| DTC | P3221/314 | GENERATOR INVERTER TEMPERATURE SENSOR CIRCUIT RANGE/PERFORMANCE |
|---|---|---|

| DTC | P3221/315 | GENERATOR INVERTER TEMPERATURE SENSOR CIRCUIT RANGE/PERFORMANCE |
|---|---|---|

## CIRCUIT DESCRIPTION

Refer to DTC P3222 (INF 313) on page 05–623.

| DTC No. | INF Code | DTC Detection Condition | Trouble Area |
|---|---|---|---|
| P3221 | 314 | Sudden change in generator inverter temperature sensor output | • Wire harness or connector<br>• Inverter cooling system<br>• Water w/ motor & bracket pump assembly<br>• Cooling fan motor<br>• Cooling fan motor No. 2<br>• w/ converter inverter assembly |
| P3221 | 315 | Generator inverter temperature sensor output deviation | • Wire harness or connector<br>• Inverter cooling system<br>• Water w/ motor & bracket pump assembly<br>• Cooling fan motor<br>• Cooling fan motor No. 2<br>• w/ converter inverter assembly |

## WIRING DIAGRAM

Refer to DTC P3222 (INF 313) on page 05–623.

## 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 | CHECK QUANTITY OF HV COOLANT |
|---|---|

(a) Check that there is a sufficient amount of coolant for the inverter.

**OK: There is a sufficient amount of coolant for the inverter**

NG → ADD HV COOLANT (See page 22–4)

OK

| 2 | CHECK COOLANT HOSE |
|---|---|

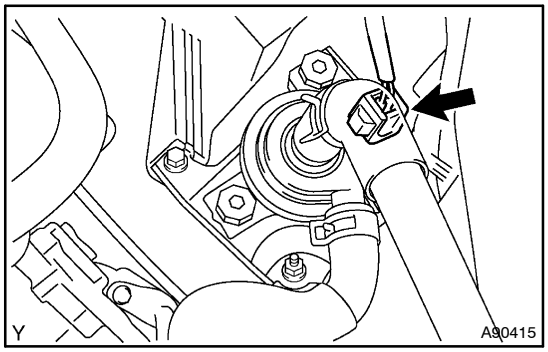
(a) Check that the hoses of the cooling system are not bent or clogged (see the cooling system on page 05–474).

**OK: The hoses of the cooling system are not bent or clogged**

NG → CORRECT TO NORMAL CONDITION

OK

| 3 | CHECK CONNECTION CONDITION OF WATER PUMP CONNECTOR(LOOSENESS AND POOR CONTACT) |
|---|---|




(a) Check the connection condition of the water pump connector.
**OK: Connector has been connected securely and there is no poor connection.**

NG → CONNECT SECURELY

OK

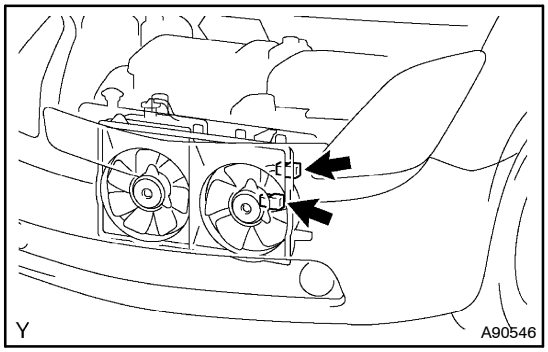
| 4 | CHECK WATER W/MOTOR & BRACKET PUMP ASSY |
|---|---|

(a) Turn the power switch ON (IG).
(b) Check the operation of the water pump.
**OK: Coolant is sloshing in the reservoir tank**

NG → REPLACE WATER W/MOTOR & BRACKET PUMP ASSY

OK

| 5 | CHECK CONNECTION CONDITION OF COOLING FAN MOTOR CONNECTOR(LOOSENESS AND POOR CONTACT) |
|---|---|




(a) Check the connection condition of the cooling fan motor connectors.
**OK: Connectors have been connected securely and there is no poor connection.**

NG → CONNECT SECURELY

OK

| | |
|---|---|
| 6 | INSPECT COOLING FAN MOTOR (See page 16–8) |

NG → REPLACE COOLING FAN MOTOR AND ADD ENGINE COOLANT

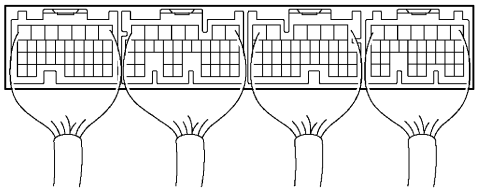
OK

| | |
|---|---|
| 7 | INSPECT COOLING FAN MOTOR NO.2 (See page 16–8) |

NG → REPLACE COOLING FAN MOTOR NO. 2 AND ADD ENGINE COOLANT

OK

| | |
|---|---|
| 8 | CHECK CONNECTION CONDITION OF HYBRID VEHICLE CONTROL ECU CONNECTOR(LOOSENESS AND POOR CONTACT) |


HV Control ECU Connector
A18294

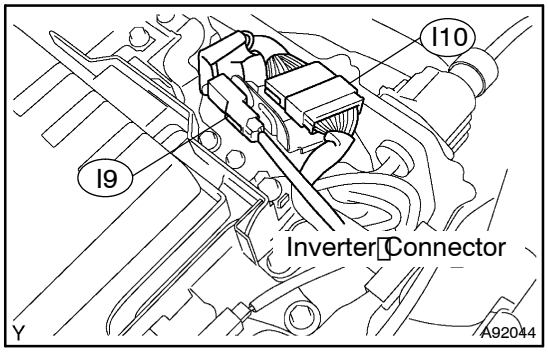
(a) Check the connection condition of all the connectors at the HV control ECU.
**OK: Connectors have been connected securely and there is no poor connection.**

NG → CONNECT SECURELY

OK

| | |
|---|---|
| 9 | CHECK CONNECTION CONDITION OF INVERTER CONNECTOR(LOOSENESS AND POOR CONTACT) |

**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).

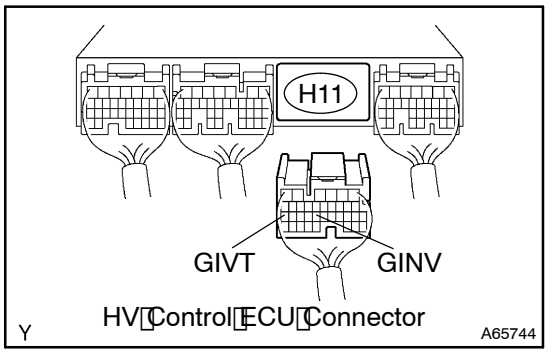


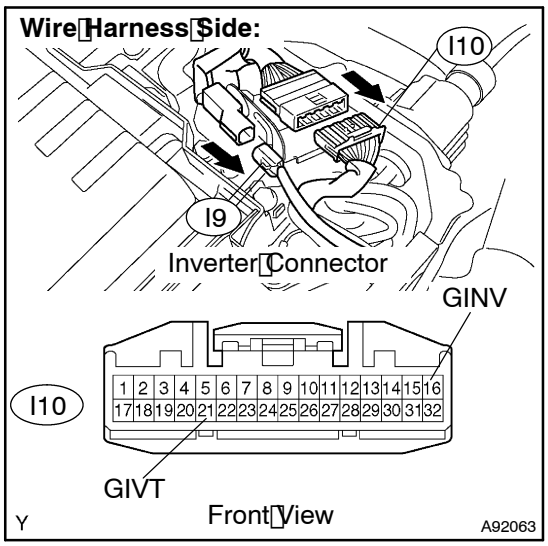

(d) Check the connection condition of the I9 and I10 inverter connectors.
**OK: Connectors have been connected securely and there is no poor connection.**

**NG** → **CONNECT SECURELY**

**OK**

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




**CAUTION:**
**Wear insulated gloves before performing the following operation.**

(a) Check that the service plug grip and inverter cover have been removed.
(b) Disconnect the H11 HV control ECU connector.
(c) Disconnect the I9 and I10 inverter connectors.
(d) 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.

(e) Measure the voltage between the terminals of the HV control ECU connector and body ground.
**Standard:**

| Tester Connection | Specified Condition |
|---|---|
| GIVT (H11–27) – Body ground | Below 1 V |
| GINV (H11–23) – Body ground | Below 1 V |

(f) Turn the power switch OFF.
(g) Check the resistance between the wire harness side connectors.
**Standard (Check for open):**

| Tester Connection | Specified Condition |
|---|---|
| GIVT (H11–27) – GIVT (I10–21) | Below 1 Ω |
| GINV (H11–23) – GINV (I10–16) | Below 1 Ω |

**Standard (Check for short):**

| Tester Connection | Specified Condition |
|---|---|
| GIVT (H11–27) or GIVT (I10–21) – Body ground | 10 kΩ or higher |
| GINV (H11–23) or GINV (I10–16) – Body ground | 10 kΩ or higher |

(h) Reconnect the inverter connectors.
(i) Reconnect the HV control ECU connector.
(j) Reinstall the inverter cover (see page 21–25).
(k) Reinstall the service plug grip (see page 21–120).

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

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