



Damage to the secondary air pump

Formation of ice and corrosion in the secondary air injection system are the most common causes for secondary air injection pump malfunctions

Secondary air injection systems are an important component of low-emission petrol engines, reducing high levels of carbon monoxide and hydrocarbon during cold starts.

With the help of the secondary air injection system, fresh air is aspirated and during the cold start phase is injected directly behind the valves in the exhaust manifold. Because of the secondary air injection, the catalytic converter is brought to operating temperature more quickly – which leads to a reduction in pollutant emissions. The automatic recirculation valve (ARV) has the task of preventing exhaust or condensation entering the secondary air injection pump.

Due to the resulting large differences in temperature, condensation forms, which can freeze in winter and thereby block the secondary air injection pump. The injection control unit recognises this error and lights up the engine warning lamp. This then has the consequence that the next exhaust emissions test is not passed.



CAUSES

Condensation forms in the secondary air injection pump due to the large temperature differences that exist. In winter, this may freeze causing the pump to be blocked. The electrical part of the pump is also affected by corrosion.



IDENTIFIED DAMAGE

First this will lead to bearing damage and a resulting whistling noise following a cold start. After a certain period of time, the pump malfunctions entirely.

When making a guarantee claim, please also attach the test report.



INSTALLATION NOTES

- Besides the exchange of the secondary air injection pump, the automatic recirculation valve (ARV) and the electric switching valve (ESV) should also be thoroughly tested for proper operation and possible leaks.
- The ESV must be checked for electrical activation. If connected incorrectly due to confusing the cables, the recirculation valve can then open at times when it should be shut.