

Yes	REPAIR or INSTALL new components.
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No	GO to A3
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A3 CHECK THE ENGINE COOLANT FOR AN INTERNAL LEAK

Inspect the engine coolant in the degas bottle for signs of engine oil or transmission fluid.

Is engine oil or transmission fluid evident in the coolant?

Yes	If engine oil is evident, REFER to: Engine . If transmission fluid is evident, INSTALL a new radiator. REFER to: Radiator .
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No	GO to A4
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A4 CHECK THE ENGINE OIL AND TRANSMISSION FLUID FOR COOLANT

Remove the oil level indicator from the engine and the transmission.

Is coolant evident in the oil or transmission fluid?

Yes	If coolant is in the engine oil, REFER to: Engine . If coolant is in the transmission fluid, INSTALL a new radiator. REFER to: Radiator .
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No	GO to A5
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A5 CHECK THE COOLING SYSTEM FOR COMBUSTION GASES



NOTE: Use UView® Combustion Leak Tester part number UVU560000-R or equivalent.

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 .
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No	The cooling system is operational
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DIAGNOSIS AND TESTING > ENGINE COOLING > PINPOINT TESTS > PINPOINT TEST B : PINPOINT TEST

The Engine Overheats

Normal operation and Fault Conditions

The engine cooling system maintains the engine temperature during operation. Correct coolant flow through the engine, radiator and remainder of cooling system passages and components is essential to maintaining a correct engine temperature.

Engine coolant flows primarily from the engine to the radiator circuit and back to the coolant pump. Coolant is sent from the coolant pump through the engine block and cylinder heads. A separate circuit from the engine also feeds the heater core and turbochargers with coolant. The coolant pump circulates the coolant. The coolant thermostat is a control valve actuated by coolant temperature. When the thermostat is closed, coolant flow bypasses the radiator circuit and returns to the coolant pump. When the thermostat is opened, coolant flows through the radiator circuit to transfer engine-generated heat to the outside air.

Engine overheating generally occurs when there is a disruption in the ability to control either coolant flow at the correct rate, the inability to transfer heat from the engine through the coolant (including low coolant) or an inability to transfer engine-generated heat to the outside air through the radiator.

Possible Sources

- Low coolant level
- External engine coolant leak
- Airlock in system
- Pressure relief cap
- Restricted airflow through A/C condenser/radiator
- Internal engine coolant leak
- Turbochargers
- Coolant condition/concentration
- Accessory drive components
- Non-OEM engine enhancement components
- Electric cooling fan
- CHT sensor
- ECT sensor
- Radiator
- Thermostat
- Coolant pump
- Coolant flow restriction
- Active grill shutter assembly