

Issue no. 07/2022

Important steps when replacing coolant thermostats

When replacing a coolant thermostat, there are certain things you need to be aware of.

The coolant thermostat performs many important functions in a vehicle, so it must be replaced as quickly as possible if it becomes defective. An excessively high or excessively low coolant temperature is often an indication that there's a problem with the thermostat. If the thermostat no longer opens as it should, the cooling circuit will stop working properly and the engine won't run at the optimum operating temperature. In general, thermostat faults are caused by normal wear and tear. However, when newly fitted coolant thermostats malfunction or leak, it often turns out that additional sealing compound was used during installation. This can result in the following possible sources of damage:

Material incompatibility

Thermostat seals are made of a mix of different materials, some of which are not oil-resistant. When a sealing compound containing mineral or synthetic oil is used, the original seal will swell and become damaged, allowing coolant to escape.

Cracks

The original rubber seals are designed to fit the seal groove precisely. Applying additional sealant during installation can cause unequal force to be transmitted when tightening the assembly

screws, and the thermostat housing or flange may crack and leak as a result.

Reduced coolant flow

Often, so much sealant is applied that some of it ends up in the cooling circuit. It then becomes stuck there and blocks the thermostat or the narrow pipework in the radiator, obstructing the flow of coolant and reducing heat dissipation.



Figure 1: Thermostats with additional sealing compound



Figure 2: Sealant, foreign objects, and residues cause thermostats to malfunction and become blocked.

Important!

Only fit thermostats using the correct seals and in accordance with the manufacturer's specifications. Further sources of defects include air traps and deposits in the cooling circuit. That's why, when carrying out a repair, the cooling system should be flushed until any residues and foreign objects have been completely removed, and bled thoroughly after refilling. Replacing the coolant regularly also guards against deposits and damage.

» For more information, check out [TM 06/2016](#) and [TM 02/2022](#).