DTC P0087:00 [SKYACTIV-D 2.2]

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DTC P0087:00	Low pressure malfunction in common rail fuel pressure control system
DETECTION CONDITION	• After **6 s** have elapsed from the following conditions being met, the actual fuel pressure is lower than the target fuel pressure for a continuous specified period of time: **MONITORING CONDITIONS** — Amount of change in target fuel pressure value: within **3 MPa {31 kgf/cm^2, 435 psi}** — Fuel temperature: **-25—70 °C {-13—158 °F}** **Diagnostic support note** • This is an intermittent monitor (fuel system). • The check engine light illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available 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	• Increase the idle speed. • PCM restricts fuel pressure. (low pressure side) • Inhibits engine-stop by operating the i-stop function. • PCM restricts engine-transaxle integration control.
POSSIBLE CAUSE	• Fuel filter clogged • Fuel pressure relief valve malfunction • Suction control valve malfunction • Fuel pressure sensor malfunction • Fuel pipe perforation or breakage (improper connection) • Fuel leakage from fuel line or clogging • Supply pump malfunction • PCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/ snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (fuel system related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS 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	**VERIFY RELATED PENDING CODE AND/OR DTC** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
4	**INSPECT FUEL FILTER** • Inspect the fuel filter for clogging. (See FUEL FILTER INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 11. (See FUEL FILTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
5	**INSPECT FUEL PRESSURE RELIEF VALVE** • Inspect the fuel pressure relief valve. (See FUEL PRESSURE RELIEF VALVE INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the common rail, then go to Step 11. (See COMMON RAIL REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
6	**INSPECT SUCTION CONTROL VALVE** • Inspect the suction control valve. (See SUCTION CONTROL VALVE INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the suction control valve, then go to Step 11. (See SUCTION CONTROL VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
7	**INSPECT FUEL PRESSURE SENSOR** • Inspect the fuel pressure sensor. (See FUEL PRESSURE SENSOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the common rail, then go to Step 11. (See COMMON RAIL REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
8	**INSPECT FUEL PIPE** • Inspect the fuel pipe installation condition. (See FUEL SYSTEM LOCATION INDEX [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Install the fuel pipe properly, then go to Step 11.
		No	Go to the next step.
9	**INSPECT FOR FUEL LEAKAGE FROM FUEL LINE OR CLOGGING** • Inspect the following fuel line for fuel leakage or clogging. — Between supply pump and common rail — Between common rail and fuel injector • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 11.
		No	Go to the next step.
10	**INSPECT SUPPLY PUMP** • Inspect the supply pump. (See SUPPLY PUMP INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the supply pump, then go to the next step. (See SUPPLY PUMP REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
11	**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-D 2.2].) • Perform the Drive Mode Type A. (See OBD DRIVE MODE [SKYACTIV-D 2.2].) • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
12	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.