DTC P0091:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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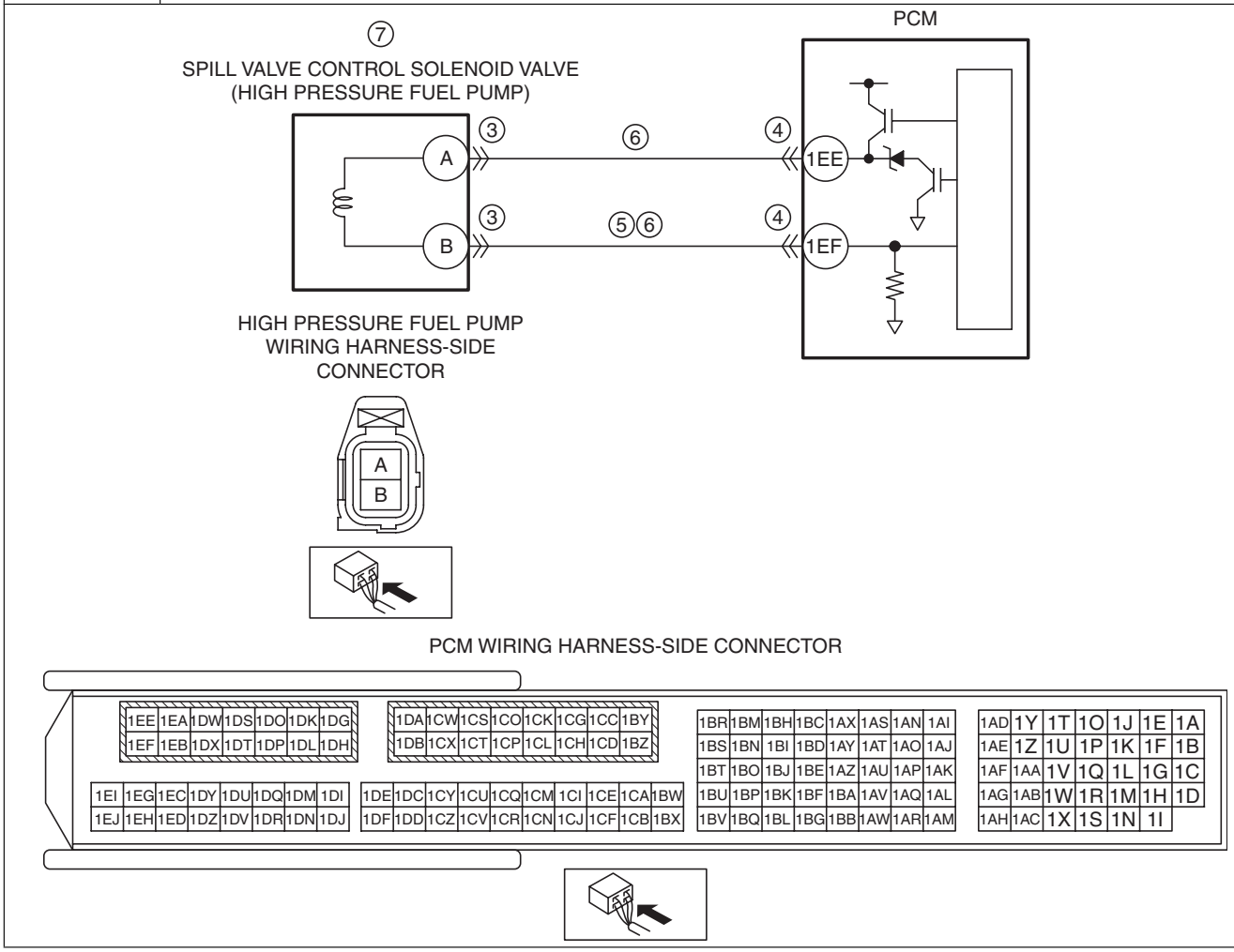
DTC P0091:00	Fuel pressure regulator control circuit low input
DETECTION CONDITION	• When the PCM turns the spill valve control solenoid valve off but the spill valve control solenoid valve control circuit voltage is low for **5 s**, the PCM determines that the spill valve control solenoid valve control circuit has a malfunction. **MONITORING CONDITIONS** — The following conditions are met: • Engine speed: **5,700 rpm or less** • Battery voltage: **10.5 V or more** **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. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Stops high pressure fuel pump control • Limits intake air amount
POSSIBLE CAUSE	• High pressure fuel pump connector or terminals malfunction • PCM connector or terminals malfunction • Short to ground in wiring harness between high pressure fuel pump terminal B and PCM terminal 1EF • Open circuit in wiring harness between the following terminals: — High pressure fuel pump terminal A—PCM terminal 1EE — High pressure fuel pump terminal B—PCM terminal 1EF • Spill valve control solenoid valve (built-into high pressure fuel pump) 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.
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 HIGH PRESSURE FUEL PUMP CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the high pressure fuel pump 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 SPILL VALVE CONTROL SOLENOID VALVE CONTROL CIRCUIT FOR SHORT TO GROUND** • Verify that the high pressure fuel pump and PCM connectors are disconnected. • Inspect for continuity between high pressure fuel pump terminal B (wiring harness-side) and body ground. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to ground, then go to Step 8.
		No	Go to the next step.
6	**INSPECT SPILL VALVE CONTROL SOLENOID VALVE CIRCUIT FOR OPEN CIRCUIT** • Verify that the high pressure fuel pump and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — High pressure fuel pump terminal A—PCM terminal 1EE — High pressure fuel pump terminal B—PCM terminal 1EF • 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.
7	**INSPECT SPILL VALVE CONTROL SOLENOID VALVE** • Reconnect all disconnected connectors. • Inspect the spill valve control solenoid valve. (See HIGH PRESSURE FUEL PUMP INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the high pressure fuel pump, then go to the next step. (See HIGH PRESSURE FUEL PUMP REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
8	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Start the engine. • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • 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, SKYACTIV-G 2.5].) Go to the next step.
		No	Go to the next step.

STEP	INSPECTION		ACTION
9	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	DTC troubleshooting completed.