

DTC P0089:00 [SKYACTIV-G 2.0]

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DTC P0089:00	Spill valve control solenoid valve control circuit range/performance problem
DETECTION CONDITION	<ul style="list-style-type: none">• The average fuel pressure on the high pressure side, measured by the fuel pressure sensor while the camshaft is rotating at the specified speed, exceeds the specified value. Diagnostic support note <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.• Restricts the upper limit of the engine speed.
POSSIBLE CAUSE	<ul style="list-style-type: none">• High pressure fuel pump connector or terminals malfunction• PCM connector or terminals malfunction• Fuel pressure sensor malfunction• High pressure fuel pump malfunction<ul style="list-style-type: none">— Spill valve control solenoid valve (built-into high pressure fuel pump) malfunction• High pressure fuel pipe clogging or damage• Fuel distributor malfunction• Fuel injector malfunction• PCM malfunction

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. <ul style="list-style-type: none">• 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 Replace the following parts because the part for the high pressure fuel is damaged. <ul style="list-style-type: none">• High pressure fuel pump (See HIGH PRESSURE FUEL PUMP REMOVAL/ INSTALLATION [SKYACTIV-G 2.0].)• High pressure fuel pipe• Fuel injector No.1 (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)• Fuel injector No.2• Fuel injector No.3• Fuel injector No.4• Fuel distributor Go to Step 9.
		No Go to the next step.

STEP	INSPECTION	ACTION	
4	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	Replace the following parts because the part for the high pressure fuel is damaged. <ul style="list-style-type: none"> • PCM connector and/or terminals • High pressure fuel pump (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • High pressure fuel pipe • Fuel injector No.1 (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • Fuel injector No.2 • Fuel injector No.3 • Fuel injector No.4 • Fuel distributor Go to Step 9.
		No	Go to the next step.
5	INSPECT FUEL PRESSURE SENSOR <ul style="list-style-type: none"> • Reconnect all disconnected connectors. • Inspect the fuel pressure sensor. (See FUEL PRESSURE SENSOR INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction? 	Yes	Replace the fuel distributor, then go to Step 9. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
6	INSPECT HIGH PRESSURE FUEL PUMP <ul style="list-style-type: none"> • Inspect the high pressure fuel pump. (See HIGH PRESSURE FUEL PUMP INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction? 	Yes	Replace the following parts because the part for the high pressure fuel is damaged. <ul style="list-style-type: none"> • High pressure fuel pump (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • High pressure fuel pipe • Fuel injector No.1 (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • Fuel injector No.2 • Fuel injector No.3 • Fuel injector No.4 • Fuel distributor Go to Step 9.
		No	Go to the next step.
7	INSPECT HIGH PRESSURE FUEL PIPE <ul style="list-style-type: none"> • Inspect the high pressure fuel pipe. (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • Is there clogging or damage in the high pressure fuel pipe? 	Yes	Replace the following parts because the part for the high pressure fuel is damaged. <ul style="list-style-type: none"> • High pressure fuel pump (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • High pressure fuel pipe • Fuel injector No.1 (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) • Fuel injector No.2 • Fuel injector No.3 • Fuel injector No.4 • Fuel distributor Go to Step 9.
		No	Go to the next step.

STEP	INSPECTION	ACTION	
8	INSPECT FUEL INJECTOR <ul style="list-style-type: none"> Inspect the fuel injector. (See FUEL INJECTOR INSPECTION [SKYACTIV-G 2.0].) Is there any malfunction? 	Yes	Replace the following parts because the part for the high pressure fuel is damaged. <ul style="list-style-type: none"> High pressure fuel pump (See HIGH PRESSURE FUEL PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) High pressure fuel pipe Fuel injector No.1 (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) Fuel injector No.2 Fuel injector No.3 Fuel injector No.4 Fuel distributor Go to the next step.
		No	Replace the fuel distributor, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
9	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].) 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. <ul style="list-style-type: none"> 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.
10	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.