DTC P1380:00 [SKYACTIV-G 2.0]

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DTC P1380:00	Electric variable valve timing control circuit problem
DETECTION CONDITION	• A malfunction is detected in the results of the on-board diagnostic test received from electric variable valve timing driver. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light does not illuminate. • FREEZE FRAME DATA (Mode 2)/Snapshot data is not available. • The DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Stops activation of the electric variable valve timing driver.
POSSIBLE CAUSE	• Electric variable valve timing motor/driver connectors or terminals malfunction • Short to ground in wiring harness between electric variable valve timing motor/driver terminal 1A and PCM terminal 1AE • PCM connector or terminals malfunction • Short to power supply in wiring harness between electric variable valve timing motor/driver terminal 1A and PCM terminal 1AE • Open circuit in wiring harness between electric variable valve timing motor/driver terminal 1A and PCM terminal 1AE • Electric variable valve timing driver malfunction • Electric variable valve timing motor malfunction • PCM malfunction

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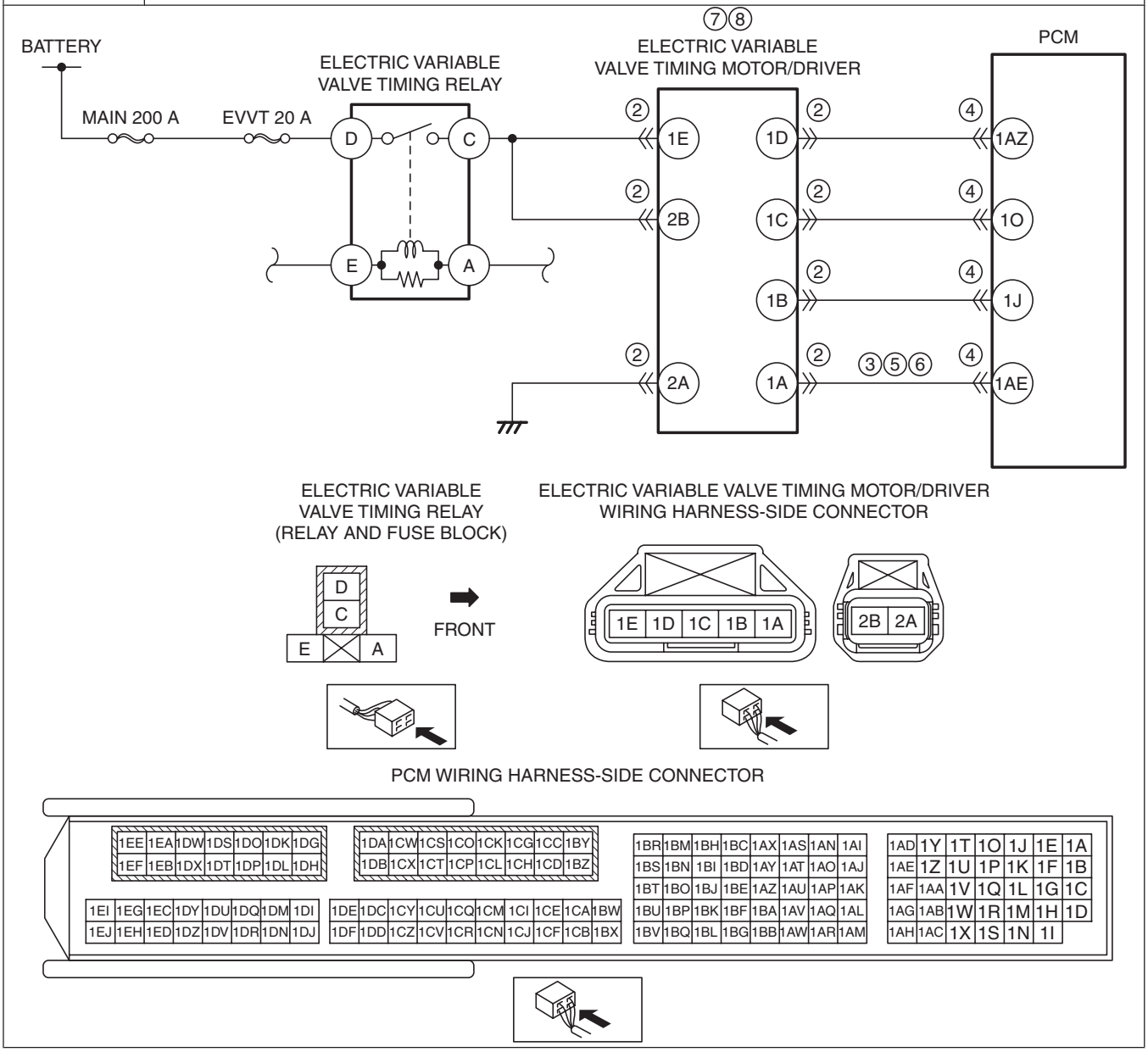

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**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.
2	**INSPECT ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the electric variable valve timing motor/driver 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 9.
		No	Go to the next step.

STEP	INSPECTION		ACTION
3	**INSPECT ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER SIGNAL CIRCUIT FOR SHORT TO GROUND** • Verify that the electric variable valve timing motor/driver connector is disconnected. • Inspect for continuity between electric variable valve timing motor/driver terminal 1A (wiring harness-side) and body ground. • Is there continuity?	Yes	If the short to ground circuit could be detected in the wiring harness: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected in the wiring harness: • Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) Go to Step 9.
		No	Go to the next step.
4	**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 9.
		No	Go to the next step.
5	**INSPECT ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the electric variable valve timing motor/driver and PCM connectors are disconnected. • Switch the ignition ON (engine off or on). • Measure the voltage at the electric variable valve timing motor/driver terminal 1A (wiring harness-side). • 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 9.
6	**INSPECT ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Verify that the electric variable valve timing motor/driver and PCM connectors are disconnected. • Switch the ignition to off. • Inspect for continuity between electric variable valve timing motor/driver terminal 1A (wiring harness-side) and PCM terminal 1AE (wiring harness-side). • 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 9.
7	**INSPECT ELECTRIC VARIABLE VALVE TIMING DRIVER** • Inspect the electric variable valve timing driver. (See ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the electric variable valve timing motor/driver, then go to Step 9. (See ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
8	**INSPECT ELECTRIC VARIABLE VALVE TIMING MOTOR** • Inspect the electric variable valve timing motor. (See ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the electric variable valve timing motor/driver, then go to the next step. (See ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
9	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Perform the KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-G 2.0].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) Go to the next step.
		No	Go to the next step.

STEP	INSPECTION		ACTION
10	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0].)
		No	DTC troubleshooting completed.