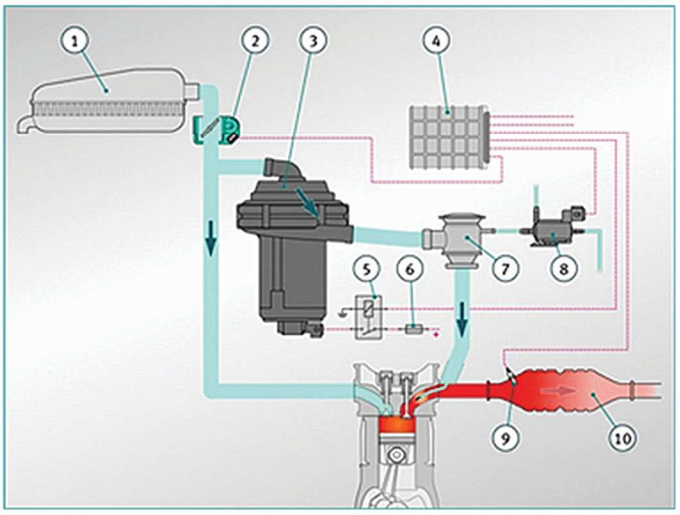
Technical Information

SECONDARY AIR PUMP

secondary air pump CODE: 9600

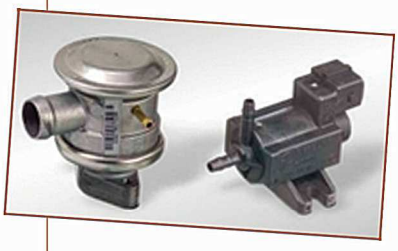
In spark-ignition engines, the largest amount of pollution is produced during cold starting. A “rich mixture” (λ<1) is required for starting a cold spark-ignition engine. Until the engine and the catalytic converter reach operating temperature, large quantities of carbon monoxide and unburnt hydrocarbons are produced.

For the reduction of these pollutants, the **Secondary Air Pump** injects atmospheric air in the exhaust outlet, which oxidizes the hydrocarbons and reduces them to carbon dioxide and water. The heat that is emitted during this procedure, additionally heats the lambda sensor and the correct mixture adjustment is achieved in a shorter period of time.



Secondary Air System in a gasoline engine

1. *Air filter*
2. *Throttle body*
3. *Secondary-air pumps*
4. *ECU*
5. *Relay*
6. *Fuse*
7. *Non-return valve*
8. *Actuator*
9. *Lambda sensor*
10. *Catalytic converter*



Details about these pumps...

Between the secondary air pump and the exhaust manifold the ***Non-Return Valve*** protects the air pump from the exhaust gases and pressure peaks (misfires) that could cause damage. A ***Shut Off Valve*** is used, to ensure that the secondary air flows in the exhaust manifold only during the cold start phase. In some cases the ***Secondary Air Pump*** is also equipped with an air filter.