



## *Evaporation loss- and re-circulation system / absorption canister*

### General

In a parked vehicle, fuel evaporates via the tank vent line into the environment. To avoid this pollution, vehicles with a controlled fuel mixture system, have an evaporation loss- and re-circulation system fitted. An important component is the absorption canister.

### Function

The absorption canister is connected to the tank vent line. The activated carbon has the property to store the evaporated fuel. If the engine is started, the stored fuel is inducted into the inlet manifold. In the connecting line between the inlet manifold and the absorption canister a switching valve is fitted. If the lambda system is active, the switching valve is controlled and opens the line between the inlet manifold and the absorption canister. Due to the vacuum in the inlet manifold, through an opening in the absorption canister, ambient air enters, this air flows through the activated carbon and carries with it the stored fuel to the inlet manifold. Because of the influence of the system on the fuel mixture, it is only active when the lambda system operates.



Absorption canister



Switching valve

### Causes of failure

A faulty system can produce the following fault symptoms:

- Storing a fault code
- Engine runs roughly
- Fuel smells through escaping fuel vapour



## Causes of failure:

- Faulty control from the ECU
- Faulty switching valve
- Mechanical damage
- Faulty lines
- Collapse of the activated charcoal element

## Fault diagnosis

For the fault diagnosis consider the following steps:

- Check the absorption canister for damage (usually under the front wing)
- Check the hoses, lines and connectors for damage and correct size / fitting
- Check air inlet hole of the canister for blockage
- Check switching valve for damage
- Check the electrical connections of the switching valve for damage and correct fitting
- Check the operation voltage and ground, for this disconnect the plug at the switching valve. When the engine is at operating temperature, a voltage of 11V – 14 V must be measured (engine must be at operating temperature to ensure that the lambda system is active and the switching valve is controlled).