DTC P2112:00 [SKYACTIV-G 2.0]

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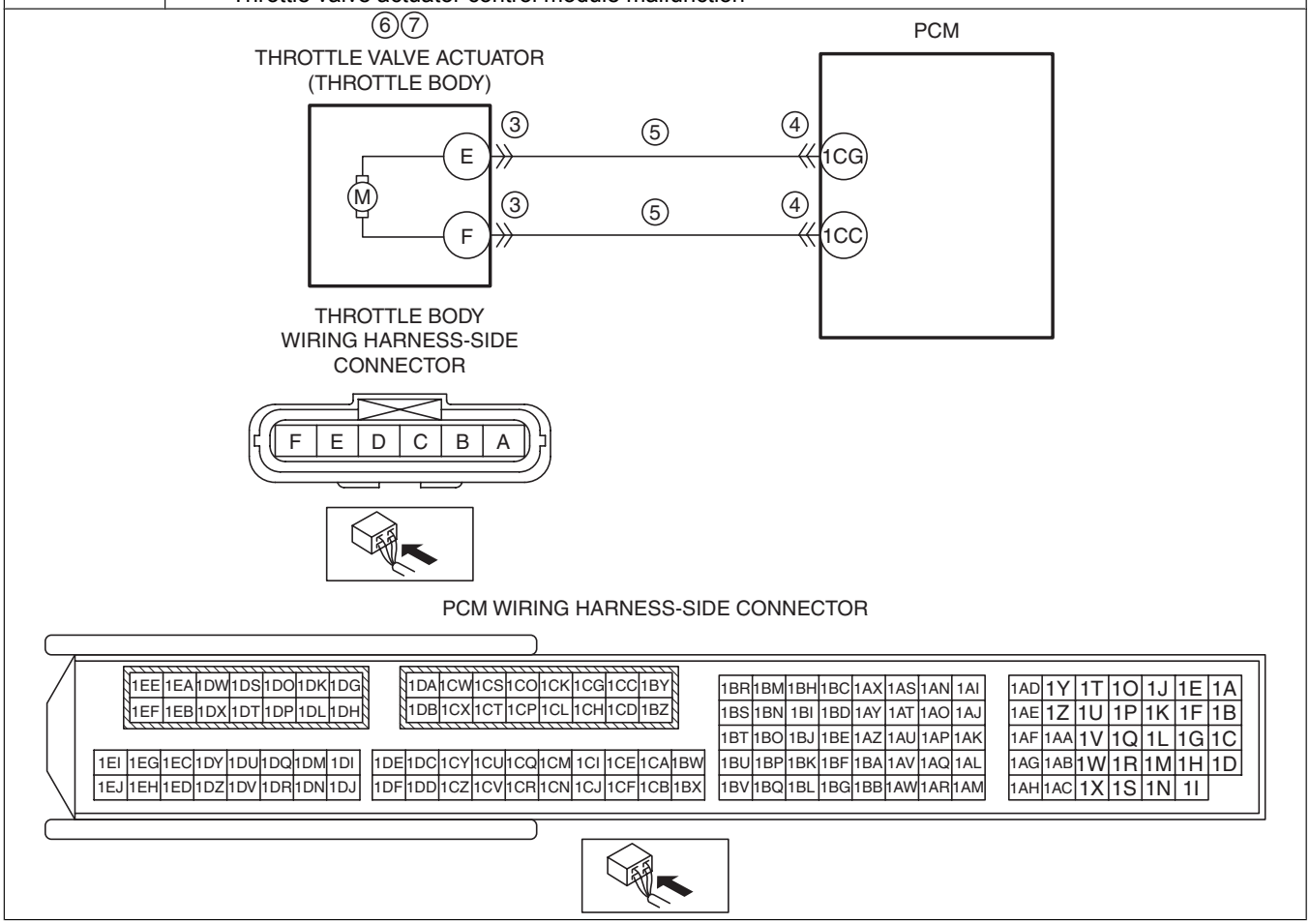
DTC P2112:00	**Throttle valve actuator motor current range/performance problem**
DETECTION CONDITION	• If the duty ratio is **95 % or more**, the PCM determines that there is a throttle valve actuator control system range/performance problem. **Diagnostic support note** • This is a continuous monitor (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. • The DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Restricts the upper limit of the engine speed. • Stops the drive-by-wire control (throttle valve is open at **approx. 8 °** by return spring force).
POSSIBLE CAUSE	• Throttle body connector or terminals malfunction • PCM connector or terminals malfunction • Open circuit in wiring harness between the following terminals: — Throttle body terminal E—PCM terminal 1CG — Throttle body terminal F—PCM terminal 1CC • Throttle valve actuator malfunction • Throttle valve malfunction • PCM malfunction — Throttle valve actuator control module malfunction



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	**INSPECT THROTTLE BODY CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the throttle body 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 8.
		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 8.
		No	Go to the next step.
5	**INSPECT THROTTLE VALVE ACTUATOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the throttle body and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Throttle body terminal E—PCM terminal 1CG — Throttle body terminal F—PCM terminal 1CC • 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 8.
6	**INSPECT THROTTLE VALVE** • Inspect the throttle valve. (See THROTTLE BODY INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the throttle body, then go to Step 8. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
7	**INSPECT THROTTLE VALVE ACTUATOR** • Inspect the throttle valve actuator. (See THROTTLE BODY INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the throttle body, then go to the next step. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
8	**VERIFY DTC TROUBLESHOOTING COMPLETED** • 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	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
9	**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.