

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

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

Diagnostic Procedure

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

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

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