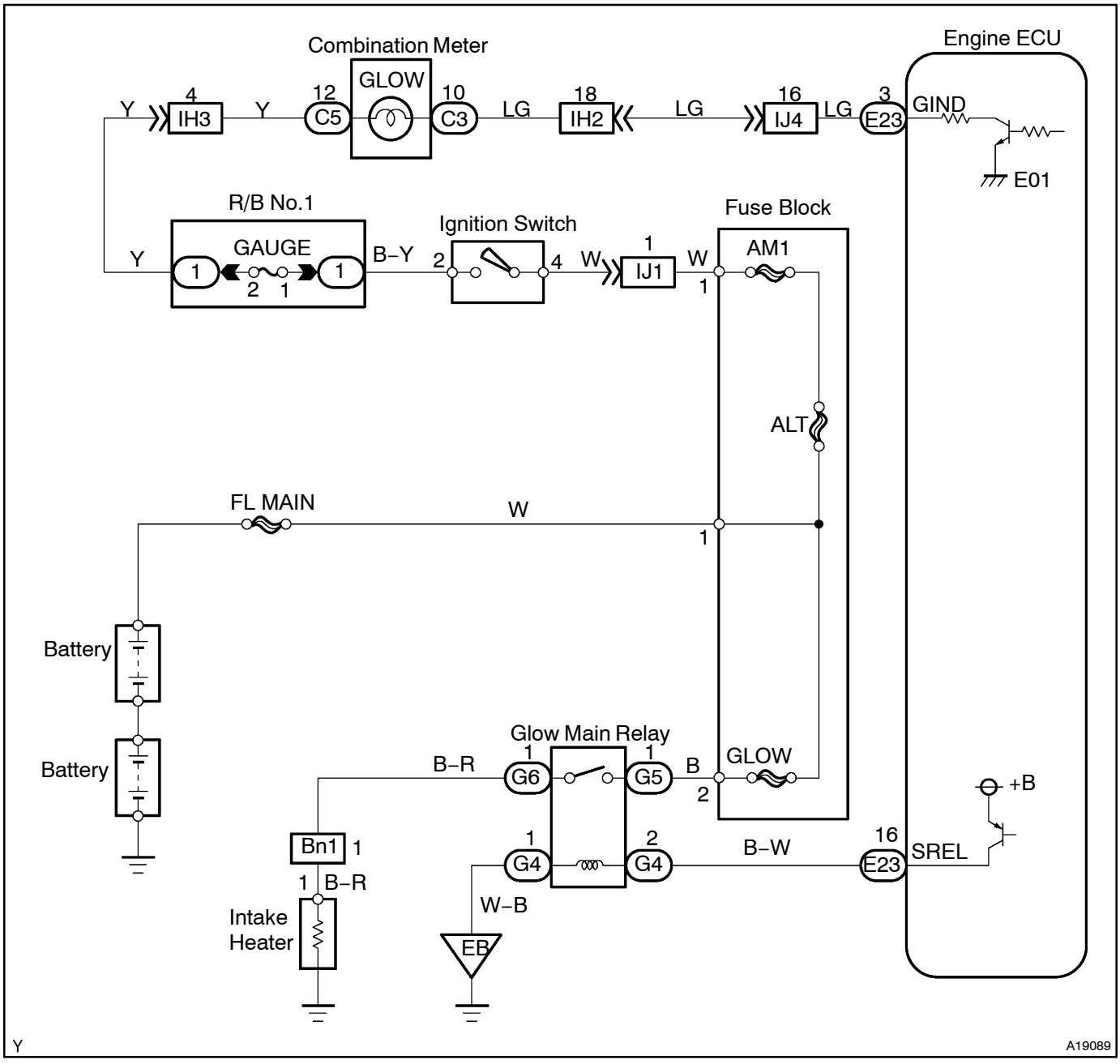
DI9GG–02

Intake Heater Control Circuit

CIRCUIT DESCRIPTION

When the engine coolant temperature is below 20˚C (68˚F), turning the ignition switch ON causes the intake heater relay to turn ON, allowing the intake heater to operate. The intake heater operates until the engine coolant temperature becomes higher than 20˚C (68˚F), or the maximum of 77 seconds.
At the same time, the glow indicator lamp is illuminated in accordance with the engine coolant temperature (maximum 5 seconds).

WIRING DIAGRAM



INSPECTION PROCEDURE

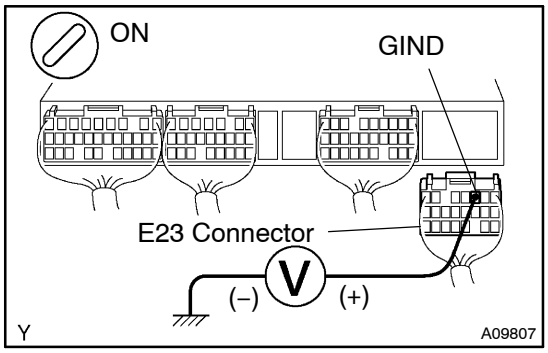
1	**Does glow indicator light up?**

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.**

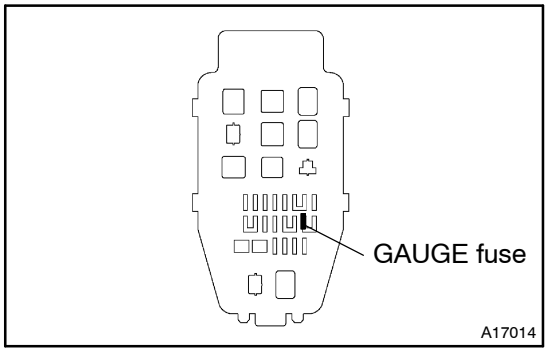


PREPARATION:
(a) Disconnect the engine ECU from the body bracket (See page ED–30).
(b) Disconnect the E23 connector from the engine ECU.
(c) Turn the ignition switch ON.
CHECK:
Measure the voltage between terminal GIND of the engine ECU connector and body ground.
OK:
Voltage: 18 – 27 V

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

NG

3	**Check GAUGE fuse.**



PREPARATION:
Remove the GAUGE fuse.
CHECK:
Check the continuity of the GAUGE fuse.
OK:
Continuity

NG → **Check for short in all harness and components connected to 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–2).

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–13).

NO

7	Check glow main relay (See page ST–2).

NG → Replace glow main relay.

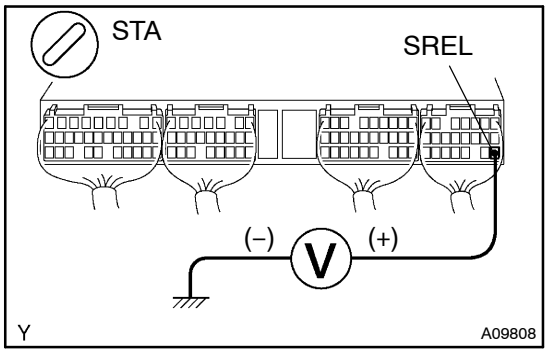
OK

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

NG → **Repair harness or connector.**

OK

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



PREPARATION:

(a) Disconnect the engine ECU from the body bracket (See page ED–30).

(b) Start the engine.

CHECK:

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

OK:

Voltage: 18 – 27 V

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

OK

10	**Check resistance of intake heater (See page ST–2).**

NG → **Replace intake heater.**

OK

11	**Inspect intake heater installation.**

NG → **Tighten intake heater.**

OK

12	Check for open in harness and connector between glow main relay and intake heater (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–18).