

## NO.17 COOLING SYSTEM CONCERNS-OVERHEATING [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

id0103g3802300

17	COOLING SYSTEM CONCERNS-OVERHEATING
DESCRIPTION	<ul style="list-style-type: none"> <li>• Engine runs at higher than normal temperature/overheats.</li> </ul>
POSSIBLE CAUSE	<ul style="list-style-type: none"> <li>• Engine heat generation amount is excessive               <ul style="list-style-type: none"> <li>— Engine speed is high and remains high for continuous long periods</li> </ul> </li> <li>• PCM DTC is stored</li> <li>• Improper indication of low engine coolant temperature indicator light and/or high engine coolant temperature warning light               <ul style="list-style-type: none"> <li>— ECT sensor malfunction</li> <li>— Instrument cluster malfunction</li> </ul> </li> <li>• Improper operation of A/C system</li> <li>• Cooling fan inoperative</li> <li>• Improper engine coolant level</li> <li>• Coolant leakage (engine internal, external)</li> <li>• Engine coolant performance deterioration</li> <li>• Improper water/anti-freeze mixture</li> <li>• Poor radiator condition</li> <li>• Radiator hose damage</li> <li>• Improper or damaged radiator cap</li> <li>• Coolant overflow system malfunction</li> <li>• Fans reverse rotation</li> <li>• Blown fuse</li> <li>• Leakage at coolant hoses and/or radiator</li> <li>• Leakage around heater unit in passenger compartment</li> <li>• Drive belt damage</li> <li>• Improper drive belt tension</li> <li>• Thermostat malfunction</li> <li>• Excessive A/C system pressure</li> </ul>

### Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	<b>INSPECT VEHICLE CONDITION FOR EFFECT ON MALFUNCTION</b> <ul style="list-style-type: none"> <li>• Verify how the customer drives the vehicle by asking the customer the following:               <ul style="list-style-type: none"> <li>— Engine speed is high and remains high for continuous long periods like when climbing a long, steep grade.</li> </ul> </li> <li>• Is the engine generating excessive heat when driven?</li> </ul>	Yes	Explain to the customer that the vehicle is normal and give them advice how to use vehicle and provide a specific example of the conditions in which the engine overheats.
		No	Go to the next step.
2	<b>DETERMINE IF MALFUNCTION CAUSE IS A/C SYSTEM OR OTHER</b> <ul style="list-style-type: none"> <li>• Start the engine and run it at idle speed.</li> <li>• Turn the A/C switch off.</li> <li>• Does the A/C compressor disengaged?</li> </ul>	Yes	Go to the next step.
		No	Perform the symptom troubleshooting "NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY". (See NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
3	<b>VERIFY PCM DTC</b> <ul style="list-style-type: none"> <li>• Retrieve any DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>• Are any DTCs present?</li> </ul>	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
4	<b>INSPECT ECT SENSOR SIGNAL</b> <ul style="list-style-type: none"> <li>Access the ECT PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Compare the ECT PID and low engine coolant temperature indicator light and high engine coolant temperature warning light operation.</li> <li>Is the ECT PID value same as indicator/warning light readings?</li> </ul>	Yes	Go to the next step.
		No	Inspect the ECT sensor. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) <ul style="list-style-type: none"> <li>If there is any malfunction:               <ul style="list-style-type: none"> <li>Replace the ECT sensor. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> </ul> </li> <li>If there is no malfunction:               <ul style="list-style-type: none"> <li>Perform the instrument cluster symptom troubleshooting "LOW ENGINE COOLANT TEMPERATURE INDICATOR LIGHT/HIGH ENGINE COOLANT TEMPERATURE WARNING LIGHT ILLUMINATES OR FLASHES CONTINUOUSLY". (See LOW ENGINE COOLANT TEMPERATURE INDICATOR LIGHT/HIGH ENGINE COOLANT TEMPERATURE WARNING LIGHT ILLUMINATES OR FLASHES CONTINUOUSLY [INSTRUMENT CLUSTER].)</li> </ul> </li> </ul>
5	<b>INSPECT COOLING FAN CONTROL SYSTEM OPERATION</b> <ul style="list-style-type: none"> <li>Perform the Cooling Fan Control System Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Does the cooling fan control system operate properly?</li> </ul>	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results.
6	<b>INSPECT RELATED PART CONDITION</b> <ul style="list-style-type: none"> <li>Inspect the following:               <ul style="list-style-type: none"> <li>Engine coolant level</li> <li>Engine coolant performance</li> <li>Water and anti-freeze mixture</li> <li>Radiator condition</li> <li>Collapsed or restricted radiator hoses</li> <li>Radiator pressure cap</li> <li>Coolant overflow system</li> <li>Fan rotational direction</li> <li>Fuses</li> </ul> </li> <li>Is there any malfunction?</li> </ul>	Yes	Service if necessary. <ul style="list-style-type: none"> <li>Repeat this step.</li> </ul>
		No	Go to the next step.
7	<b>INSPECT COOLANT LEAKAGE AT COOLING SYSTEM PART</b> <ul style="list-style-type: none"> <li>Inspect for leakage at coolant hoses and/or radiator.</li> <li>Is there any leakage?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
8	<b>INSPECT COOLANT LEAKAGE AT HEATER UNIT</b> <ul style="list-style-type: none"> <li>Inspect for leakage around heater unit in passenger compartment.</li> <li>Is there any leakage?</li> </ul>	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
9	<b>INSPECT DRIVE BELT</b> <ul style="list-style-type: none"> <li>Inspect the drive belt. (See DRIVE BELT INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Is there any malfunction?</li> </ul>	Yes	Replace the drive belt. (See DRIVE BELT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
10	<b>INSPECT THERMOSTAT</b> <ul style="list-style-type: none"> <li>Cool down the engine.</li> <li>Remove the thermostat. (See THERMOSTAT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Inspect the thermostat operation. (See THERMOSTAT INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Is there any malfunction?</li> </ul>	Yes	Replace the thermostat. (See THERMOSTAT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Reinstall the thermostat. (See THERMOSTAT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) The engine coolant temperature and thermostat are normal. <ul style="list-style-type: none"> <li>Inspect the engine block for leakage or blockage.</li> <li>Repair or replace the malfunctioning part according to the inspection results.</li> </ul>
11	Verify the test results. <ul style="list-style-type: none"> <li>If normal, return to the diagnostic index to service any additional symptoms. (See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>If a malfunction remains, inspect the related Service Information and perform the repair or diagnosis.               <ul style="list-style-type: none"> <li>If the vehicle is repaired, troubleshooting is completed.</li> <li>If the vehicle is not repaired or additional diagnostic information is not available, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> </ul> </li> </ul>		