DTC	B1810/53	SHORT IN D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT

DTC	B1811/53	OPEN IN D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT

DTC	B1812/53	SHORT IN D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (TO GROUND)

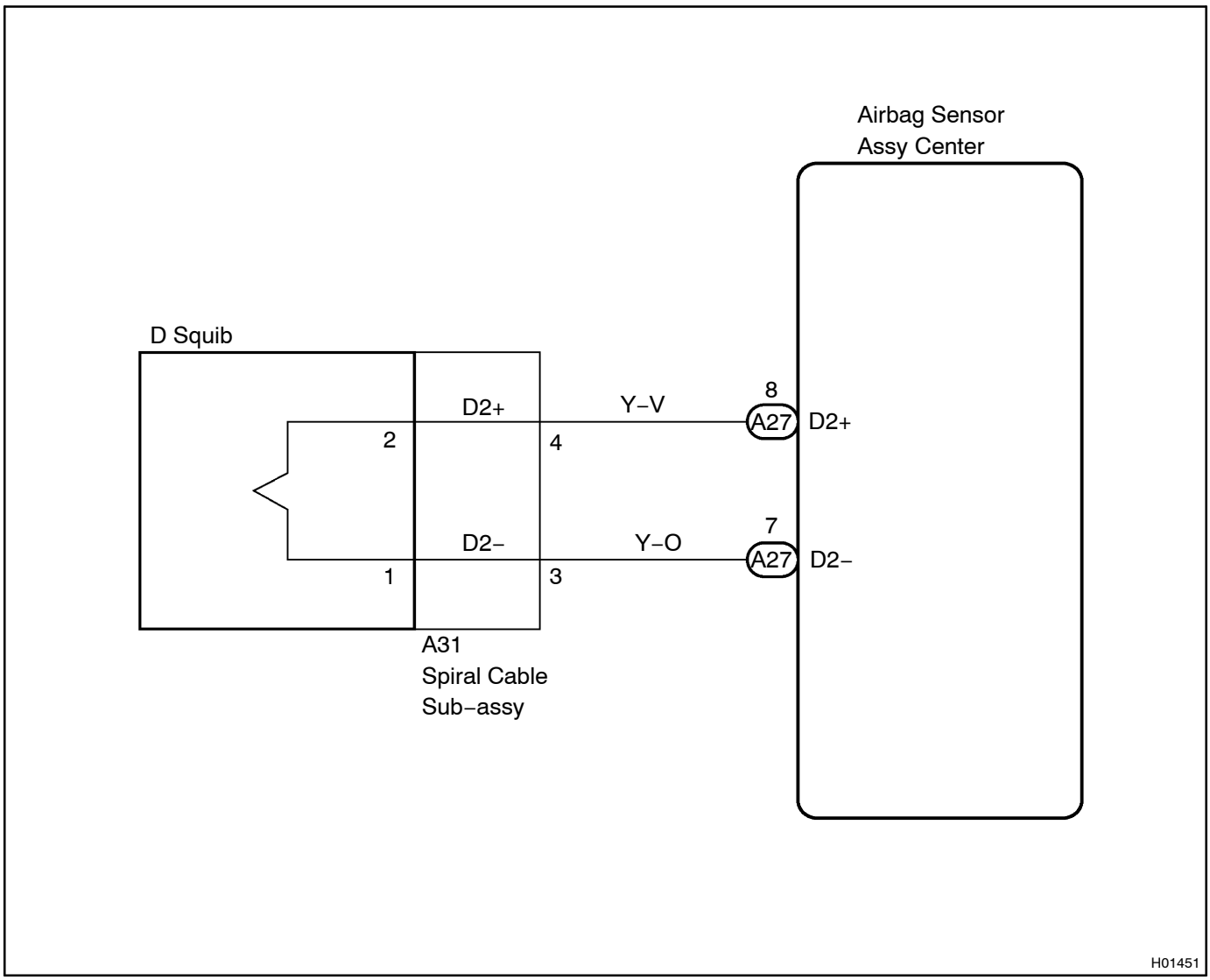
DTC	B1813/53	SHORT IN D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (TO B+)

CIRCUIT DESCRIPTION

The D squib (Dual stage – 2nd step) circuit consists of the airbag sensor assy center, the spiral cable sub–assy and the horn button assy.
The circuit instructs the SRS to deploy when deployment conditions are met.
These DTCs are recorded when a malfunction is detected in the D squib (Dual stage – 2nd step) circuit.

DTC No.	DTC Detecting Condition	Trouble Area
B1810/53	• The airbag sensor assy center receives a line short circuit signal 5 times in the D squib (Dual stage – 2nd step) circuit during primary check. • D squib (Dual stage – 2nd step) malfunction • Spiral cable sub–assy malfunction • Airbag sensor assy center malfunction	• Horn button assy (D squib, Dual stage – 2nd step) • Spiral cable sub–assy • Airbag sensor assy center • Instrument panel wire
B1811/53	• The airbag sensor assy center receives an open circuit signal in the D squib (Dual stage – 2nd step) circuit for 2 seconds. • D squib (Dual stage – 2nd step) malfunction • Spiral cable sub–assy malfunction • Airbag sensor assy center malfunction	• Horn button assy (D squib, Dual stage – 2nd step) • Spiral cable sub–assy • Airbag sensor assy center • Instrument panel wire
B1812/53	• The airbag sensor assy center receives a short circuit to ground signal in the D squib (Dual stage – 2nd step) circuit for 0.5 second. • D squib (Dual stage – 2nd step) malfunction • Spiral cable sub–assy malfunction • Airbag sensor assy center malfunction	• Horn button assy (D squib, Dual stage – 2nd step) • Spiral cable sub–assy • Airbag sensor assy center • Instrument panel wire
B1813/53	• The airbag sensor assy center receives a short circuit to B+ signal in the D squib (Dual stage – 2nd step) circuit for 0.5 second. • D squib (Dual stage – 2nd step) malfunction • Spiral cable sub–assy malfunction • Airbag sensor assy center malfunction	• Horn button assy (D squib, Dual stage – 2nd step) • Spiral cable sub–assy • Airbag sensor assy center • Instrument panel wire

WIRING DIAGRAM



INSPECTION PROCEDURE

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) Disconnect the connector from the front seat airbag assy LH.
(g) 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.

1	CHECK READ METHOD OF DTC

(a) Proceed to each step according to DTC readings.
(1) If using the intelligent tester II (read the 5–digit of DTC):
Using the intelligent tester II, check the DTCs (see page 05–16).

Result:

DTC B1810 is output.	A
DTC B1811 is output.	B
DTC B1812 is output.	C
DTC B1813 is output.	D

(2) If not using the intelligent tester II (read the 2–digit of DTC):
Check the DTCs (see page 05–16).

Result:

DTC 53 is output.	E

B → **Go to step 4**

C → **Go to step 5**

D → **Go to step 6**

E → **Go to step 7**

A

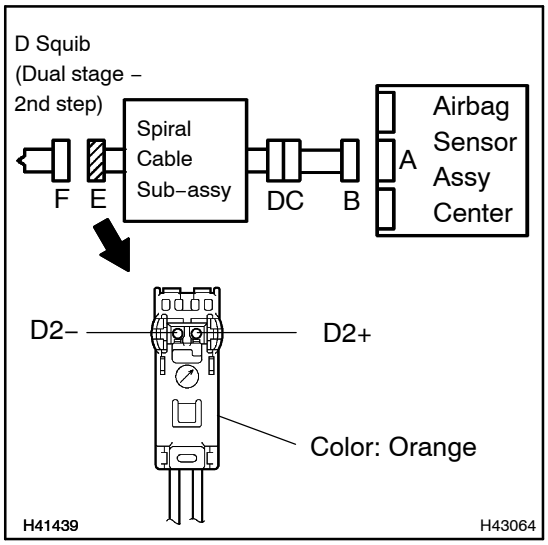
2	CHECK CONNECTOR

(a) Check that the spiral cable sub–assy connectors (on the horn button assy side) are not damaged.
OK:
The lock button is not disengaged, or the claw of the lock is not deformed or damaged.

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

OK

3	CHECK D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (SHORT)



(a) Release the activation prevention mechanism built into connector "B" (see page 05–10).
(b) Measure the resistance according to the value(s) in the table below.
Standard:

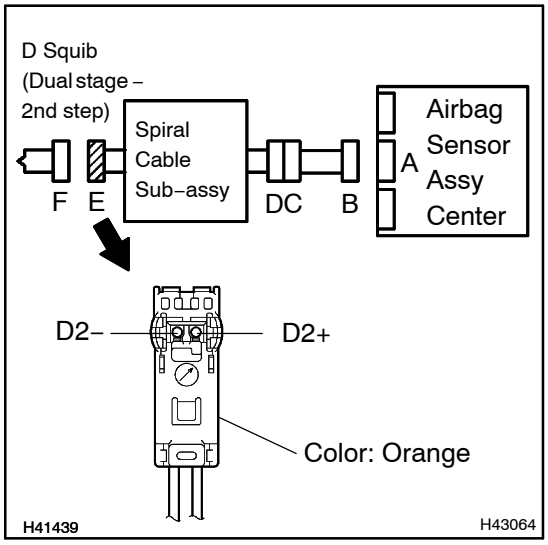
Tester connection	Condition	Specified condition
D2+ – D2–	Always	1 MΩ or Higher

NG → **Go to step 13**

OK

GO TO STEP 10

4 CHECK D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (OPEN)



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

Standard:

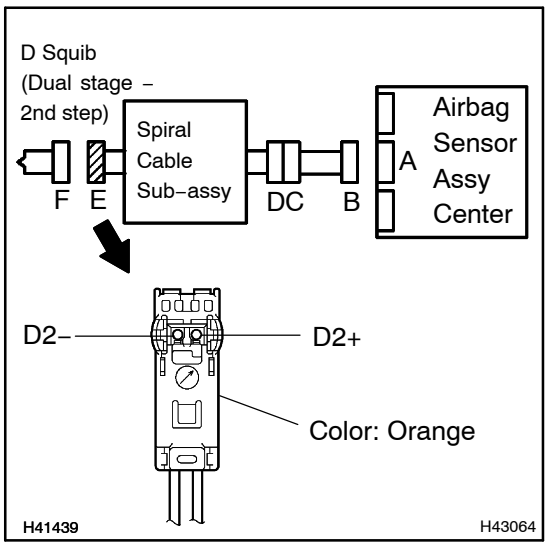
Tester connection	Condition	Specified condition
D2+ – D2–	Always	Below 1 Ω

NG → **Go to step 15**

OK

GO TO STEP 11

5 CHECK D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (TO GROUND)



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

Standard:

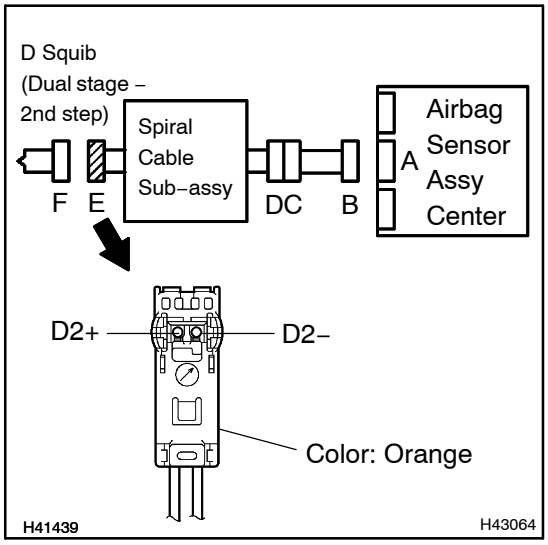
Tester connection	Condition	Specified condition
D2+ – Body ground	Always	1 MΩ or Higher
D2– – Body ground	Always	1 MΩ or Higher

NG → **Go to step 17**

OK

GO TO STEP 11

6 CHECK D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT (TO B+)



(a) Connect the negative (–) terminal cable to the battery, and wait for at least 2 seconds.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
D2+ – Body ground	Ignition switch ON	Below 1 V
D2– – Body ground	Ignition switch ON	Below 1 V

NG → **Go to step 19**

OK

GO TO STEP 11

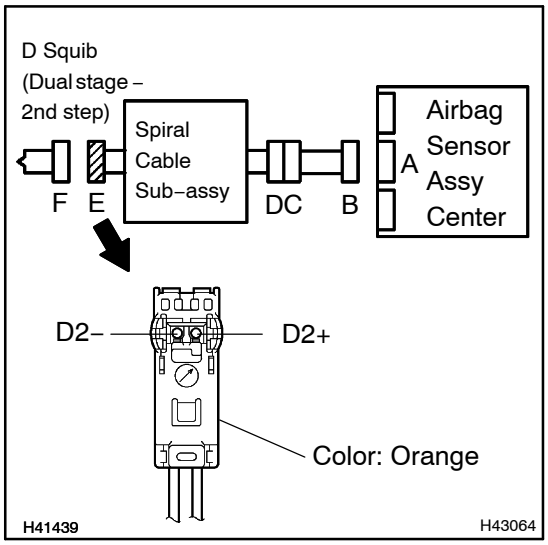
7	CHECK CONNECTOR

(a) Check that the spiral cable sub–assy connectors (on the horn button assy side) are not damaged.
OK:
The lock button is not disengaged, or the claw of the lock is not deformed or damaged.

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

OK

8	CHECK D SQUIB (DUAL STAGE – 2ND STEP) CIRCUIT



(a) Connect the negative (–) terminal cable to the battery, and wait for at least 2 seconds.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.
Standard:

Tester connection	Condition	Specified condition
D2+ – Body ground	Ignition switch ON	Below 1 V
D2– – Body ground	Ignition switch ON	Below 1 V

(d) Turn the ignition switch to the LOCK position.
(e) Disconnect the negative (–) terminal cable from the battery, and wait for at least 90 seconds.
(f) Measure the resistance according to the value(s) in the table below.
Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	Below 1 Ω
D2+ – Body ground	Always	1 MΩ or Higher
D2– – Body ground	Always	1 MΩ or Higher

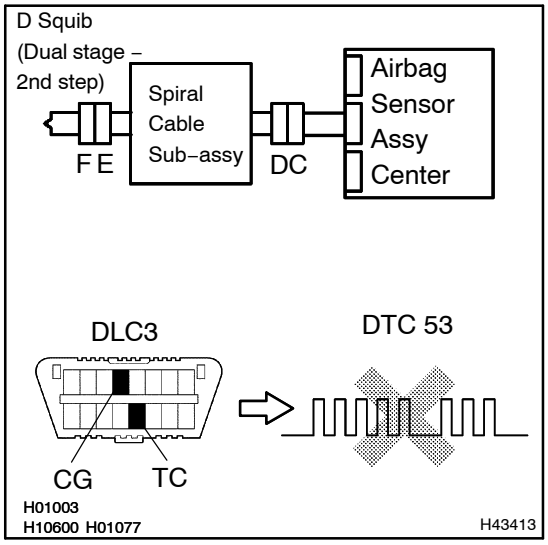
(g) Release the activation prevention mechanism built into connector "B" (see page 05–10).
(h) Measure the resistance according to the value(s) in the table below.
Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	1 MΩ or Higher

NG → **Go to step 21**

OK

9	REPLACE HORN BUTTON ASSY (D SQUIB, DUAL STATE – 2ND STEP)



(a) Replace the horn button assy (see page 60–19).

HINT:

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

(b) Connect the connectors to the airbag sensor assy center.

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

(d) Turn the ignition switch to the ON position, and wait for at least 60 seconds.

(e) Clear the DTCs stored in memory (see page 05–16).

(f) Turn the ignition switch to the LOCK position.

(g) Turn the ignition switch to the ON position, and wait for at least 60 seconds.

(h) Check the DTCs (see page 05–16).

OK:

DTC 53 is not output.

HINT:

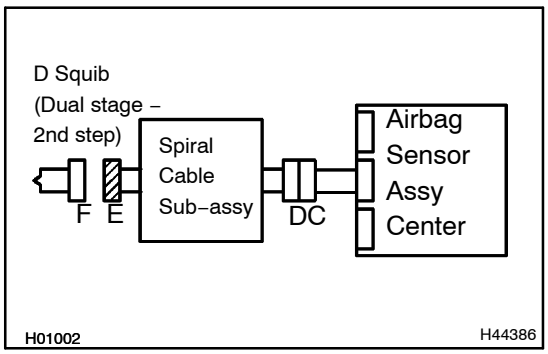
Codes other than code 53 may be output at this time, but they are not related to this check.

NG → **REPLACE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60–40)**

OK

END

10	CHECK AIR BAG SENSOR ASSY CENTER



(a) Connect the connectors to the airbag sensor assy center.
(b) Connect the negative (–) terminal cable to the battery, and wait for at least 2 seconds.
(c) Turn the ignition switch to the ON position, and wait for at least 60 seconds.
(d) Clear the DTCs stored in memory (see page 05–16).
(e) Turn the ignition switch to the LOCK position.
(f) Turn the ignition switch to the ON position, and wait for at least 60 seconds.
(g) Check the DTCs (see page 05–16).
OK:
DTC B1810 is not output.

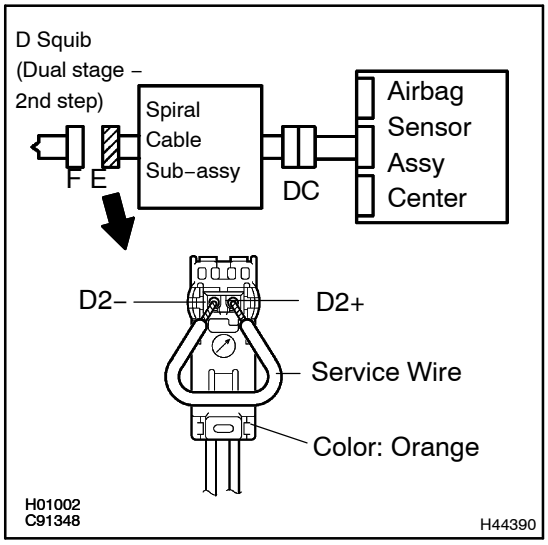
HINT:
Codes other than code B1810 may be output at this time, but they are not related to this check.

NG → **REPLACE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60–40)**

OK

GO TO STEP 12

11 CHECK AIR BAG SENSOR ASSY CENTER



(a) From the step 6:
Turn the ignition switch to the LOCK position.

(b) From the step 6:
Disconnect the negative (–) terminal cable from the battery, and wait for at least 90 seconds.

(c) Connect the connectors to the airbag sensor assy center.

(d) Using a service wire, connect D2+ and D2– of connector "E".

NOTICE:

- **Twist the end of the service wire in order to insert it into the connector.**
- **Do not forcibly insert the twisted service wire into the terminals of the connector when connecting.**

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

(f) Turn the ignition switch to the ON position, and wait for at least 60 seconds.

(g) Clear the DTCs stored in memory (see page 05–16).

(h) Turn the ignition switch to the LOCK position.

(i) Turn the ignition switch to the ON position, and wait for at least 60 seconds.

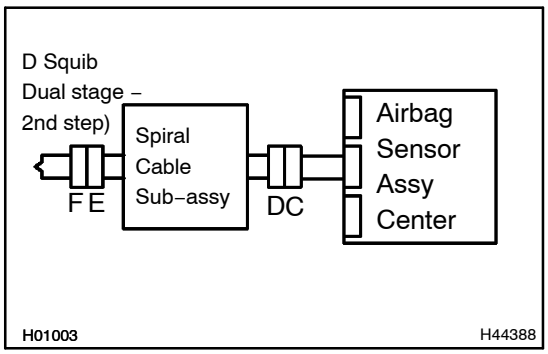
(j) Check the DTCs (see page 05–16).
OK:
DTC B1811, B1812 or B1813 is not output.

HINT:
Codes other than code B1811, B1812 and B1813 may be output at this time, but they are not related to this check.

NG → **REPLACE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60–40)**

OK

12 CHECK HORN BUTTON ASSY (D SQUIB, DUAL STAGE – 2ND STEP)



(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) From the step 11:
Disconnect the service wire from connector "E".
(d) Connect the connectors to the horn button assy.
(e) Connect the negative (–) terminal cable to the battery, and wait for at least 2 seconds.
(f) Turn the ignition switch to the ON position, and wait for at least 60 seconds.
(g) Clear the DTCs stored in memory (see page 05–16).
(h) Turn the ignition switch to the LOCK position.
(i) Turn the ignition switch to the ON position, and wait for at least 60 seconds.
(j) Check the DTCs (see page 05–16).
OK:
DTC B1810, B1811, B1812 or B1813 is not output.

HINT:
Codes other than code B1810, B1811, B1812 and B1813 may be output at this time, but they are not related to this check.

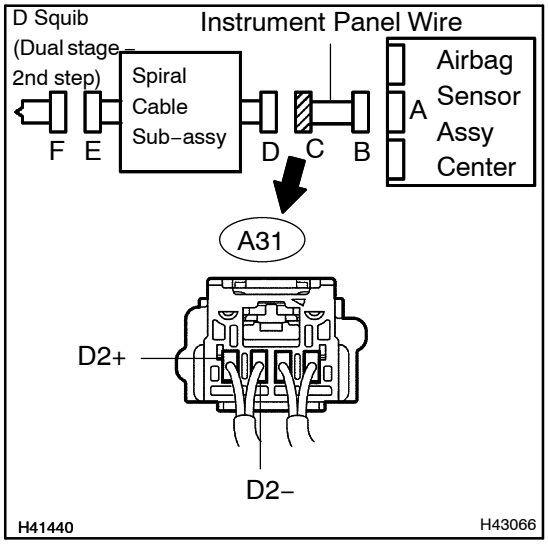
NG → **REPLACE HORN BUTTON ASSY (SEE PAGE 60–19)**

OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:
- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the airbag system or driving the vehicle on a city or rough road (see page 05–19).

13 CHECK INSTRUMENT PANEL WIRE (SHORT)



(a) Disconnect the instrument panel wire connector from the spiral cable sub–assy.

HINT:

The activation prevention mechanism of connector "B" has already been released.

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

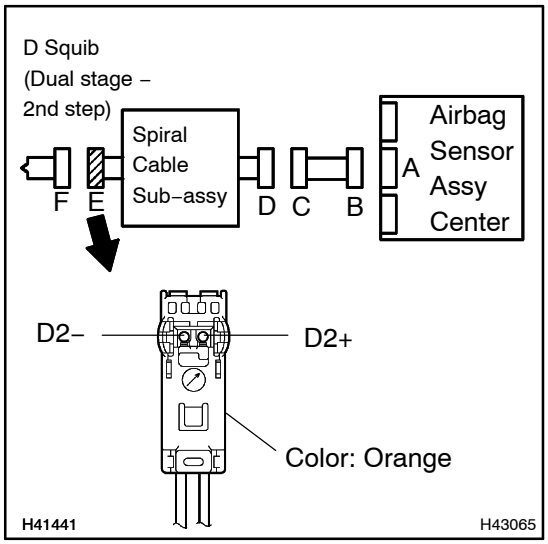
Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – A31–3 (D2–)	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE INSTRUMENT PANEL WIRE**

OK

14 CHECK SPIRAL CABLE SUB–ASSY (SHORT)



(a) Release the activation prevention mechanism built into connector "D" (see page 05–10).

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

Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	1 MΩ or Higher

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

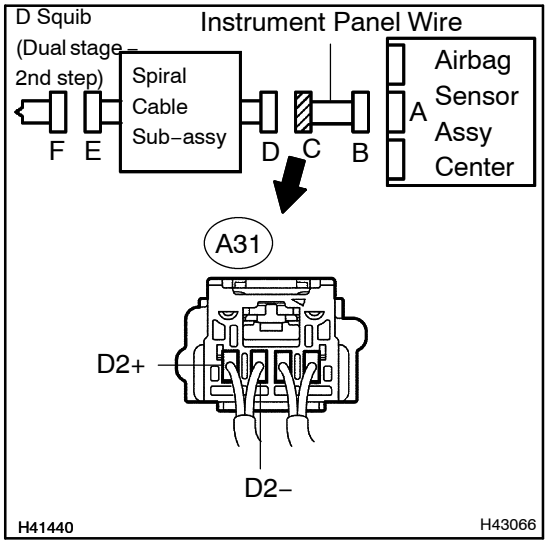
OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:

- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the airbag system or driving the vehicle on a city or rough road (see page 05–19).

15 CHECK INSTRUMENT PANEL WIRE (OPEN)



(a) Disconnect the instrument panel wire connector from the spiral cable sub–assy.

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

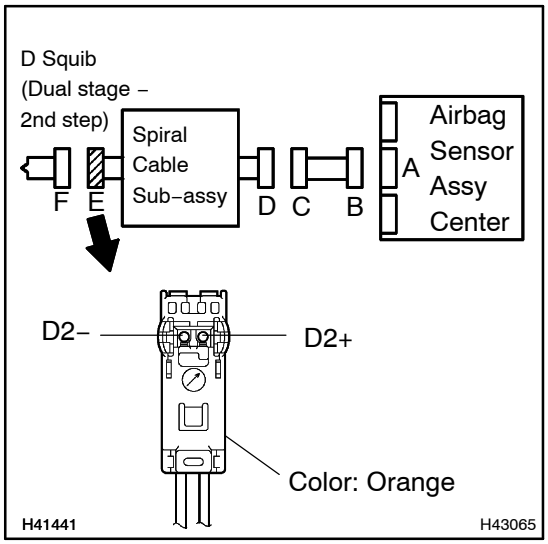
Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – A31–3 (D2–)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE INSTRUMENT PANEL WIRE**

OK

16 CHECK SPIRAL CABLE SUB–ASSY (OPEN)



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

Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	Below 1 Ω

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

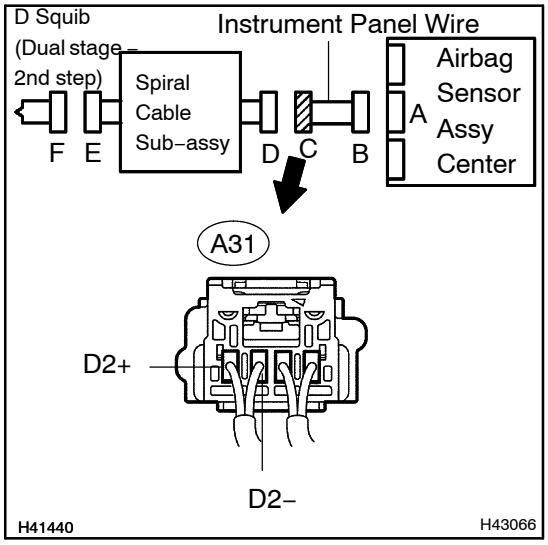
OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:

- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the air-bag system or driving the vehicle on a city or rough road (see page 05–19).

17 CHECK INSTRUMENT PANEL WIRE (TO GROUND)



(a) Disconnect the instrument panel wire connector from the spiral cable sub–assy.

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

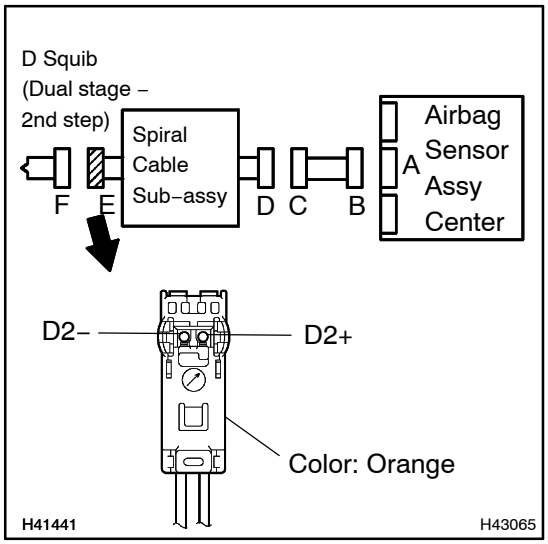
Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – Body ground	Always	1 MΩ or Higher
A31–3 (D2–) – Body ground	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE INSTRUMENT PANEL WIRE**

OK

18 CHECK SPIRAL CABLE SUB–ASSY (TO GROUND)



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

Standard:

Tester connection	Condition	Specified condition
D2+ – Body ground	Always	1 MΩ or Higher
D2– – Body ground	Always	1 MΩ or Higher

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

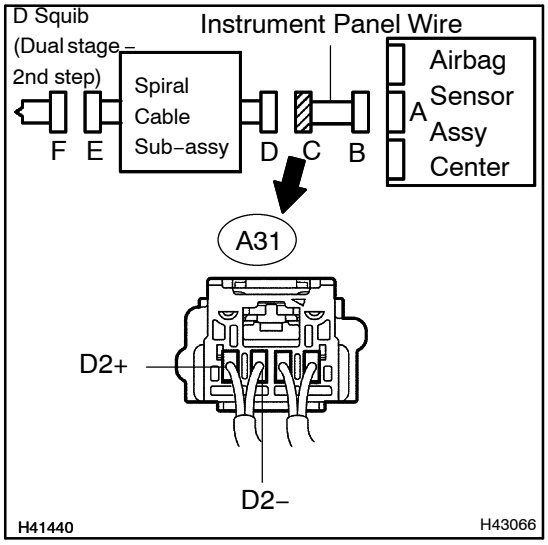
OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:

- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the air-bag system or driving the vehicle on a city or rough road (see page 05–19).

19 CHECK INSTRUMENT PANEL WIRE (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 instrument panel wire connector from the spiral cable sub–assy.
(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.

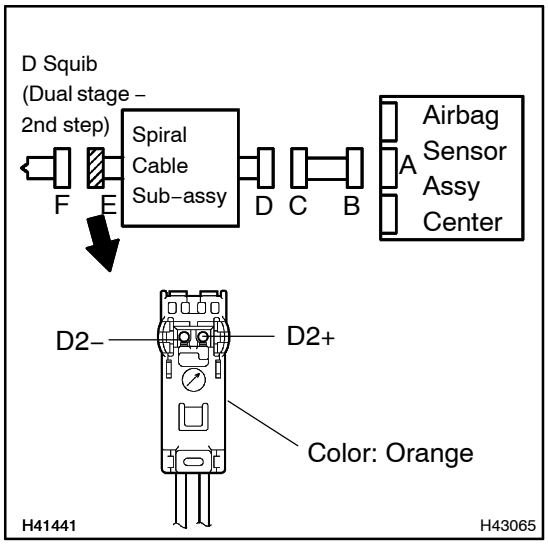
Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – Body ground	Ignition switch ON	Below 1 V
A31–3 (D2–) – Body ground	Ignition switch ON	Below 1 V

NG → **REPAIR OR REPLACE INSTRUMENT PANEL WIRE**

OK

20 CHECK SPIRAL CABLE SUB–ASSY (TO B+)



(a) Measure the voltage according to the value(s) in the table below when the ignition switch is in the ON position.

Standard:

Tester connection	Condition	Specified condition
D2+ – Body ground	Ignition switch ON	Below 1 V
D2– – Body ground	Ignition switch ON	Below 1 V

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

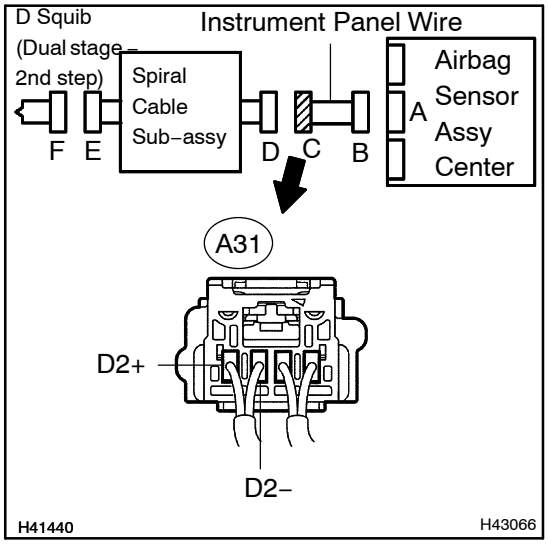
OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:

- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the airbag system or driving the vehicle on a city or rough road (see page 05–19).

21 CHECK INSTRUMENT PANEL WIRE



(a) Restore the released activation prevention mechanism of connector "B" to the original condition.

(b) Disconnect the instrument panel wire connector from the spiral cable sub–assy.

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

(d) Turn the ignition switch to the ON position.

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

Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – Body ground	Ignition switch ON	Below 1 V
A31–3 (D2–) – Body ground	Ignition switch ON	Below 1 V

(f) Turn the ignition switch to the LOCK position.

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

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

Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – A31–3 (D2–)	Always	Below 1 Ω
A31–4 (D2+) – Body ground	Always	1 MΩ or Higher
A31–3 (D2–) – Body ground	Always	1 MΩ or Higher

(i) Release the activation prevention mechanism built into connector "B" (see page 05–10).

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

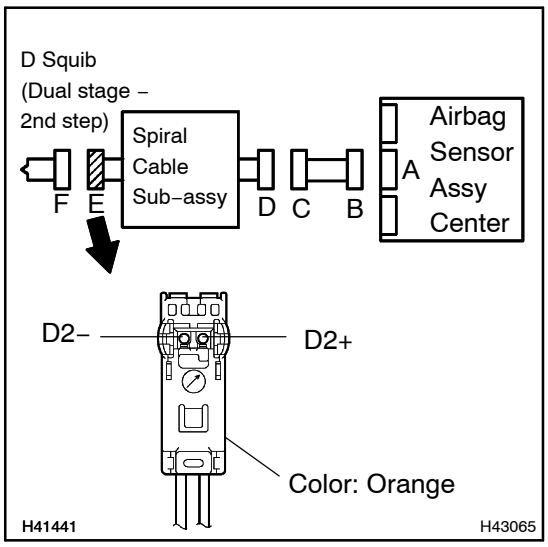
Standard:

Tester connection	Condition	Specified condition
A31–4 (D2+) – A31–3 (D2–)	Always	1 MΩ or Higher

NG → **REPAIR OR REPLACE INSTRUMENT PANEL WIRE**

OK

22 CHECK SPIRAL CABLE SUB–ASSY



(a) Connect the negative (–) terminal cable from the battery, and wait for at least 2 seconds.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
D2+ – Body ground	Ignition switch ON	Below 1 V
D2– – Body ground	Ignition switch ON	Below 1 V

(d) Turn the ignition switch to the LOCK position.
(e) Disconnect the negative (–) terminal cable from the battery, and wait for at least 90 seconds.
(f) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	Below 1 Ω
D2+ – Body ground	Always	1 MΩ or Higher
D2– – Body ground	Always	1 MΩ or Higher

(g) Release the activation prevention mechanism built into connector "D" (see page 05–10).
(h) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
D2+ – D2–	Always	1 MΩ or Higher

NG → **REPLACE SPIRAL CABLE SUB–ASSY (SEE PAGE 60–28)**

OK

USE SIMULATION METHOD TO CHECK (SEE PAGE 05–10)

HINT:

- Perform the simulation method by selecting the check mode with the intelligent tester II (see page 05–19).
- After selecting the check mode, perform the simulation method by wiggling each connector of the airbag system or driving the vehicle on a city or rough road (see page 05–19).