DTC P0670:00 [SKYACTIV-D 2.2]

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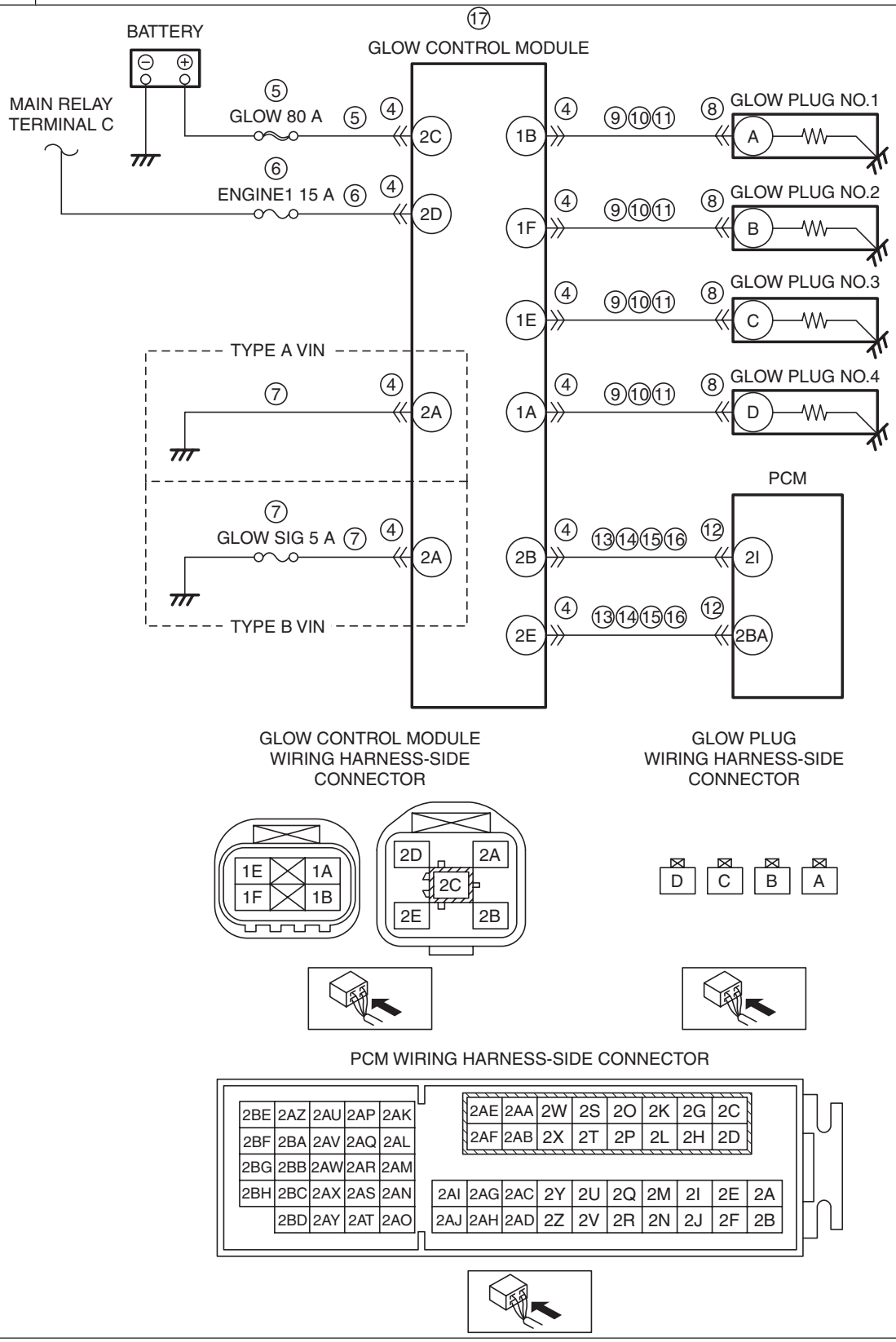
Caution

- **Vehicle specifications differ depending on the vehicle identification number (VIN).**
  - **— Type A VIN:**
    JM0 KE**** 100001—**
    JM6 KE**** 100001—**
    JM8 KE**** 100001—**
    JMZ KE**** 100001—**
  - **— Type B VIN:**
    JM0 KE**** 200001—**
    JM6 KE**** 200001—**
    JM8 KE**** 200001—**
    JMZ KE**** 200001—**

DTC P0670:00	Glow control module control circuit problem
DETECTION CONDITION	• When the following conditions are met, the glow control module circuit malfunctions for a continuous **5 s**: **MONITORING CONDITIONS** — Battery voltage: **8—20 V** — Detects that the output duty value of the glow plug is **10 to 90 %** for **1 s or more**. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Inhibits engine-stop by operating the i-stop function.

DTC P0670:00	Glow control module control circuit problem
POSSIBLE CAUSE	• Glow control module connector or terminals malfunction • Short to ground or open circuit in glow control module power supply circuit — Short to ground in wiring harness between GLOW 80 A fuse and glow control module terminal 2C — GLOW 80 A fuse malfunction — Open circuit in wiring harness between battery positive terminal and glow control module terminal 2C • Short to ground or open circuit in glow control module power supply circuit — Short to ground in wiring harness between ENGINE1 15 A fuse and glow control module terminal 2D — ENGINE1 15 A fuse malfunction — Open circuit in wiring harness between main relay terminal C and glow control module terminal 2D • Open circuit in wiring harness between glow control module terminal 2A and body ground — GLOW SIG 5 A fuse malfunction (Type B VIN) • Glow plug connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Glow control module terminal 1B—Glow plug terminal A — Glow control module terminal 1F—Glow plug terminal B — Glow control module terminal 1E—Glow plug terminal C — Glow control module terminal 1A—Glow plug terminal D • Short to power supply in wiring harness between the following terminals: — Glow control module terminal 1B—Glow plug terminal A — Glow control module terminal 1F—Glow plug terminal B — Glow control module terminal 1E—Glow plug terminal C — Glow control module terminal 1A—Glow plug terminal D • Glow plug circuits are shorted to each other • PCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Glow control module terminal 2B—PCM terminal 2I — Glow control module terminal 2E—PCM terminal 2BA • Short to power supply in wiring harness between the following terminals: — Glow control module terminal 2B—PCM terminal 2I — Glow control module terminal 2E—PCM terminal 2BA • Glow control module circuits are shorted to each other • Open circuit in wiring harness between the following terminals: — Glow control module terminal 2B—PCM terminal 2I — Glow control module terminal 2E—PCM terminal 2BA • Glow control module temperature is too high (**more than 125 °C {257 °F}**) • Glow control module malfunction • PCM malfunction

DTC P0670:00	Glow control module control circuit problem



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.

STEP	INSPECTION		ACTION
2	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**VERIFY RELATED PENDING CODE AND/OR DTC** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
4	**INSPECT GLOW CONTROL MODULE CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the glow control module connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 18.
		No	Go to the next step.
5	**INSPECT GLOW CONTROL MODULE POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the glow control module connector is disconnected. • Measure the voltage at the glow control module terminal 2C (wiring harness-side). • Is the voltage **B+**?	Yes	Go to the next step.
		No	Inspect the GLOW 80 A fuse. • If the fuse is blown: — Repair or replace the wiring harness for a possible short to ground. — Replace the fuse. • If the fuse is deteriorated: — Replace the fuse. • If the fuse is normal: — Repair or replace the wiring harness for a possible open circuit. Go to Step 18.
6	**INSPECT GLOW CONTROL MODULE POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the glow control module connector is disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the glow control module terminal 2D (wiring harness-side). • Is the voltage **B+**?	Yes	Go to the next step.
		No	Inspect the ENGINE1 15 A fuse. • If the fuse is blown: — Repair or replace the wiring harness for a possible short to ground. — Replace the fuse. • If the fuse is deteriorated: — Replace the fuse. • If the fuse is normal: — Repair or replace the wiring harness for a possible open circuit. Go to Step 18.
7	**INSPECT GLOW CONTROL MODULE GROUND CIRCUIT FOR OPEN CIRCUIT** • Verify that the glow control module connector is disconnected. • Switch the ignition off. • Inspect for continuity between glow control module terminal 2A (wiring harness-side) and body ground. • Is there continuity?	Yes	Go to the next step.
		No	Type A VIN: • Repair or replace the wiring harness for a possible open circuit, then go to Step 18. Type B VIN: • Inspect the GLOW SIG 5 A fuse. — If the fuse is burnt out or deteriorated: • Replace the fuse. — If the fuse is normal: • Repair or replace the wiring harness for a possible open circuit. • Go to Step 18.
8	**INSPECT GLOW PLUG CONNECTOR CONDITION** • Disconnect the glow plug connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 18.
		No	Go to the next step.

STEP	INSPECTION		ACTION
9	**INSPECT GLOW PLUG CIRCUIT FOR SHORT TO GROUND** • Verify that the glow control module and glow plug connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Glow plug terminal A — Glow plug terminal B — Glow plug terminal C — Glow plug terminal D • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to ground, then go to Step 18.
		No	Go to the next step.
10	**INSPECT GLOW PLUG CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the glow control module and glow plug connectors are disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the following terminals (wiring harness-side): — Glow plug terminal A — Glow plug terminal B — Glow plug terminal C — Glow plug terminal D • Is the voltage **0 V**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 18.
11	**INSPECT GLOW PLUG CIRCUITS FOR SHORT TO EACH OTHER** • Verify that the glow control module and glow plug connectors are disconnected. • Switch the ignition off. • Inspect for continuity between glow plug terminals A, B, C and D (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to each other, then go to Step 18.
		No	Go to the next step.
12	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 18.
		No	Go to the next step.
13	**INSPECT GLOW CONTROL MODULE CIRCUIT FOR SHORT TO GROUND** • Verify that the glow control module and glow plug and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Glow control module terminal 2B — Glow control module terminal 2E • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to ground, then go to Step 18.
		No	Go to the next step.
14	**INSPECT GLOW CONTROL MODULE CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the glow control module and glow plug and PCM connectors are disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the following terminals (wiring harness-side): — Glow control module terminal 2B — Glow control module terminal 2E • Is the voltage **0 V**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 18.
15	**INSPECT GLOW CONTROL MODULE CIRCUITS FOR SHORT TO EACH OTHER** • Verify that the glow control module and glow plug and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between glow control module terminals 2B and 2E (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to each other, then go to Step 18.
		No	Go to the next step.

STEP	INSPECTION		ACTION
16	**INSPECT GLOW CONTROL MODULE CIRCUIT FOR OPEN CIRCUIT** • Verify that the glow control module and glow plug and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Glow control module terminal 2B—PCM terminal 2I — Glow control module terminal 2E—PCM terminal 2BA • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 18.
17	**INSPECT GLOW CONTROL MODULE** • Inspect the glow control module. (See GLOW PLUG CONTROL MODULE INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the glow control module, then go to the next step. (See GLOW PLUG CONTROL MODULE REMOVAL/ INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
18	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Perform the DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
19	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.