

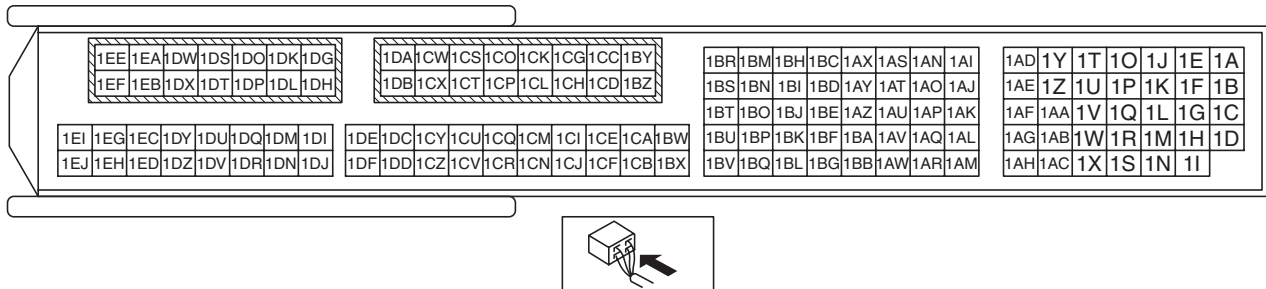
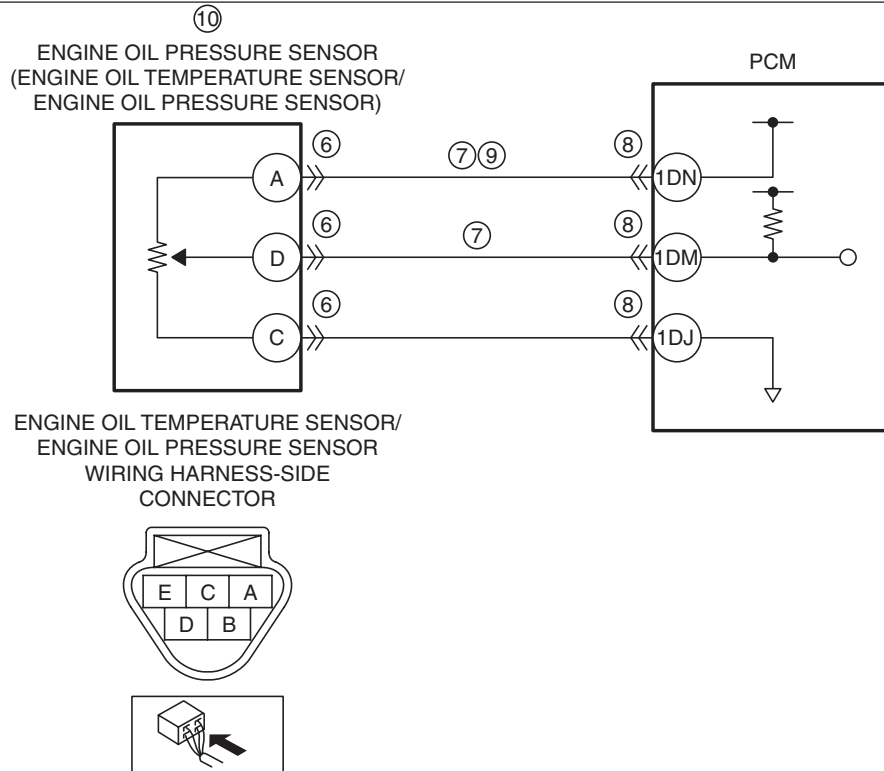
**DTC P0524:00 [SKYACTIV-D 2.2]**

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<b>DTC P0524:00</b>	<b>Engine oil pressure too low</b>
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"><li>• If the engine oil pressure is <b>below 30 kPa {0.31 kgf/cm<sup>2</sup>, 4.4 psi}</b>, the PCM determines that the engine oil pressure control circuit problem.</li></ul> <b>Diagnostic support note</b> <ul style="list-style-type: none"><li>• This is a continuous monitor (CCM).</li><li>• The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle.</li><li>• FREEZE FRAME DATA (Mode 2)/Snapshot data is available.</li><li>• DTC is stored in the PCM memory.</li></ul>
<b>FAIL-SAFE FUNCTION</b>	<ul style="list-style-type: none"><li>• PCM restricts engine torque.</li><li>• Regulates the upper limit of the APP sensor output.</li><li>• Inhibits the EGR control.</li><li>• Inhibits the diesel particulate filter regeneration control.</li><li>• The fast idle up correction for the idle speed control is inhibited.</li><li>• Inhibits engine-stop by operating the i-stop function.</li></ul>
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"><li>• Engine oil leakage</li><li>• Improper engine oil level</li><li>• Engine oil temperature sensor/engine oil pressure sensor connector or terminals malfunction</li><li>• Short to ground in wiring harness between the following terminals:<ul style="list-style-type: none"><li>— Engine oil temperature sensor/engine oil pressure sensor terminal A—PCM terminal 1DN</li><li>— Engine oil temperature sensor/engine oil pressure sensor terminal D—PCM terminal 1DM</li></ul></li><li>• PCM connector or terminals malfunction</li><li>• Open circuit in wiring harness between engine oil temperature sensor/engine oil pressure sensor terminal A and PCM terminal 1DN</li><li>• Engine oil pressure sensor malfunction</li><li>• Oil pump malfunction</li><li>• PCM malfunction</li></ul>

**DTC  
P0524:00**

**Engine oil pressure too low**



**Diagnostic Procedure**

STEP	INSPECTION	ACTION	
1	<b>VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED</b> <ul style="list-style-type: none"><li>Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?</li></ul>	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	<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. <ul style="list-style-type: none"><li>If the vehicle is not repaired, go to the next step.</li></ul>
		No	Go to the next step.
3	<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>Are any other PENDING CODEs and/or DTCs present?</li></ul>	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
4	<b>INSPECT ENGINE OIL LEAKAGE</b> <ul style="list-style-type: none"> <li>Start the engine.</li> <li>Verify that there is no engine oil leakage in the hydraulic circuit.</li> <li>Is there any leakage?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results, then add genuine motor oil. Go to Step 11.
		No	Go to the next step.
5	<b>INSPECT ENGINE OIL LEVEL</b> <ul style="list-style-type: none"> <li>Inspect the engine oil level. (See ENGINE OIL LEVEL INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is the engine oil level sufficient?</li> </ul>	Yes	Go to the next step.
		No	Add genuine motor oil, then go to the next step. (See ENGINE OIL REPLACEMENT [SKYACTIV-D 2.2].)
6	<b>INSPECT ENGINE OIL TEMPERATURE SENSOR/ENGINE OIL PRESSURE SENSOR CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>Disconnect the engine oil temperature sensor/engine oil pressure sensor connector.</li> <li>Inspect for poor connection (such as damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>	Yes	Repair or replace the connector and/or terminals, then go to Step 11.
		No	Go to the next step.
7	<b>INSPECT ENGINE OIL PRESSURE SENSOR CIRCUIT FOR SHORT TO GROUND</b> <ul style="list-style-type: none"> <li>Verify that the engine oil temperature sensor/engine oil pressure sensor connector is disconnected.</li> <li>Switch the ignition off.</li> <li>Inspect for continuity between the following terminals (wiring harness-side) and body ground: <ul style="list-style-type: none"> <li>Engine oil temperature sensor/engine oil pressure sensor terminal A</li> <li>Engine oil temperature sensor/engine oil pressure sensor terminal D</li> </ul> </li> <li>Is there continuity?</li> </ul>	Yes	If the short to ground circuit could be detected in the wiring harness: <ul style="list-style-type: none"> <li>Repair or replace the wiring harness for a possible short to ground.</li> </ul> If the short to ground circuit could not be detected in the wiring harness: <ul style="list-style-type: none"> <li>Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</li> </ul> Go to Step 11.
		No	Go to the next step.
8	<b>INSPECT PCM CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>Disconnect the PCM connector.</li> <li>Inspect for poor connection (such as damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>	Yes	Repair or replace the connector and/or terminals, then go to Step 11.
		No	Go to the next step.
9	<b>INSPECT ENGINE OIL PRESSURE SENSOR CIRCUIT FOR OPEN CIRCUIT</b> <ul style="list-style-type: none"> <li>Verify that the engine oil temperature sensor/engine oil pressure sensor and PCM connectors are disconnected.</li> <li>Inspect for continuity between engine oil temperature sensor/engine oil pressure sensor terminal A (wiring harness-side) and PCM terminal 1DN (wiring harness-side).</li> <li>Is there continuity?</li> </ul>	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
10	<b>INSPECT ENGINE OIL PRESSURE SENSOR</b> <ul style="list-style-type: none"> <li>Reconnect all disconnected connectors.</li> <li>Inspect the Engine oil pressure sensor. (See ENGINE OIL PRESSURE SENSOR INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is there any malfunction?</li> </ul>	Yes	Replace the engine oil temperature sensor/engine oil pressure sensor, then go to the next step. (See ENGINE OIL TEMPERATURE SENSOR/ENGINE OIL PRESSURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Replace the oil pump, then go to the next step. (See OIL PUMP REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

STEP	INSPECTION	ACTION	
11	<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. • 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	<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.