

DTC P0091:00	Fuel pressure regulator control circuit low input
DETECTION CONDITION	<ul style="list-style-type: none">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. <p>MONITORING CONDITIONS</p> <ul style="list-style-type: none">The following conditions are met:<ul style="list-style-type: none">Engine speed: 5,700 rpm or lessBattery voltage: 10.5 V or more <p>Diagnostic support note</p> <ul style="list-style-type: none">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	<ul style="list-style-type: none">Stops the high pressure fuel pump control.Limits the intake air amount.
POSSIBLE CAUSE	<ul style="list-style-type: none">High pressure fuel pump connector or terminals malfunctionShort to ground in wiring harness between high pressure fuel pump terminal B and PCM terminal 1EFPCM connector or terminals malfunctionOpen circuit in wiring harness between the following terminals:<ul style="list-style-type: none">High pressure fuel pump terminal A—PCM terminal 1EEHigh pressure fuel pump terminal B—PCM terminal 1EFSpill valve control solenoid valve (built-into high pressure fuel pump) malfunctionPCM malfunction

⑦

SPILL VALVE CONTROL SOLENOID VALVE
(HIGH PRESSURE FUEL PUMP)

A

B

③

③

④ ⑥

⑤

⑤

HIGH PRESSURE FUEL PUMP
WIRING HARNESS-SIDE
CONNECTOR

A

B

PCM WIRING HARNESS-SIDE CONNECTOR

1EE1EA1DW1DS1DO1DK1DG
1EF1EB1DX1DT1DP1DL1DH

1DA1CW1CS1CO1CK1CG1CC1BY
1DB1CX1CT1CP1CL1CH1CD1BZ

1EI1EG1EC1DY1DU1DQ1DM1DI
1EJ1EH1ED1DZ1DV1DR1DN1DJ

1DE1DC1CY1CU1CQ1CM1CI1CE1CA1BW
1DF1DD1CZ1CV1CR1CN1CJ1CF1CB1BX

1BR1BM1BH1BC1AX1AS1AN1AI
1BS1BN1BI1BD1AY1AT1AO1AJ
1BT1BO1BJ1BE1AZ1AU1AP1AK
1BU1BP1BK1BF1BA1AV1AQ1AL
1BV1BQ1BL1BG1BB1AW1AR1AM

1AD1Y1T1O1J1E1A
1AE1Z1U1P1K1F1B
1AF1AA1V1Q1L1G1C
1AG1AB1W1R1M1H1D
1AH1AC1X1S1N1I

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Switch the ignition to 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 SPILL VALVE CONTROL SOLENOID VALVE CONTROL CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> Verify that the high pressure fuel pump connector is disconnected. Inspect for continuity between high pressure fuel pump terminal B (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 8.
		No	Go to the next step.
5	INSPECT PCM CONNECTOR CONDITION <ul style="list-style-type: none"> 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.
6	INSPECT SPILL VALVE CONTROL SOLENOID VALVE CIRCUIT FOR OPEN CIRCUIT <ul style="list-style-type: none"> Verify that the high pressure fuel pump and PCM connectors are disconnected. Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Reconnect all disconnected connectors. Inspect the spill valve control solenoid valve. (See HIGH PRESSURE FUEL PUMP INSPECTION [SKYACTIV-G 2.0].) 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].)
		No	Go to the next step.

STEP	INSPECTION	ACTION	
8	VERIFY DTC TROUBLESHOOTING COMPLETED <ul style="list-style-type: none"> • 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].) • Start the engine. • Perform the KOEO or 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.
9	VERIFY AFTER REPAIR PROCEDURE <ul style="list-style-type: none"> • 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.