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| DTC | P3004/132 | HIGH VOLTAGE POWER RESOURCE MALFUNCTION |
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CIRCUIT DESCRIPTION

| DTC No. | INF Code | DTC Detection Condition | Trouble Area |
|---------|----------|--|---|
| P3004 | 132 | Inverter voltage sensor malfunction, or limiter resistance increases | <ul style="list-style-type: none"> • 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 05-781.

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(HV ECU) |
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- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the power switch ON (IG).
- (c) Turn the hand-held tester ON.
- (d) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / HV ECU / DTC INFO / TROUBLE CODES.
- (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.

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| YES | GO TO RELEVANT DTC CHART (See page 05-440) |
|------------|--|

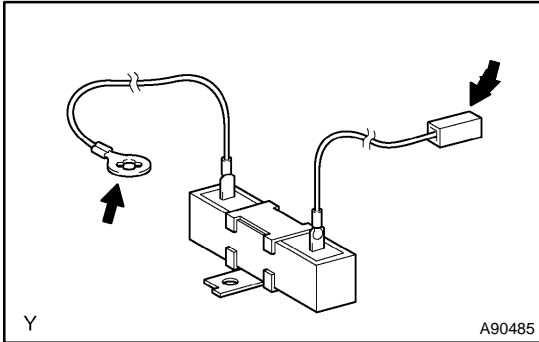
| |
|-----------|
| NO |
|-----------|

2 INSPECT SYSTEM MAIN RESISTOR

CAUTION:

Wear insulated gloves and goggles before performing the following operation.

- (a) Remove the system main resistor (see page 21-92).
- (b) Measure the resistance between the terminals.
Standard: 18 to 22 Ω
- (c) Reinstall the system main resistor (see page 21-92).



NG REPLACE SYSTEM MAIN RESISTOR
(See page 21-92)

OK

3 INSPECT SYSTEM MAIN RELAY NO.1 (See page 21-40)

NG REPLACE SYSTEM MAIN RELAY NO.1
(See page 21-83)

OK

4 INSPECT SYSTEM MAIN RELAY NO.3 (See page 21-40)

NG REPLACE SYSTEM MAIN RELAY NO.3
(See page 21-90)

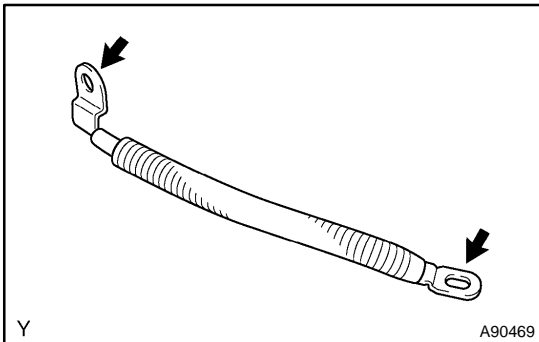
OK

5 INSPECT MAIN BATTERY CABLE

CAUTION:

Wear insulated gloves and goggles before performing the following operation.

- (a) Remove the HV battery assembly (see page 21-54).
- (b) Remove the main battery cable (see page 21-66).
- (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 |
|----------|--|

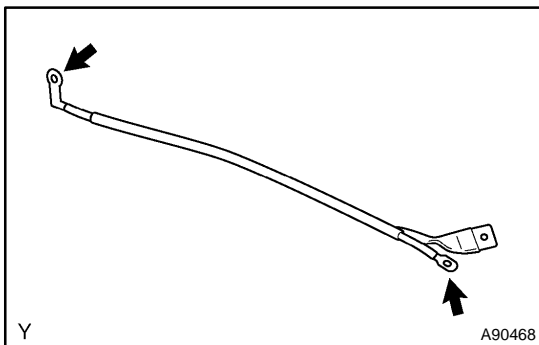
CAUTION:

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 21-70).

- (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

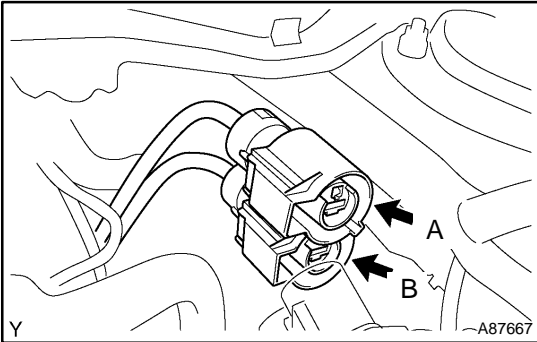
REPLACE MAIN BATTERY CABLE NO. 2. IF NECESSARY, REPLACE HV BATTERY OR SYSTEM MAIN RELAY

OK

9 INSPECT FRAME WIRE

CAUTION:

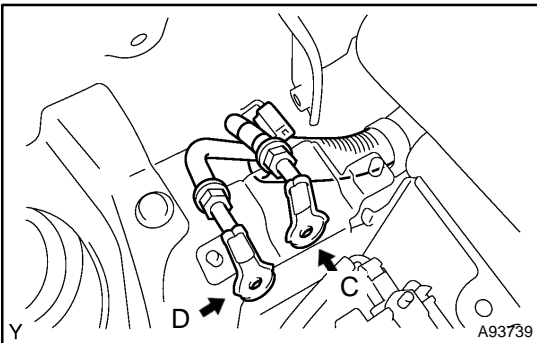
Wear insulated gloves before performing the following operation.



- (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 21-54).
- (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 21-116).

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 21-23).
- (d) Disconnect the H15 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:

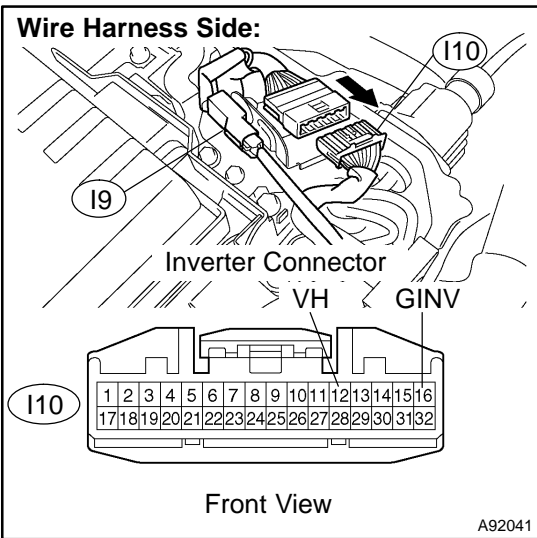
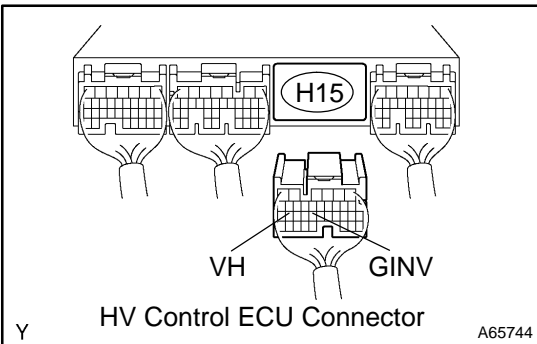
| Tester Connection | Specified Condition |
|-----------------------------|---------------------|
| VH (H15-26) – Body ground | Below 1 V |
| GINV (H15-23) – Body ground | Below 1 V |

- (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 (H15-26) or VH (I10-12) – Body ground | 10 kΩ or higher |
| GINV (H15-23) or GINV (I10-16) – Body ground | 10 kΩ or higher |

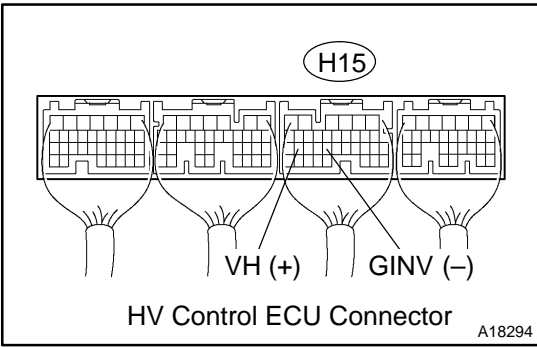
- (j) Reconnect the inverter connector.
- (k) Reconnect the HV control ECU connector.
- (l) Reinstall the inverter cover (see page 21-23).
- (m) Reinstall the service plug grip (see page 21-116).



NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

11 INSPECT HYBRID VEHICLE CONTROL ECU(VH VOLTAGE)



(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 H15 HV control ECU connector.

Standard:

| Tester Connection | Specified Condition |
|-----------------------------|---------------------|
| VH (H15-26) - GINV (H15-23) | 1.6 to 3.8 V |

NG → **REPLACE W/CONVERTER INVERTER ASSY (See page 21-23)**

OK

REPLACE HYBRID VEHICLE CONTROL ECU (See page 21-124)