

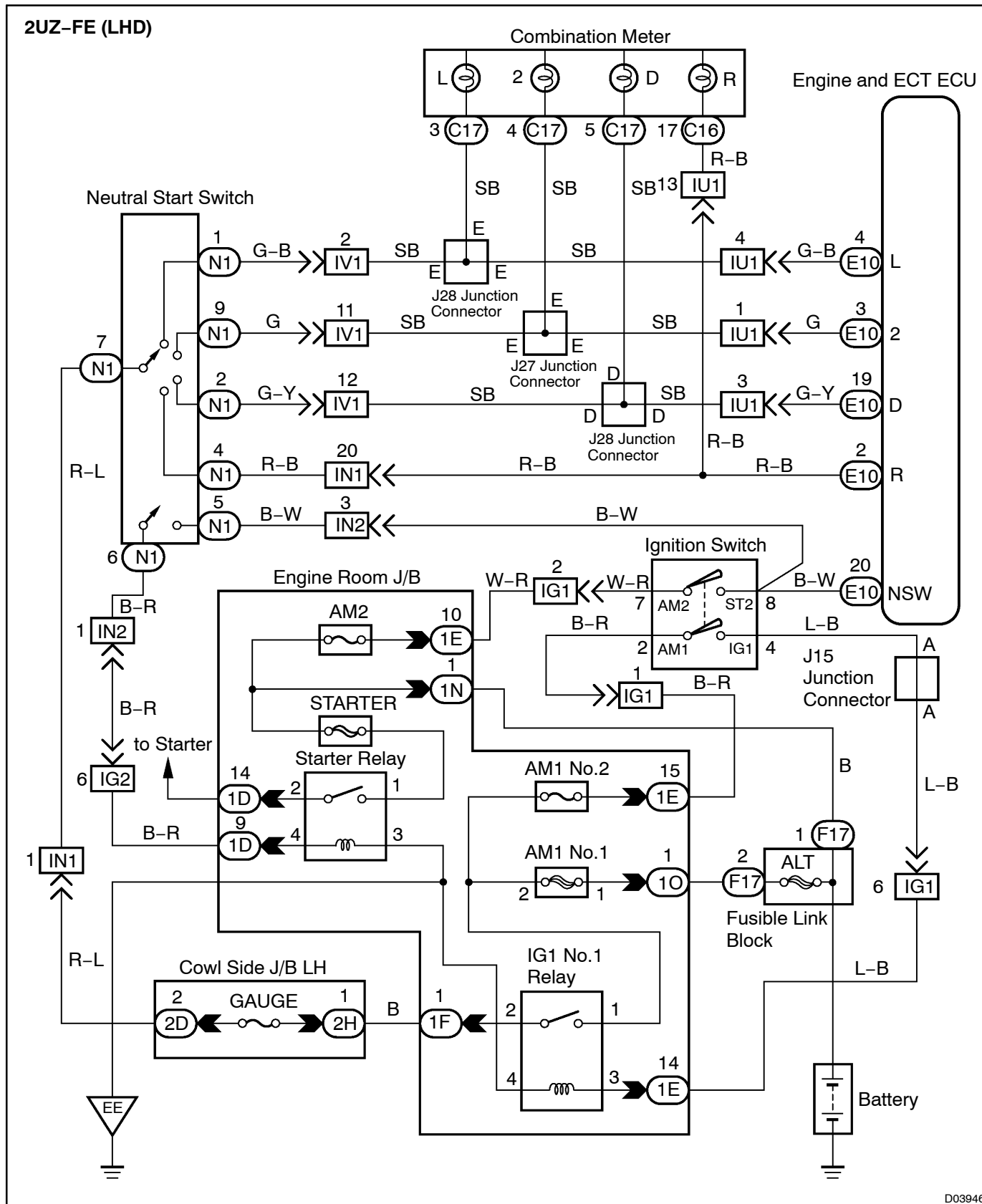
Neutral Start Switch Circuit Malfunction

CIRCUIT DESCRIPTION

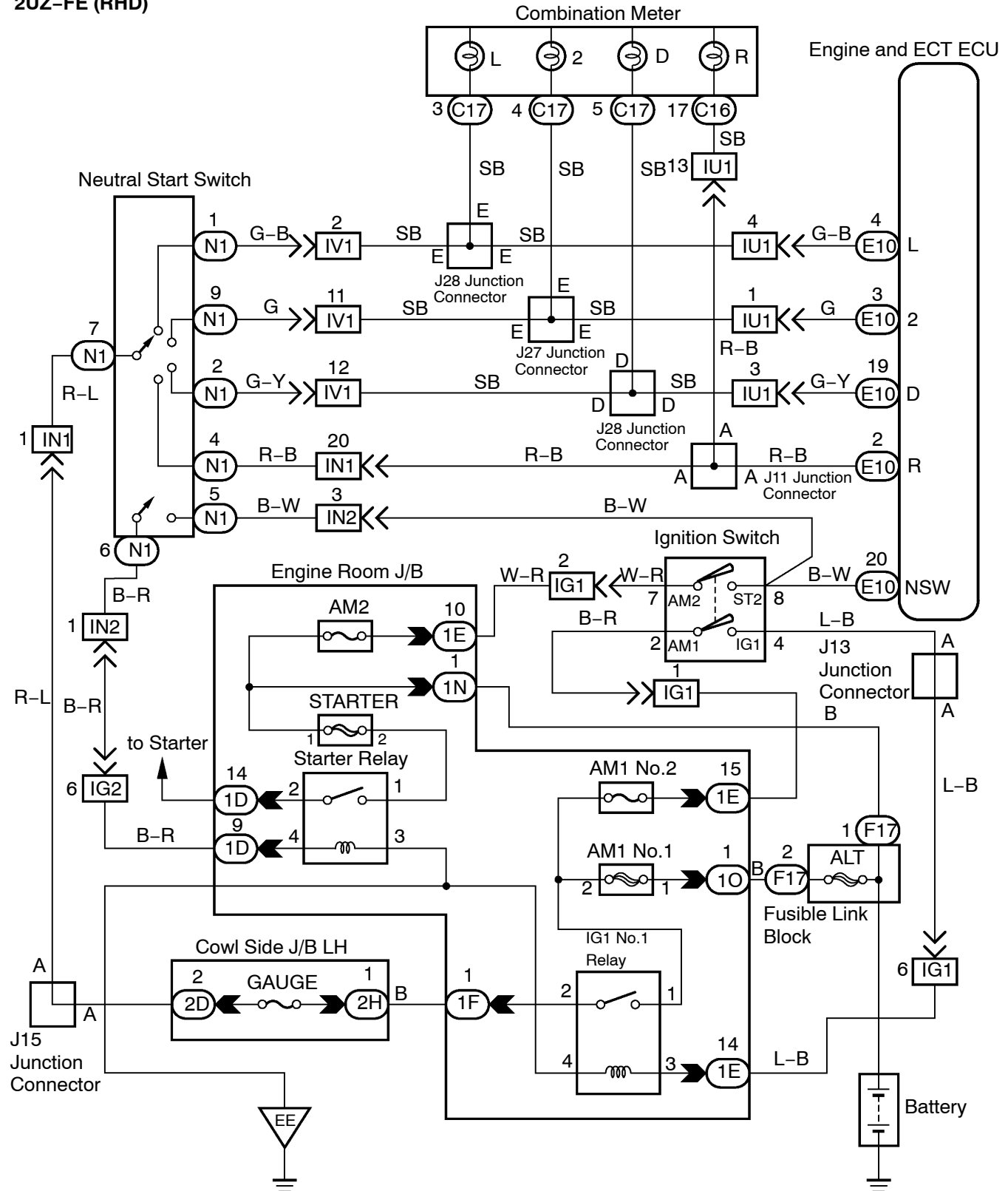
The neutral start switch detects the shift lever range and sends signals to the Engine and ECT ECU (2UZ-FE, 1FZ-FE) or ECT ECU (1HZ, 1HD-T, 1HD-FTE).

The Engine and ECT ECU receives signals (NSW, R, 2 and L) or ECT ECU receives signals (P, R, N, 2 and L) from the neutral start switch. When the signal is not sent to the Engine and ECT ECU (2UZ-FE, 1FZ-FE) or ECT ECU (1HZ, 1HD-T, 1HD-FTE) from the neutral start switch, the Engine and ECT ECU (2UZ-FE, 1FZ-FE) or ECT ECU (1HZ, 1HD-T, 1HD-FTE) judges that the shift lever is in D range.

2UZ-FE (LHD)

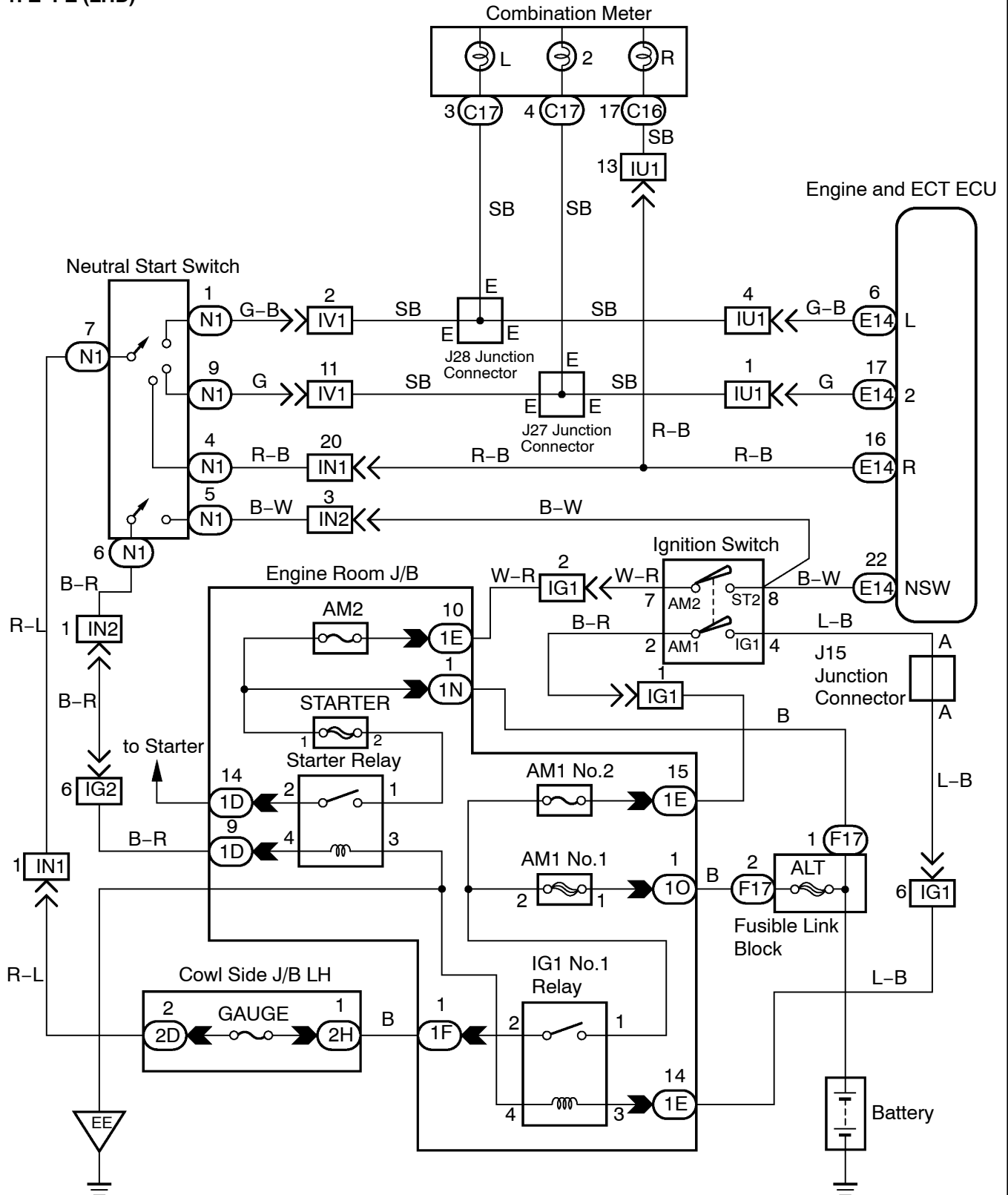


2UZ-FE (RHD)



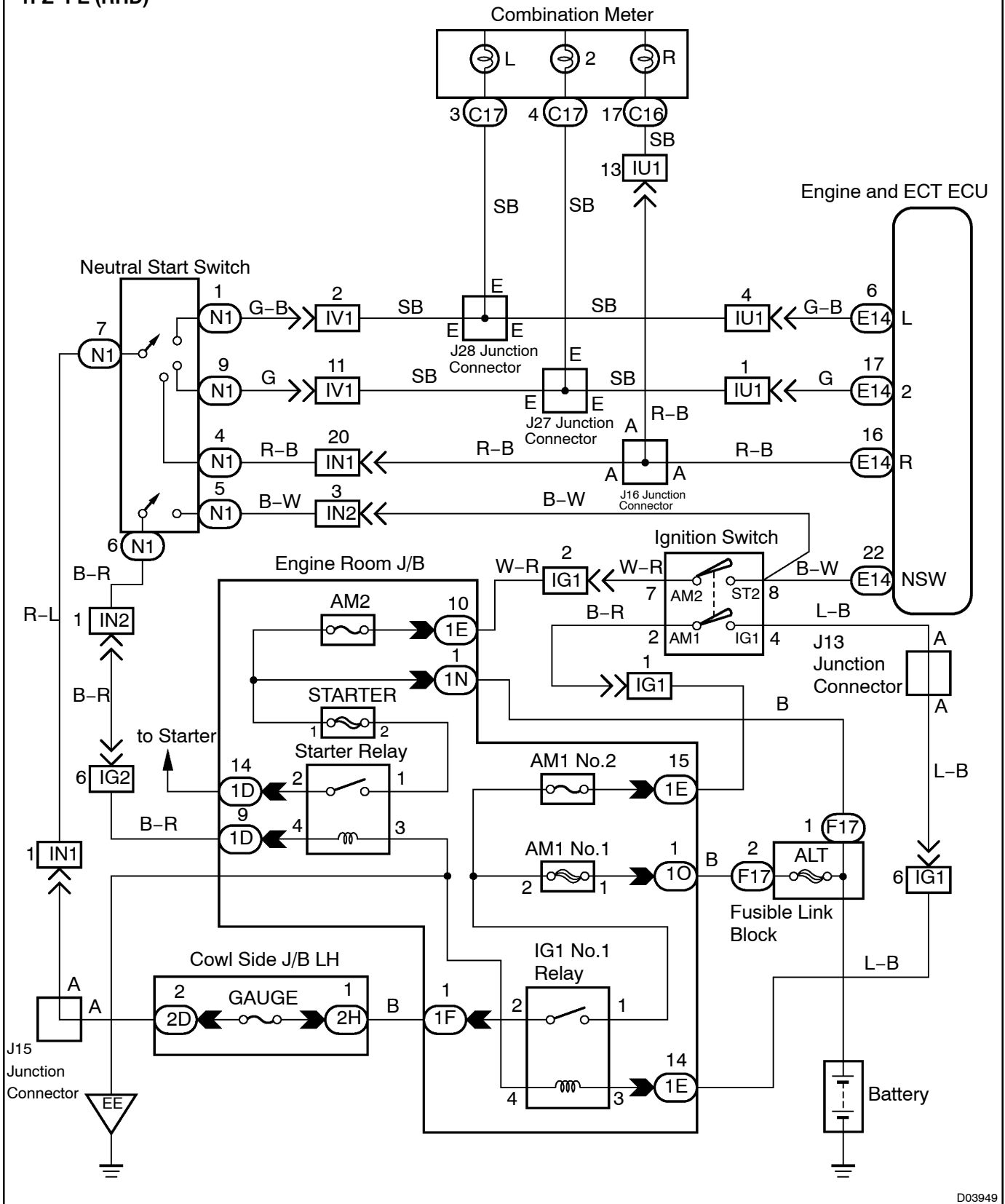
D03947

1FZ-FE (LHD)



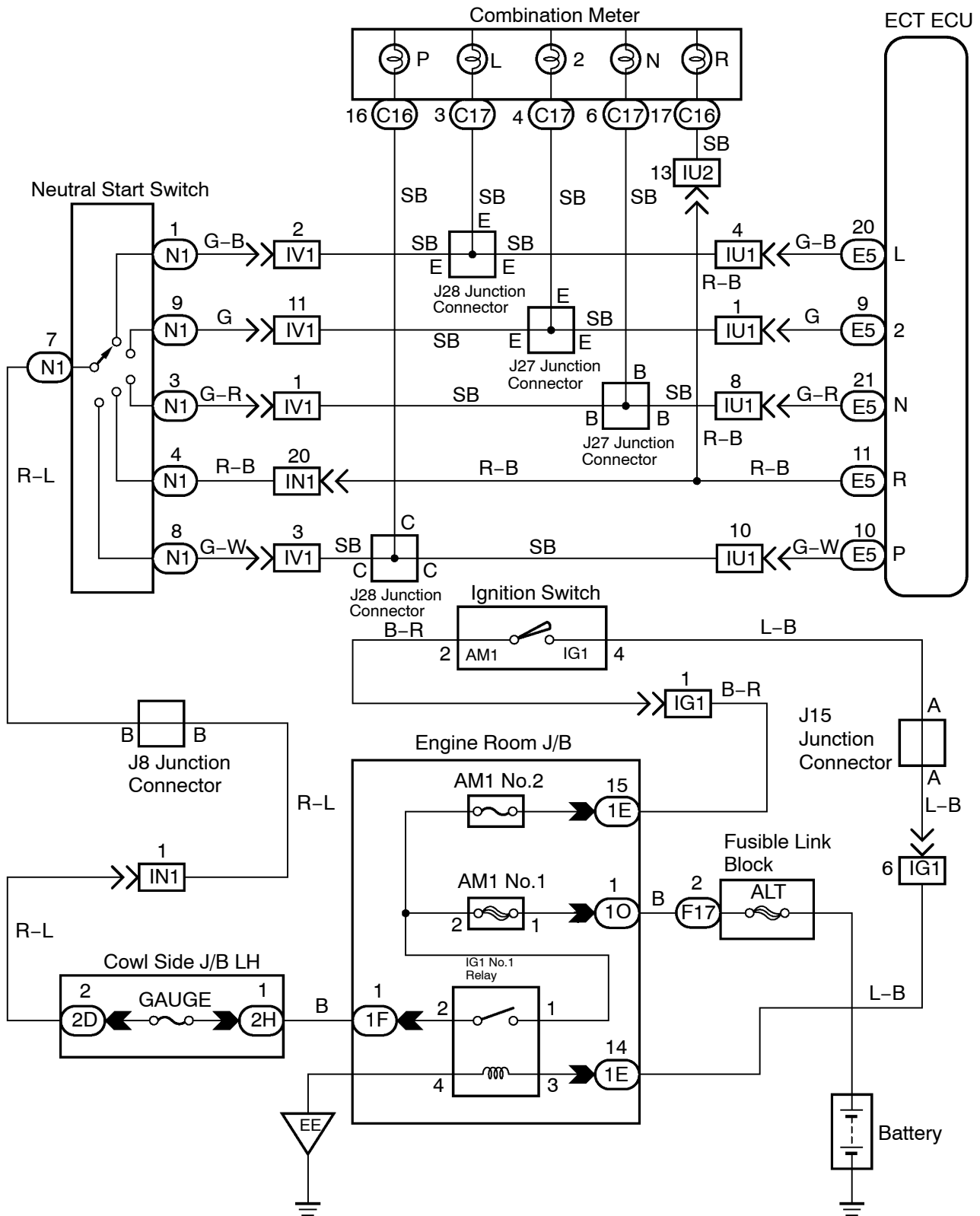
D03948

1FZ-FE (RHD)



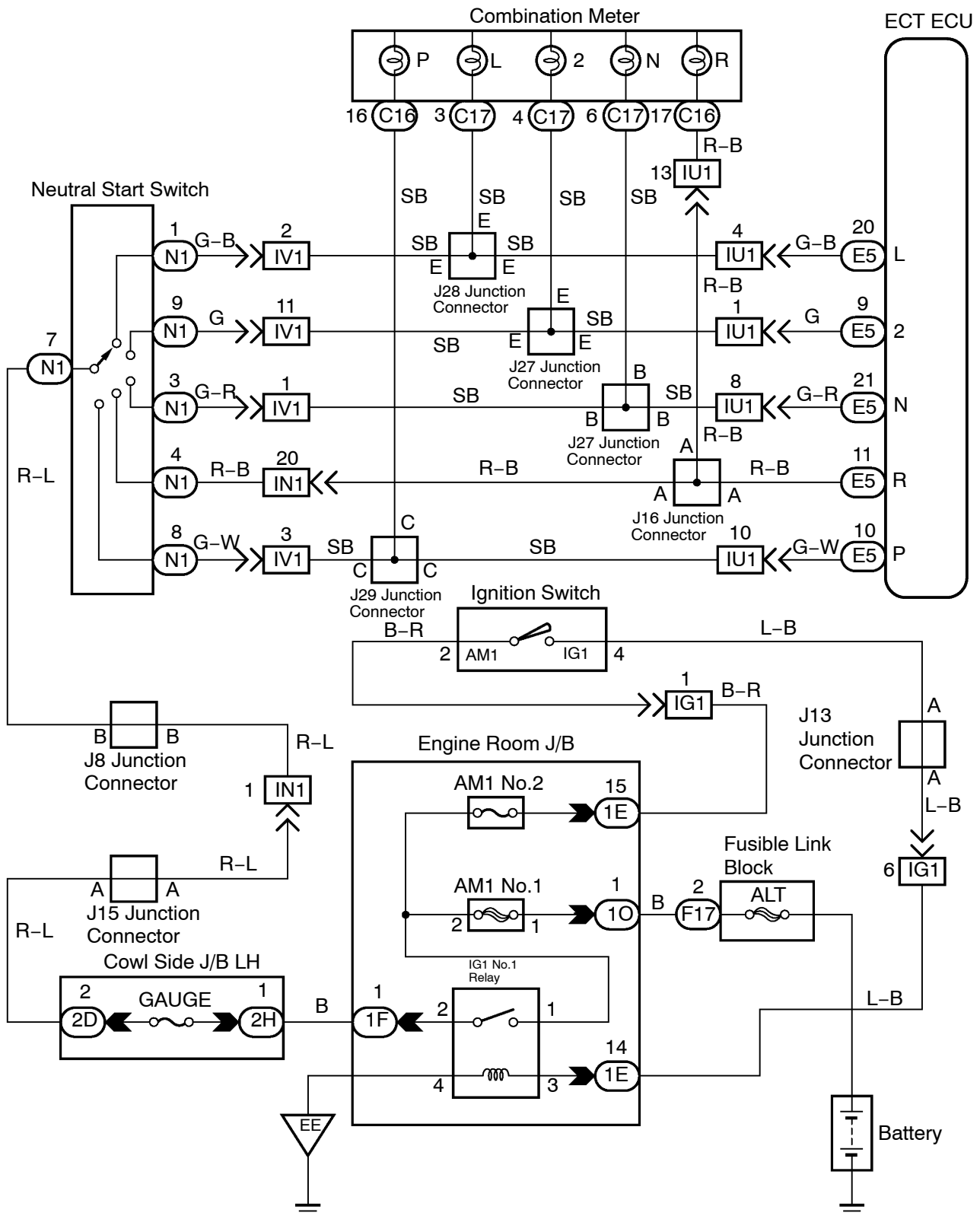
D03949

1HD-FTE (LHD)



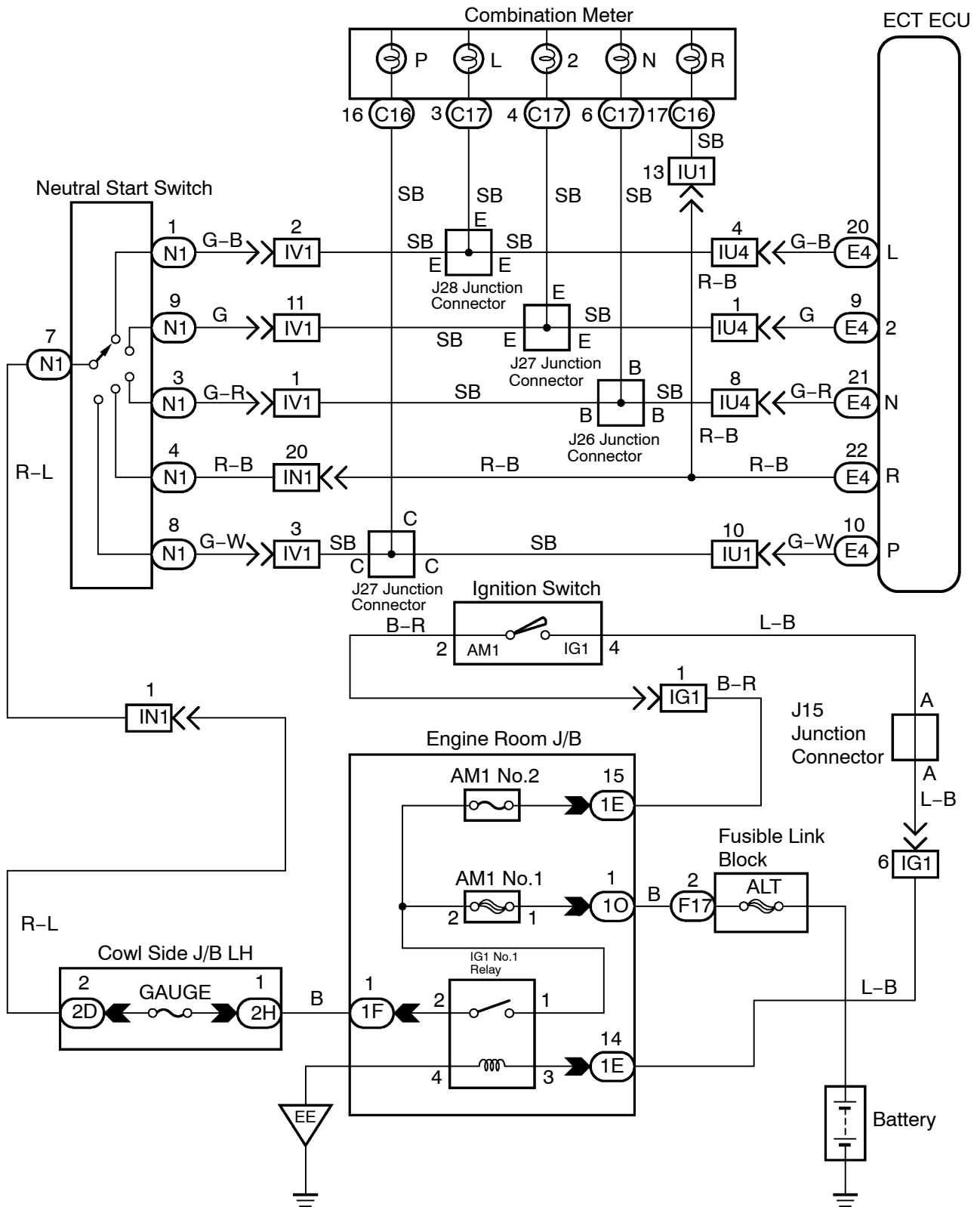
D03950

1HD-FTE (RHD)



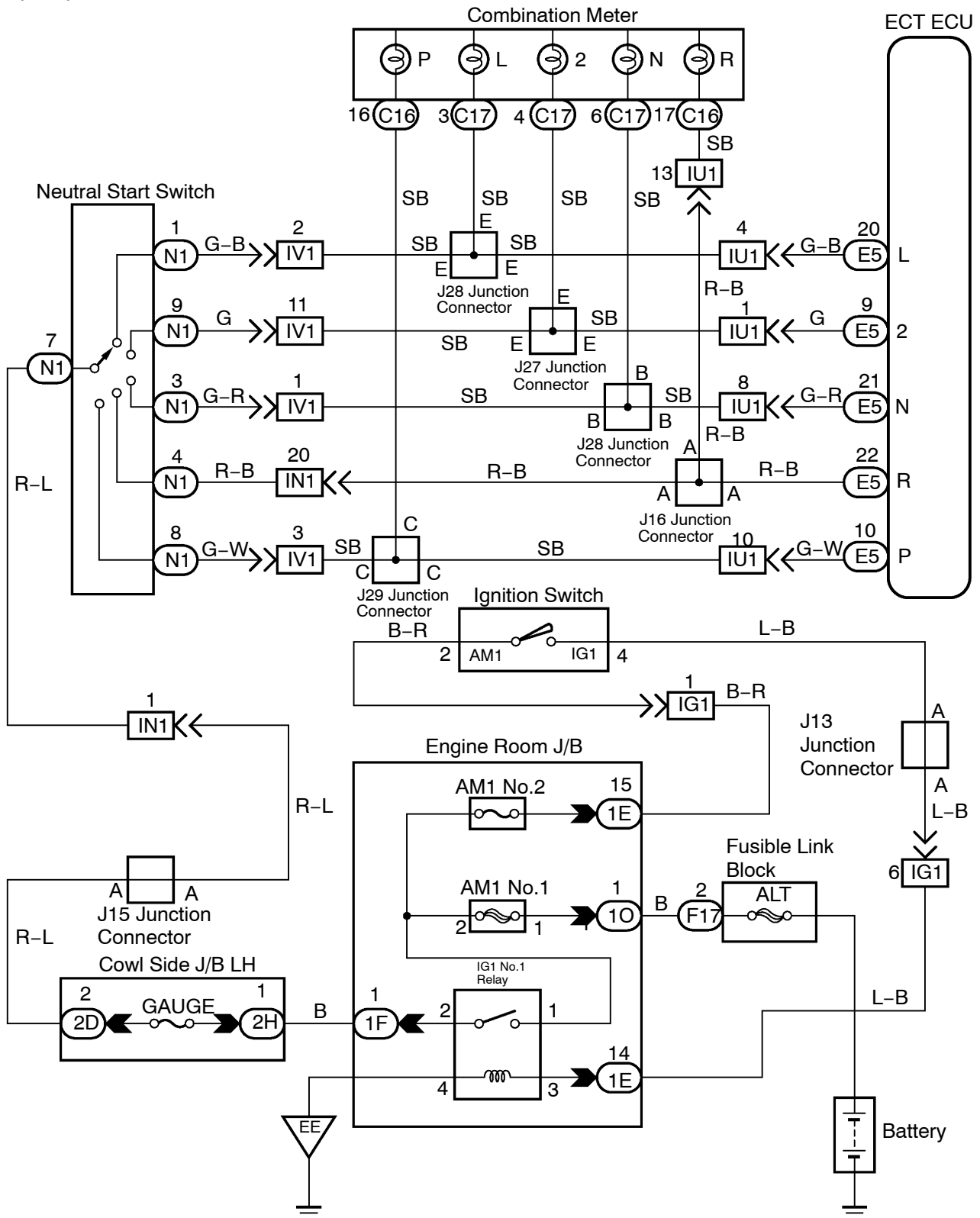
D03951

1HZ (LHD), 1HD-T (LHD)



D03952

1HZ (RHD)



D03953

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection from step 1 and in case of not using the hand-held tester, start from step 2.

1	Read PNP, REVERSE, DRIVE, 2ND and LOW signals.
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PREPARATION:

- (a) Remove the DLC3 cover.
- (b) Connect a hand-held tester to the DLC3.
- (c) Turn the ignition switch ON and hand-held tester main switch ON.

CHECK:

Shift lever into the P, R, N, D, 2 and L ranges, and read the PNP, REVERSE, DRIVE, 2ND and LOW signals on the hand-held tester.

OK:

Shift range	Signal
P, N	PNP : OFF → ON
R	REVERSE : OFF → ON
D	DRIVE : OFF → ON
2	2ND : OFF → ON
L	LOW : OFF → ON

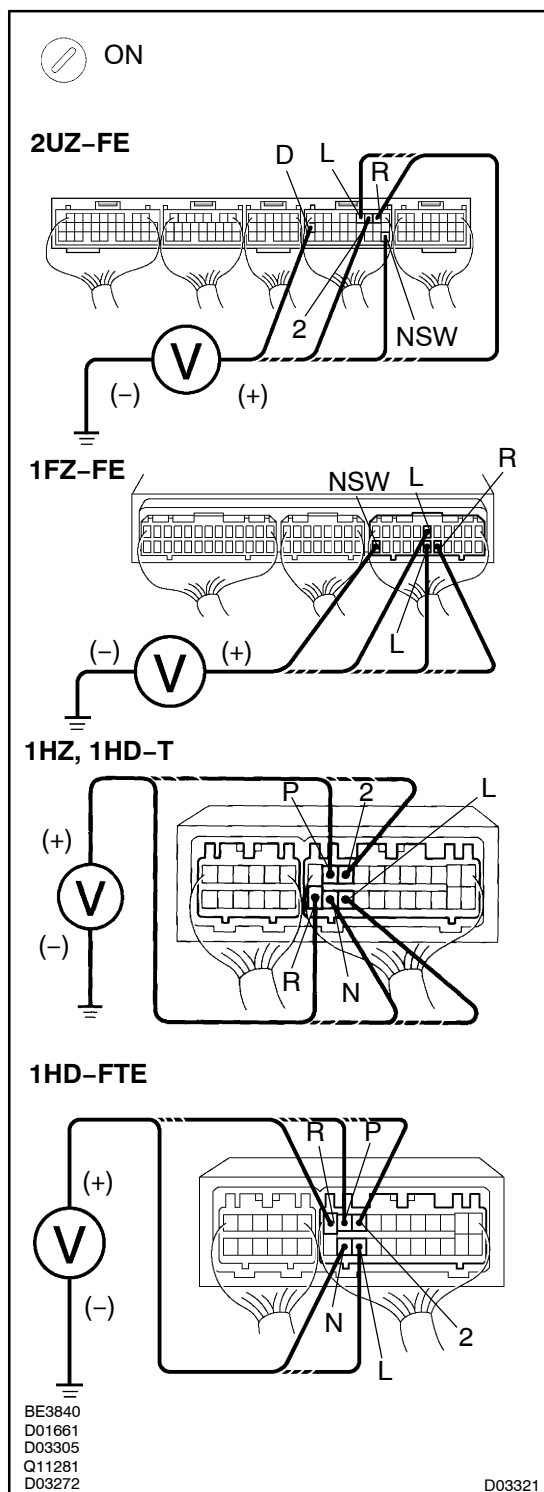
OK

Check and replace the Engine and ECT ECU or ECT ECU (See page IN-35).

NG

Go to step 3.

- 2 Measure voltage between each terminals of NSW, R, 2, and L of Engine and ECT ECU or P, R, N, 2 and L of ECT ECU and body ground.**

**PREPARATION:**

Turn the ignition switch ON.

CHECK:

Measure voltage between each terminals NSW, R, N, 2 and L of Engine and ECT ECU and body ground when the shift lever is shifted to the following positions.

OK:**2UZ-FE:**

Tester connection	Condition	Specified condition
NSW - Body ground	Shift lever range : P, N	No battery positive voltage
R - Body ground	Shift lever range : R	Battery positive voltage*
D - Body ground	Shift lever range : D	Battery positive voltage
2 - Body ground	Shift lever range : 2	Battery positive voltage
L - Body ground	Shift lever range : L	Battery positive voltage

1FZ-FE:

Tester connection	Condition	Specified condition
NSW - Body ground	Shift lever range : P, N	No battery positive voltage
R - Body ground	Shift lever range : R	Battery positive voltage*
2 - Body ground	Shift lever range : 2	Battery positive voltage
L - Body ground	Shift lever range : L	Battery positive voltage

1HZ, 1HD-T, 1HD-FTE:

Tester connection	Condition	Specified condition
P - Body ground	Shift lever range : P	Battery positive voltage
N - Body ground	Shift lever range : N	Battery positive voltage
R - Body ground	Shift lever range : R	Battery positive voltage*
2 - Body ground	Shift lever range : 2	Battery positive voltage
L - Body ground	Shift lever range : L	Battery positive voltage

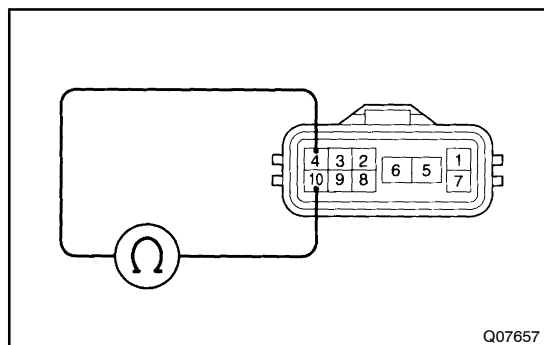
HINT:

*: The voltage will drop slightly due to lighting up of the back up light.

OK

Check and replace the Engine and ECT ECU or ECT ECU (See page IN-35).

NG

3 Check neutral start switch.**PREPARATION:**

- (a) Jack up the vehicle.
- (b) Remove the neutral start switch.

CHECK:

Check continuity between each terminal shown below when the shift lever is moved to each range.

OK:

Shift Range	Terminal No. to continuity	Terminal No. to continuity
P	4 – 7	5 – 6
R	4 – 8	–
N	4 – 10	5 – 6
D	4 – 9	–
2	2 – 4	–
L	2 – 3	–

NG**Replace the neutral start switch.****OK**

Repair or replace harness and connector between battery and neutral start switch, neutral start switch and Engine and ECT ECU or ECT ECU ([See page IN-35](#)).