CHECK CAN BUS LINES FOR SHORT CIRCUIT (LHD, w/o LEXUS Navigation System)

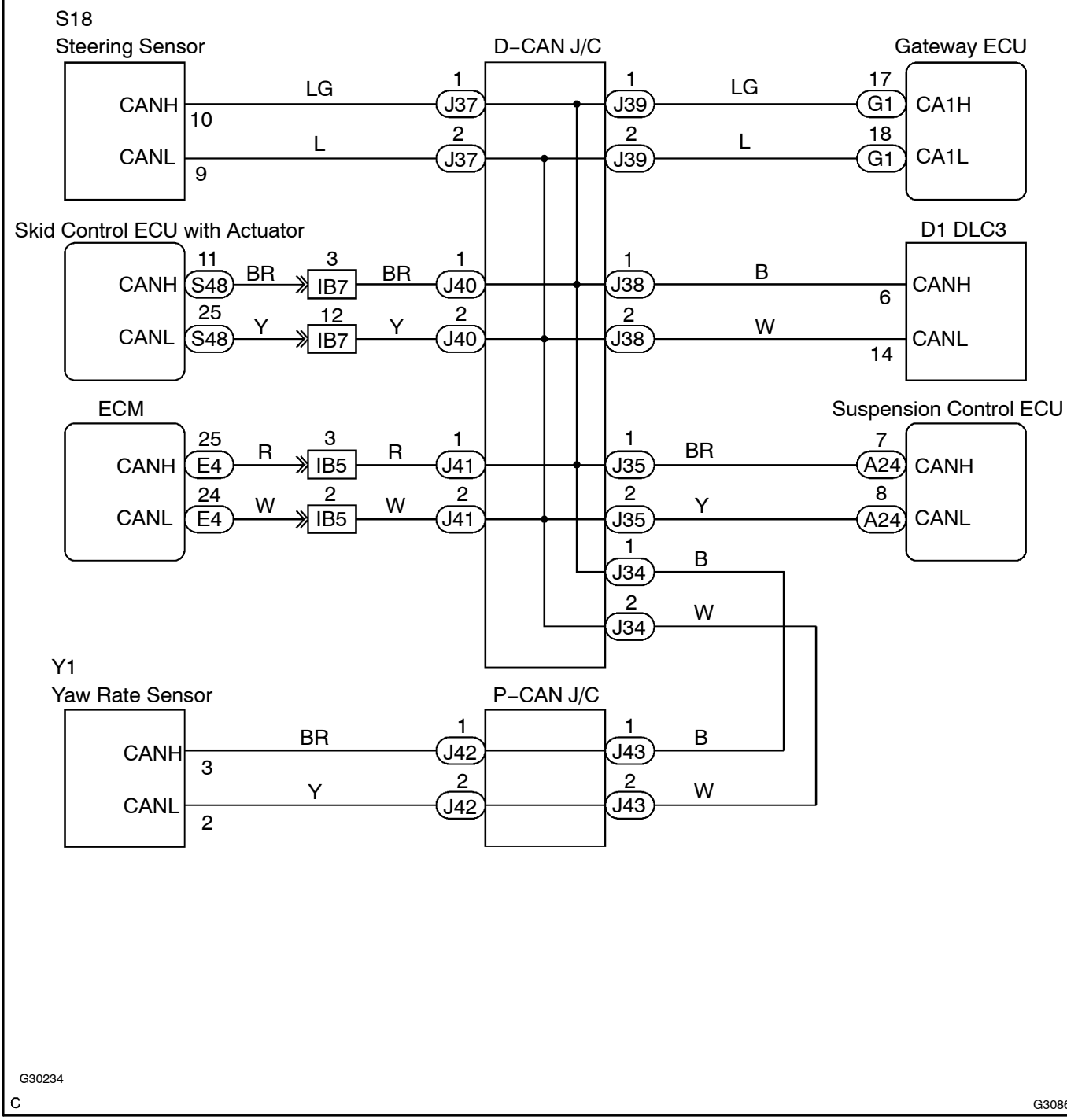
CIRCUIT DESCRIPTION

There may be a short circuit between the CAN bus lines when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.	• Short between CAN bus lines • Skid control ECU with actuator • Steering sensor • Yaw rate sensor • Suspension control ECU • ECM • Gateway ECU • Junction connector (P–CAN J/C) • Junction connector (D–CAN J/C)

WIRING DIAGRAM

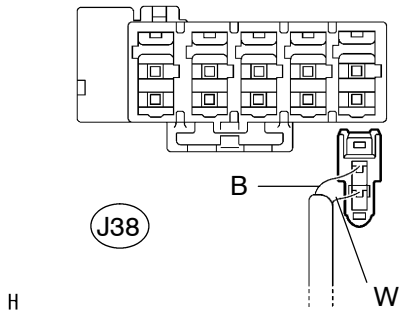
LHD:



INSPECTION PROCEDURE

1 CHECK CAN BUS LINES FOR SHORT CIRCUIT(DLC3 SUB BUS LINE)

D–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:

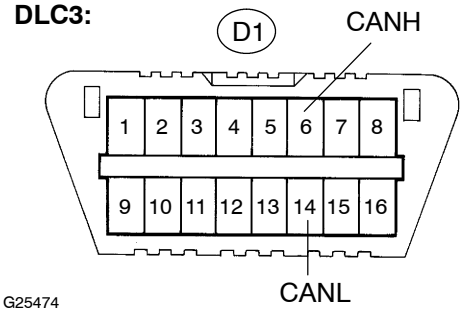


(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the DLC3 sub bus line connector (J38) from the D–CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	1 MΩ or more

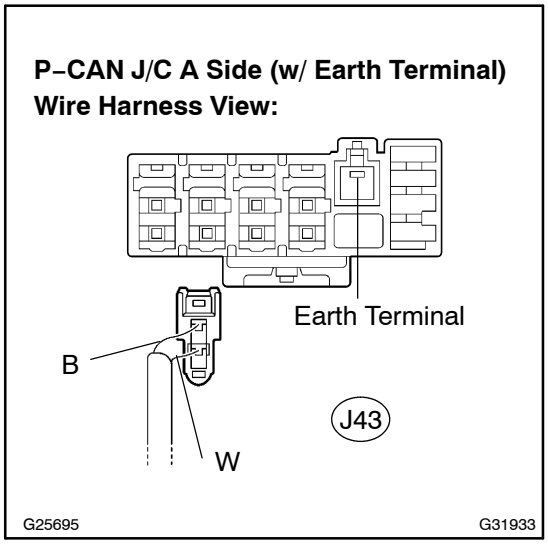
NG → **REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR(CAN–H, CAN–L)**

OK

2 CONNECT CONNECTOR

(a) Reconnect the DLC3 sub bus line connector (J38) to the D–CAN J/C B side (w/o earth terminal).

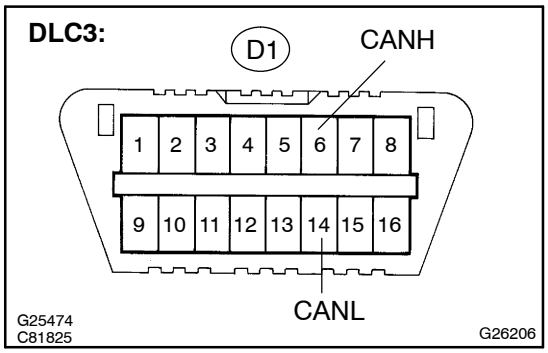
3 CHECK CAN BUS LINES FOR SHORT CIRCUIT(CAN BUSES TO P–CAN J/C)



(a) Disconnect the CAN main bus line connector (J43) from the P–CAN J/C A side (w/ earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	108 to 132 Ω

OK → **Go to step 26**

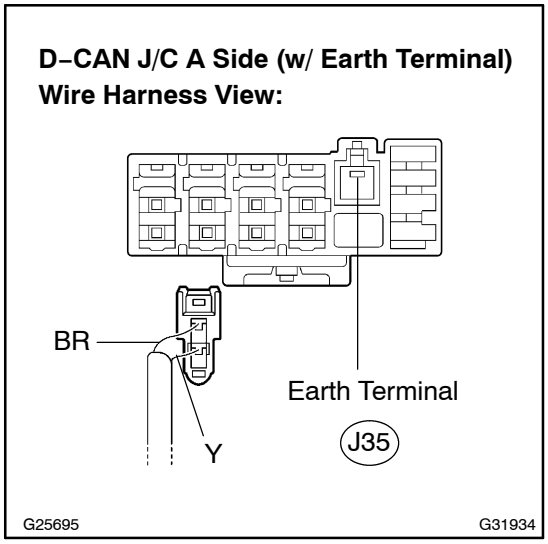
NG

4 CONNECT CONNECTOR

(a) Reconnect the CAN main bus line connector (J43) to the P–CAN J/C A side (w/ earth terminal).

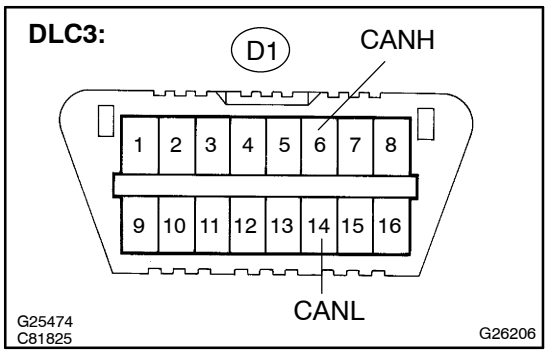
5	CHECK CAN BUS LINES FOR SHORT CIRCUIT(SUSPENSION CONTROL ECU SUB BUS LINE)

NOTICE:
For vehicles without electronic modulated air suspension, go to step 7.



(a) Disconnect the suspension control ECU sub bus line connector (J35) from the D–CAN J/C A side (w/ earth terminal).

NOTICE:
- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK	Go to step 16

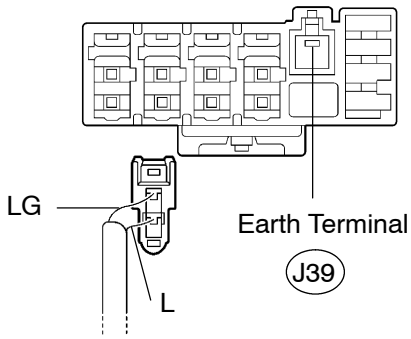
NG

6	CONNECT CONNECTOR

(a) Reconnect the suspension control ECU sub bus line connector (J35) to the D–CAN J/C A side (w/ earth terminal).

7 CHECK CAN BUS LINES FOR SHORT CIRCUIT(GATEWAY ECU SUB BUS LINE)

D–CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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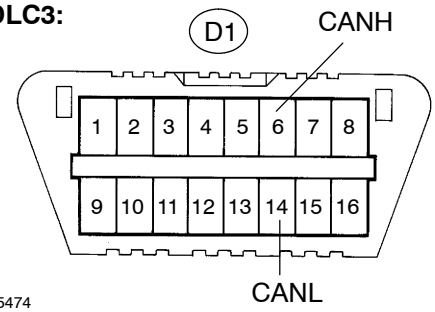
(a) Disconnect the gateway ECU sub bus line connector (J39) from the D–CAN J/C A side (w/ earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **Go to step 18**

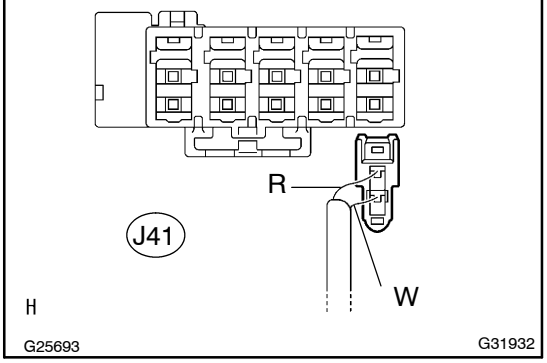
NG

8 CONNECT CONNECTOR

(a) Reconnect the gateway ECU sub bus line connector (J39) to the D–CAN J/C A side (w/ earth terminal).

9 CHECK CAN BUS LINES FOR SHORT CIRCUIT(ECM SUB BUS LINE)

D–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:

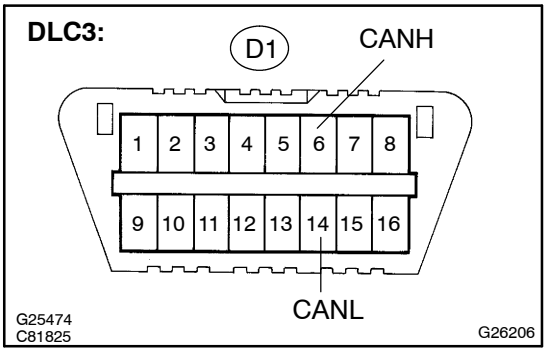


(a) Disconnect the ECM sub bus line connector (J41) from the D–CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **Go to step 20**

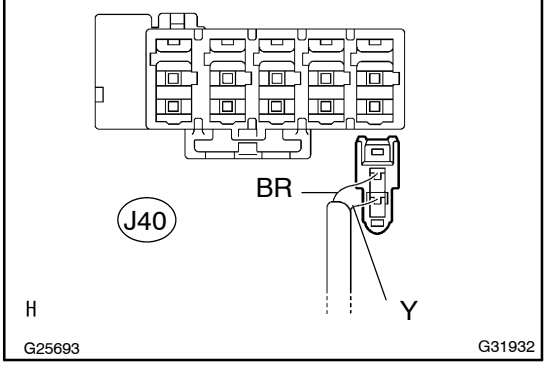
NG

10 CONNECT CONNECTOR

(a) Reconnect the ECM sub bus line connector (J41) to the D–CAN J/C B side (w/o earth terminal).

11	CHECK CAN BUS LINES FOR SHORT CIRCUIT(SKID CONTROL ECU SUB BUS LINE)

D–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:

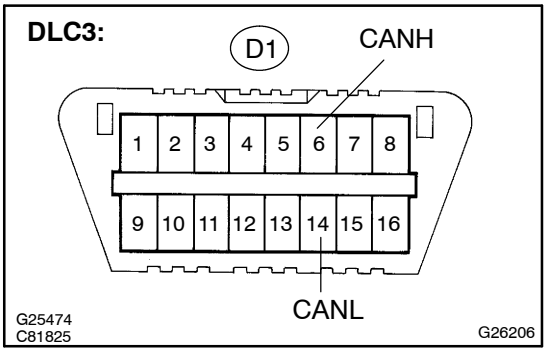


(a) Disconnect the skid control ECU sub bus line connector (J40) from the D–CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **Go to step 22**

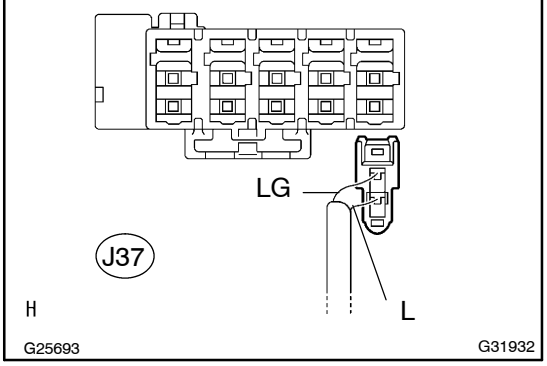
NG

12	CONNECT CONNECTOR

(a) Reconnect the skid control ECU sub bus line connector (J40) to the D–CAN J/C B side (w/o earth terminal).

13	CHECK CAN BUS LINES FOR SHORT CIRCUIT(STEERING SENSOR SUB BUS LINE)

D–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:

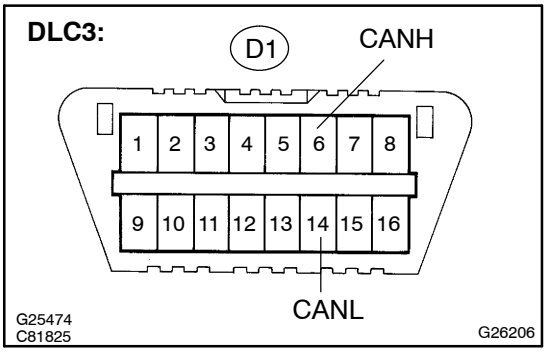


(a) Disconnect the steering sensor sub bus line connector (J37) from the D–CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK	Go to step 24

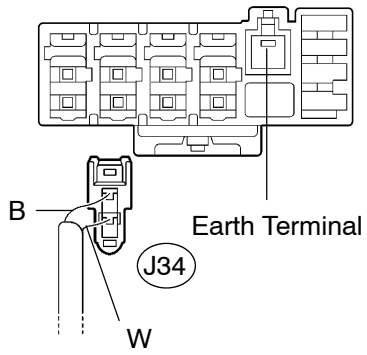
NG

14	CONNECT CONNECTOR

(a) Reconnect the steering sensor sub bus line connector (J37) to the D–CAN J/C B side (w/o earth terminal).

15 CHECK CAN BUS LINES FOR SHORT CIRCUIT(D–CAN J/C)

D–CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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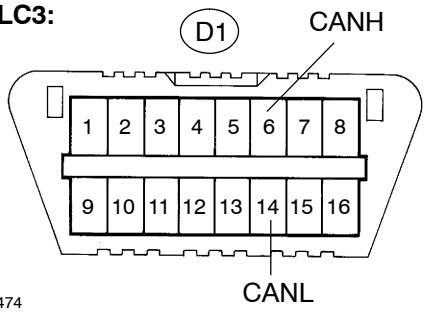
(a) Disconnect the CAN main bus line connector (J34) from the D–CAN J/C A side (w/ earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	108 to 132 Ω

NG → **REPLACE JUNCTION CONNECTOR (D–CAN J/C)**

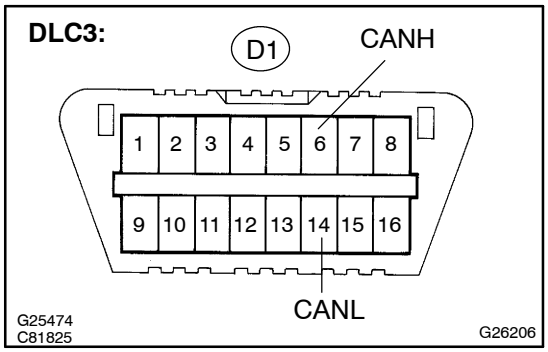
OK

REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (D–CAN J/C – P–CAN J/C)

16	CONNECT CONNECTOR

(a) Reconnect the suspension control ECU sub bus line connector (J35) to the D–CAN J/C A side (w/ earth terminal).

17	CHECK CAN BUS LINES FOR SHORT CIRCUIT(SUSPENSION CONTROL ECU SUB BUS LINE)



(a) Disconnect the suspension control ECU connector (A24).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE SUSPENSION CONTROL ECU (SEE PAGE 25–20)**

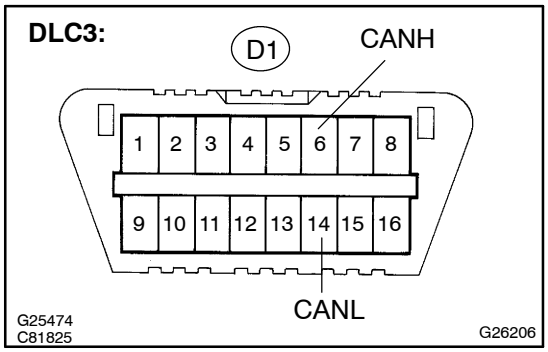
NG

REPAIR OR REPLACE SUSPENSION CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

18	CONNECT CONNECTOR

(a) Reconnect the gateway ECU sub bus line connector (J39) to the D–CAN J/C A side (w/ earth terminal).

19	CHECK CAN BUS LINES FOR SHORT CIRCUIT(GATEWAY ECU SUB BUS LINE)



(a) Disconnect the gateway ECU connector (G1).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE GATEWAY ECU**

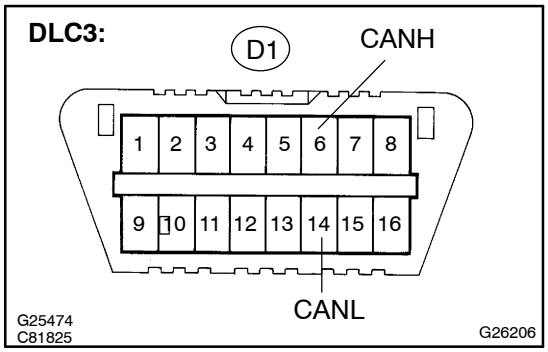
NG

REPAIR OR REPLACE GATEWAY ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

20	CONNECT CONNECTOR

(a) Reconnect the ECM sub bus line connector (J41) to the D–CAN J/C B side (w/o earth terminal).

21	CHECK CAN BUS LINES FOR SHORT CIRCUIT (ECM SUB BUS LINE)



(a) Disconnect the ECM connector (E4).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE ECM (SEE PAGE 10–21)**

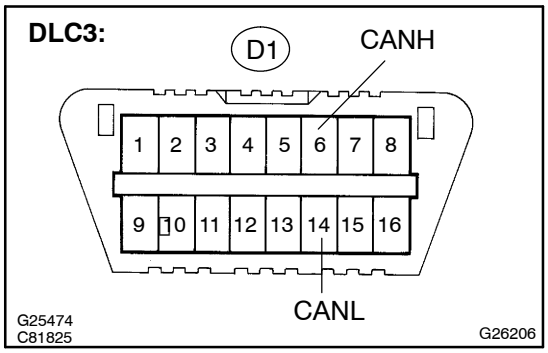
NG

REPAIR OR REPLACE ECM SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

22	CONNECT CONNECTOR

(a) Reconnect the skid control ECU sub bus line connector (J40) to the D–CAN J/C B side (w/ earth terminal).

23	CHECK CAN BUS LINES FOR SHORT CIRCUIT (SKID CONTROL ECU SUB BUS LINE)



(a) Disconnect the skid control ECU connector (S48).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE SKID CONTROL ECU WITH ACTUATOR (SEE PAGE 32–53)**

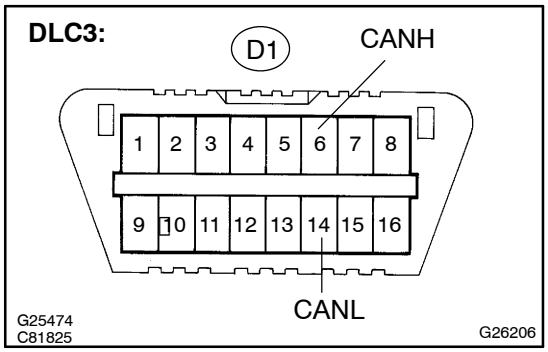
NG

REPAIR OR REPLACE SKID CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

24	CONNECT CONNECTOR

(a) Reconnect the steering sensor sub bus line connector (J37) to the D–CAN J/C B side (w/o earth terminal).

25	CHECK CAN BUS LINES FOR SHORT CIRCUIT (STEERING SENSOR SUB BUS LINE)



(a) Disconnect the steering sensor connector (S18).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE STEERING SENSOR (SEE PAGE 32–65)**

NG

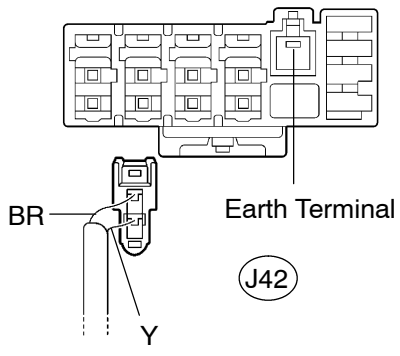
REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

26	CONNECT CONNECTOR

(a) Reconnect the CAN main bus line connector (J43) to the P–CAN J/C A side (w/ earth terminal).

27	CHECK CAN BUS LINES FOR SHORT CIRCUIT(YAW RATE SENSOR SUB BUS LINE)

P–CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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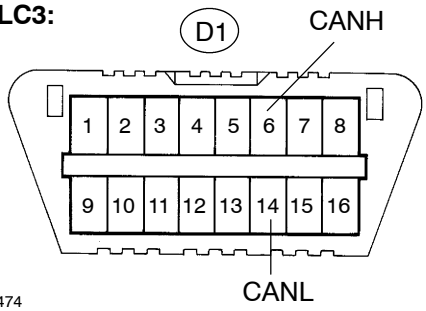
(a) Disconnect the yaw rate sensor sub bus line connector (J42) from the P–CAN J/C A side (w/ earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

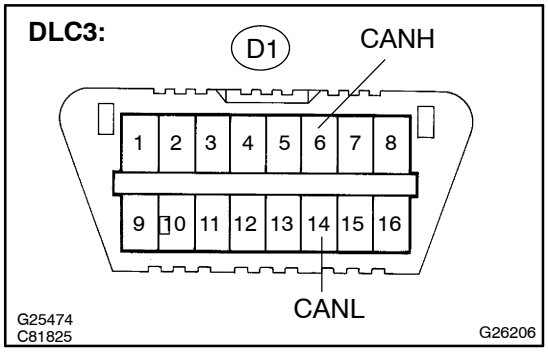
NG → **REPLACE JUNCTION CONNECTOR (P–CAN J/C)**

OK

28	CONNECT CONNECTOR

(a) Reconnect the yaw rate sensor sub bus line connector (J42) to the P–CAN J/C A side (w/ earth terminal).

29	CHECK CAN BUS LINES FOR SHORT CIRCUIT (YAW RATE SENSOR SUB BUS LINE)



(a) Disconnect the yaw rate sensor connector (Y1).

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

Standard:

Tester connection	Condition	Specified value
D1–6 (CANH) – D1–14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK → **REPLACE YAW RATE SENSOR (SEE PAGE 32–63)**

NG

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)