DTC P2090:00 [SKYACTIV-G 2.0]

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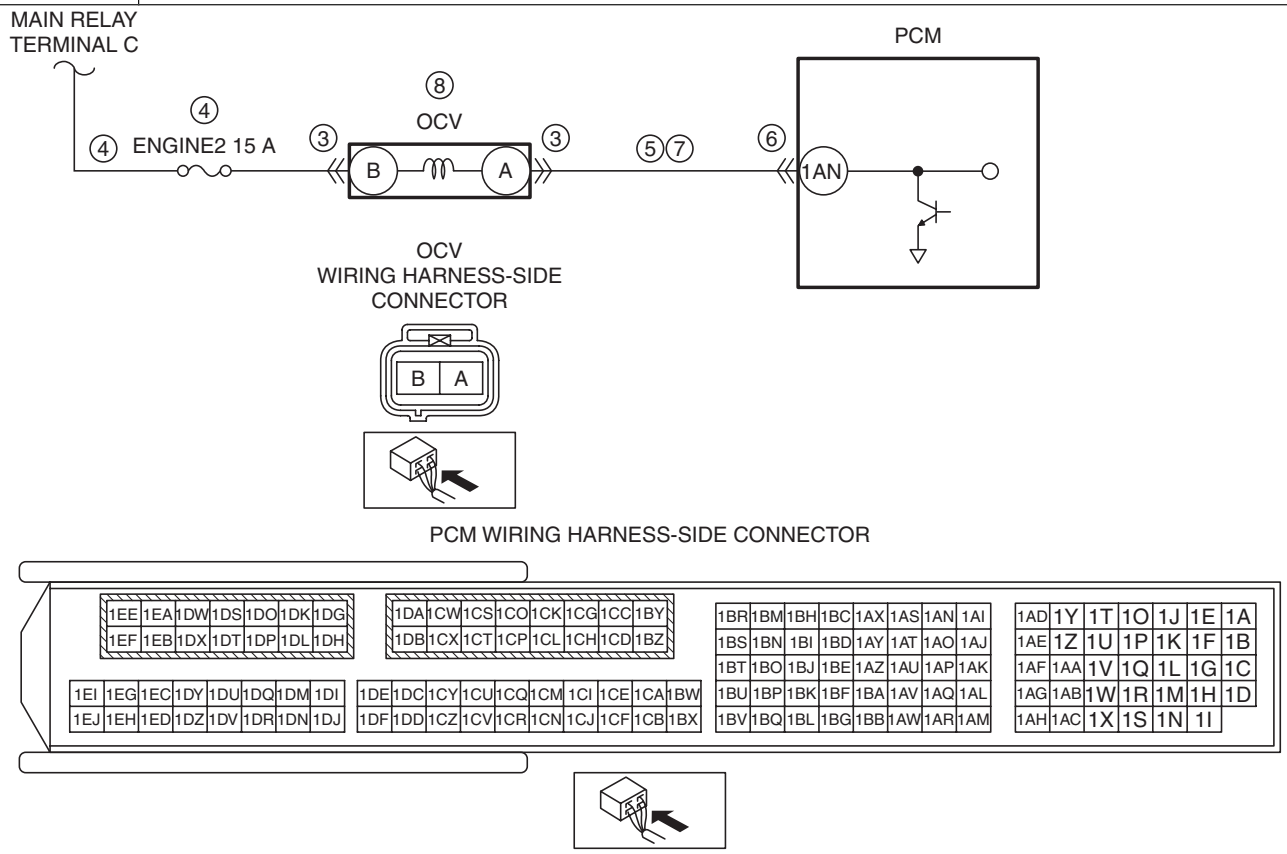
DTC P2090:00	OCV circuit low input
DETECTION CONDITION	• The PCM monitors the OCV voltage. If the PCM detects the OCV control voltage (calculated from the OCV) is below the specification voltage (calculated from the battery positive voltage), the PCM determines that the OCV circuit has a malfunction. **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	• Performs the exhaust variable valve timing control with a maximum cam retard request.
POSSIBLE CAUSE	• OCV connector or terminals malfunction • Short to ground or open circuit in OCV power supply circuit — Short to ground in wiring harness between ENGINE2 15 A fuse and OCV terminal B — ENGINE2 15 A fuse malfunction — Open circuit in wiring harness between main relay terminal C and OCV terminal B • Short to ground in wiring harness between OCV terminal A and PCM terminal 1AN • PCM connector or terminals malfunction • Open circuit in wiring harness between OCV terminal A and PCM terminal 1AN • OCV malfunction • PCM 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 OCV CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the OCV 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.
4	**INSPECT OCV POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the OCV connector is disconnected. • Switch the ignition ON (engine off or on). • Measure the voltage at the OCV terminal B (wiring harness-side). • Is the voltage **B+**?	Yes	Go to the next step.
		No	Inspect the ENGINE2 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 9.
5	**INSPECT OCV SIGNAL CIRCUIT FOR SHORT TO GROUND** • Verify that the OCV connector is disconnected. • Switch the ignition to off. • Inspect for continuity between OCV terminal A (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.
6	**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.
7	**INSPECT OCV SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Verify that the OCV and PCM connectors are disconnected. • Inspect for continuity between OCV terminal A (wiring harness-side) and PCM terminal 1AN (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.
8	**INSPECT OCV** • Inspect the OCV. (See OIL CONTROL VALVE (OCV) INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the OCV, then go to the next step. (See OIL CONTROL VALVE (OCV) 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.