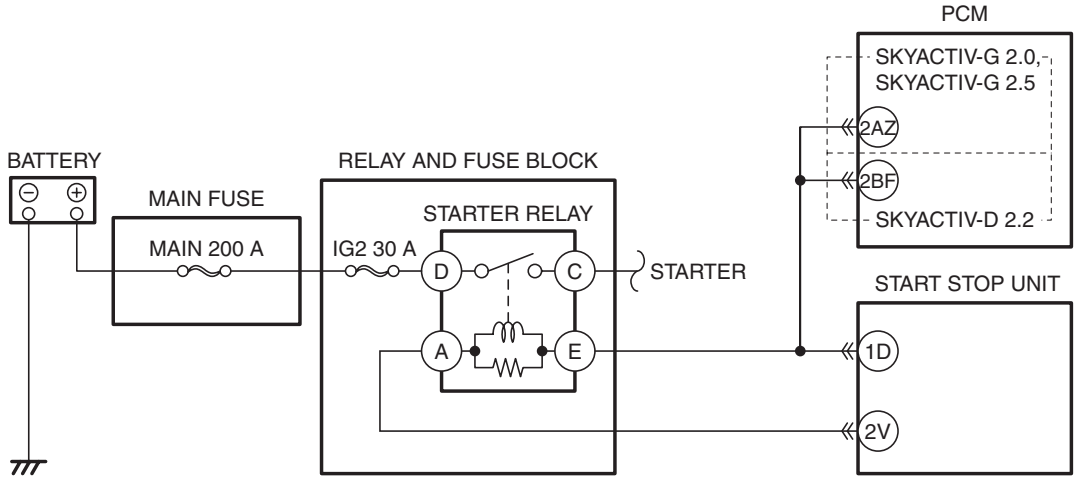
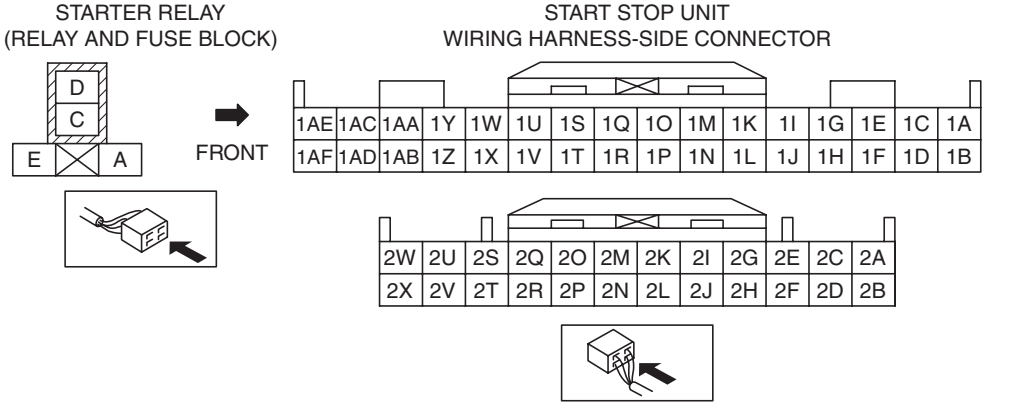
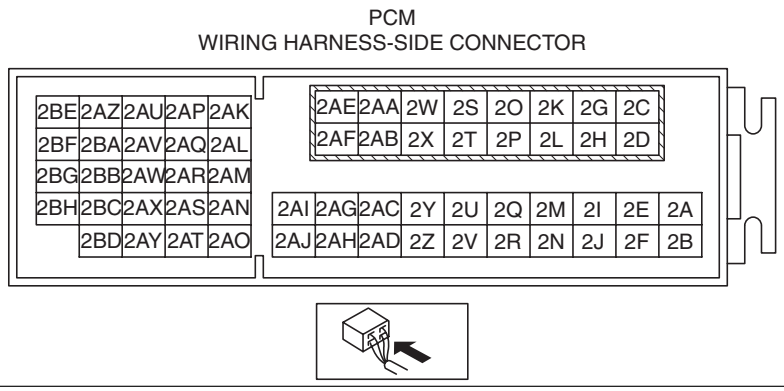
DTC P0615:11 [START STOP UNIT]

id0902p6022000

System malfunction location	**Starter relay circuit malfunction**
Detection condition	• The start stop unit detects starter relay monitor circuit voltage of **less than 2.2 V** for **1 s or more** with the ignition switched off.
Fail-safe	—
Possible cause	• DTCs are stored in the PCM • Starter relay malfunction • Start stop unit connector or terminal malfunction • PCM connector malfunction • Short to ground in wiring harness between the following terminals: — Starter relay terminal E—Start stop unit terminal 1D — Start stop unit terminal 1D—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — Start stop unit terminal 1D—PCM terminal 2BF (SKYACTIV-D 2.2) — Starter relay terminal A—Start stop unit terminal 2V • Start stop unit malfunction







Diagnostic Procedure

Step	Inspection		Action
1	**VERIFY PCM DTCs** • Perform the DTC inspection for the PCM using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Is the DTC displayed?	Yes	Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
2	**INSPECT STARTER RELAY FOR MALFUNCTION** • Switch the ignition to off. • Disconnect the negative battery cable. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Remove the starter relay. (See RELAY LOCATION.) • Inspect the starter relay. (See RELAY INSPECTION.) • Is the starter relay normal?	Yes	Go to the next step.
		No	Replace the starter relay, then go to Step 6. (See RELAY LOCATION.)
3	**INSPECT START STOP UNIT CONNECTOR CONDITION** • 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 6.
4	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM 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 6.
5	**INSPECT STARTER RELAY CIRCUIT FOR SHORT TO GROUND** • Verify that the starter relay is removed. • Verify that the start stop unit and PCM connectors are disconnected. • Inspect for continuity between the following terminals (vehicle wiring harness side) and body ground. — Starter relay terminal E — Starter relay terminal A • Is there continuity?	Yes	Repair or replace the wiring harness which has a short to ground, then go to the next step.
		No	Go to the next step.

Step	Inspection		Action
6	**VERIFY THAT REPAIRS HAVE BEEN COMPLETED** • Reconnect all the disconnected connectors. • Reconnect the disconnected negative battery cable. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY INSPECTION [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 to off 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 DTC P0615:11 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.
7	**VERIFY IF OTHER DTCs DISPLAYED** • 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.