DTC	P3004/132	HIGH VOLTAGE POWER RESOURCE MALFUNCTION

CIRCUIT DESCRIPTION

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P3004	132	Inverter voltage sensor malfunction, or limiter resistance increases	• HV control system • System main resistor • System main relay No. 1 • System main relay No. 3 • Main battery cable • Main battery cable No. 2 • Frame wire • w/ Converter inverter assembly • HV control ECU

WIRING DIAGRAM

Refer to DTC P3004 (INF 131) on page 05–557.

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	READ OUTPUT DTC (HYBRID CONTROL)

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the power switch ON (IG).
(c) Turn the intelligent tester II ON.
(d) On the intelligent tester II, enter the following menus: Powertrain / Hybrid Control / DTC.
(e) Read DTCs.

Result: DTC P3004 (INF 132) and other DTCs are output

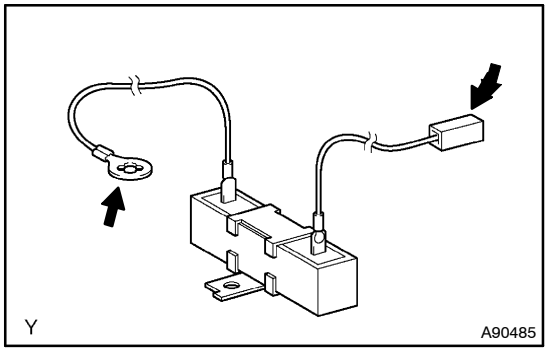
HINT:

If any other codes besides P3004 (INF 132) are output, perform troubleshooting for those DTCs first.

YES → **GO TO RELEVANT DTC CHART (See page 05–268)**

NO

2	INSPECT SYSTEM MAIN RESISTOR



CAUTION:
Wear insulated gloves and goggles before performing the following operation.

(a) Remove the system main resistor (see page 21–94).
(b) Measure the resistance between the terminals.
Standard: 18 to 22 Ω
(c) Reinstall the system main resistor (see page 21–94).

NG → **REPLACE SYSTEM MAIN RESISTOR (See page 21–94)**

OK

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

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

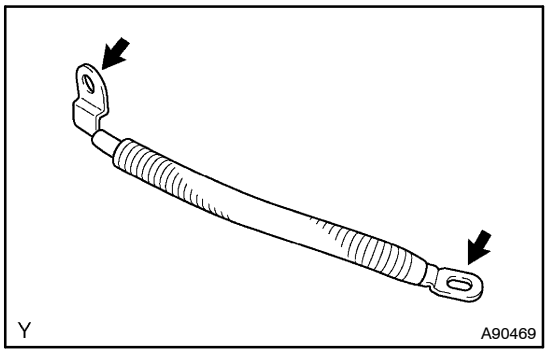
OK

4	INSPECT SYSTEM MAIN RELAY NO.3 (See page 21–42)

NG → **REPLACE SYSTEM MAIN RELAY NO.3 (See page 21–92)**

OK

5	INSPECT MAIN BATTERY CABLE



CAUTION:
Wear insulated gloves and goggles before performing the following operation.

(a) Remove the HV battery assembly (see page 21–56).
(b) Remove the main battery cable (see page 21–58).
(c) Check the resistance between the terminals of the main battery cable.
Standard: Below 1 Ω

NG → **REPLACE MAIN BATTERY CABLE**

OK

6	INSPECT MAIN BATTERY CABLE

CAUTION:
Wear insulated gloves and goggles before performing the following operation.

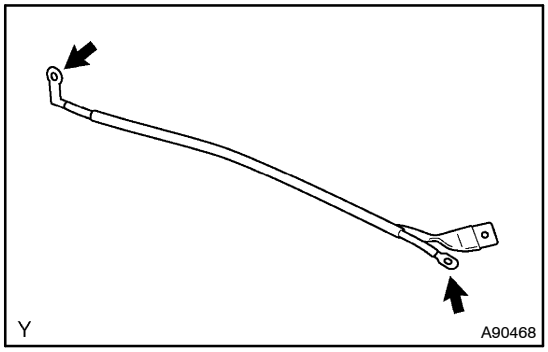
(a) Check the cover and terminals of the main battery cable for any abnormality.
OK: No abnormality is found on the cover and terminals.

(b) Check the terminals of the HV battery and the system main relay, which are to be connected to the main cable, for any abnormality.
OK: No abnormality is found on the terminals of the HV battery and system main relay.

NG	REPLACE MAIN BATTERY CABLE. IF NECESSARY, REPLACE HV BATTERY OR SYSTEM MAIN RELAY

OK

7	INSPECT MAIN BATTERY CABLE NO.2



CAUTION:
Wear insulated gloves and goggles before performing the following operation.

(a) Remove the main battery cable No. 2 with the HV battery assembly removed (see page 21–72).

(b) Check the resistance between the terminals of the main battery cable No. 2.
Standard: Below 1 Ω

NG	REPLACE MAIN BATTERY CABLE NO.2

OK

8	INSPECT MAIN BATTERY CABLE NO.2

CAUTION:
Wear insulated gloves and goggles before performing the following operation.

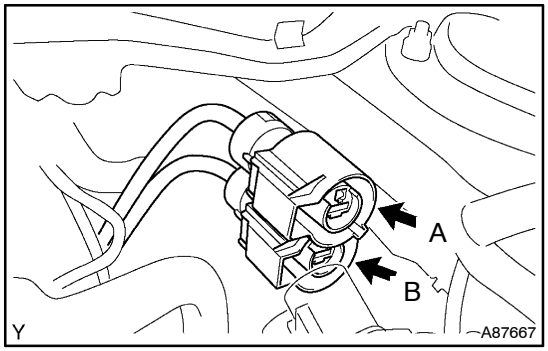
(a) Check the cover and terminals of the main battery cable No. 2 for any abnormality.
OK: No abnormality is found on the cover and terminals.

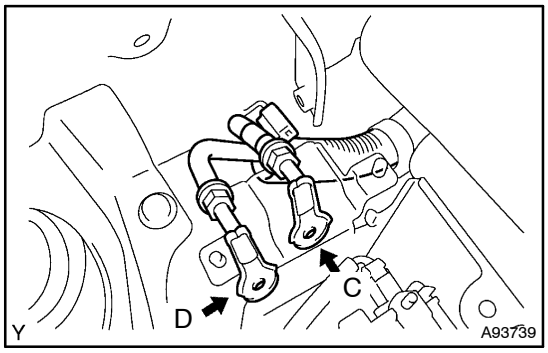
(b) Check the terminals of the HV battery and the system main relay, which are to be connected to the main battery cable No. 2, for any abnormality.
OK: No abnormality is found on the terminals of the HV battery and system main relay.

NG	REPLACE MAIN BATTERY CABLE NO. 2. IF NECESSARY, REPLACE HV BATTERY OR SYSTEM MAIN RELAY

OK

9	INSPECT FRAME WIRE





CAUTION:
Wear insulated gloves before performing the following operation.

(a) Disconnect the frame wire from the w/ converter inverter.

(b) Check that the frame wire has been disconnected from the system main relay.

(c) Using a megohmmeter, check the insulation resistance between the high–voltage terminals of the frame wire and body ground.

Standard:

Tester Connection	Specified Condition
A – Body ground	10 MΩ or higher
B – Body ground	10 MΩ or higher

(d) Check the resistance between the terminals of the frame wire.

Standard:

Tester Connection	Specified Condition
A – C	Below 1 Ω
B – D	Below 1 Ω

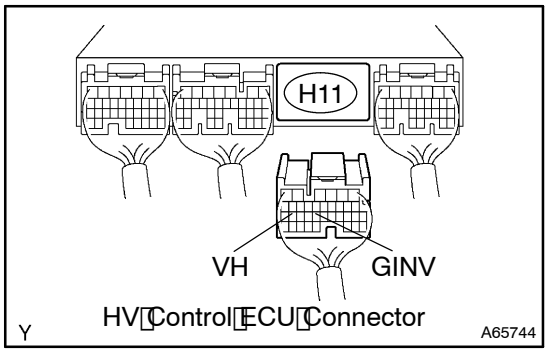
(e) Reinstall the HV battery assembly (see page 21–56).

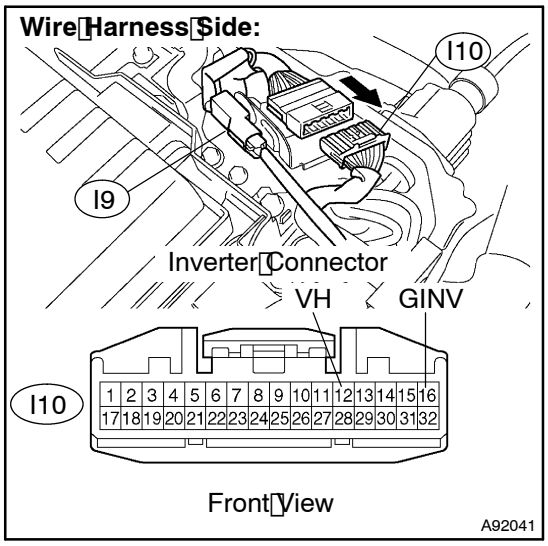
(f) Reconnect the frame wire.

NG → **REPLACE FRAME WIRE**

OK

10	CHECK HARNESS AND CONNECTOR(HYBRID VEHICLE CONTROL ECU – INVERTER)





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) Remove the inverter cover (see page 21–25).

(d) Disconnect the H11 HV control ECU connector.

(e) Disconnect the I10 inverter connector.

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

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

(g) Measure the voltage between the terminals of the HV control ECU connector and body ground.

Standard:

Tester Connection	Specified Condition
VH (H11–26) – Body ground	Below 1 V
GINV (H11–23) – Body ground	Below 1 V

(h) Turn the power switch OFF.

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

Standard (Check for short):

Tester Connection	Specified Condition
VH (H11–26) or VH (I10–12) – Body ground	10 kΩ or higher
GINV (H11–23) or GINV (I10–16) – Body ground	10 kΩ or higher

(j) Reconnect the inverter connector.

(k) Reconnect the HV control ECU connector.

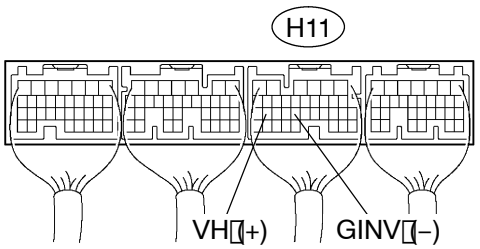
(l) Reinstall the inverter cover (see page 21–25).

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

NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

11	INSPECT HYBRID VEHICLE CONTROL ECU(VH VOLTAGE)



HV Control ECU Connector
A18294

(a) Turn the power switch ON (READY).

HINT:

DTCs for the interlock switch system are output when turning the power switch ON (IG) with both service plug grip and inverter cover removed.

(b) Measure the voltage between the terminals of the H11 HV control ECU connector.

Standard:

Tester Connection	Specified Condition
VH (H11–26) – GINV (H11–23)	1.6 to 3.8 V

NG → **REPLACE W/CONVERTER INVERTER ASSY (See page 21–25)**

OK

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