DTC	P0A7A/342	GENERATOR INVERTER PERFORMANCE

DTC	P0A7A/343	GENERATOR INVERTER PERFORMANCE

DTC	P0A7A/519	GENERATOR INVERTER PERFORMANCE

CIRCUIT DESCRIPTION

See the description of the inverter on page 05–562.

Upon receiving a generator gate shutdown signal from the HV control ECU, the inverter forcefully stops the operation of the MG1 by turning OFF the power transistors that are actuating the MG1.

The HV control ECU monitors the generator gate shutdown signal line and detects malfunction.

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0A7A	342	Open or +B short in generator gate shutdown (GSDN) signal circuit	• Wire harness or connector • w/ converter inverter assembly
P0A7A	343	GND short in generator gate shutdown (GSDN) signal circuit	• Wire harness or connector • w/ converter inverter assembly
P0A7A	519	Open in generator gate shutdown (GSDN) signal circuit	• Wire harness or connector • w/ converter inverter assembly

MONITOR DESCRIPTION

The HV control ECU monitors the generator gate shutdown (GSDN) signal line. If the HV control ECU detects an open or short malfunction of the GSDN signal circuit, the HV control ECU illuminates the MIL and sets a DTC.

MONITOR STRATEGY

Related DTCs	P0A7A (INF 342/343/519): Generator inverter/Generator gate shutdown signal malfunction
Required sensor/components	Generator inverter
Frequency of operation	Continuous
Duration	TOYOTA's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	TOYOTA's intellectual property
Other conditions belong to TOYOTA's intellectual property	–

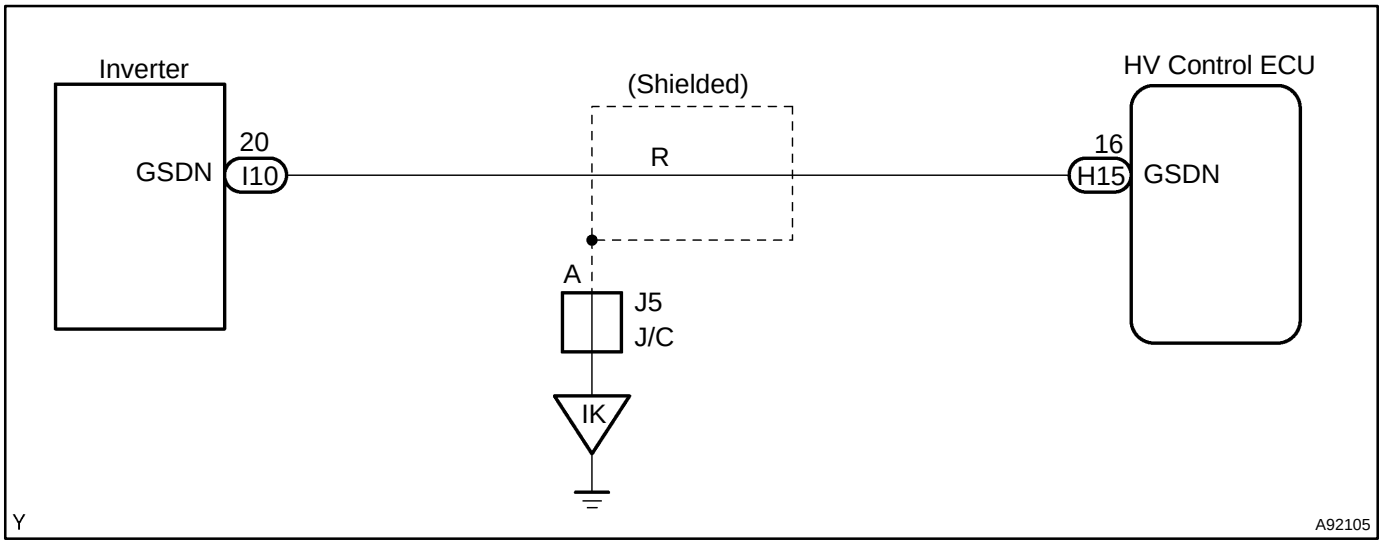
TYPICAL MALFUNCTION THRESHOLDS

Generator gate shutdown signal circuit	Open or short

COMPONENT OPERATING RANGE

Generator inverter	DTC P0A7A (INF 342/343/519) is not detected

WIRING DIAGRAM



INSPECTION PROCEDURE

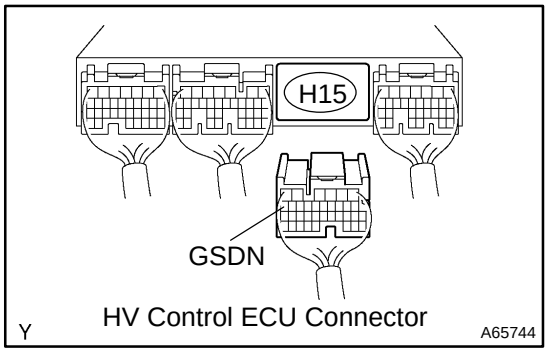
CAUTION:

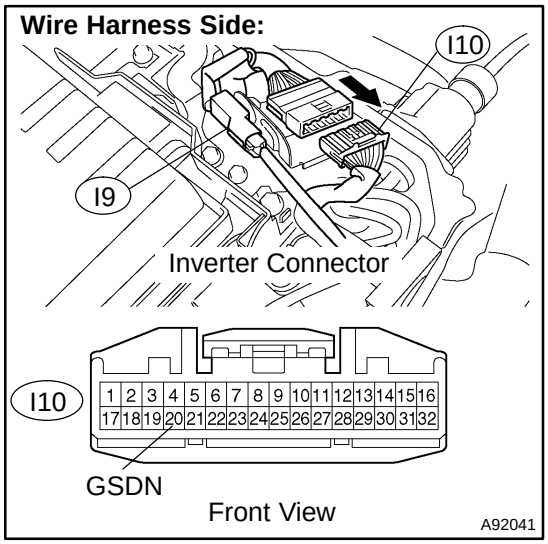
- **Before inspecting the high–voltage system, take safety precautions to prevent electrical shocks, such as wearing insulated gloves and removing the service plug grip. After removing the service plug grip, put it in your pocket to prevent other technicians from reconnecting it while you are servicing 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	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) Disconnect the H15 HV control ECU connector.
(d) Remove the inverter cover (see page 21–23).
(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 terminal of the HV control ECU connector and body ground.

Standard:

Tester Connection	Specified Condition
GSDN (H15–16) – Body ground	Below 1 V

(h) Turn the power switch OFF.
(i) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
GSDN (H15–16) – GSDN (I10–20)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
GSDN (H15–16) or GSDN (I10–20) – 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

REPLACE W/CONVERTER INVERTER ASSY (See page 21–23)