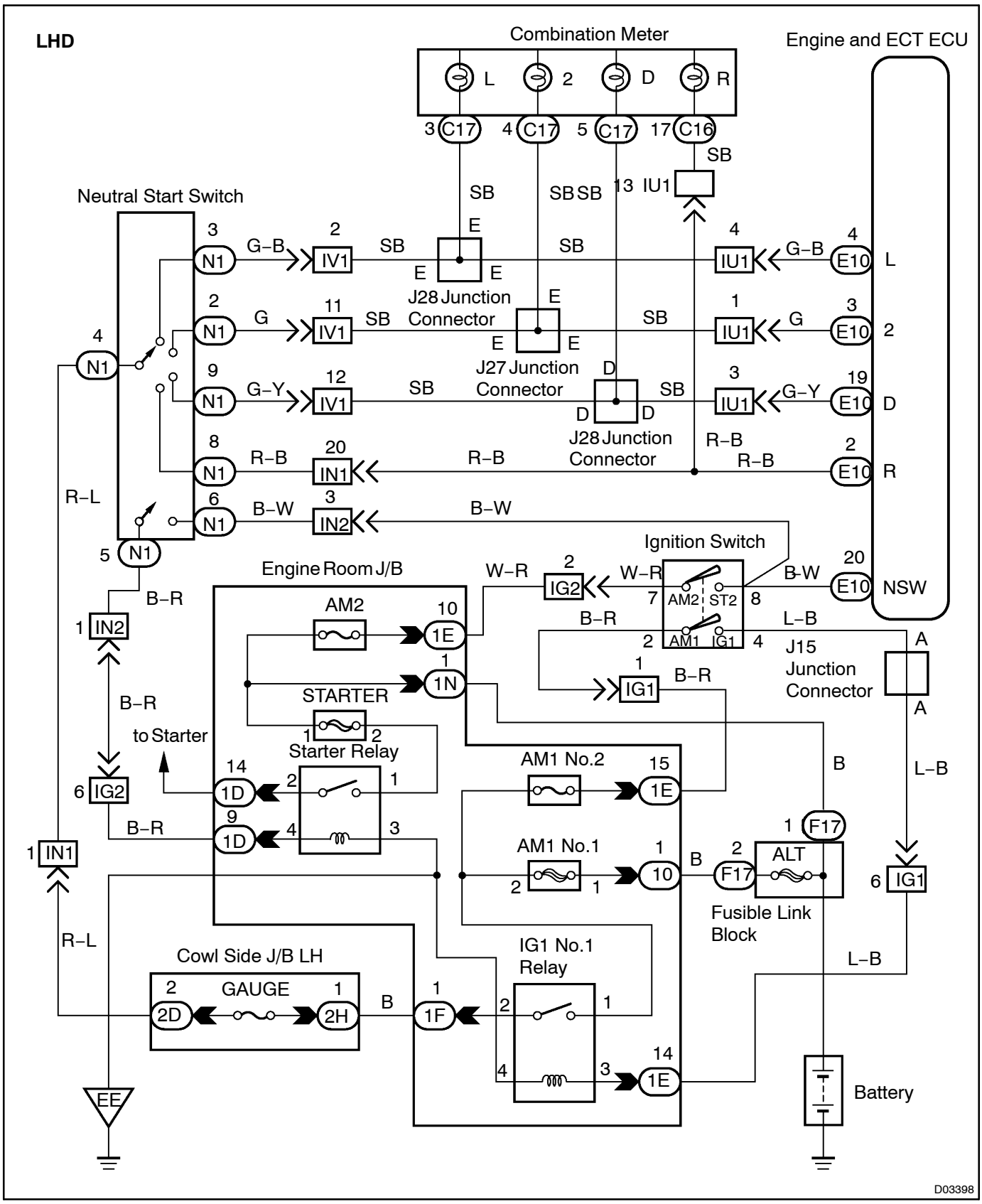
DI3RZ–01

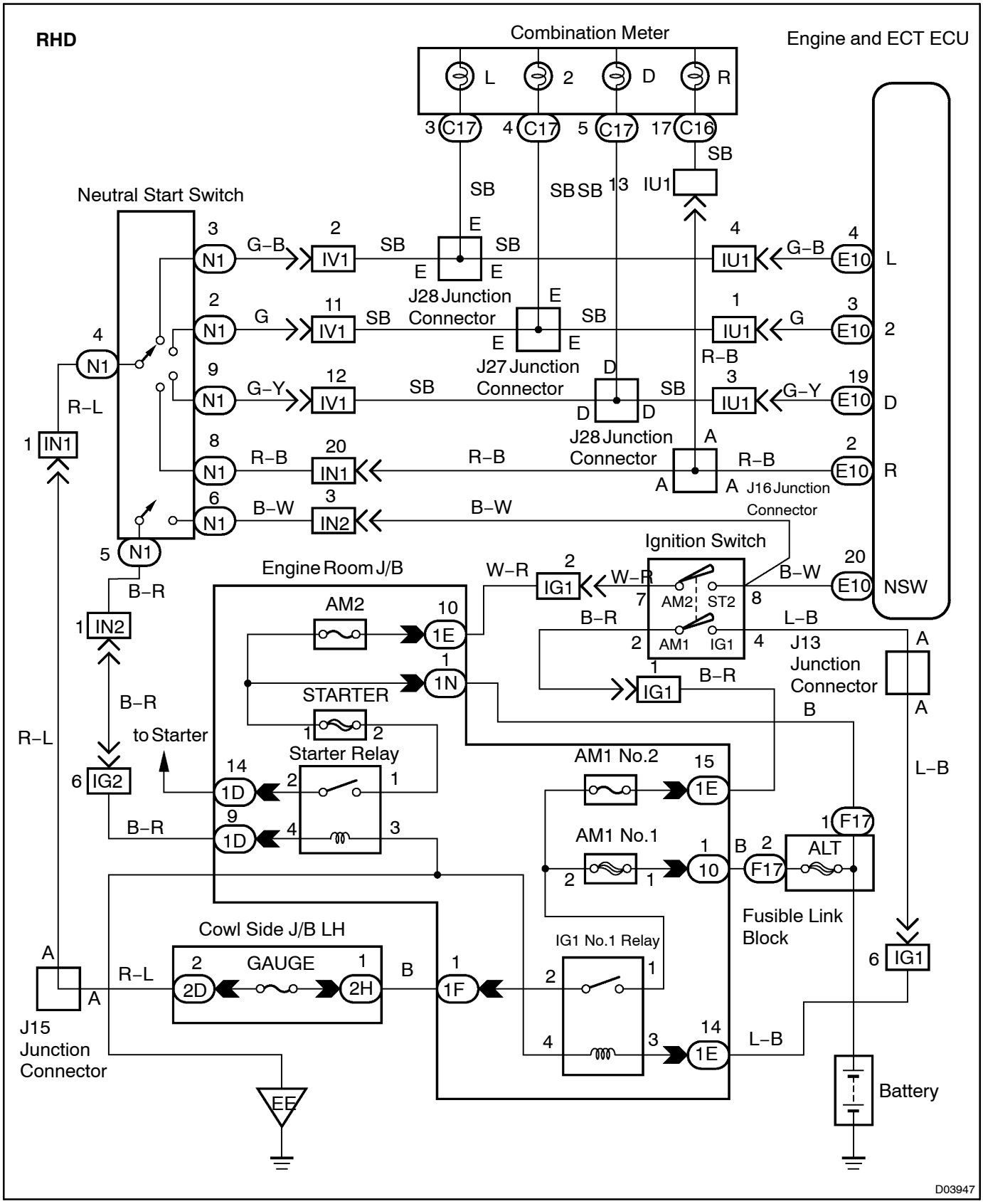
Neutral Start Switch Circuit

CIRCUIT DESCRIPTION

The neutral start switch detects the shift lever range and sends signals to the Engine and ECT ECU.
The Engine and ECT ECU receives signals (NSW, R, 2 and L) from the neutral start switch. When the signal is not sent to the Engine and ECT ECU from the neutral start switch, the Engine and ECT ECU judges that the shift lever is in D range.

WIRING DIAGRAM




RHD
Combination Meter
Engine and ECT ECU
L
2
D
R
3 C17
4 C17
5 C17
17 C16
SB
SB
SB SB
13 IU1
Neutral Start Switch
3 N1
G–B
2 IV1
SB
E
SB
E E
4 IU1
G–B
4 E10
L
J28 Junction Connector
2 N1
G
11 IV1
SB
E
SB
E E
1 IU1
G
3 E10
2
4 N1
R–B
J27 Junction Connector
9 N1
G–Y
12 IV1
SB
D
SB
D D
3 IU1
G–Y
19 E10
D
R–L
1 IN1
J28 Junction Connector
8 N1
R–B
20 IN1
R–B
A
R–B
2 E10
R
A A
J16 Junction Connector
6 N1
B–W
3 IN2
B–W
5 N1
Ignition Switch
Engine Room J/B
W–R
2 IG1
W–R
7 AM2
ST2
8
B–W
20 E10
NSW
B–R
AM2
10 1E
B–R
2 AM1
IG1
4
L–B
J13 Junction Connector
A
1 IN2
1 1N
1 IG1
B–R
B
STARTER
B–R
to Starter
Starter Relay
R–L
14 1D
2
1
AM1 No.2
15 1E
6 IG2
B–R
9 1D
4
3
AM1 No.1
1
B
2
1 F17
ALT
2
1
10
F17
Fusible Link Block
L–B
Cowl Side J/B LH
IG1 No.1 Relay
A
R–L
2 GAUGE 1
2D
2H
B
1
1F
2
1
6 IG1
A
J15 Junction Connector
4
3
14 1E
L–B
EE
Battery
D03947

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.**

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, 4, 3, 2 and L ranges, and read the PNP, REVERSE, DRIVE, 2ND and LOW signals on the hand–held tester.

OK:

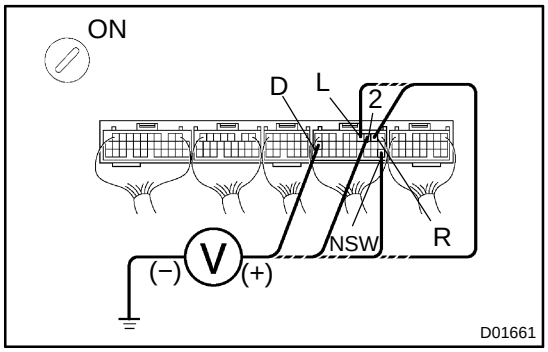
Shift range	Signal
P, N	PNP : OFF → ON
R	REVERSE : OFF → ON
D	DRIVE : OFF → ON
2	2ND : OFF → ON
L	LOW : OFF → ON

OK → **Check and replace the Engine and ECT ECU (See page IN–35).**

NG →

Go to step 3.

2	**Measure voltage between each terminals of NSW, R, D, 2, and L of Engine and 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:

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

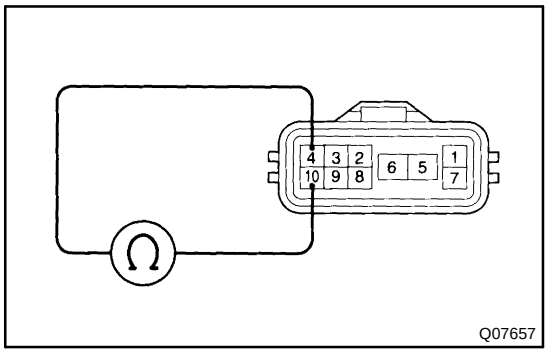
HINT:

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

OK → **Check and replace the Engine and ECT ECU (See page IN−35).**

NG

3	Check neutral start switch.



PREPARATION:

(a) Jack up the vehicle.

(b) Remove the neutral start switch connector.

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 (See page IN−35).