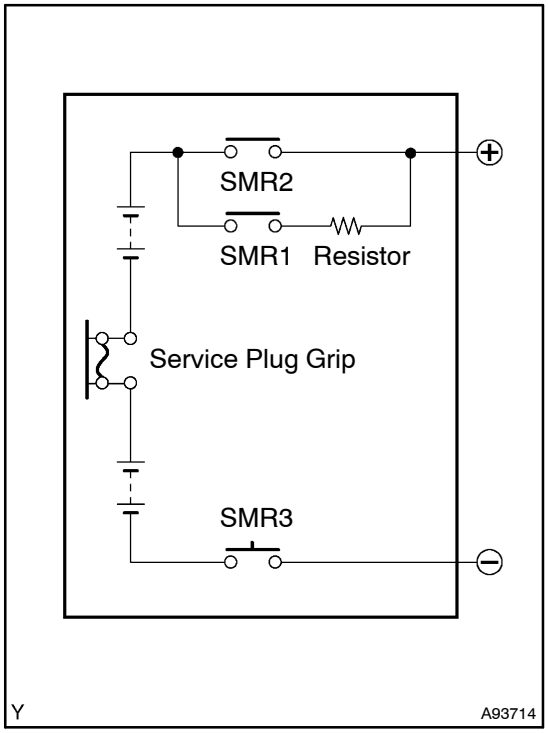
DTC	P0AA1/224	HYBRID BATTERY POSITIVE CONTACTOR CIRCUIT STUCK CLOSED

DTC	P0AA2/225	HYBRID BATTERY POSITIVE CONTACTOR CIRCUIT STUCK OPEN

CIRCUIT DESCRIPTION



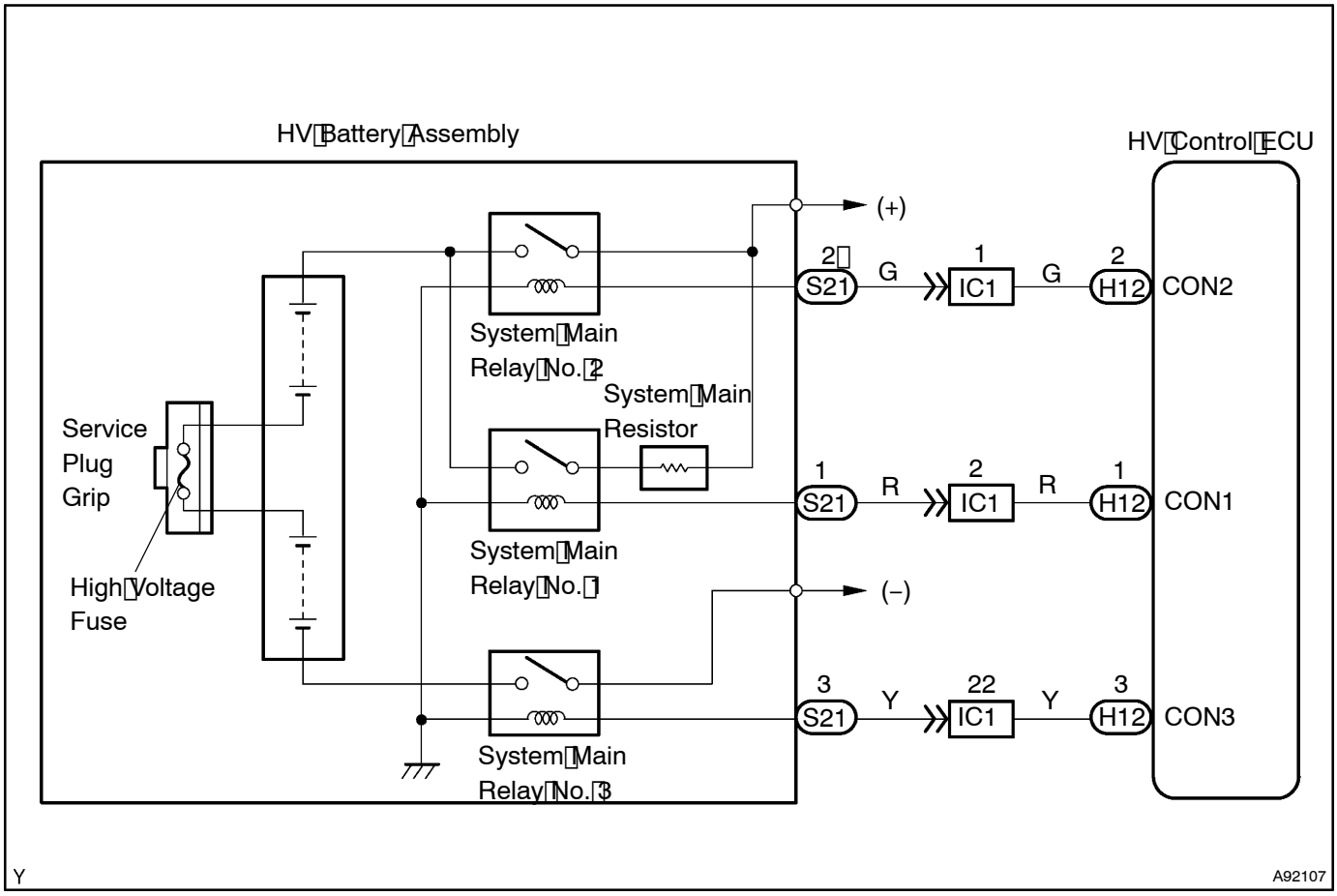
The SMRs (System Main Relays) connect and disconnect the high–voltage power supply circuit in accordance with requests from the HV control ECU. To ensure a reliable operation, they consists of a total of three relays (one for the negative side and two for the positive side).

To connect, SMR1 and SMR3 turn ON initially. Then, SMR2 turns ON and SMR1 turns OFF. This process protects the circuit from the high–voltage surge current by allowing the limit current to flow via the resistor. To disconnect, SMR2 and SMR3 turn OFF in that order. The HV control ECU checks that the relays have turned OFF properly.

The HV control ECU monitors the proper operation of the SMRs (CON1, CON2 and CON3) to check for malfunction.

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0AA1	224	Open or +B short in system main relay No. 1 circuit	• Wire harness or connector • System main relay No. 1 • HV control ECU
P0AA2	225	GND short in system main relay No. 1 circuit	• Wire harness or connector • System main relay No. 1 • HV control ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

CAUTION:

- **Before inspecting the high–voltage system, take safety precautions to prevent electrical shocks, such as wearing insulated gloves and removing the service plug grip. After removing the service plug grip, put it in your pocket to prevent other technicians from reconnecting it while you are servicing the high–voltage system.**
- **After disconnecting the service plug grip, wait at least for 5 minutes before touching any of the high–voltage connectors or terminals.**

HINT:

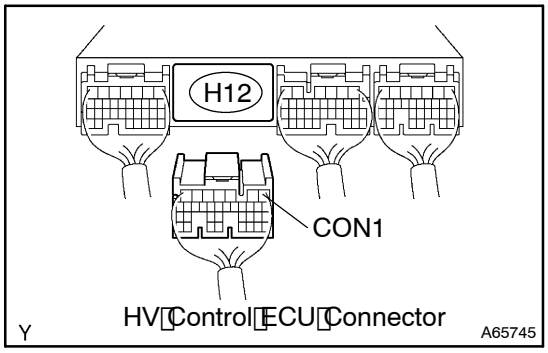
At least 5 minutes is required to discharge the high–voltage condenser inside the inverter.

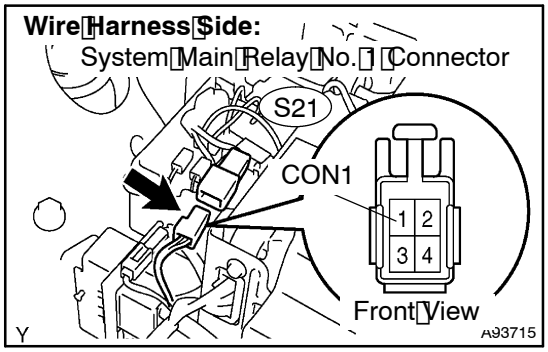
1	**INSPECT SYSTEM MAIN RELAY NO.1 (See page 21–42)**

NG → **REPLACE SYSTEM MAIN RELAY NO.1 (See page 21–85)**

OK

2	CHECK HARNESS AND CONNECTOR(HYBRID VEHICLE CONTROL ECU – SYSTEM MAIN RELAY NO.1)





CAUTION:
Wear insulated gloves before performing the following operation.

(a) Turn the power switch OFF.

(b) Remove the service plug grip (see page 21–120).

NOTICE:
Turning the power switch ON (READY) with the service plug grip removed could cause malfunction. Therefore, never turn the power switch ON (READY) in this state.

(c) Disconnect the H12 HV control ECU connector.

(d) Disconnect the S21 system main relay No.1 connector.

(e) Turn the power switch ON (IG).

HINT:
DTCs for the interlock switch system are output when turning the power switch ON (IG) with the service plug grip removed.

(f) Measure the voltage between the terminal of the HV control ECU connector and body ground.

Standard:

Tester Connection	Specified Condition
CON1 (H12–1) – Body ground	Below 1 V

(g) Turn the power switch OFF.

(h) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
CON1 (H12–1) – CON1 (S21–1)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
CON1 (H12–1) or CON1 (S21–1) – Body ground	10 kΩ or higher

(i) Reconnect the system main relay No.1 connector.

(j) Reconnect the HV control ECU connector.

(k) Reinstall the service plug grip (see page 21–120).

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE HYBRID VEHICLE CONTROL ECU (See page 21–128)