

Diagnosing Engine Overheating

Engine overheating is a common problem and in many cases, can lead to engine damage. The cooling system of a vehicle plays a crucial role in maintaining the correct engine operating temperature. If this system fails, the engine can quickly overheat, which can lead to significant long-term damage. Overheating can be caused by a wide range of issues, from a faulty radiator cap to a leaking cylinder head gasket. The following advice from Pierburg describes how to diagnose the problem and what steps should be taken to prevent overheating.



Check the radiator cap: First important step



A common cause of engine overheating is a faulty pressure relief valve in the radiator cap. If this is contaminated, the engine cooling system may be impacted. A simple measurement of the temperatures in the cooling system, will quickly indicate whether the radiator cap is the root of the problem. If the temperature is OK, take a closer look at the entire cooling system. If you find that the radiator cap is faulty, replacing or cleaning it, may be enough to rectify the problem.

Measure the radiator temperature

Measure the temperature in the radiator. It is particularly important to check the temperature display in the vehicle. The temperature difference between the inlet and outlet of the radiator should be at least 7 degrees under full load. Under normal operation, differences of 10 to 15 degrees are most common. However, if the temperatures at the inlet and outlet are almost identical, this indicates that the

coolant circuit is not working correctly. A low temperature difference could be a sign of a blockage or a fault in the radiator.

Clean or replace the radiator



If it is determined that the radiator is no longer effectively dissipating heat, flushing the radiator can help remove minor blockages. Dirt or deposits can block the cooling fins, which significantly impairs the cooling performance. However, if cleaning is not sufficient, e.g. because the fins are bent or scale has formed inside the radiator, it is often necessary to replace the radiator. Even if the coolant level is too low or the coolant is incorrectly dosed, this can lead to overheating.

Cylinder head gasket and leaks

Another common problem that can cause the engine to overheat is a faulty cylinder head gasket. If this is damaged, coolant can enter the engine compartment and impair cooling. Often this problem can

only be diagnosed by carrying out a more detailed investigation, such as a temperature measurement or an analysis of the coolant agent. Leaks in the cooling system can also lead to loss of coolant, which in turn causes overheating.

Preventive measures to avoid damage

Regular maintenance of the cooling system is essential to prevent overheating of the engine and its associated consequences. The coolant level should be checked regularly and topped up if necessary, to ensure that the coolant circuit is functioning correctly. Checking the cooling system for leaks can also help to avoid major damage. It is also recommended to check that the cylinder head gasket is sufficiently tight, especially in older vehicles.

Summary

Act quickly before damage occurs. Engine overheating can be caused by a wide range of issues, but early diagnosis and quick action can help to avoid engine damage or other major damage. Taking regular temperature measurements, checking the coolant level and checking components such as the radiator cover or cylinder head gasket can help ensure that the engine operating temperature remains constant. If the cooling system is regularly serviced, overheating can usually be reliably prevented.



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