

DTC B10E7:16 [START STOP UNIT]

id0902p6020200

System malfunction location	IG1 relay circuit malfunction
Detection condition	<ul style="list-style-type: none"> With the ignition switched ON (engine off or on), the start stop unit detects IG1 monitor voltage of less than 2.5 V for 1 s or more.
Fail-safe	—
Possible cause	<ul style="list-style-type: none"> IG1 relay malfunction IG1 relay power supply circuit malfunction <ul style="list-style-type: none"> Short to ground in wiring harness between MAIN 200 A fuse and IG1 relay terminal D MAIN 200 A fuse malfunction Open circuit in wiring harness between battery positive terminal and IG1 relay terminal D Start stop unit connector or terminal malfunction Start stop unit power supply circuit (IG1) malfunction <ul style="list-style-type: none"> Short to ground in wiring harness between IG1 relay terminal C and start stop unit terminal 1B C/U IG1 15 A fuse malfunction Open circuit in wiring harness between IG1 relay terminal C and start stop unit terminal 1B Start stop unit malfunction

Diagnostic Procedure

Step	Inspection	Action
1	INSPECT IG1 RELAY FOR MALFUNCTION <ul style="list-style-type: none"> Switch the ignition to off. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) Remove the IG1 relay. (See RELAY LOCATION.) Inspect the IG1 relay. (See RELAY INSPECTION.) Is the IG1 relay normal? 	<div>Yes</div> Go to the next step. <div>No</div> Replace the IG1 relay, then go to Step 5. (See RELAY LOCATION.)

Step	Inspection	Action
2	INSPECT IG1 RELAY POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND <ul style="list-style-type: none"> • Verify that the IG1 relay is removed. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off or on). • Measure the voltage at IG1 relay terminal D (vehicle wiring harness side). • Is the voltage B+? 	Yes Go to the next step.
		No Inspect the MAIN 200 A fuse. <ul style="list-style-type: none"> • If a fuse is burnt out: <ul style="list-style-type: none"> — Repair or replace the wiring harness which is shorted to ground. — Replace the fuse. • If a fuse is damaged: <ul style="list-style-type: none"> — Replace the fuse. • If the fuse is normal: <ul style="list-style-type: none"> — Repair or replace the wiring harness which has an open circuit. Go to Step 5.
3	INSPECT START STOP UNIT CONNECTOR CONDITION <ul style="list-style-type: none"> • Switch the ignition to off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the start stop unit connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal? 	Yes Go to the next step.
		No Repair or replace the connector, then go to Step 5.
4	INSPECT START STOP UNIT POWER SUPPLY CIRCUIT (IG1) FOR OPEN CIRCUIT OR SHORT TO GROUND <ul style="list-style-type: none"> • Verify that the start stop unit connector is disconnected. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off or on). • Measure the voltage at IG1 relay terminal C (vehicle wiring harness side). • Is the voltage B+? 	Yes Go to the next step.
		No Inspect the C/U IG1 15 A fuse. <ul style="list-style-type: none"> • If a fuse is burnt out: <ul style="list-style-type: none"> — Repair or replace the wiring harness which is shorted to ground. — Replace the fuse. • If a fuse is damaged: <ul style="list-style-type: none"> — Replace the fuse. • If the fuse is normal: <ul style="list-style-type: none"> — Repair or replace the wiring harness which has an open circuit. Go to the next step.

Step	Inspection	Action
5	VERIFY THAT REPAIRS HAVE BEEN COMPLETED <ul style="list-style-type: none"> • Reconnect all the disconnected connectors. • Reconnect the disconnected negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Clear DTC for the start stop unit using the M-MDS. (See CLEARING DTC [START STOP UNIT].) • Switch the ignition ON (engine off or on) and wait for 1 s or more. • Perform the DTC inspection for the start stop unit using the M-MDS. (See DTC INSPECTION [START STOP UNIT].) • Is the DTC B10E7:16 displayed? 	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the start stop unit, then go to the next step. (See START STOP UNIT REMOVAL/INSTALLATION.)
		No Go to the next step.
6	VERIFY IF OTHER DTCs DISPLAYED <ul style="list-style-type: none"> • Are any other DTCs displayed? 	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [START STOP UNIT].)
		No DTC troubleshooting completed.