step 14

A

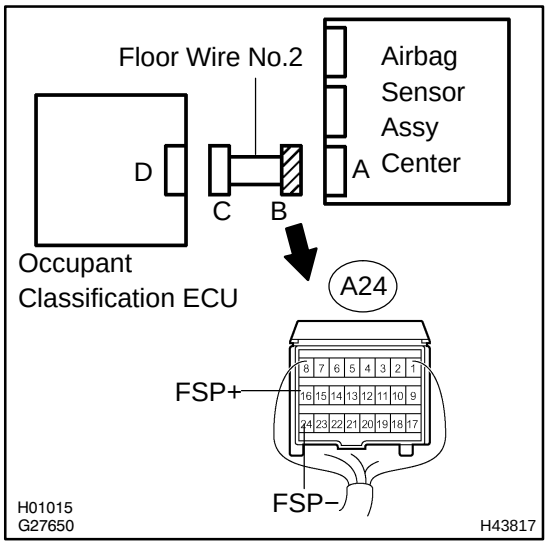
4	PREPARE FOR INSPECTION

CAUTION:
Be sure to perform the following procedures before troubleshooting to avoid unexpected airbag deployment.

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Disconnect the connectors from the airbag sensor assy center.
(d) Disconnect the connectors from the horn button assy.
(e) Disconnect the connectors from the front passenger airbag assy.
(f) w/ Side airbag:
Disconnect the connector from the front seat airbag assy LH.
(g) w/ Side airbag:
Disconnect the connector from the front seat airbag assy RH.
(h) w/ Curtain shield airbag:
Disconnect the connector from the curtain shield airbag assy LH.
(i) w/ Curtain shield airbag:
Disconnect the connector from the curtain shield airbag assy RH.
(j) Disconnect the connector from the front seat outer belt assy LH.
(k) Disconnect the connector from the front seat outer belt assy RH.

NEXT

5 CHECK FLOOR WIRE NO.2 (TO B+)



(a) Disconnect the connector from the occupant classification ECU.
(b) Connect the negative (−) terminal cable to the battery.
(c) Turn the ignition switch to the ON position.
(d) Measure the voltage according to the value(s) in the table below.

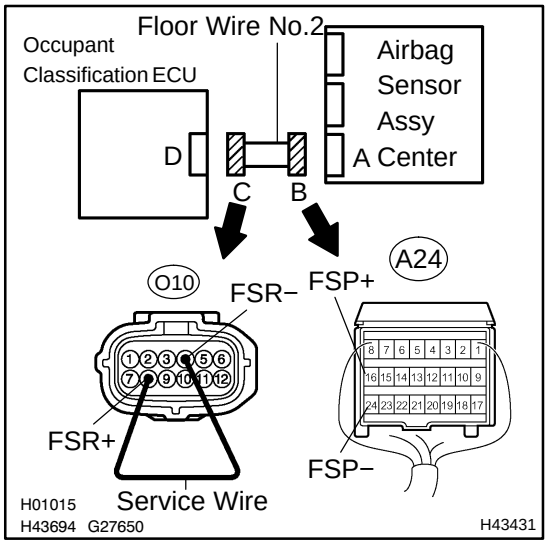
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − Body ground	Ignition switch ON	Below 1 V
A24−24 (FSP−) − Body ground	Ignition switch ON	Below 1 V

NG → **REPAIR OR REPLACE FLOOR WIRE NO.2**

OK

6 CHECK FLOOR WIRE NO.2 (OPEN)



(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Using a service wire, connect O10−8 (FSR+) and O10−4 (FSR−) of connector "C".

NOTICE:

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

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

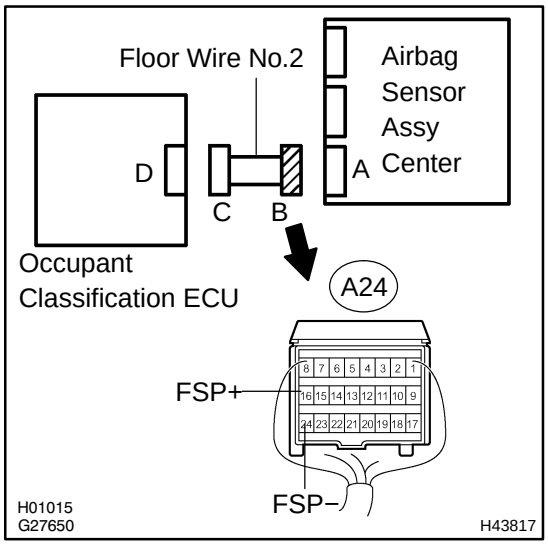
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − A24−24 (FSP−)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE FLOOR WIRE NO.2**

OK

7 CHECK FLOOR WIRE NO.2 (SHORT)



(a) Disconnect the service wire from connector ”C”.
(b) Measure the resistance according to the value(s) in the table below.

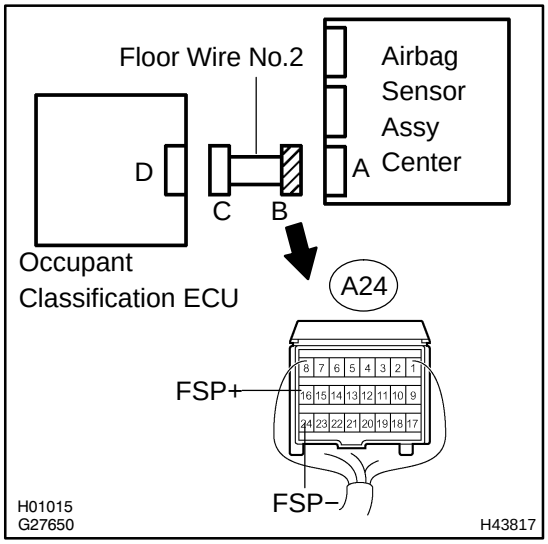
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − A24−24 (FSP−)	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE FLOOR WIRE NO.2**

OK

8 CHECK FLOOR WIRE NO.2 (TO GROUND)



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

Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − Body ground	Always	1 MΩ or Higher
A24−24 (FSP−) − Body ground	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE FLOOR WIRE NO.2**

OK

9	RECHECK DTC

(a) Connect the connectors to the occupant classification ECU and the airbag sensor assy center.
(b) Connect the negative (−) terminal cable to the battery.
(c) Turn the ignition switch to the ON position.
(d) Clear the DTCs stored in memory (see page 05−1464).

HINT:

- First clear DTCs stored in the occupant classification ECU and then in the airbag sensor assy center.
- Use the hand−held tester to clear the DTC of the occupant classification ECU, otherwise the DTC cannot be cleared.

(e) Turn the ignition switch to the LOCK position.
(f) Turn the ignition switch to the ON position.
(g) Using the hand−held tester, check the DTCs of the occupant classification ECU (see page 05−1464).
OK:
DTC B1790 is not output.

HINT:

Codes other than code B1790 may be output at this time, but they are not related to this check.

NG → **Go to step 10**

OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05−1456)

10	REPLACE OCCUPANT CLASSIFICATION ECU

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Replace the occupant classification ECU (see page 60−72).

HINT:

Perform the inspection using parts from a normal vehicle if possible.

NEXT

11	PERFORM ZERO POINT CALIBRATION

(a) Connect the negative (−) terminal cable to the battery.
(b) Connect the hand−held tester to the DLC3.
(c) Turn the ignition switch to the ON position.
(d) Using the hand−held tester, perform ”Zero point calibration” (see page 05−1452).
OK:
The ”COMPLETED” is displayed.

NEXT

12	PERFORM SENSITIVITY CHECK

(a) Using the hand−held tester, perform ”Sensitivity check” (see page 05−1452).
Standard value: 27 to 33 kg (59.52 to 72.75 lb)

NEXT

13	RECHECK DTC

(a) Turn the ignition switch to the ON position.
(b) Clear the DTCs stored in memory (see page 05−1464).

HINT:

- First clear DTCs stored in the occupant classification ECU and then in the airbag sensor assy center.
- Use the hand−held tester to clear the DTC of the occupant classification ECU, otherwise the DTC cannot be cleared.

(c) Turn the ignition switch to the LOCK position.
(d) Turn the ignition switch to the ON position.
(e) Using the hand−held tester, check the DTCs of the occupant classification ECU (see page 05−1464).
OK:
DTC B1790 is not output.

HINT:

Codes other than code B1790 may be output at this time, but they are not related to this check.

NG → **REPLACE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60−59)**

OK

END

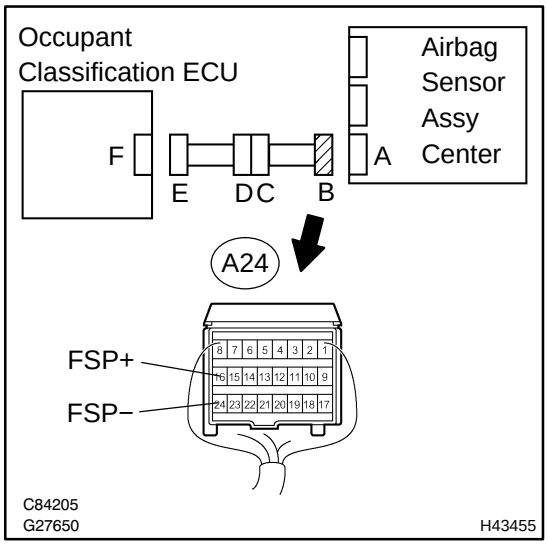
14	PREPARE FOR INSPECTION

CAUTION:
Be sure to perform the following procedures before troubleshooting to avoid unexpected airbag deployment.

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Disconnect the connectors from the airbag sensor assy center.
(d) Disconnect the connectors from the horn button assy.
(e) Disconnect the connectors from the front passenger airbag assy.
(f) w/ Side airbag:
Disconnect the connector from the front seat airbag assy LH.
(g) w/ Side airbag:
Disconnect the connector from the front seat airbag assy RH.
(h) w/ Curtain shield airbag:
Disconnect the connector from the curtain shield airbag assy LH.
(i) w/ Curtain shield airbag:
Disconnect the connector from the curtain shield airbag assy RH.
(j) Disconnect the connector from the front seat outer belt assy LH.
(k) Disconnect the connector from the front seat outer belt assy RH.

NEXT

15 CHECK OCCUPANT CLASSIFICATION ECU CIRCUIT (TO B+)



(a) Disconnect the connector from the occupant classification ECU and the airbag sensor assy center.
(b) Connect the negative (−) terminal cable to the battery.
(c) Turn the ignition switch to the ON position.
(d) Measure the voltage according to the value(s) in the table below.

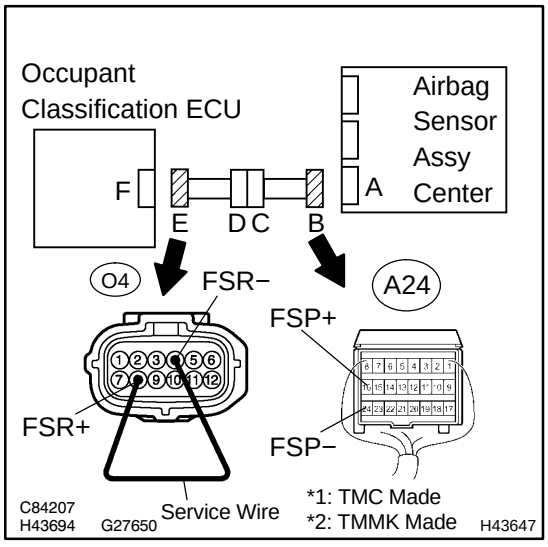
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − Body ground	Ignition switch ON	Below 1 V
A24−24 (FSP−) − Body ground	Ignition switch ON	Below 1 V

NG → **Go to step 24**

OK

16 CHECK OCCUPANT CLASSIFICATION ECU CIRCUIT (OPEN)



(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Using a service wire, connect O4−8 (FSR+) and O4−4 (FSR−) of connector "E".

NOTICE:

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

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

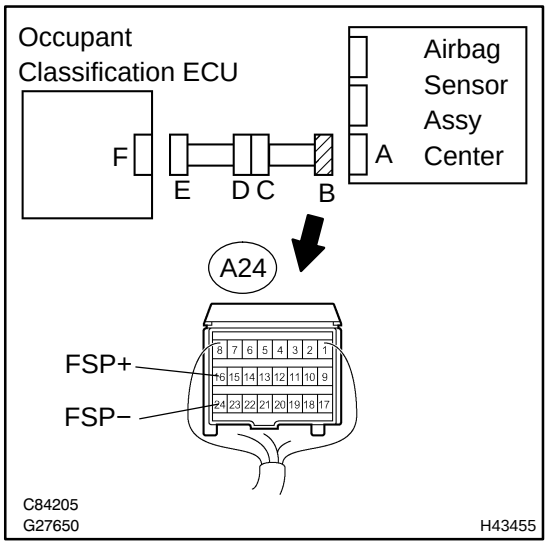
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − A24−24 (FSP−)	Always	Below 1 Ω

NG → **Go to step 25**

OK

17 CHECK OCCUPANT CLASSIFICATION ECU CIRCUIT (SHORT)



(a) Disconnect the service wire from connector ”E”.
(b) Measure the resistance according to the value(s) in the table below.

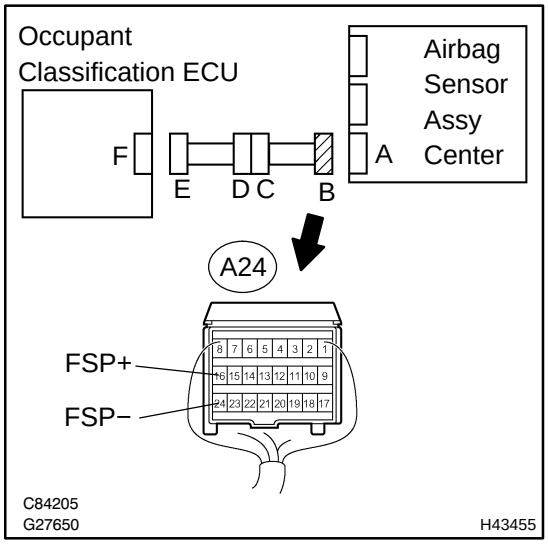
Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − A24−24 (FSP−)	Always	1 MΩ or Higher

NG → **Go to step 26**

OK

18 CHECK OCCUPANT CLASSIFICATION ECU CIRCUIT (TO GROUND)



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

Standard:

Tester connection	Condition	Specified condition
A24−16 (FSP+) − Body ground	Always	1 MΩ or Higher
A24−24 (FSP−) − Body ground	Always	1 MΩ or Higher

NG → **Go to step 27**

OK

19	RECHECK DTC

(a) Connect the connectors to the occupant classification ECU and the airbag sensor assy center.
(b) Connect the negative (−) terminal cable to the battery.
(c) Turn the ignition switch to the ON position.
(d) Clear the DTCs stored in memory (see page 05−1464).

HINT:

- First clear DTCs stored in the occupant classification ECU and then in the airbag sensor assy center.
- Use the hand−held tester to clear the DTC of the occupant classification ECU, otherwise the DTC cannot be cleared.

(e) Turn the ignition switch to the LOCK position.
(f) Turn the ignition switch to the ON position.
(g) Using the hand−held tester, check the DTCs of the occupant classification ECU (see page 05−1464).
OK:
DTC B1790 is not output.

HINT:

Codes other than code B1790 may be output at this time, but they are not related to this check.

NG → **Go to step 20**

OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05−1456)

20	REPLACE OCCUPANT CLASSIFICATION ECU

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Replace the occupant classification ECU (see page 60−72).

HINT:

Perform the inspection using parts from a normal vehicle if possible.

NEXT

21	PERFORM ZERO POINT CALIBRATION

(a) Connect the negative (−) terminal cable to the battery.
(b) Connect the hand−held tester to the DLC3.
(c) Turn the ignition switch to the ON position.
(d) Using the hand−held tester, perform ”Zero point calibration” (see page 05−1452).
OK:
The ”COMPLETED” is displayed.

NEXT

22	PERFORM SENSITIVITY CHECK

(a) Using the hand−held tester, perform ”Sensitivity check” (see page 05−1452).
Standard value: 27 to 33 kg (59.52 to 72.75 lb)

NEXT

23	RECHECK DTC

(a) Turn the ignition switch to the ON position.
(b) Clear the DTCs stored in memory (see page 05−1464).

HINT:

- First clear DTCs stored in the occupant classification ECU and then in the airbag sensor assy center.
- Use the hand−held tester to clear the DTC of the occupant classification ECU, otherwise the DTC cannot be cleared.

(c) Turn the ignition switch to the LOCK position.
(d) Turn the ignition switch to the ON position.
(e) Using the hand−held tester, check the DTCs of the occupant classification ECU (see page 05−1464).
OK:
DTC B1790 is not output.

HINT:

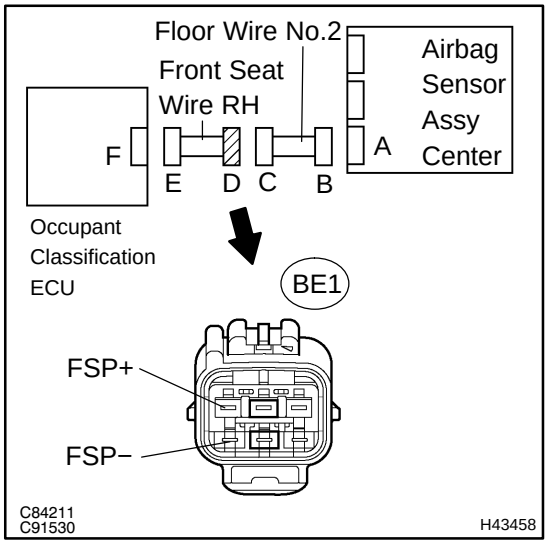
Codes other than code B1790 may be output at this time, but they are not related to this check.

NG → **REPLACE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60−59)**

OK

END

24	CHECK FRONT SEAT WIRE RH (TO B+)



(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (−) terminal cable from the battery, and wait for at least 90 seconds.
(c) Disconnect the floor wire No.2 connector from the front seat wire RH.
(d) Connect the negative (−) terminal cable to the battery, and wait for at least 2 seconds.
(e) Turn the ignition switch to the ON position.
(f) Measure the voltage according to the value(s) in the table below.
Standard:

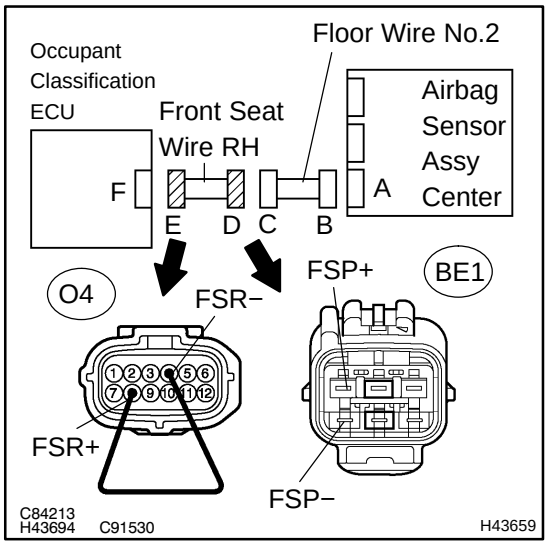
Tester connection	Condition	Specified condition
BE1−1 (FSP+) − Body ground	Ignition switch ON	Below 1 V
BE1−4 (FSP−) − Body ground	Ignition switch ON	Below 1 V

NG → **REPAIR OR REPLACE FRONT SEAT WIRE RH**

OK

REPAIR OR REPLACE FLOOR WIRE NO.2

25 CHECK FRONT SEAT WIRE RH (OPEN)



(a) Disconnect the floor wire No.2 connector from the front seat wire RH.

HINT:

The service wire has already been inserted into connector "E".

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

Standard:

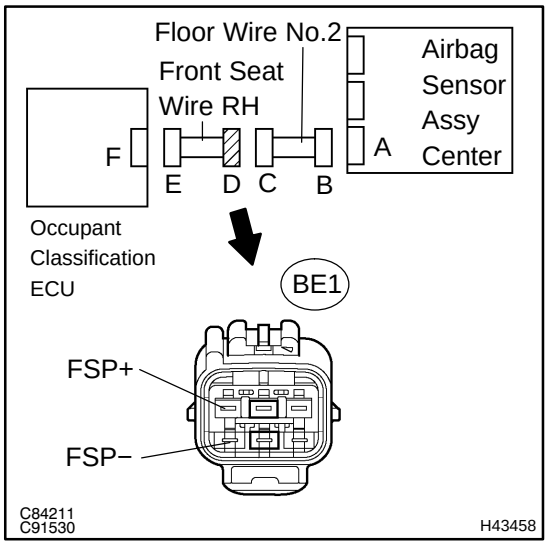
Tester connection	Condition	Specified condition
BE1−1 (FSP+) − BE1−4 (FSP−)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE FRONT SEAT WIRE RH**

OK

REPAIR OR REPLACE FLOOR WIRE NO.2

26 CHECK FRONT SEAT WIRE RH (SHORT)



(a) Disconnect the floor wire No.2 connector from the front seat wire RH.

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

Standard:

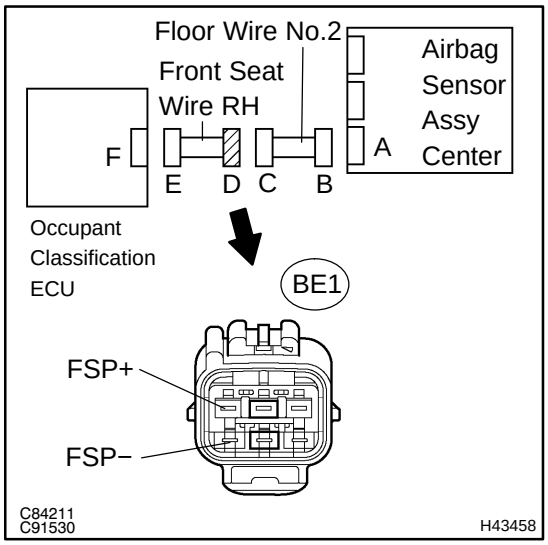
Tester connection	Condition	Specified condition
BE1−1 (FSP+) − BE1−4 (FSP−)	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE FRONT SEAT WIRE RH**

OK

REPAIR OR REPLACE FLOOR WIRE NO.2

27 CHECK FRONT SEAT WIRE RH (TO GROUND)



(a) Disconnect the floor wire No.2 connector from the front seat wire RH.

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

Standard:

Tester connection	Condition	Specified condition
BE1−1 (FSP+) − Body ground	Always	1 MΩ or Higher
BE1−4 (FSP−) − Body ground	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE FRONT SEAT WIRE RH**

OK

REPAIR OR REPLACE FLOOR WIRE NO.2