DIDRT−01

DTC	P0617	Starter Relay Circuit High

MONITOR DESCRIPTION

While the engine is being cranked, the battery positive voltage is applied to terminal STA of the ECM. If the vehicle is being driven and the ECM detects the starter control signal (STA), the ECM concludes that the starter control circuit is malfunctioning. The ECM will turn on the MIL and a DTC is set.

DTC No.	DTC Detection Condition	Trouble Area
P0617	When all conditions (a), (b) and (c) are satisfied for 20 seconds with battery (+B) voltage 10.5 V or more (a) Vehicle speed ≧ 12.4 mph (20 km/h) (b) Engine revolution ≧ 1,000 rpm (c) STA signal ON	• Park/neutral position switch • Starter relay circuit • Ignition switch • ECM

MONITOR STRATEGY

Related DTCs	P0617	Starter signal error
Required sensors/components	Main sensors/components	Starter signal
	Related sensors/components	Vehicle speed sensor, Engine speed sensor
Frequency of operation	Continuous	
Duration	20 sec.	
MIL operation	Immediate	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

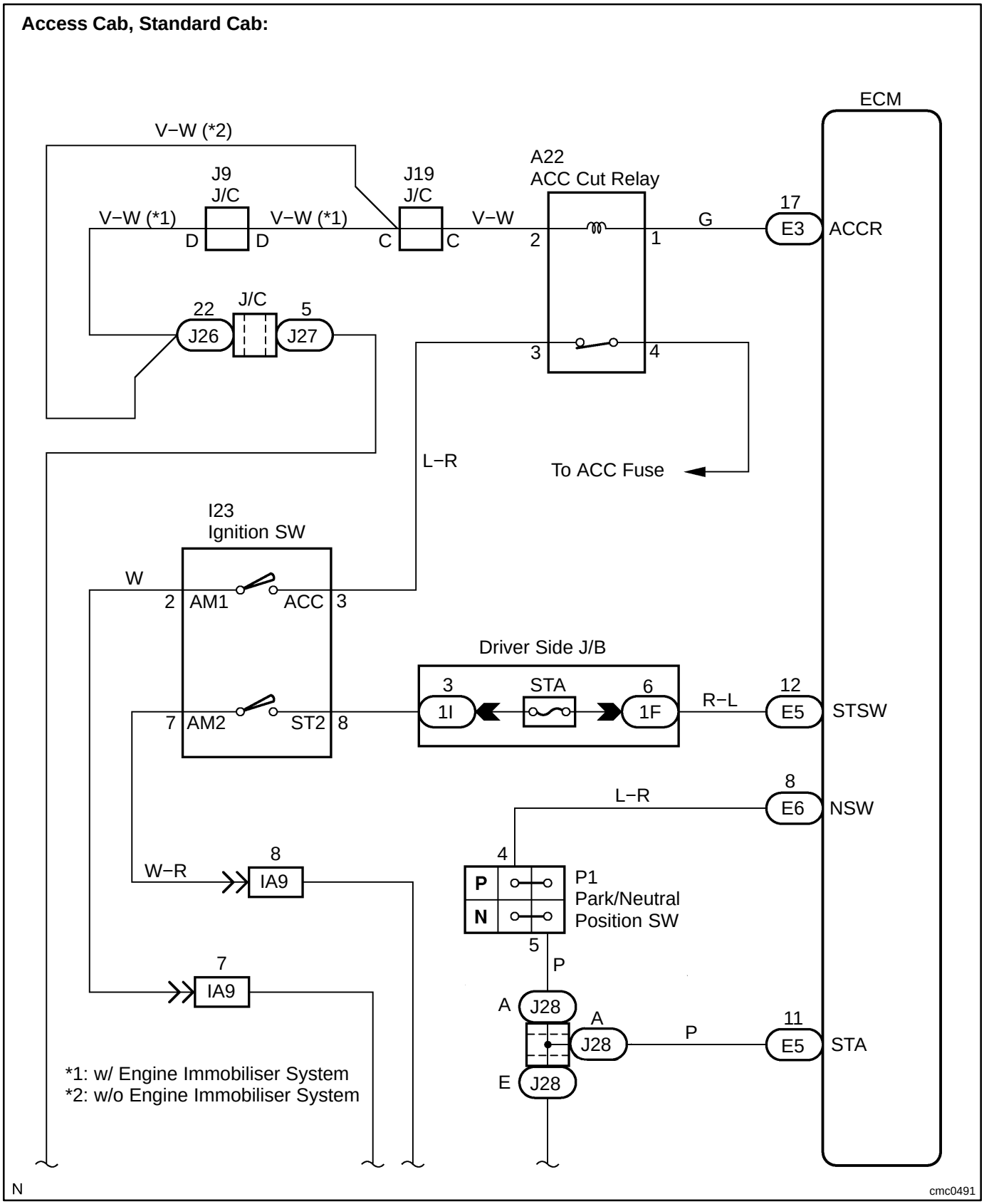
Item	Specification	
	Minimum	Maximum
The monitor will run whenever this DTC is not present	See page DI−437	
Battery voltage	10.5 V	−
Vehicle speed	12.4 mph (20 km/h)	−
Engine RPM	1,000 rpm	−

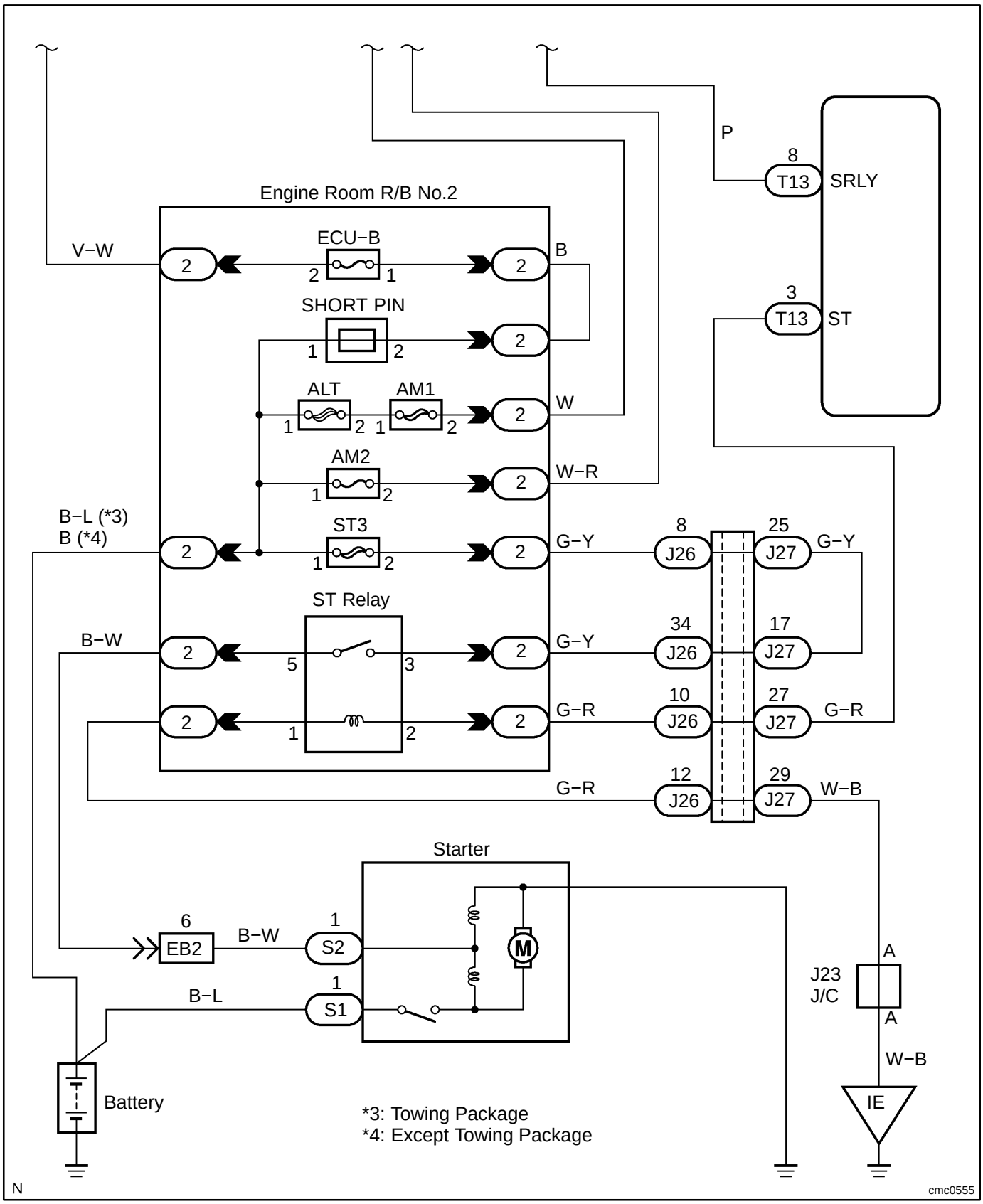
TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Starter signal	ON

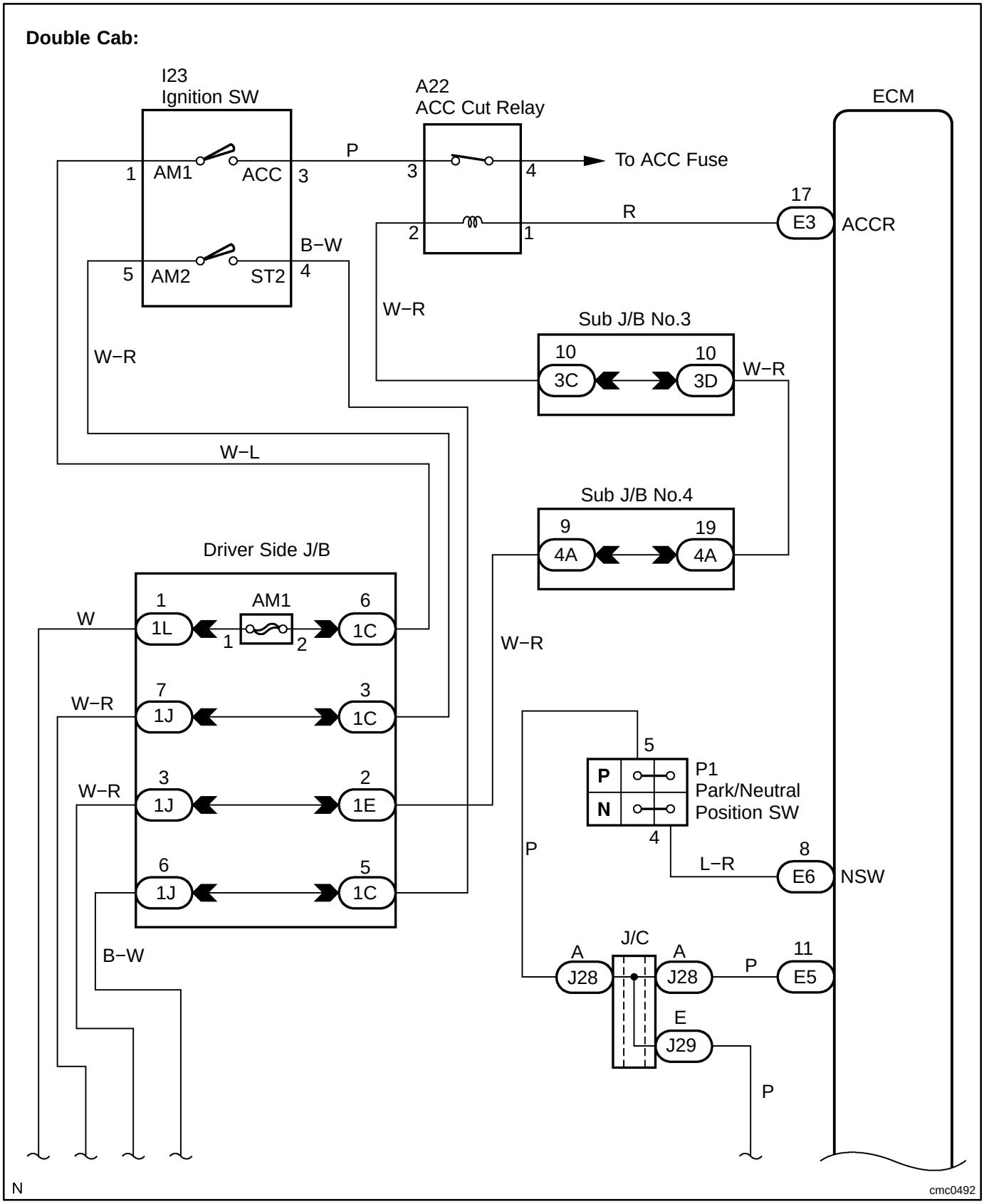
WIRING DIAGRAM

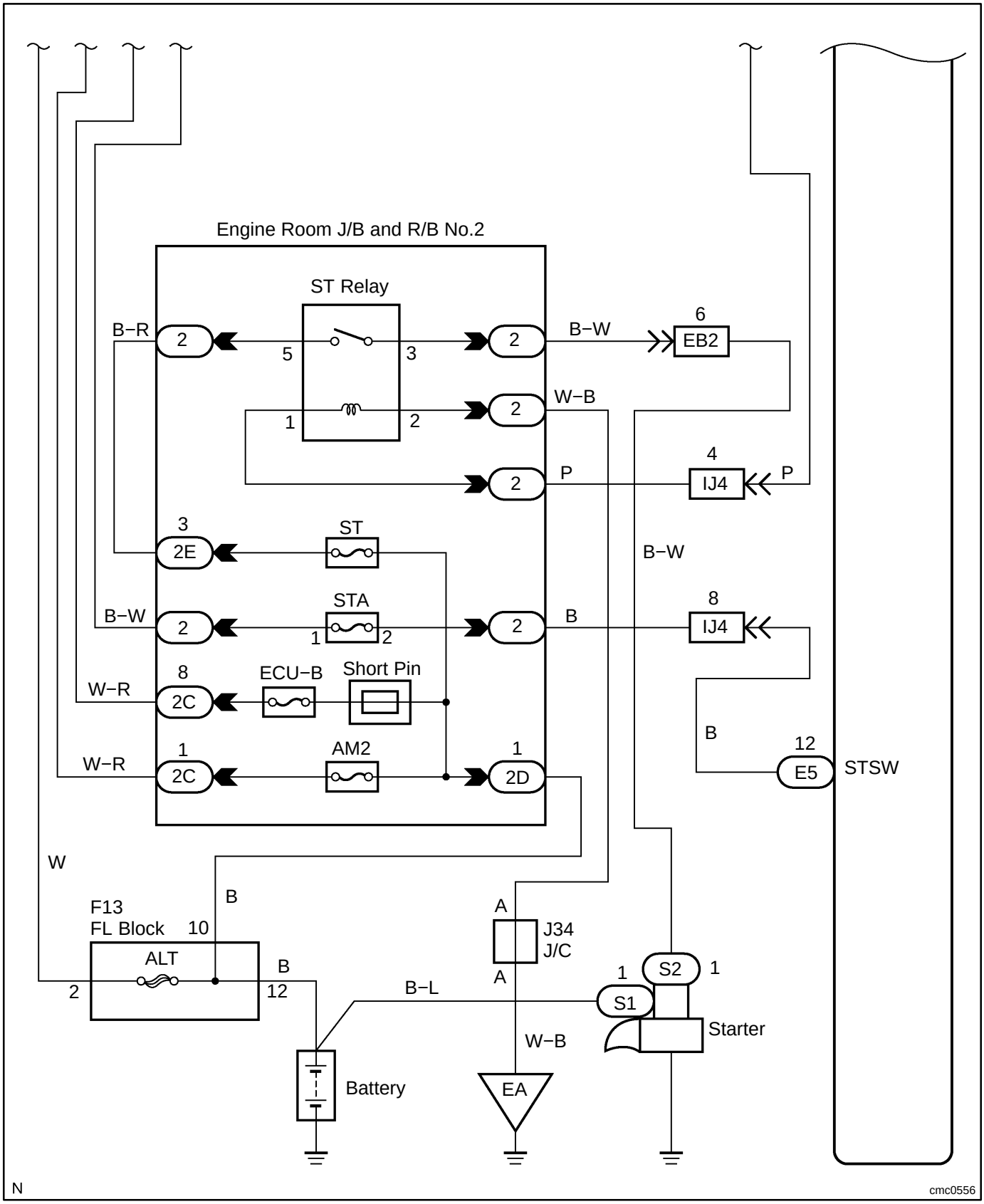
Access Cab, Standard Cab:




P
8
T13
SRLY
3
T13
ST
Engine Room R/B No.2
V−W
ECU−B
B
SHORT PIN
ALT
AM1
W
AM2
W−R
B−L (*3)
B (*4)
ST3
G−Y
8
J26
25
J27
G−Y
ST Relay
B−W
34
J26
17
J27
G−Y
10
J26
27
J27
G−R
G−R
12
J26
29
J27
W−B
Starter
6
EB2
B−W
1
S2
B−L
1
S1
M
A
J23
J/C
A
W−B
IE
Battery
*3: Towing Package
*4: Except Towing Package
N
cmc0555

Double Cab:


I23
Ignition SW
A22
ACC Cut Relay
ECM
1
AM1
ACC
3
P
3
4
To ACC Fuse
2
1
R
17
E3
ACCR
5
AM2
ST2
4
B−W
W−R
Sub J/B No.3
10
3C
10
3D
W−R
W−R
W−L
Sub J/B No.4
9
4A
19
4A
Driver Side J/B
W
1
1L
AM1
1
2
6
1C
W−R
7
1J
3
1C
W−R
3
1J
2
1E
6
1J
5
1C
B−W
5
P
N
P1
Park/Neutral
Position SW
4
P
L−R
8
E6
NSW
J/C
A
J28
A
J28
P
11
E5
E
J29
P
N
cmc0492


Engine Room J/B and R/B No.2
ST Relay
B−R
2
5
3
2
B−W
6
EB2
1
2
2
W−B
2
P
4
IJ4
P
3
2E
ST
B−W
B−W
2
STA
1
2
2
B
8
IJ4
W−R
8
2C
ECU−B
Short Pin
B
12
E5
STSW
W−R
1
2C
AM2
1
2D
W
B
F13
FL Block
10
ALT
2
B
12
A
J34
J/C
A
1
S2
1
S1
B−L
Starter
W−B
Battery
EA
N
cmc0556

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand−held tester. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air−fuel ratio was lean or rich, as well as other data from the time when a malfunction occurred.

1	**Connect hand−held tester, and check STA signal.**

PREPARATION:

(a) Connect the hand−held tester to the DLC3.
(b) Turn the ignition switch ON, and push the hand−held tester main switch ON.
(c) When using hand−held tester, enter the following menu: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.

CHECK:

Read the STA signal on the hand−held tester while the starter operates.

OK:

Standard:

Ignition Switch Position	ON	START
STARTER SIG	OFF	ON

OK → **Go to step 5.**

NG

2	**Check park/neutral position switch (See page DI−1159).**

NG → **Replace park/neutral position switch. Go to next step 5 after the replacement.**

OK

3	**Check ignition switch (See page BE−37).**

NG → **Replace ignition switch. Go the next step 5 after the replacement.**

OK

4	**Connect hand−held tester, and check STA signal.**

PREPARATION:

(a) Connect the hand−held tester to the DLC3.
(b) Turn the ignition switch ON, and push the hand−held tester main switch ON.
(c) On the hand−held tester, enter the following menu: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.

CHECK:

Read the STA signal on the hand−held tester while the starter operates.

OK:

Standard:

Ignition Switch Position	ON	START
STARTER SIG	OFF	ON

NG → **Repair or replace harness or connector.**

OK

5	**Check DTC reoccur**

PREPARATION:

(a) Connect the hand−held tester.
(b) Turn the ignition switch ON and hand−held tester main switch ON.
(c) Clear DTCs (see page DI−462).
(d) Drive the vehicle more than 25 mph (40 km/h) for 20 seconds or more.

CHECK:

Check DTC reoccur.

RESULT:

Display (DTC Output)	Proceed to
P0617	A
No DTC output	B

A → **Replace ECM (See page SF−82).**

B

Check for intermittent problems (See page DI−430).