

Radiator filler cap

Task

Scarcely noticed but important: the radiator cap. In addition to the task of sealing the filling opening in the radiator or surge tank gas-proof, it also has to ensure that not too much excess pressure and no partial vacuum forms in the cooling system. For this purpose, the filler cap is equipped with a vacuum and a pressure relief valve. The pressure relief valve is used to increase the pressure by approx. 0.3-1.4 bar. Depending on this, the boiling point of the coolant rises to 104 – 110 °C and the performance of the cooling system is improved. During cooling, a partial vacuum would form if the system were hermetically sealed. The task of the vacuum valve is to prevent this happening.

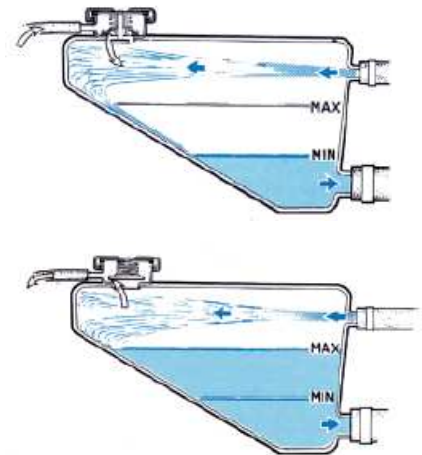




Function

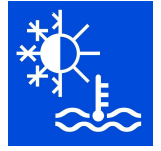
High coolant temperature leads to an increase in pressure in the cooling system, since the coolant expands. The coolant is pressed into the tank. The pressure in the tank increases. The pressure relief valve in the filler cap opens and allows air to escape.

When the coolant temperature returns to normal, a partial vacuum forms in the cooling system. Coolant is extracted from the tank. This causes a vacuum in the tank. This in turn results in the vacuum equalising valve in tank's filler cap opening. Air flows into the tank until a pressure balance has been achieved.



How to open the radiator filler cap

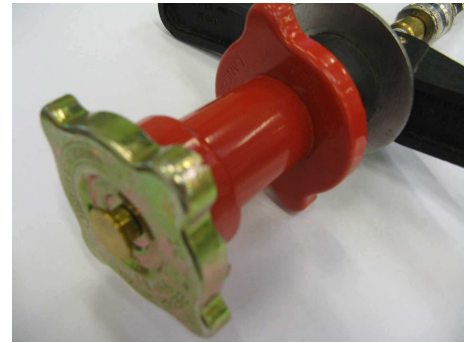
- Allow the cooling system to cool down to a coolant temperature below 90°C
- The cooling system is under pressure when the engine is hot
- Risk of scalding if the cooling system is opened suddenly!
- Open the radiator filler cap to the penultimate notch or with screw-type versions by $\frac{1}{2}$ a turn, and allow the excess pressure to escape
- Always wear protective gloves, goggles and protective clothing!



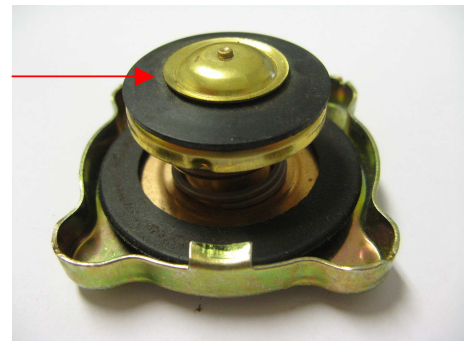
Functional test

The valve on the radiator filler cap can be tested for perfect function (according to vehicle manufacturer's specification) using a suitable tester.

1. Establish opening pressure by increasing the pressure.



2. The vacuum valve must be flush to the rubber seal, be able to be lifted a little and then spring back into place once released.



Behr Hella Service recommends replacing the filler cap every time the radiator is replaced.