

Throttle-valve housings

General points

Throttle valves are installed between induction bridge and load sensor. Throttle valves control the air flow suctioned in by the engine. The mixing ratio of fuel and air is changed by the throttle valve's opening angle. The throttle valves are actuated by mechanical connection to the accelerator pedal or electrical actuating elements.

Versions

A distinction is made between the following throttle-valve housings:

Mechanical throttle-valve housings

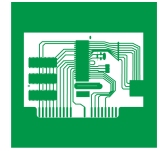
When the accelerator pedal is pressed, the driver's load requirement is transmitted to the throttle valve via rods or Bowden cable. A built-in potentiometer transmits the throttle valve position to the control unit. The idling speed is adapted to the required operating status the integrated idling actuator.



Electromotive throttle-valve housings

The throttle valve is triggered via Bowden cable and control unit. The position of the throttle valve is regulated mechanically through the accelerator pedal and transmitted to the engine control unit via the integrated electronics. The engine control unit uses the driver requirement and the current engine operating status to calculate the required throttle valve opening angle. This information is relayed back to the throttle valve by means of a control signal, and the throttle valve position is corrected by the integrated throttle valve actuator motor.





Electronic throttle-valve housings

The information from the accelerator pedal and all the other engine management data available are compared permanently. Using these data, the engine control unit calculates the respective optimum throttle valve position. The electronic throttle valve is exclusively triggered by the control signal from the engine management system. The electronic triggering of the throttle valve ensures particularly efficient engine control.



Effects and reasons for failure

Effect of failure:

- Loss of power
- Misfiring during acceleration
- Vehicle goes into emergency running mode
- Fluctuating idling speed
- Engine warning light comes on

Reasons for failure are:

- Soiling through oil carbon deposits
- Mechanical blockage through foreign particles
- Defective actuator motor
- Defective potentiometer

Troubleshooting

- Readout fault store
- Check the supply voltages and signals using a multimeter and oscilloscope
- Visual inspection of the cabling and mechanical assemblies

Repair note

After replacement, the throttle-valve housing must be adapted to the engine control unit. The specifications issued by the respective vehicle manufacturers must be heeded in this context.