

- Radiator
- Thermostat
- Coolant pump
- Coolant flow restriction

Diagnostic Trouble Code (DTC) Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
P0217	Engine Coolant Overtemperature Condition	Sets in the PCM when an engine overheat condition was sensed by the CHT sensor.
P1299	Cylinder Head Overtemperature Protection Active	Sets in the PCM when an engine overheat condition was sensed by the CHT sensor.

DIAGNOSIS AND TESTING > ENGINE COOLING > PINPOINT TESTS > PINPOINT TEST B : PINPOINT TEST > PINPOINT TEST B : PINPOINT TEST

B1 CARRY OUT INSPECTION AND VERIFICATION

Carry out the Inspection and Verification .

Are any concerns present?

Yes	REPAIR as needed.
No	GO to B2

B2 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) DTCS

Ignition ON.

Using a scan tool, perform PCM self-test.

Is DTC P0217 and/or P1299 present?

Yes	GO to B4
No	Actual engine overheating has not been verified. CHECK the engine coolant temperature gauge operation. REFER to: Instrumentation, Message Center and Warning Chimes . If any other PCM DTCS are retrieved, REFER to: ELECTRONIC ENGINE CONTROLS - 5.0L 32V Ti-VCT/5.0L Ti-VCT V8 (308kW/418PS).

B3 CHECK FOR ACTIVE GRILL SHUDDER DTCS

Review the PCM DTCs.

Are any active grill shudder DTCs present?

Yes	REFER to: Active Grille Shutter .
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No	GO to B4
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NOTE: Verify no vehicle front end damage is present.

B4 CHECK FOR AN AIRFLOW OBSTRUCTION AND MISSING AIR DEFLECTORS

Check the radiator or A/C condenser for an external obstruction such as leaves or cardboard and verify all air deflectors are present.

Is an airflow obstruction present or air deflectors missing?

Yes	REPAIR as necessary.
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No	GO to B5
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B5 CHECK THE ENGINE COOLANT LEVEL AND PRESSURE TEST THE COOLING SYSTEM

Ignition OFF.

Visually check the engine coolant level in the coolant expansion tank and adjust as necessary. Pressure test the cooling system.

Does the engine cooling system leak externally?

Yes	REPAIR or INSTALL new components.
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No	GO to B6
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B6 CHECK THE ENGINE COOLANT FOR AN INTERNAL LEAK

Inspect the engine coolant in the coolant expansion tank for signs of engine oil.

Is engine oil evident in the coolant?

Yes	REFER to: ENGINE SYSTEM - GENERAL INFORMATION .
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No	GO to B7
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B7 CHECK THE ENGINE OIL FOR COOLANT

Remove the oil level indicator from the engine.

Is coolant evident in the oil?

Yes	REFER to: ENGINE SYSTEM - GENERAL INFORMATION .
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No	GO to B8
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 **NOTE:** Use UView® Combustion Leak Tester part number UVU560000-R or equivalent.

B8 CHECK THE COOLING SYSTEM FOR COMBUSTION GASES

Using a cooling system combustion gas leak tester, following the instructions supplied with the tester, check the coolant for combustion gases.

Are combustion gases present?

Yes	REFER to: ENGINE SYSTEM - GENERAL INFORMATION .
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No	GO to B9
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B9 CHECK COOLANT CONDITION

Check the coolant for dirt, rust or contamination and check the coolant concentration.

Is the coolant condition OK?

Yes	GO to B10
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No	FLUSH the engine cooling system. REFER to: Cooling System Flushing .
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B10 CHECK THE ELECTRIC COOLING FAN OPERATION

Start the engine.

Place the climate control function selector in the MAX A/C position and the blower motor switch in the HI position.

Did the electric cooling fan operate?

Yes	GO to B11
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No	DIAGNOSE the electric cooling fan operation. Refer to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) .
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B11 CHECK THE COOLANT PUMP OPERATION