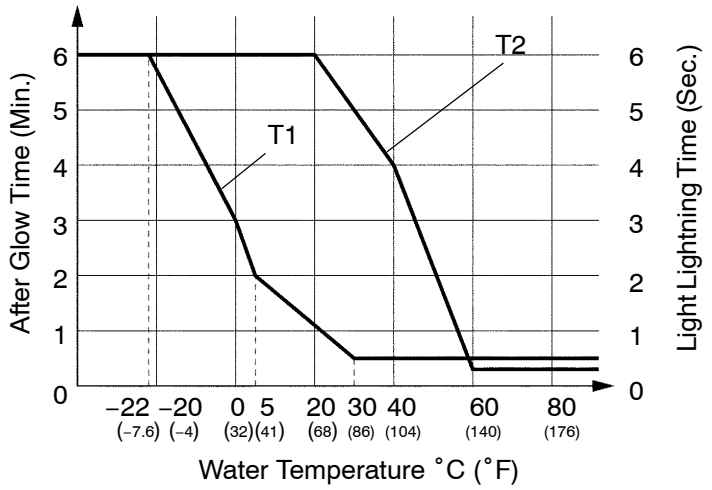
DI8FW–01

Pre–heating Control Circuit

CIRCUIT DESCRIPTION

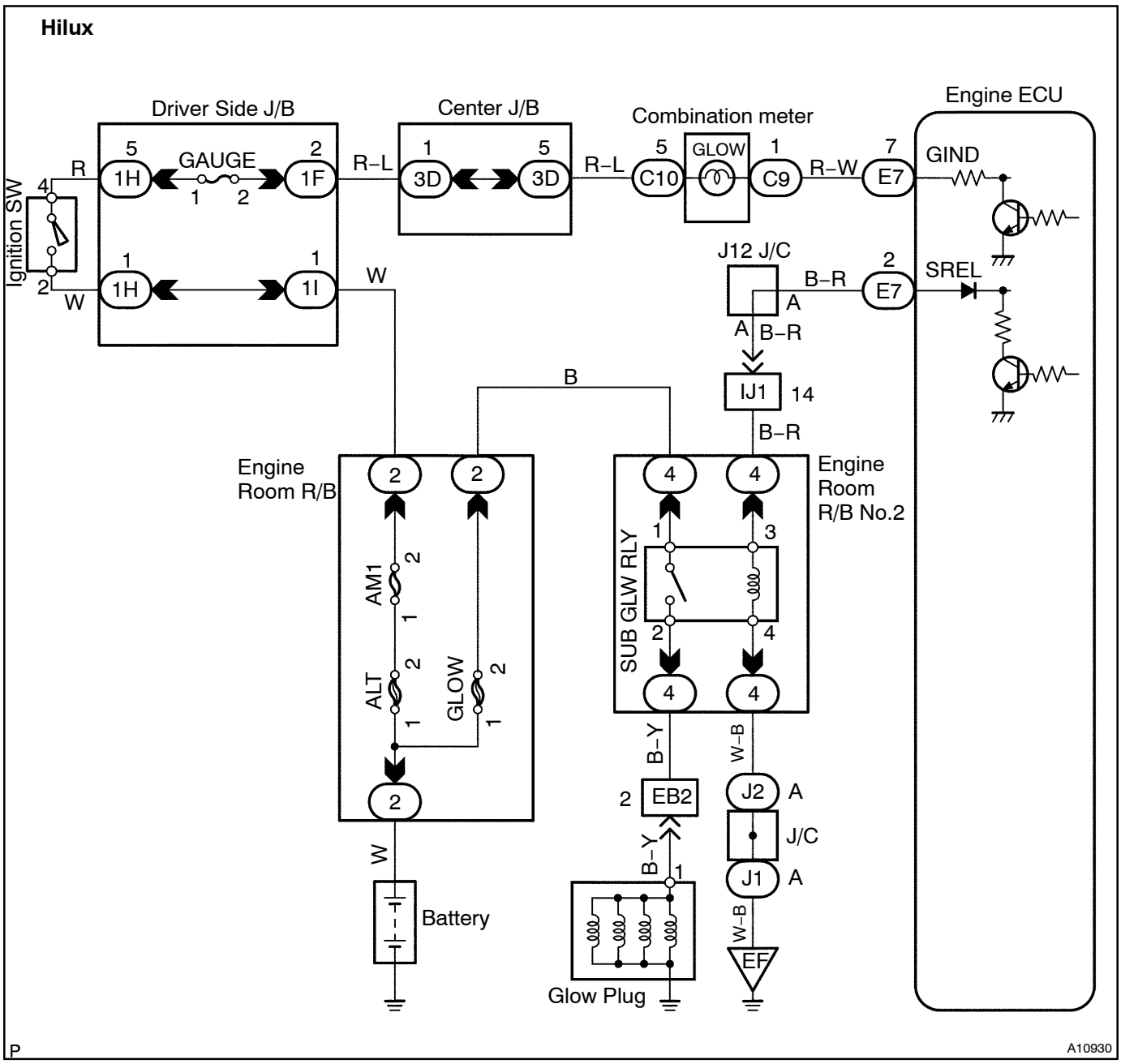
When the ignition switch is turned ON, the engine ECU calculates the glow indicator lighting time/heating corresponding to the coolant temperature at that time and turns on the glow indicator light/glow plug relay. As ceramics is used for a glow plug material, the current control is impossible.



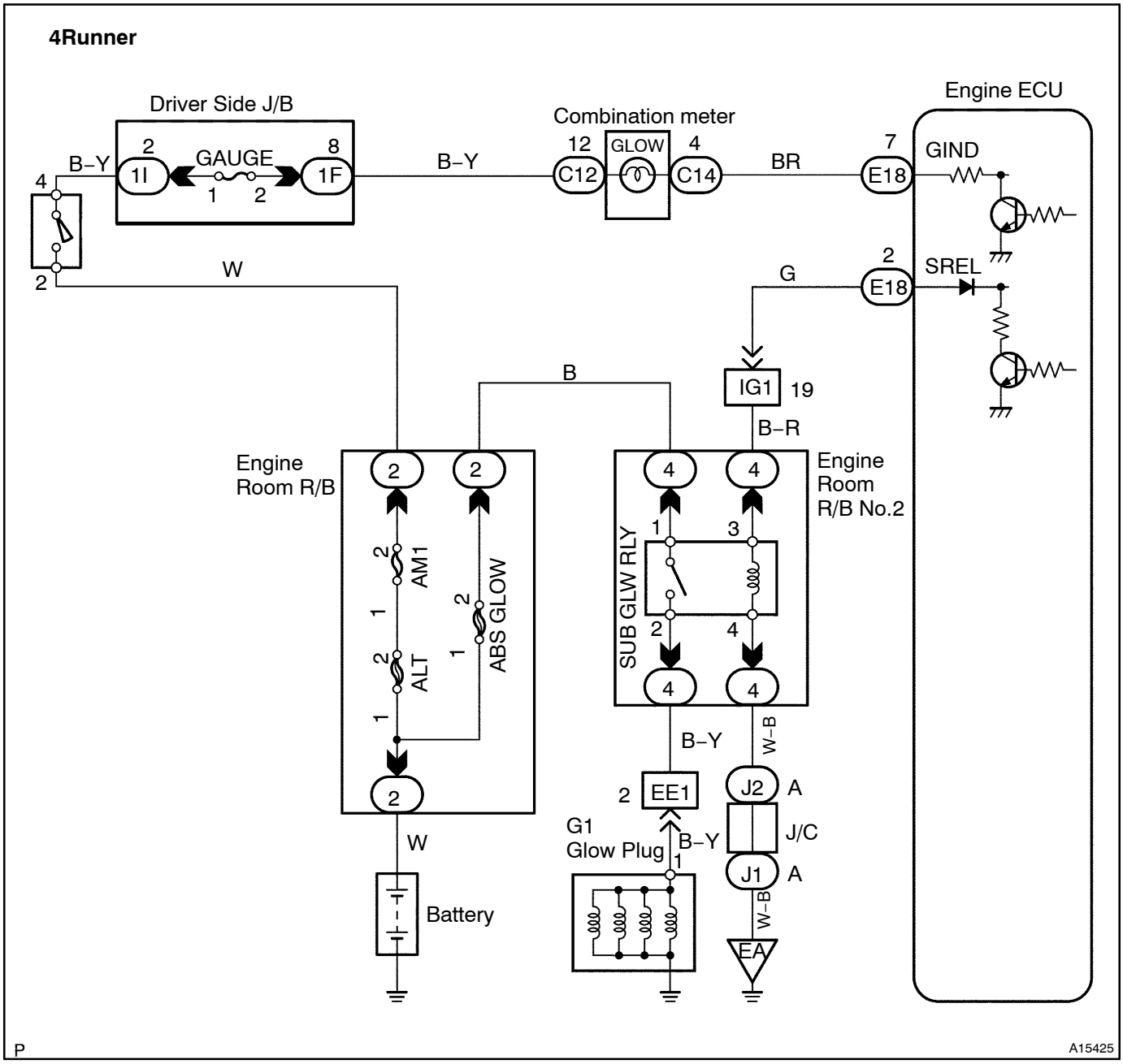
B13253

A15427

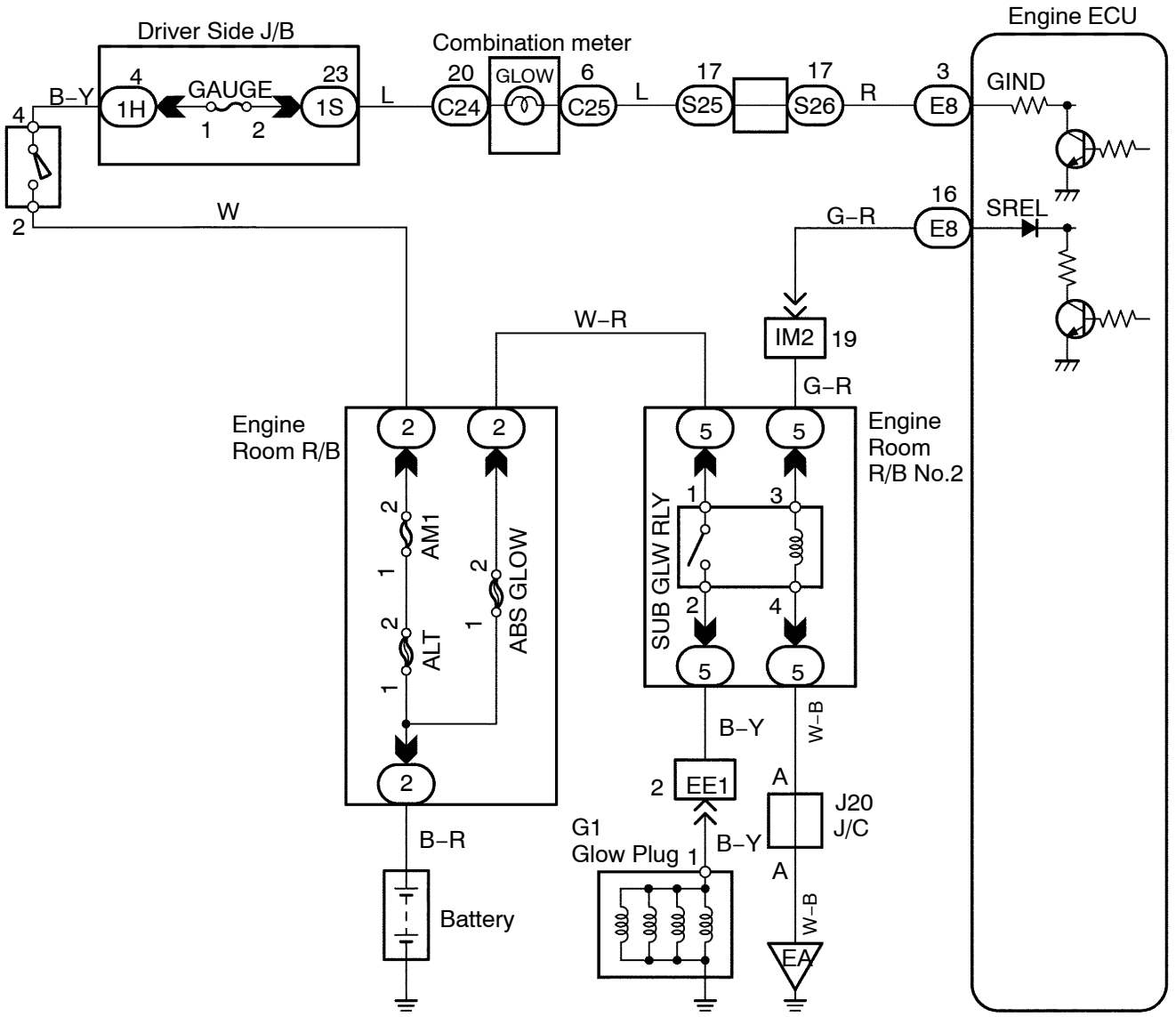
WIRING DIAGRAM



4Runner

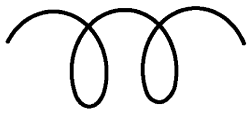

Driver Side J/B
Combination meter
Engine ECU
GAUGE
GLOW
GIND
SREL
B–Y
BR
W
G
B
B–R
IG1
19
Engine Room R/B
Engine Room R/B No.2
AM1
ALT
ABS GLOW
SUB GLW RLY
EE1
J2
J1
J/C
A
W–B
G1
Glow Plug
Battery
EA
C12
C14
E18
1I
1F
P
A15425

Land Cruiser/Land Cruiser Prado



INSPECTION PROCEDURE

1	**Does glow indicator light up?**

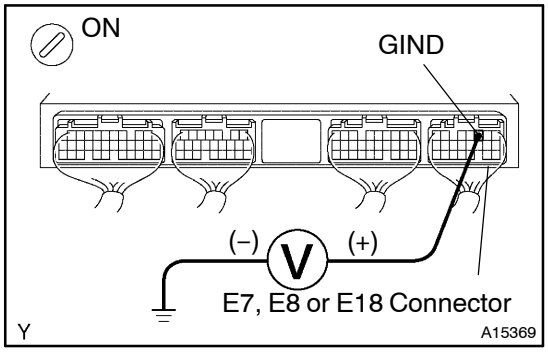


PREPARATION:
Turn the ignition switch ON.
CHECK:
Does the glow indicator light up?
OK:
The glow indicator lights up for 0.5 sec. or more.

OK	**Go to step 5.**

NG

2	Check voltage between terminal GIND of engine ECU connector and body ground.



PREPARATION:

(a) Remove the glove compartment.

(b) Disconnect the E7 (Hilux), E8 (Land Cruiser/Land Cruiser/Prado) or E18 (4Runner) connector from the engine ECU.

(c) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal GIND of the engine ECU connector and the body ground.

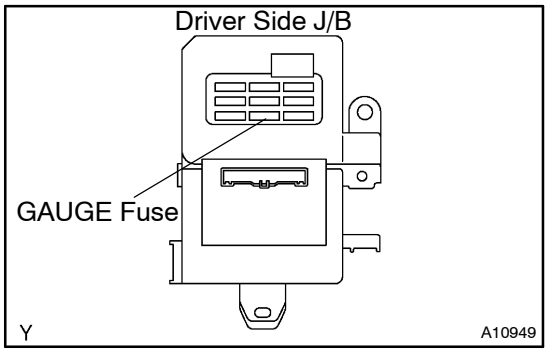
OK:

Voltage: 9 – 14 V

OK	Check and replace engine ECU (See page IN–20).

NG

3	Check GAUGE fuse.



PREPARATION:

Remove the GAUGE fuse from the driver side J/B.

CHECK:

Check the continuity of the GAUGE fuse.

OK:

Continuity

NG	Replace GAUGE fuse.

OK

4	Check glow indicator light bulb.

NG	Replace bulb.

OK

Check for open in harness and connector between combination meter and engine ECU, and combination meter and GAUGE fuse (See page IN–20).

5	**Check glow indicator lighting time (See page ST–1).**

NG → **Check and replace engine ECU (See page IN–20).**

OK

6	**Are there any DTC being output?**

YES → **Go to relevant DTC chart (See page DI–14).**

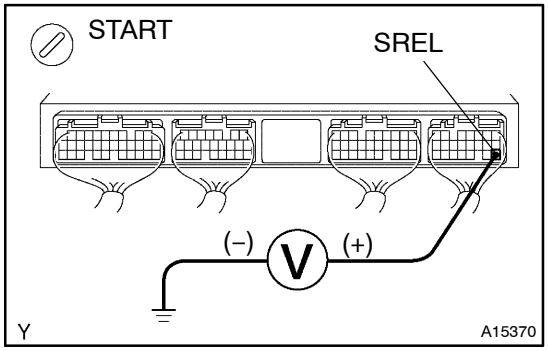
NO

7	**Check glow plug relay (Marking: SUB GLW RLY for Hilux and 4Runner, SUB GLW for Land Cruiser/Land Cruiser Prado) (See page ST–1).**

NG → **Replace glow plug relay.**

OK

8	**Check voltage between terminal SREL of engine ECU connector and body ground at cranking.**



PREPARATION:

(a) Remove the glove compartment.
(b) Disconnect the E7 (Hilux), E8 (Land Cruiser/Land Cruiser Prado) orE18 (4Runner) connector from the engine ECU.
(c) Turn the ignition switch START.

CHECK:

Measure the voltage between terminal SREL of the engine ECU connector and the body ground at cranking.

OK:

Voltage: 9 – 14 V

NG → Check and replace engine ECU (See page IN–20).

OK

9	Check for open and short in harness and connector between glow plug relay and engine ECU, and glow plug relay and body ground (See page IN–20).

NG → Repair or replace harness or connector.

OK

10	Check resistance of glow plug (See Pub. No. RM710E, ST section).

NG → Replace glow plug.

OK

11	Inspect glow plug installation.

NG → Tighten glow plug.

OK

12	Check for open in harness and connector between glow plug relay and glow plug (See page IN–20).

NG → Repair or replace harness or connector.

OK

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