

Auto Repair Guide

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How to Care for Your Car's Cooling System

How to Maintain a Car Cooling System

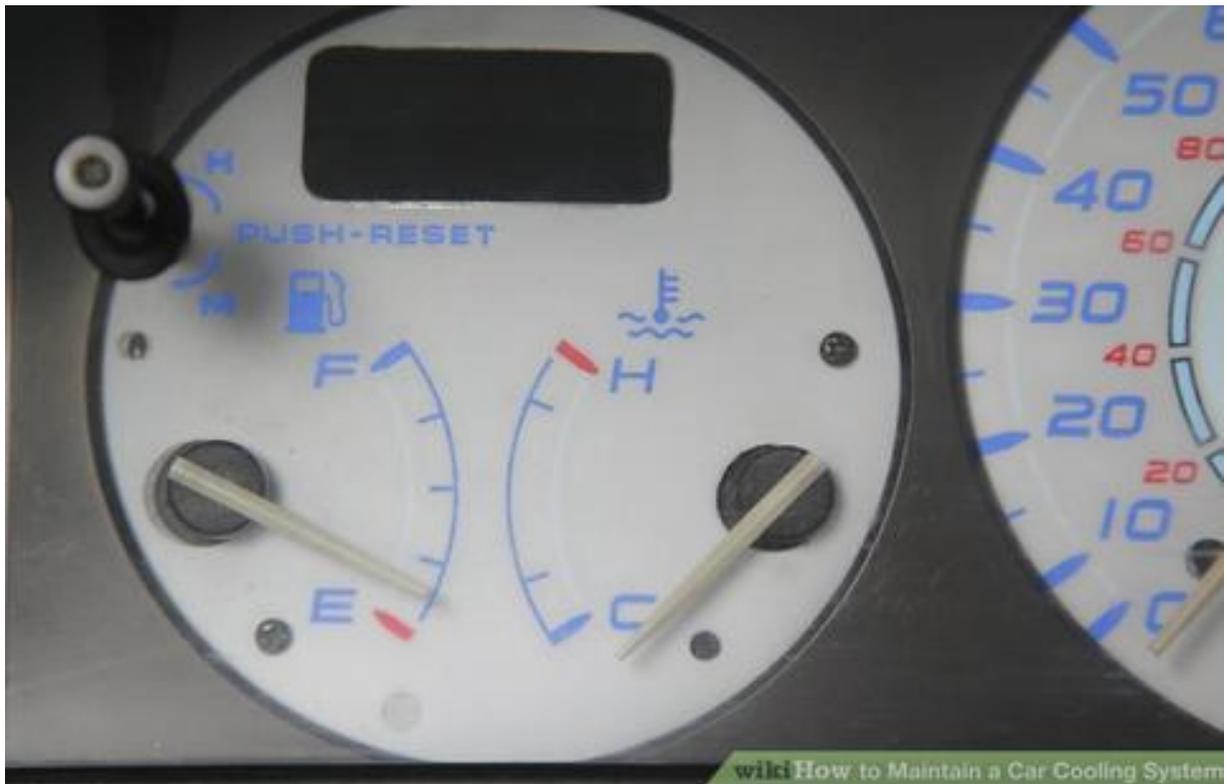
Maintaining your vehicle's cooling system is essential to prolonging the life and efficiency of your engine. As much as 70% of the car's main source of power, the gas, is converted to heat. It is the task of the cooling system to convert all of this heat to air; much like your circulatory system oxygenates your blood. The components include: the radiator and the proper balance of fluid, the water pump, the thermostat, and the fan. There are several maintenance precautions that every car owner should exercise, as well as a few rules of thumb regarding predicting or diagnosing a dysfunctional component. Consider the following as you research how to maintain a car cooling system.

Steps

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- 1** Consult your vehicle-specific owner's manual regarding the proper ratio of coolant to water.
 - An improper balance of coolant can cause damage to the water pump.



2 Wait until the engine is completely cool before proceeding.



3 Twist off the radiator cap by turning it counterclockwise.



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- 4** Ensure that the radiator is full according to that model's specifications.
 - Your owner's manual will provide information regarding the ideal fluid level in relation to the fill line.



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- 5** Keep an eye on your vehicle's temperature gauge.
 - When the vehicle is running beyond optimal temperature (anything into the red portion of the gauge), this is the first sign of trouble.



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- 6** Assume there is a leak somewhere in the cooling system if you experience an acrid smell when the engine is at ideal temperature.



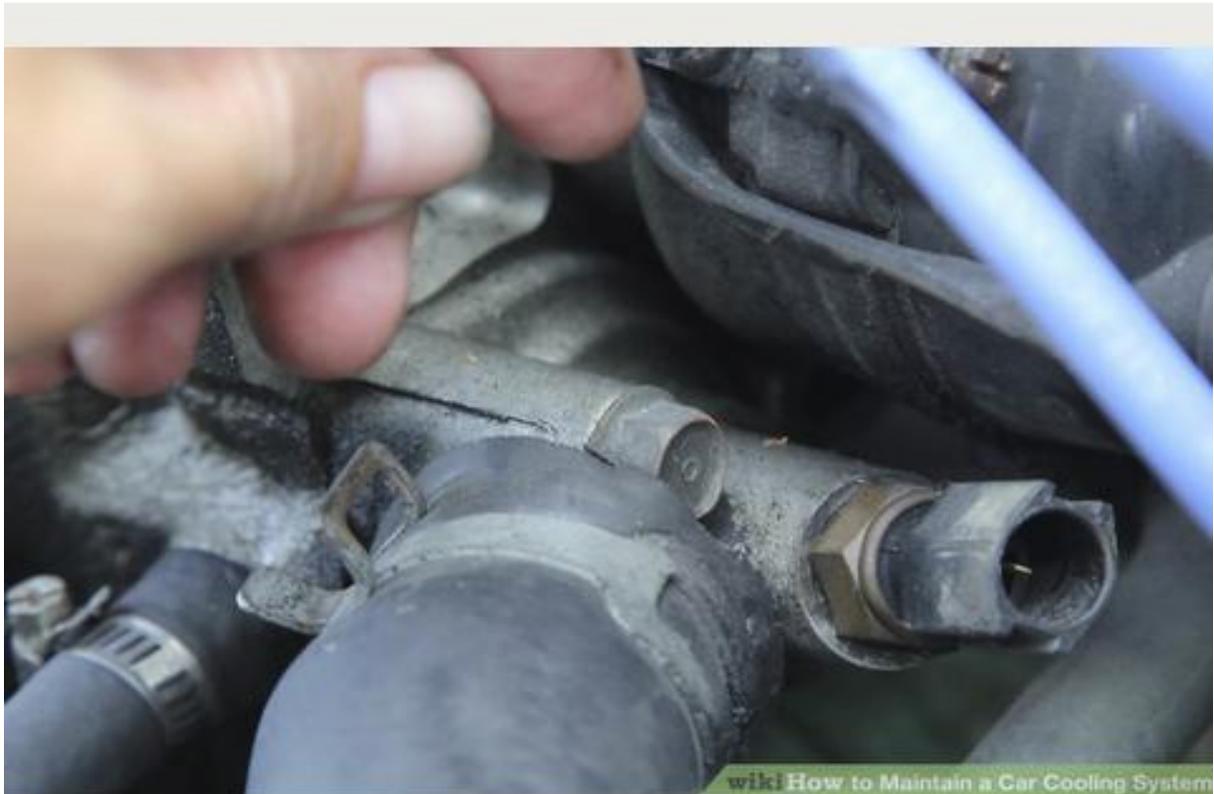
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- 7** Pull over, turn the engine off and look at the ground. Move on to the next step if you see any fluid under your car.



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8 Open your hood.



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9 Examine the water pump for any signs of scorching, which would indicate a leak in that component.

10 Look and listen for any obvious leaks.

- A leak in the cooling system will either cause the pressurized fluids to spew, or you will hear a hissing sound.



11 Acquire a rag, if there are no obvious leaks.





- 12** Wrap the rag around the cap to the overflow reservoir, and twist it off.
- If you discover fluid in the reservoir tank, this could indicate a serious problem with your engine.



- 13** Investigate further if you discover no leaks and there is no coolant in the overflow compartment.



14 Park the vehicle and leave it idling.



15 Watch the gauges.

- If the temperature gauge goes into the red, and you don't see the fan on, this would indicate a bad sensor, which would require a simple and inexpensive repair.



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16 Watch the fan. If it comes on, but is ineffectual, proceed with the following steps to check the thermostat.



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17 Allow the engine to cool.



18 Locate the thermostat. It can be found under the hose that connects the engine to the radiator.



19 Remove the existing thermostat and purchase a new one.



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20 Reinstall the thermostat.



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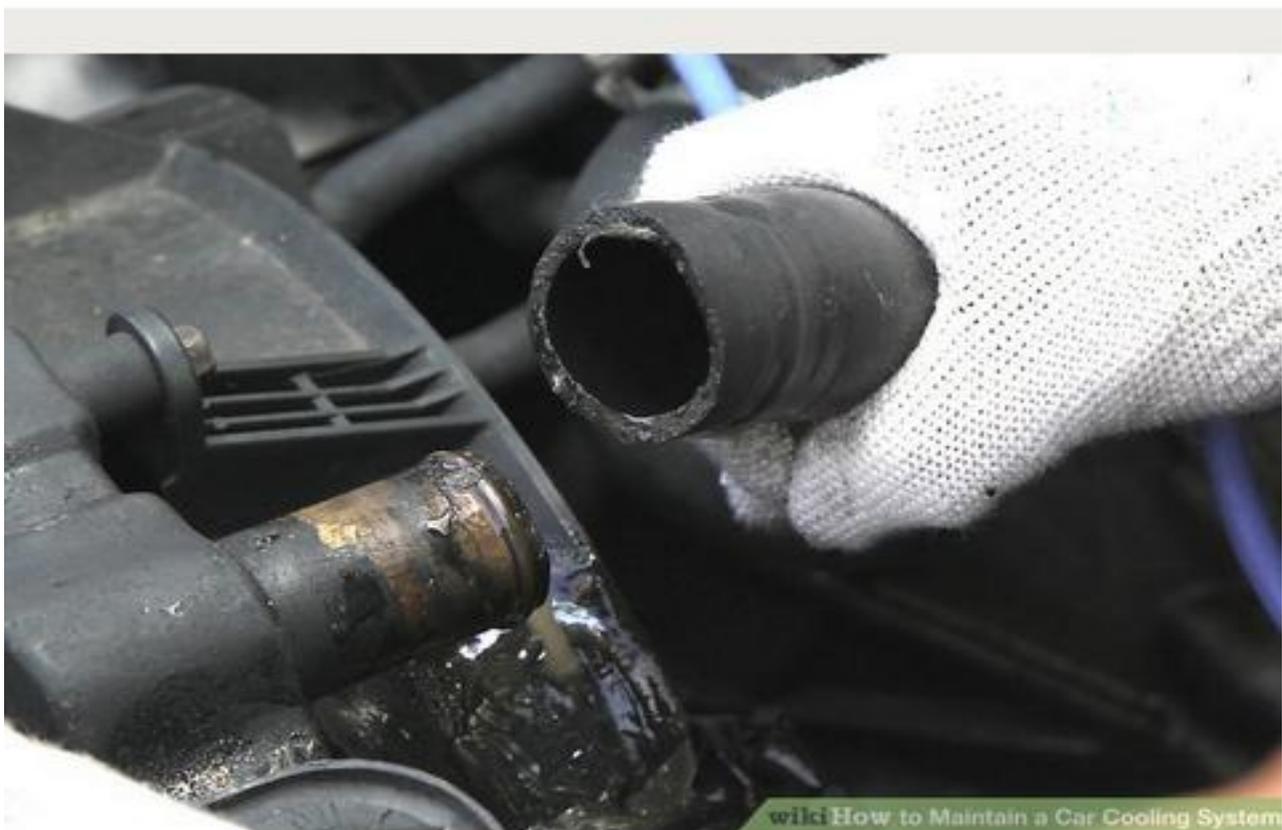
21 Repeat the testing procedure with the car idling.

- If the gauge stays cool, and the fan operates properly, consider the problem solved.



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- 22** Check the radiator for cold spots after the engine is warm. If you feel cold spots, then you probably have a clog somewhere within the radiator.



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- 23** Remove and inspect the radiator hoses.



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24 Replace the hoses as needed.



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25 Take the car to a mechanic for a radiator flush and fill if none of the preceding steps solve the problem.



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26 Compose a maintenance schedule which involves flushing the radiator at regulated time intervals.

Tips

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- When the engine is running hot, avoid driving your car until the malfunctioning cooling system component is repaired.
- An entire cooling system can be replaced for less than 10% of the average cost of a replacement engine.
- A car running at ideal temperature produces enough heat to warm 2 houses.
- The only reason to deviate from the manufacturer's recommended coolant and water ratio, or the brand of coolant suggested, is a radiator replacement.

Warnings

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- Never open the radiator cap if you pull over due to an overheating engine. The contents are pressurized, and extremely hot.

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