

Common Causes of Overheating



NOTE: To avoid burns and injury, never, ever attempt to remove a radiator cap while the engine is hot!

An overheated engine can be caused by anything that decreases the cooling system's ability to absorb, transport and dissipate heat; therefore engines can overheat for a variety of reasons. Let's take a look at some of the most common causes.

Cooling System Leaks

This is the primary cause of engine overheating. Possible leak points include hoses, the radiator, water pump, thermostat housing, heater core, head gasket, freeze plugs, automatic transmission oil cooler, cylinder heads and block. Perform a pressure test. A leak-free system should hold pressure for at least one minute.

Wrong Coolant Concentration

Be sure to use the coolant recommended by your vehicle's manufacturer. The wrong type of coolant and/or mixing the incorrect concentration of coolant and distilled water can also result in engine overheating. The best bet is to perform a complete flush and fill.

Bad Thermostat

A thermostat is a heat-sensitive valve that opens and closes in response to engine temperature. Heated engine coolant passes through to the radiator when the thermostat is in the open position. In the closed position, it prevents the flow of coolant to speed up the warming of a cold engine. When the thermostat gets stuck in the closed position, coolant stays in the engine and quickly becomes overheated, resulting in engine overheating.

Blocked Coolant Passageways

Rust, dirt and sediment can all block or greatly impede the flow of coolant through the cooling system. This can limit the system's ability to control engine temperature, which may result in higher operating temperatures and engine overheating. Once again, a flush and fill is recommended to remove debris.

Faulty Radiator

By passing through a series of tubes and fins, coolant temperature is reduced in the radiator. Leaks and clogging are some of the most common causes of radiator failure. Any disruption in the radiator's function can lead to elevated engine temperature and overheating.

Worn/Burst Hoses

A hose that contains visual cracks or holes, or has burst will result in leaks and disrupt the flow of engine coolant. This can result in overheating.

Bad Radiator Fan

A fan blows air across the radiator fins to assist in reducing the temperature of the coolant. A fan that wobbles, spins freely when the engine is off, or has broken shrouds will not be able to reduce the temperature to proper level, thus possibly resulting in engine overheating.

Loose or Broken Belt

A belt is often the driving link that turns the water pump at the correct speed for proper coolant flow through the cooling system. If a belt is loose or broken, it cannot maintain the proper speed, thus resulting in poor coolant flow and ultimately, engine overheating.

Faulty Water Pump

Known as the 'heart' of the cooling system, the water pump is responsible for pressurizing and propelling engine coolant through the cooling system. Any malfunction of the water pump, including eroded impeller vanes, seepage or wobble in the pump shaft, can prevent adequate coolant flow and result in engine overheating.