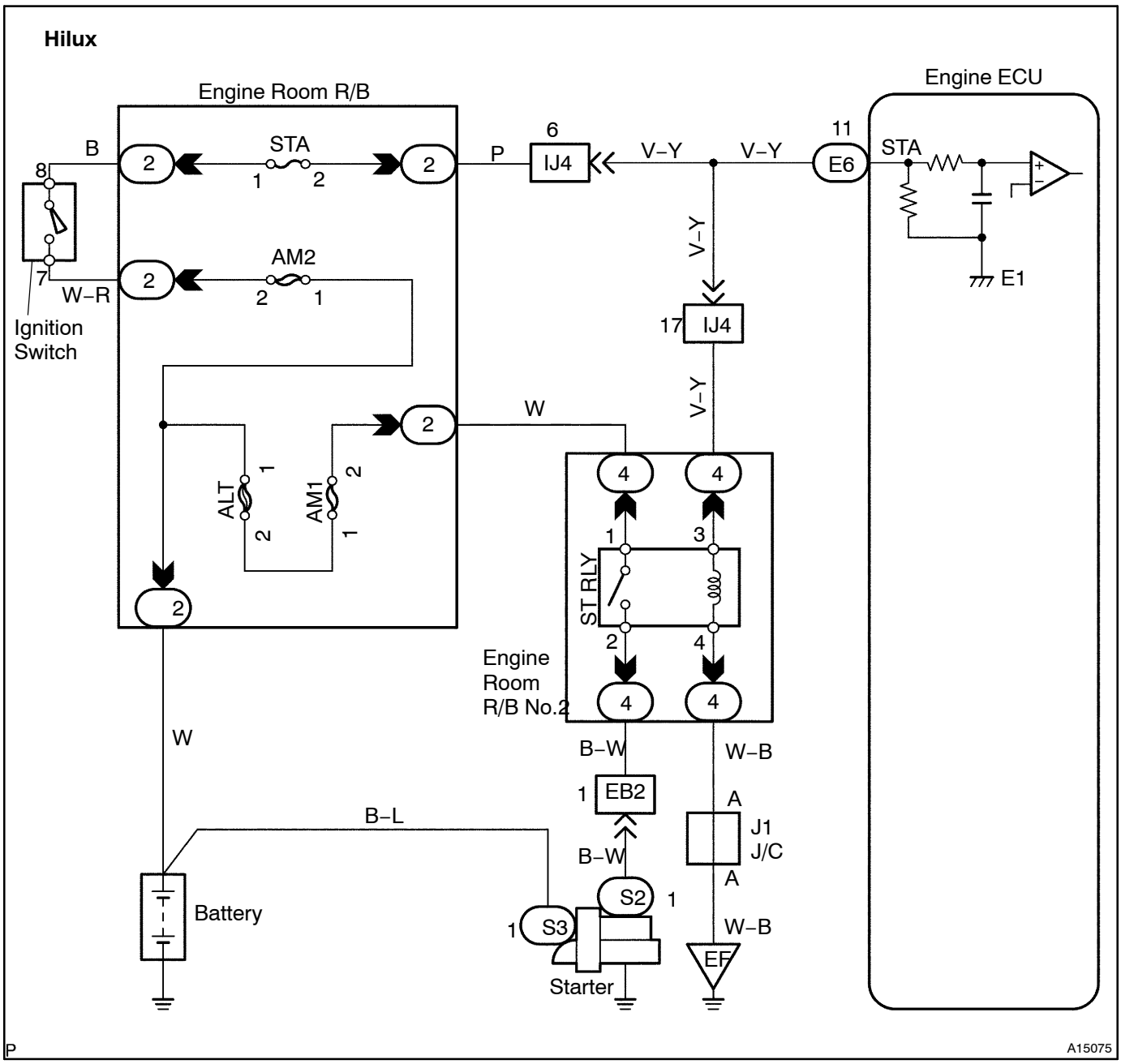
DI8FP–01

Starter Signal Circuit

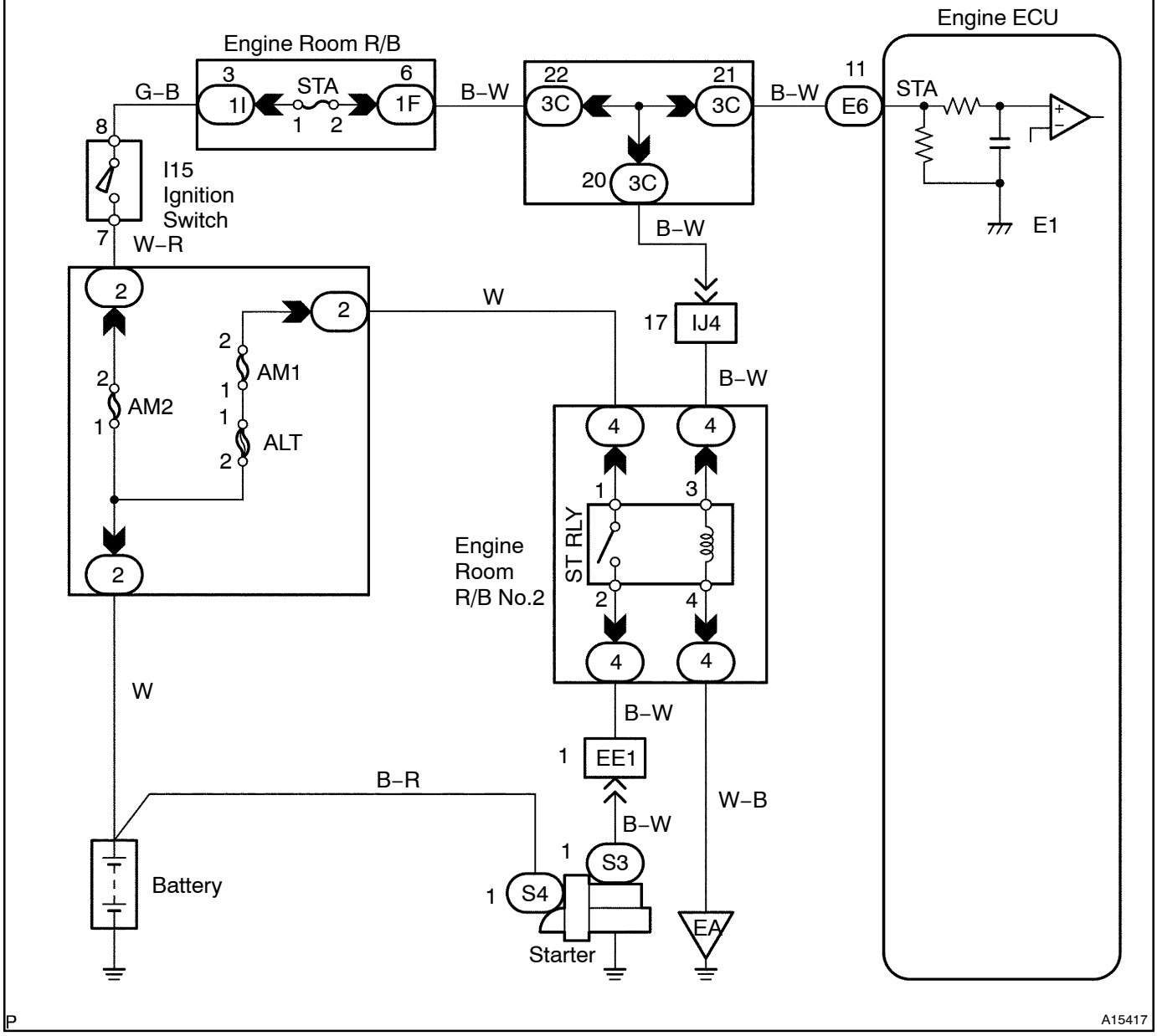
CIRCUIT DESCRIPTION

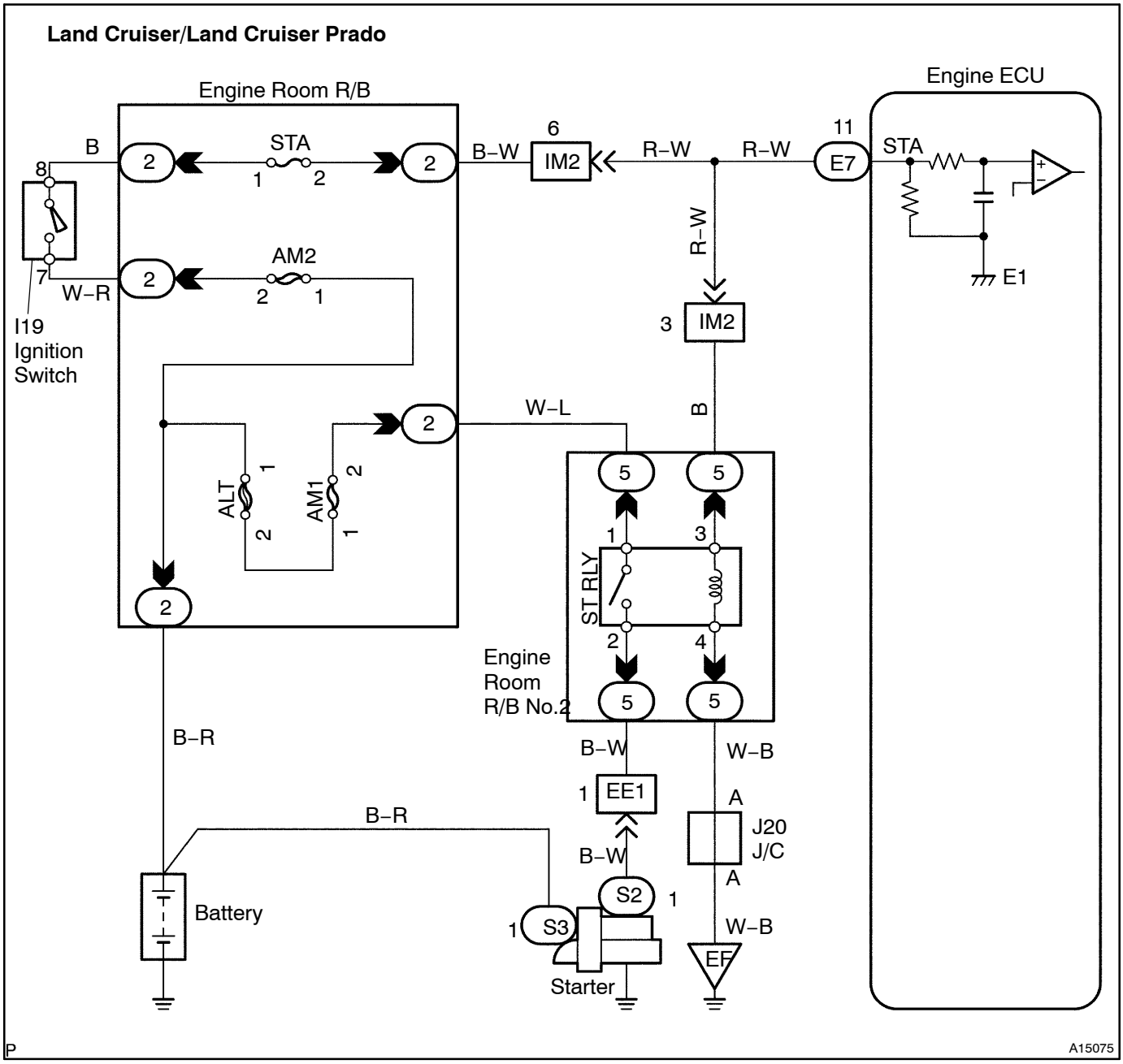
While the engine is cranking, the intake air flow is slow, so fuel vaporization is poor. A rich mixture is therefore necessary in order to achieve a good start ability. While the engine is being cranked, the battery positive voltage is applied to terminal STA of the engine ECU. The starter signal is mainly used to increase the fuel injection volume for the starting injection control and after–starting injection control.

WIRING DIAGRAM



4Runner


Engine ECU
Engine Room R/B
3
1I
STA
1
2
6
1F
G–B
B–W
22
3C
21
3C
20
3C
B–W
11
E6
B–W
STA
E1
8
I15
Ignition
Switch
7
W–R
B–W
2
2
AM2
1
2
1
AM1
1
ALT
2
2
2
W
17
IJ4
B–W
4
4
1
3
ST RLY
2
4
4
4
Engine
Room
R/B No.2
W
B–W
1
EE1
B–R
W–B
B–W
1
S3
1
S4
Starter
EA
Battery
P
A15417


Land Cruiser/Land Cruiser Prado
Engine Room R/B
Engine ECU
B
8
7
W–R
I19
Ignition
Switch
STA
AM2
ALT
AM1
B–W
IM2
6
R–W
R–W
11
E7
STA
E1
R–W
3
IM2
B
W–L
ST RLY
Engine
Room
R/B No.2
B–R
B–R
B–W
W–B
EE1
J20
J/C
A
Battery
S2
S3
Starter
EF
W–B
P
A15075

INSPECTION PROCEDURE

HINT:
This diagnostic chart is based on the premise that the engine is being cranked under the normal conditions.
If the engine does not crank, proceed to the problem symptoms table on page DI–24.

When using hand–held tester:

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.

CHECK:

Read the STA signal on the hand–held tester while the starter is operating.

OK:

Ignition Switch Position	ON	STA
STA Signal	OFF	ON

OK → **Proceed to next circuit inspection shown on problem symptoms table (See page DI–24).**

NG

2	**Check for open in harness and connector between engine ECU and starter relay (Marking : ST RLY for Land Cruiser/Land Cruiser Prado or ST for Hilux and 4Runner) (See page IN–20).**

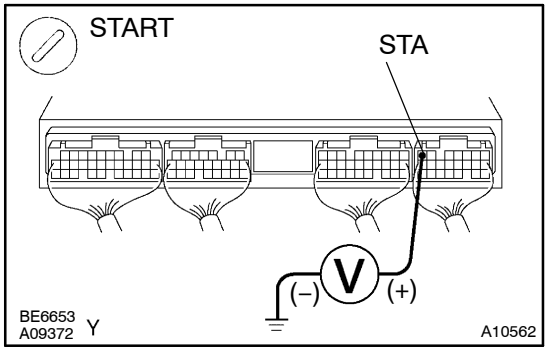
NG → **Repair or replace harness or connector.**

OK

Check and replace engine ECU.

When not using hand–held tester:

1	**Check voltage between terminal STA of engine ECU connector and body ground.**



PREPARATION:

(a) Remove the glove compartment door.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal STA of the engine ECU connector and the body ground during cranking.

OK:

Voltage: 6.0 V or more

OK → **Proceed to next circuit inspection shown on problem symptoms table (See page DI–24).**

NG

2	**Check for open in harness and connector between engine ECU and starter relay (Marking : ST RLY for Land Cruiser/Land Cruiser Prado or ST for Hilux and 4Runner) (See page IN–20).**

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

OK

Check and replace engine ECU.