

Issue no. 06/2016: Thermal problems after a thermostat change: air in the cooling circuit

If insufficient heating and cooling capacity is experienced after replacing a coolant thermostat, the new thermostat is often wrongly suspected to be the cause.

In order to replace the thermostat, the cooling circuit of the engine needs to be opened—as a result, cooling water escapes and air enters the system (see Figure 1). If these increasingly complex systems are not completely bled after the repair, air pockets remain in the circuit.



Figure 1: When the cooling circuit is open, cooling water escapes and air enters the system.

This not only results in inadequate cooling water circulation (and thus poor heating and cooling performance), but can also lead to serious engine damage—because the trapped air can potentially cause local overheating.

Using a vacuum-venting device to fill the circuit has proved to be very reliable (see Figure 2). By means of a standard repair shop compressed air connecti-



Figure 2: Standard vacuum-venting device.

on, this creates a vacuum in the cooling system (see Figure 3). The air is thereby completely evacuated from the circuit and new coolant is sucked in bubble-free by the vacuum. This ensures that all isolated air pockets are removed from the cooling circuit.



Figure 3: A vacuum is created in the system by means of the Venturi effect.

IMPORTANT! It is imperative that the cooling circuit is completely bled each time it is opened!