

**NO.18 COOLING SYSTEM CONCERNS-RUNS COLD [SKYACTIV-G 2.0, SKYACTIV-G 2.5]**

id0103g3802400

18	COOLING SYSTEM CONCERNS-RUNS COLD
DESCRIPTION	<ul style="list-style-type: none"><li>• Engine does not reach normal operating temperature.</li></ul>
POSSIBLE CAUSE	<ul style="list-style-type: none"><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>• Cooling fan system malfunction</li><li>• Condenser fan system malfunction</li><li>• Thermostat malfunction</li><li>• foreign matter penetration in engine coolant</li></ul>

**Diagnostic Procedure**

STEP	INSPECTION	RESULTS	ACTION
1	<b>DETERMINE IF MALFUNCTION CAUSE IS HVAC SYSTEM OR ENGINE</b> <ul style="list-style-type: none"><li>• Is a customer complaint "Lack of passenger compartment heat" only?</li></ul>	Yes	Inspect the A/C heater system. Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
2	<b>VERIFY IDLE SPEED</b> <ul style="list-style-type: none"><li>• Does the engine speed continue at fast idle?</li></ul>	Yes	Perform the symptom troubleshooting "NO.9 FAST IDLE/RUNS ON". (See NO.9 FAST IDLE/RUNS ON [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
3	<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>
4	<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.

STEP	INSPECTION	RESULTS	ACTION
5	<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, then go to the next step. (See THERMOSTAT REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
6	<b>VERIFY THAT NO FOREIGN MATTER IS IN ENGINE COOLANT</b> <ul style="list-style-type: none"> <li>Drain the engine coolant. (See ENGINE COOLANT REPLACEMENT [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Has foreign matter penetrated the engine coolant?</li> </ul>	Yes	Replace the engine coolant. (See ENGINE COOLANT REPLACEMENT [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
7	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>		