DTC	P0A4B/253	GENERATOR POSITION SENSOR CIRCUIT

DTC	P0A4C/513	GENERATOR POSITION SENSOR CIRCUIT RANGE/PERFORMANCE

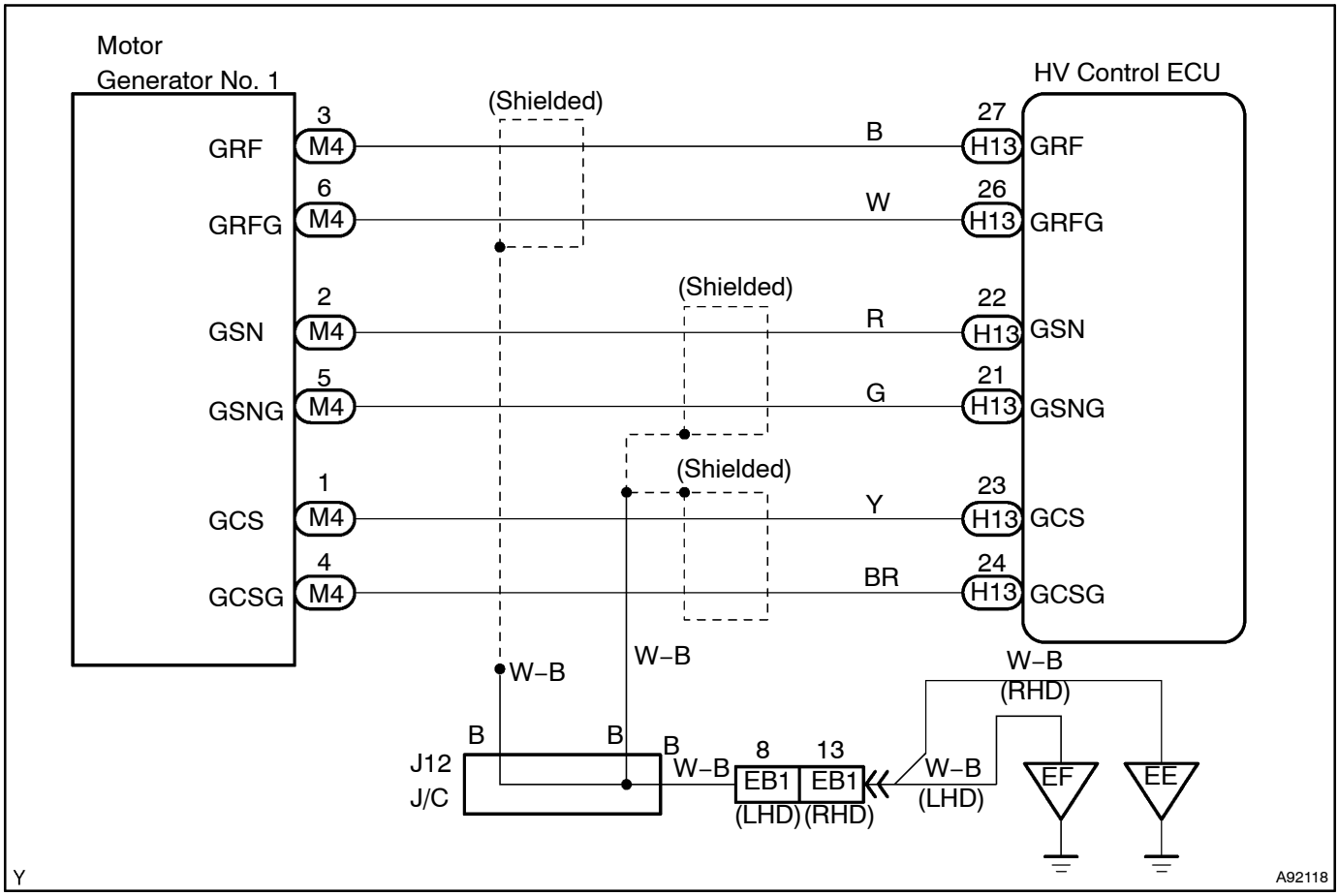
DTC	P0A4D/255	GENERATOR POSITION SENSOR CIRCUIT LOW

CIRCUIT DESCRIPTION

The generator resolver detects the position of the magnetic poles, which are indispensable for ensuring the highly efficient control of the MG1 and MG2. The construction of the generator resolver and how it is connected to the HV control ECU are the same as those of the motor resolver (see the circuit description on page 05–349).

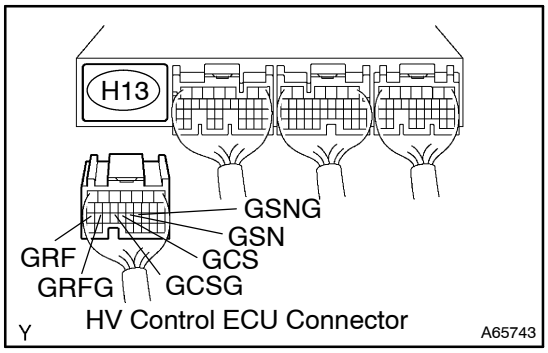
DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0A4B	253	Interphase short in generator resolver circuit	• Wire harness or connector • Hybrid vehicle generator • HV control ECU
P0A4C	513	Generator resolver output is out of normal range	• Wire harness or connector • Hybrid vehicle generator • HV control ECU
P0A4D	255	Open or short in generator resolver circuit	• Wire harness or connector • Hybrid vehicle generator • HV control ECU

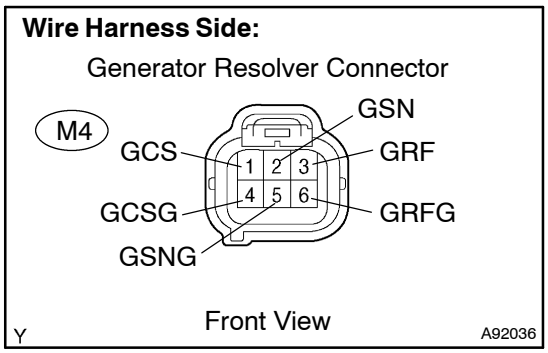
WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR(HYBRID VEHICLE CONTROL ECU – GENERATOR RESOLVER)





(a) Disconnect the H13 HV control ECU connector.
(b) Disconnect the M4 generator resolver connector.
(c) Turn the power switch ON (IG).
(d) Measure the voltage between the terminals of the HV control ECU connector and body ground.

Standard:

Tester Connection	Specified Condition
GRF (H13–27) – Body ground	Below 1 V
GRFG (H13–26) – Body ground	Below 1 V
GSN (H13–22) – Body ground	Below 1 V
GSNG (H13–21) – Body ground	Below 1 V
GCS (H13–23) – Body ground	Below 1 V
GCSG (H13–24) – Body ground	Below 1 V

(e) Turn the power switch OFF.

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

Standard (Check for open):

Tester Connection	Specified Condition
GRF (H13–27) – GRF (M4–3)	Below 1 Ω
GRFG (H13–26) – GRFG (M4–6)	Below 1 Ω
GSN (H13–22) – GSN (M4–2)	Below 1 Ω
GSNG (H13–21) – GSNG (M4–5)	Below 1 Ω
GCS (H13–23) – GCS (M4–1)	Below 1 Ω
GCSG (H13–24) – GCSG (M4–4)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
GRF (H13–27) or GRF (M4–3) – Body ground	10 kΩ or higher
GRFG (H13–26) or GRFG (M4–6) – Body ground	10 kΩ or higher
GSN (H13–22) or GSN (M4–2) – Body ground	10 kΩ or higher
GSNG (H13–21) or GSNG (M4–5) – Body ground	10 kΩ or higher
GCS (H13–23) or GCS (M4–1) – Body ground	10 kΩ or higher
GCSG (H13–24) or GCSG (M4–4) – Body ground	10 kΩ or higher

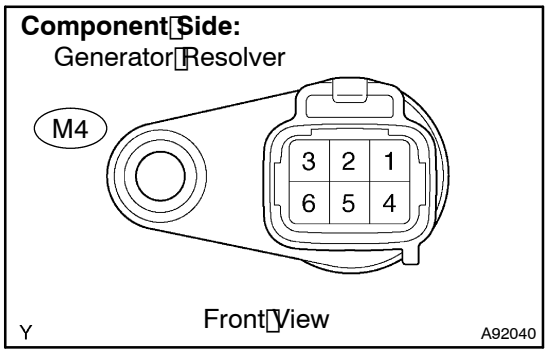
(g) Reconnect the generator resolver connector.

(h) Reconnect the HV control ECU connector.

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

OK

2 INSPECT GENERATOR RESOLVER



(a) Measure the resistance between the terminals of the generator resolver.

Standard:

Tester Connection	Specified Condition
GCS (M4–1) – GCSG (M4–4)	12.6 to 16.8 Ω
GSN (M4–2) – GSNG (M4–5)	12.6 to 16.8 Ω
GRF (M4–3) – GRFG (M4–6)	7.65 to 10.2 Ω
Each terminal listed above – Transaxle housing	10 kΩ or higher

NG → **REPLACE HYBRID VEHICLE GENERATOR ASSY**

OK

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