

## E-gas Throttle Body EDR-E

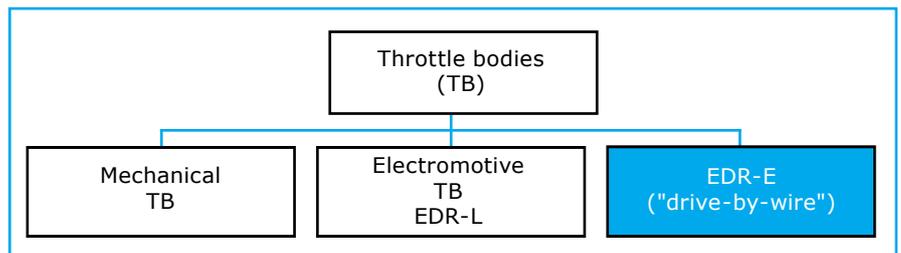
### Product summary

<b>Vehicle:</b>	<b>Product:</b>	E-gas throttle body EDR-E
Various with gasoline engines	<b>Pierburg no.:</b>	Various: See the current catalog, TecDoc CD or systems using TecDoc data.

With the electronic throttle control (E-gas or **electronic gas** pedal, aka "drive by wire") adjustments are no longer made via linkages but are instead carried out completely electronically.

The position of the accelerator is recorded by a gas pedal encoder and the value is entered in the engine control unit.

The necessary opening of the throttle valve is then calculated by the engine control unit based on the current running state of the engine (RPM, temperature etc.), and the throttle valve is then set to that position by the electromotive actuator of the EDR-E.



Overview of throttle bodies (gasoline-powered vehicles)

These components can take advantage of all the options for influencing the air mass flow rate in a modern gasoline engine:

- Start control  
Compensation of higher frictional loss in the cold vehicle.
- Warm-up control - Accelerator conversion.

- Idle control Adjustment of the engine for optimal RPM.
- Improved fuel economy - Reduction of emissions
- Cruise control ("Tempomat").
- Dashpot control (close damping)
- If the accelerator is released too quickly, the throttle valve is caught by the throttle actuator and returned slowly until the required idle speed has been reached.
- Autothrottle RPM control in overrun conditions
- Knock control Prevents knocking in the drive unit bearings due to a sudden change in the engine torque.
- Adjustment to the characteristic curve for the vehicle
- Drive slip control



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Subject to change and deviation from the illustrations.

**Features:**

- Quick response time
  - High controlling torques
  - Fail-safe
  - Reset system
  - Mechanical limit stop for the actuator in idle and full load position
  - Throttle potentiometer in dual design
  - Mechanical emergency idle function
- If the supply voltage fails, an emergency spring sets the throttle valve to a predefined emergency operating position.

**Information for the workshop**

Throttle bodies generally do not require maintenance. However, if a malfunction does occur, the cause is usually contamination, particularly in conjunction with exhaust gas recirculation (EGR). In this case, the EDR-E must be checked for contamination. Intake air with a high oil content can lead to deposits which

- reduce the flow cross-section,
- cause the throttle valve to respond sluggishly or cause moving parts to stick

Oil may get into the intake air for reasons such as leakage from the pistons or piston rings ("blow-by"), which allows gases from the combustion chamber to get into the crankcase. Crankcase ventilation causes contaminants in the crankcase to be returned to the engine for combustion.

Thus, for example, it can occur that the EDR-E no longer operates normally and that the on-board diagnostics detect this and indicate a malfunction.

Please note also:

A defective mass air flow sensor can send false input signals to the engine control unit, which can cause it to regulate the throttle valve incorrectly.