

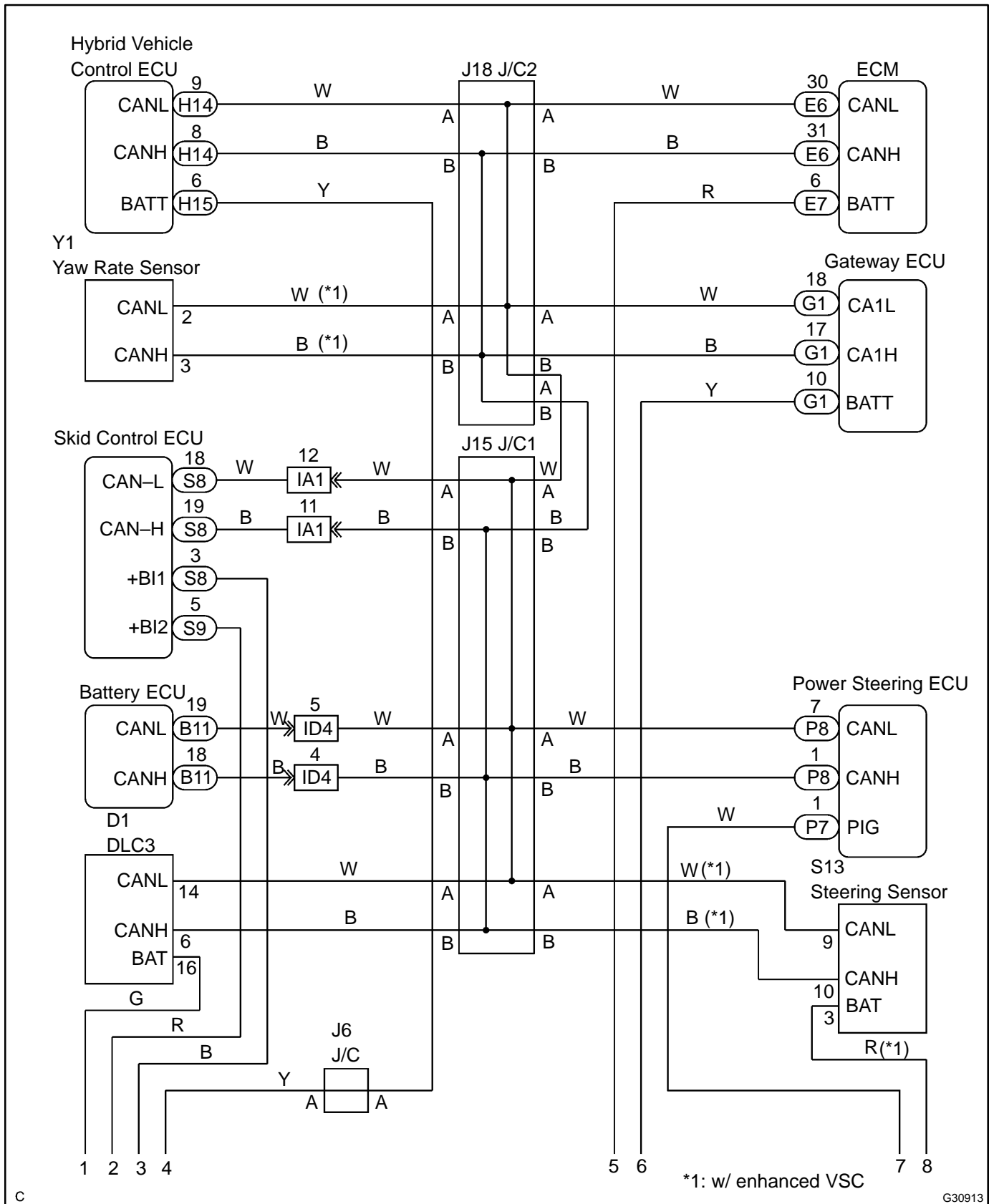
CHECK CAN BUS LINE FOR SHORT TO +B

CIRCUIT DESCRIPTION

There may be a short circuit between the CAN bus line and +B when there is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3. 85K2-01

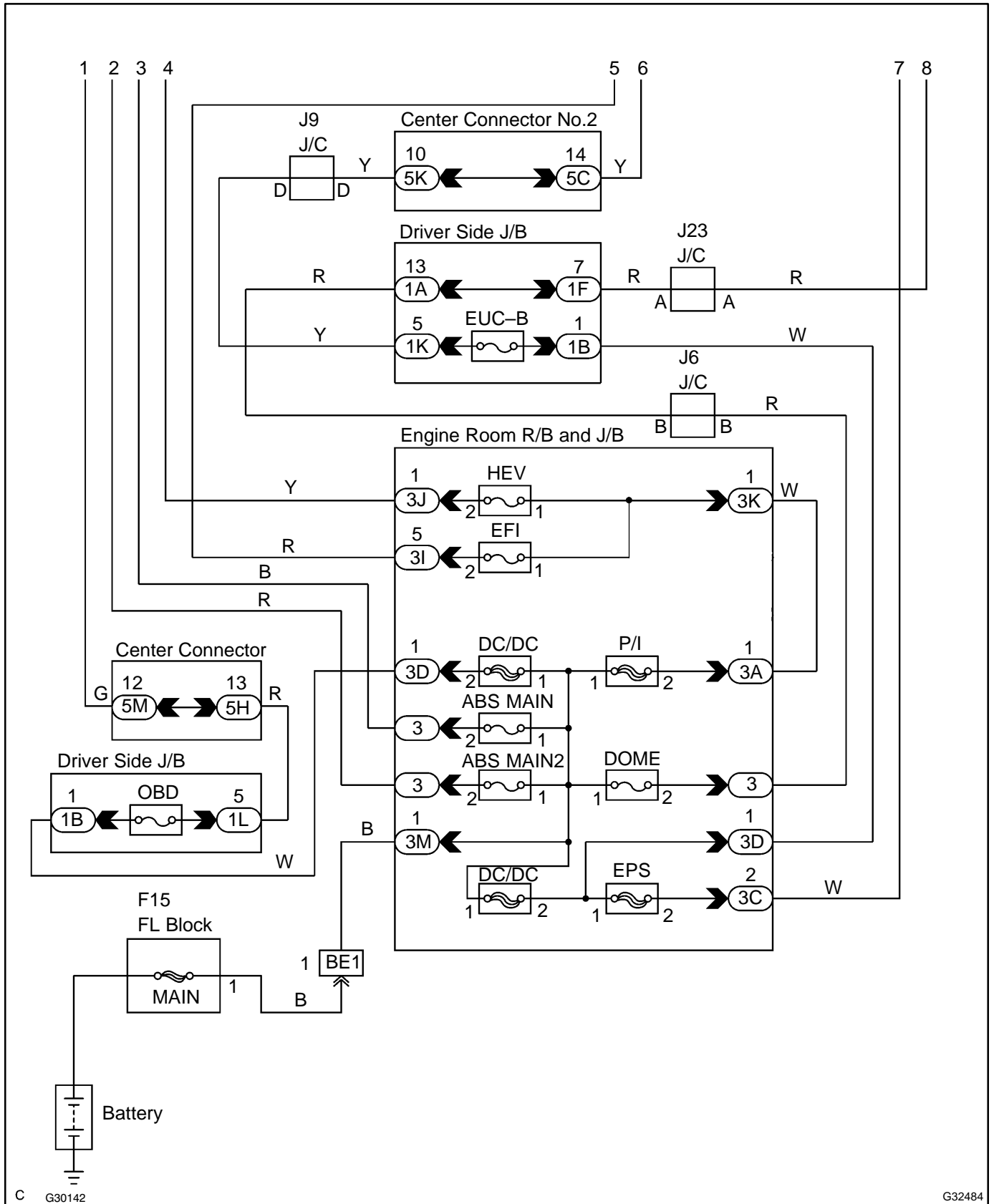
| Symptom | Trouble Area |
|--|---|
| There is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3. | <ul style="list-style-type: none"> • Short to +B • Hybrid vehicle control ECU • Battery ECU • ECM • Skid control ECU • Steering sensor • Yaw rate sensor • Power steering ECU |

WIRING DIAGRAM



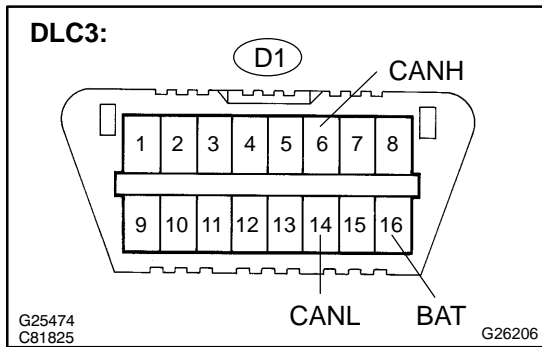
c

G30913



INSPECTION PROCEDURE

1 CHECK CAN BUS LINE FOR SHORT TO +B(DLC3 SUB BUS LINE)



- (a) Turn the power switch off.
- (b) Disconnect the J/C1 connector (J15).
- (c) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| D1-6 (CANH) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

NG → REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

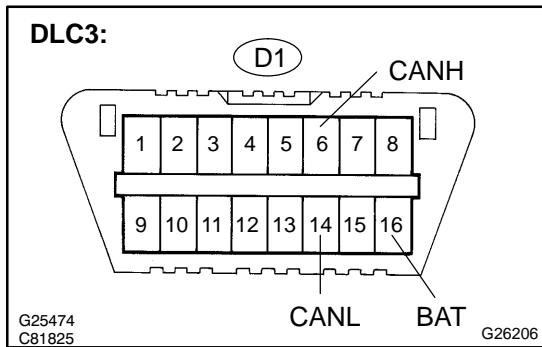
OK

2 CONNECT CONNECTOR

- (a) Reconnect the J/C1 connector (J15).

OK

3 CHECK CAN BUS LINE FOR SHORT TO +B(CAN BUSES TO J/C2)



- (a) Disconnect the J/C2 connector (J18).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| D1-6 (CANH) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → Go to step 16

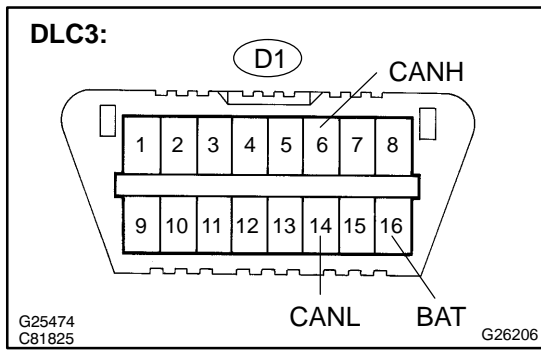
NG

4 CONNECT CONNECTOR

- (a) Reconnect the J/C2 connector (J18).

OK

5 CHECK CAN BUS LINE FOR SHORT TO +B(BATTERY ECU)



- (a) Disconnect the battery ECU connector (B11).
- (b) Measure the resistance according to the value(s) in the table below.

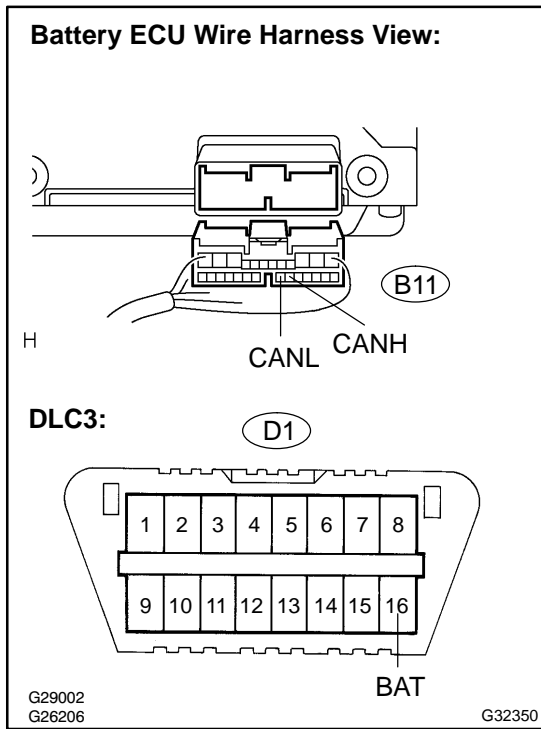
Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| D1-6 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE BATTERY ECU ASSY (SEE PAGE 21-98)**

NG

6 CHECK CAN BUS LINE FOR SHORT TO +B(BATTERY ECU - J/C1)



- (a) Disconnect the J/C1 connector (J15).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|-----------------------------|------------------|-----------------|
| B11-18 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| B11-19 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the battery ECU connector (B11) disconnected.

NG → **REPLACE CAN MAIN BUS LINE OR CONNECTOR (BATTERY ECU - J/C1)**

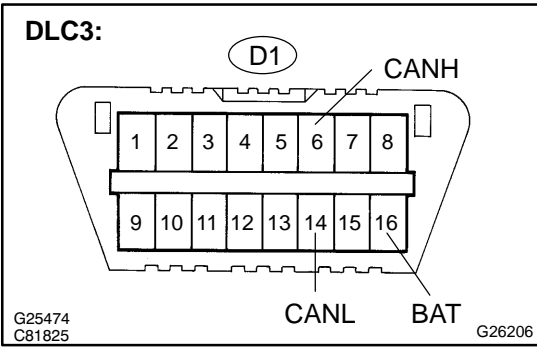
OK

7 CONNECT CONNECTOR

- (a) Reconnect the battery ECU connector (B11) and J/C1 connector (J15).

OK

8 CHECK CAN BUS LINE FOR SHORT TO +B(POWER STEERING ECU)



- (a) Disconnect the power steering ECU connector (P8).
- (b) Measure the resistance according to the value(s) in the table below.

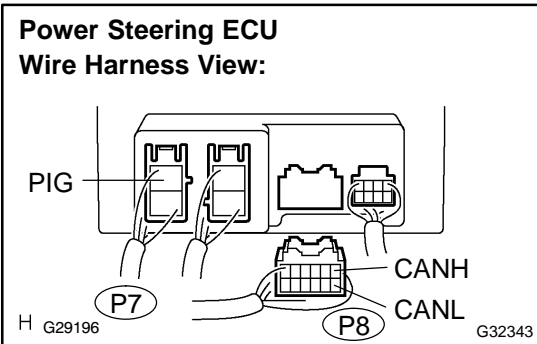
Standard:

| Tester connection | Condition | Specified value |
|-------------------------------|------------------|-----------------|
| D1-6 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE POWER STEERING ECU ASSY (SEE PAGE 50-16)**

NG

9 CHECK CAN BUS LINE FOR SHORT TO +B(POWER STEERING ECU SUB BUS LINE)



- (a) Disconnect the J/C1 connector (J15).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|-----------------------------|------------------|-----------------|
| P8-1 (CANH) - P7-1 (PIG) | Power Switch OFF | 1 MΩ or more |
| P8-7 (CANL) - P7-1 (PIG) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the power steering ECU connector (P8) disconnected.

NG → **REPLACE POWER STEERING ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

OK

10 CONNECT CONNECTOR

- (a) Reconnect the power steering ECU connector (P8) and J/C1 connector (J15).

OK

11 CHECK CAN BUS LINE FOR SHORT TO +B(STEERING SENSOR)

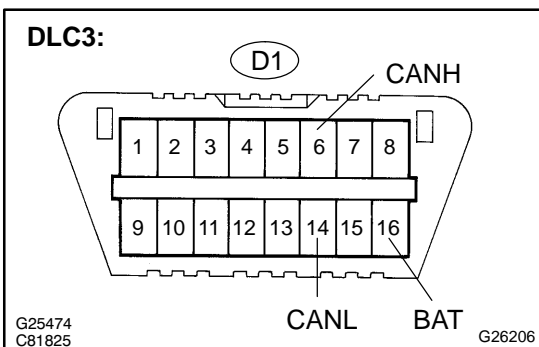
NOTICE:

For vehicles without enhanced VSC, go to step 14.

- (a) Disconnect the steering sensor connector (S13).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|-------------------------------|------------------|-----------------|
| D1-6 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |



OK → **REPLACE STEERING SENSOR (SEE PAGE 32-71)**

NG

12 CHECK CAN BUS LINE FOR SHORT TO +B(STEERING SENSOR SUB BUS LINE)

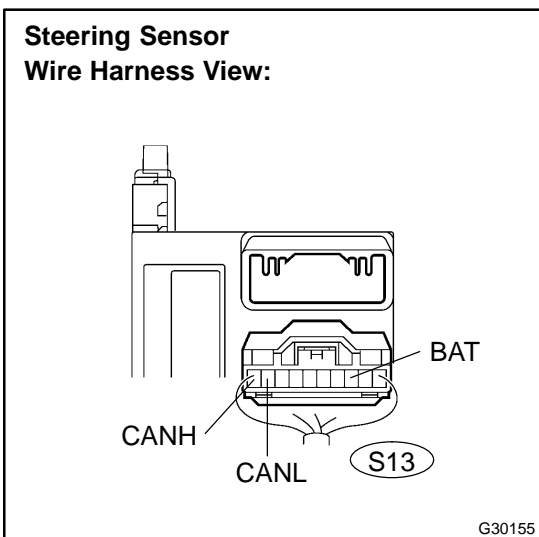
- (a) Disconnect the J/C1 connector (J15).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|--------------------------------|------------------|-----------------|
| S13-10 (CANH) - S13-3 (BAT) | Power Switch OFF | 1 MΩ or more |
| S13-9 (CANL) - S13-3 (BAT) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the steering sensor connector (S13) disconnected.



NG → **REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

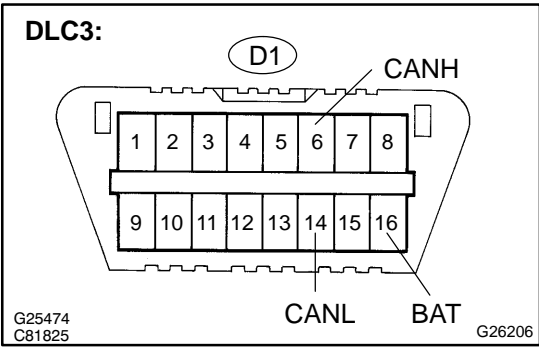
OK

13 CONNECT CONNECTOR

- (a) Reconnect the steering sensor connector (S13) and J/C1 connector (J15).

OK

14 CHECK CAN BUS LINE FOR SHORT TO +B(SKID CONTROL ECU)



- (a) Disconnect the skid control ECU connector (A8).
- (b) Measure the resistance according to the value(s) in the table below.

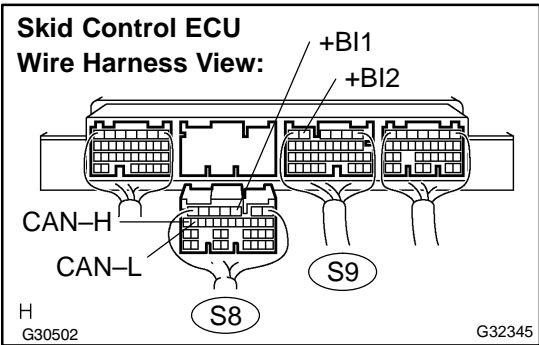
Standard:

| Tester connection | Condition | Specified value |
|-------------------------------|------------------|-----------------|
| D1-6 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32-68)**

NG

15 CHECK CAN BUS LINE FOR SHORT TO +B(SKID CONTROL ECU SUB BUS LINE)



- (a) Disconnect the J/C1 connector (J15).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|---|------------------|-----------------|
| S8-19 (CAN-H) - S8-3 (+B11), S9-5 (+B12) | Power Switch OFF | 1 MΩ or more |
| S8-18 (CAN-L) - S8-3 (+B11), S9-5 (+B12) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the skid control ECU connector (S8) disconnected.

NG → **REPLACE SKID CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

OK

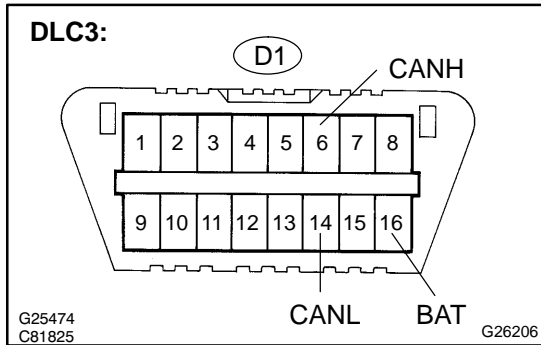
REPLACE CAN MAIN BUS LINE OR CONNECTOR (J/C1 - J/C2)

16 | CONNECT CONNECTOR

(a) Reconnect the J/C2 connector (J18).



17 | CHECK CAN BUS LINE FOR SHORT TO +B(ECM)



- (a) Disconnect the ECM connector (E6).
- (b) Measure the resistance according to the value(s) in the table below.

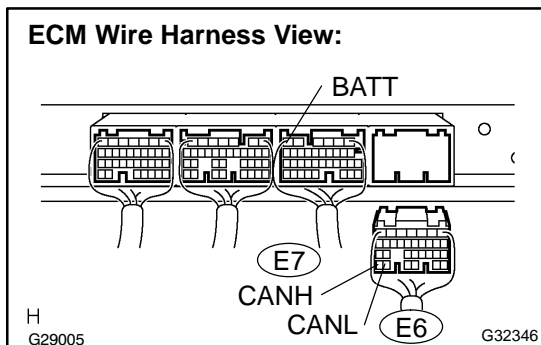
Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| D1-6 (CANH) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE ECM (SEE PAGE 10-24)**

NG

18 | CHECK CAN BUS LINE FOR SHORT TO +B(ECM - J/C2)



- (a) Disconnect the J/C2 connector (J18).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| E6-31 (CANH) – E7-6 (BATT) | Power Switch OFF | 1 MΩ or more |
| E6-30 (CANL) – E7-6 (BATT) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the ECM connector (E6) disconnected.

NG → **REPLACE CAN MAIN BUS LINE OR CONNECTOR (ECM - J/C2)**

OK

19 | CONNECT CONNECTOR

(a) Reconnect the ECM connector (E6) and J/C2 connector (J18).



20 CHECK CAN BUS LINE FOR SHORT TO +B(YAW RATE SENSOR)

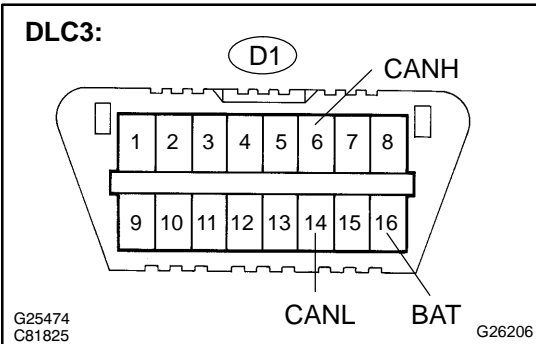
NOTICE:

For vehicles without enhanced VSC, go to step 23.

- (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) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |



OK → **REPLACE YAW RATE SENSOR (SEE PAGE 32-70)**

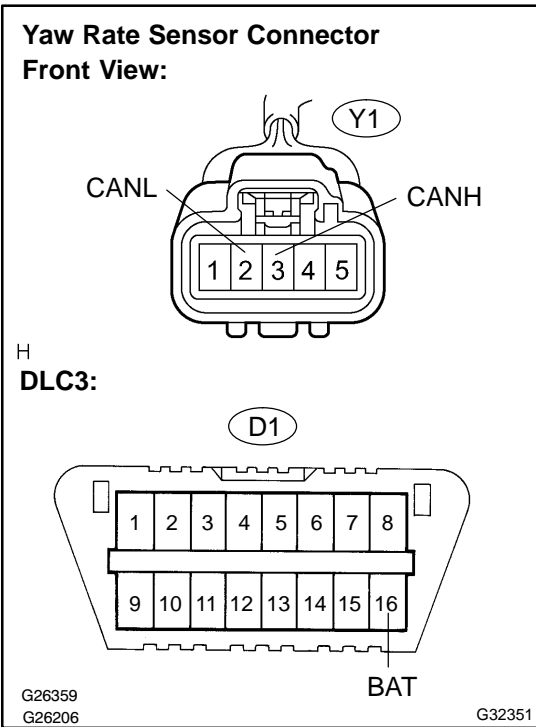
NG

21 CHECK CAN BUS LINE FOR SHORT TO +B(YAW RATE SENSOR SUB BUS LINE)

- (a) Disconnect the J/C2 connector (J18).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|------------------------------|------------------|-----------------|
| Y1-3 (CANH) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| Y1-2 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |



HINT:

Measure the resistance with the yaw rate sensor connector (Y1) disconnected.

NG → **REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

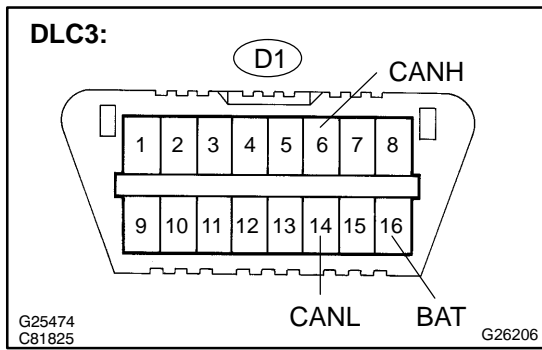
OK

22 CONNECT CONNECTOR

- (a) Reconnect the yaw rate sensor connector (Y1) and J/C2 connector (J18).

OK

23 CHECK CAN BUS LINE FOR SHORT TO +B(HYBRID VEHICLE CONTROL ECU)



- (a) Disconnect the hybrid vehicle control ECU connector (H14).
- (b) Measure the resistance according to the value(s) in the table below.

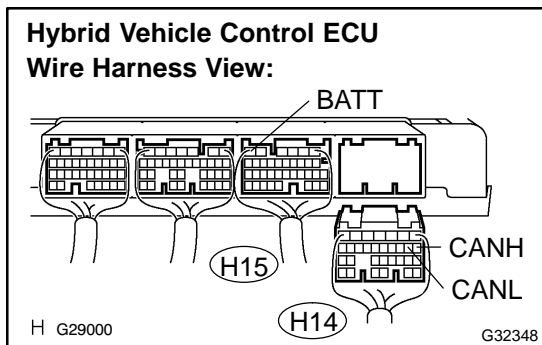
Standard:

| Tester connection | Condition | Specified value |
|----------------------------|------------------|-----------------|
| D1-6 (CANH) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) – D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE HYBRID VEHICLE CONTROL ECU (SEE PAGE 21-124)**

NG

24 CHECK CAN BUS LINE FOR SHORT TO +B(HYBRID VEHICLE CONTROL ECU SUB BUS LINE)



- (a) Disconnect the J/C2 connector (J18).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection | Condition | Specified value |
|-----------------------------|------------------|-----------------|
| H14-8 (CANH) – H15-6 (BATT) | Power Switch OFF | 1 MΩ or more |
| H14-9 (CANL) – H15-6 (BATT) | Power Switch OFF | 1 MΩ or more |

HINT:

Measure the resistance with the hybrid vehicle control ECU connector (H14) disconnected.

NG → **REPLACE HYBRID VEHICLE CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

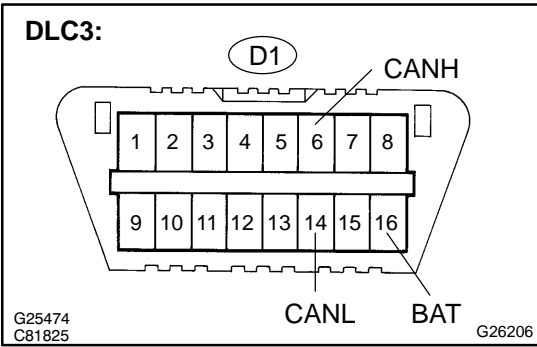
OK

25 CONNECT CONNECTOR

- (a) Reconnect the hybrid vehicle control ECU connector (H14) and J/C2 connector (J18).

OK

26 CHECK CAN BUS LINE FOR SHORT TO +B(GATEWAY ECU)



- (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) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |
| D1-14 (CANL) - D1-16 (BAT) | Power Switch OFF | 1 MΩ or more |

OK → **REPLACE GATEWAY ECU (SEE PAGE 67-26)**

NG

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