The Secondary Air System | HELLA

General Information

This system further lowers the HC (hydrocarbon) and CO (carbon monoxide) values during the cold start phase (catalytic converter not yet active).

However, because the catalytic converter only works effectively from temperatures of approx. 300°C – 350°C, the emissions must be lowered during the cold start phase using different measures. This is the task of the secondary air system.

Function

The active secondary air system usually consists of an electric pump (see figure), the control relay, a pneumatic control valve, and a combination valve.

Error indications

Increased emission values during the cold start and warm-up phases can be caused by a lack of post-combustion. The engine warning light may light up for systems which are monitored by the engine control unit's self-diagnosis function.

Causes of failure

- Faulty pump
- Faulty control and combination valve
- Damage due to ingress of moisture
- Faulty ground and voltage supply
- Blocked or leaky cables

Troubleshooting

As for all other troubleshooting and diagnostic work, begin with visual checks, and additionally an acoustic check. For the acoustic check, the electric pump is audible when the engine is cold and at idle.