

**DTC P0A0F:00 [SKYACTIV-D 2.2]**

id0102s4950400

<b>DTC P0A0F:00</b>	<b>Engine failed to restart</b>
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"> <li>Any of following conditions occurs: <ul style="list-style-type: none"> <li>When the engine should restart after it is stopped by the i-stop control, it does not start even though it is cranked for <b>3 s or more</b>.</li> <li>When the engine should restart after it is stopped by the i-stop control, it does not cranked.</li> </ul> </li> </ul> <b>Diagnostic support note</b> <ul style="list-style-type: none"> <li>This is a continuous monitor (other).</li> <li>The check engine light does not illuminate.</li> <li>FREEZE FRAME DATA (Mode 2)/Snapshot data is not available.</li> <li>DTC is stored in the PCM memory.</li> </ul>
<b>FAIL-SAFE FUNCTION</b>	Not applicable
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"> <li>Related parts malfunction <ul style="list-style-type: none"> <li>Starter relay malfunction</li> <li>Battery malfunction</li> <li>Wiring harness malfunction between starter relay and PCM, or poor connector contact</li> <li>Starter malfunction</li> </ul> </li> <li>Common rail system malfunction</li> <li>Piston stop position malfunction during idling stop <ul style="list-style-type: none"> <li>CKP sensor signal malfunction</li> <li>Intake air system related malfunction (air suction, vacuum hose breakage)</li> <li>EGR control malfunction</li> <li>Engine starting system malfunction</li> </ul> </li> <li>Mechanical (engine) malfunction <ul style="list-style-type: none"> <li>Improper valve timing</li> <li>Improper operation of intake stroke EGR using double exhaust valve actuation system (IDEVA)</li> </ul> </li> <li>PCM malfunction</li> </ul>
<b>SYSTEM WIRING DIAGRAM</b>	Not applicable

**Diagnostic Procedure**

STEP	INSPECTION	ACTION
1	<b>VERIFY RELATED SERVICE INFORMATION AVAILABILITY</b> <ul style="list-style-type: none"> <li>Verify related Service Information availability.</li> <li>Is any related Service Information available?</li> </ul>	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.
2	<b>VERIFY RELATED PENDING CODE AND/OR DTC</b> <ul style="list-style-type: none"> <li>Switch the ignition off, then ON (engine off).</li> <li>Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].)</li> <li>Is the PENDING CODE/DTC P1260:00 also present?</li> </ul>	Yes Go to the applicable PENDING CODE or DTC inspection. (See DTC P1260:00 [SKYACTIV-D 2.2].)
		No Go to the next step.
3	<b>INSPECT FOR A MALFUNCTION RELATED INABILITY TO START ENGINE</b> <ul style="list-style-type: none"> <li>Start the engine.</li> <li>Does the engine start normally?</li> </ul>	Yes Go to the next step.
		No Perform the applicable symptom troubleshooting. (See NO.9 WILL NOT CRANK [SKYACTIV-D 2.2].) (See NO.10 HARD TO START/LONG CRANK/ERRATIC START/ERRATIC CRANK [SKYACTIV-D 2.2].)
4	<b>INSPECT COMMON RAIL SYSTEM OPERATION</b> <ul style="list-style-type: none"> <li>Inspect the common rail operation. (See COMMON RAIL INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is there any malfunction?</li> </ul>	Yes Repair or replace the malfunctioning part according to the inspection results, then go to Step 13. (See COMMON RAIL REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No Go to the next step.
5	<b>DETERMINE IF MALFUNCTION IS CAUSED BY ROUGH IDLING OR A PISTON-STOP POSITION CONTROL MALFUNCTION</b> <ul style="list-style-type: none"> <li>Start the engine and warm it up completely.</li> <li>Is the idle speed stabilized?</li> </ul>	Yes Go to the next step.
		No Go to Step 8.

STEP	INSPECTION		ACTION
6	<b>INSPECT CKP SENSOR SIGNAL</b> <ul style="list-style-type: none"> <li>• Verify the CKP sensor signal using the oscilloscope. (See PCM INSPECTION [SKYACTIV-D 2.2].)</li> <li>• Is there any malfunction?</li> </ul>	Yes	Go to the next step.
		No	Go to Step 8.
7	<b>INSPECT CKP SENSOR PULSE WHEEL</b> <ul style="list-style-type: none"> <li>• Visually inspect the CKP sensor pulse wheel.</li> <li>• Is there any damage or scratching on the CKP sensor pulse wheel?</li> </ul>	Yes	Replace the CKP sensor pulse wheel, then go to Step 13.
		No	Inspect the wiring harness between the following terminals: <ul style="list-style-type: none"> <li>• CKP sensor terminal A—PCM terminal 1J</li> <li>• CKP sensor terminal C—PCM terminal 1E</li> <li>• CKP sensor terminal B—PCM terminal 1F</li> </ul> — If there is any malfunction: <ul style="list-style-type: none"> <li>• Repair or replace the suspected wiring harness, then go to Step 13.</li> </ul> — If there is no malfunction: <ul style="list-style-type: none"> <li>• Replace the CKP sensor, then go to Step 13. (See CRANKSHAFT POSITION (CKP) SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</li> </ul>
8	<b>INSPECT VACUUM HOSE CONNECTION</b> <ul style="list-style-type: none"> <li>• Inspect the vacuum hose routine. (See INTAKE-AIR SYSTEM VACUUM HOSE ROUTING DIAGRAM [SKYACTIV-D 2.2].)</li> <li>• Are vacuum hoses routines properly?</li> </ul>	Yes	Go to the next step.
		No	Reconnect the vacuum hose, then go to Step 13. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
9	<b>INSPECT INTAKE-AIR SYSTEM FOR AIR SUCTION</b> <ul style="list-style-type: none"> <li>• Inspect for leakage in intake-air system.</li> <li>• Is there any leakage?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 13.
		No	Go to the next step.
10	<b>INSPECT EGR VALVE CONTROL SYSTEM OPERATION</b> <ul style="list-style-type: none"> <li>• Perform the EGR Valve Operation Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [SKYACTIV-D 2.2].)</li> <li>• Is there any malfunction?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 13.
		No	Go to the next step.
11	<b>VERIFY TIMING CHAIN INSTALLATION</b> <ul style="list-style-type: none"> <li>• Stop the engine.</li> <li>• Remove the timing chain. (See TIMING CHAIN REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</li> <li>• Is the camshaft timing mark at the correct point?</li> </ul>	Yes	Go to the next step.
		No	Reinstall the timing chain, then go to Step 13. (See TIMING CHAIN REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
12	<b>INSPECT IDEVA</b> <ul style="list-style-type: none"> <li>• Inspect the IDEVA. (See OIL CONTROL VALVE (OCV) INSPECTION [SKYACTIV-D 2.2].) (See HYDRAULIC LASH ADJUSTER (HLA) INSPECTION [SKYACTIV-D 2.2].)</li> <li>• Is there any malfunction?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to the next step. (See OIL CONTROL VALVE (OCV) REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) (See HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.

STEP	INSPECTION	ACTION	
13	<b>VERIFY DTC TROUBLESHOOTING COMPLETED</b> <ul style="list-style-type: none"> <li>Always reconnect all disconnected connectors.</li> <li>Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].)</li> <li>Start the engine and warm it up completely.</li> </ul> <p><b>Caution</b></p> <ul style="list-style-type: none"> <li>While performing this step, always operate the vehicle in a safe and lawful manner.</li> <li>When the M-MDS is used to observe monitor system status while driving, be sure to have another technician with you, or record the data in the M-MDS using the PID/DATA MONITOR AND RECORD capturing function and inspect later.</li> </ul> <ul style="list-style-type: none"> <li>Drive the vehicle under the FREEZE FRAME DATA (Mode 2)/snapshot data condition.</li> <li>Perform the DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].)</li> <li>Is the same DTC present?</li> </ul>	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> <li>If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</li> </ul> Go to the next step.
		No	Go to the next step.
14	<b>VERIFY AFTER REPAIR PROCEDURE</b> <ul style="list-style-type: none"> <li>Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].)</li> <li>Are any DTCs present?</li> </ul>	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.