

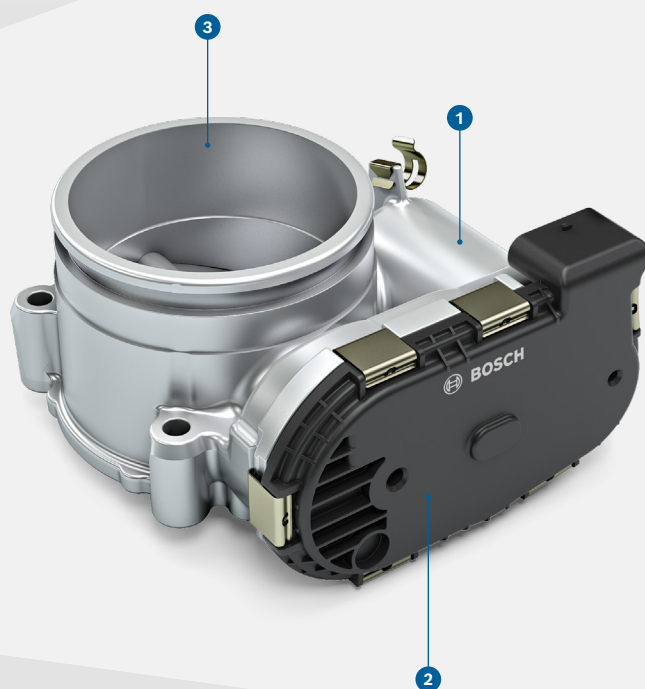
Air management

Electronic throttle valve DV-E/RKL-E



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ Engineering support and large-scale manufacturing capability available worldwide
- ▶ Best-in-class Hall IC (delay time, temperature-independent characteristic)
- ▶ Smooth engine shutdown and minimized NVH (noise, vibration, and harshness)
- ▶ DV-E/RKL-E5.9 is weight/size optimized for medium-low displacement applications
- ▶ Robust against corrosive materials

- 1 DC electric motor
- 2 Hall sensor for contactless angle measurement
- 3 Air channel with variable diameters



up to
30 %

weight and size reduction due to the new DV-E/RKL-E5.9 design as compared to the existing designs

TASK

For efficient fuel combustion, the injected fuel mass must be perfectly matched to the air supply in the engine cylinder. In an IC engine, the air supply in the combustion chamber is regulated by the electronic throttle valve by reducing or enlarging the intake manifold cross-section. The air management system drives the electronic actuators to regulate the air mass supply with absolute precision.

FUNCTION

The throttle device comprises an electrically driven throttle valve and an angular-position sensor for position feedback. The electronic engine management unit triggers the throttle valve electronically. The trigger input variables include the accelerator pedal position and any system requirements that can influence the engine torque, such as cruise control, adaptive cruise control, or active safety systems such as the electronic stability program ESP®.

100 million

supplied units attest to significant production and field expertise and set the foundation for an optimized design.

TECHNICAL CHARACTERISTICS

	DV-E5.2/ RKL-E5.2	DV-E5.9(E)/ RKL-E5.9(E)
Throttle valve diameter	32–82 mm	32–64 mm
Temperature air duct	–40 to +180 °C	–40 to +180 °C
Actuation time t_{90}	< 100 ms	< 100 ms
Excess torque	< 2.0 Nm	< 2.0 Nm
Idle air leakage (Ø 57 mm)	< 2.5 kg/h	< 2.3 kg/h
Interface	analog or SENT	analog or SENT
Optional	Stainless steel bearing, EMV package, Water heating pipes	Stainless steel bearing, EMV package

- 1 Cover
- 2 Seal
- 3 Hall IMC sensor
- 4 Idle gear
- 5 Bearing
- 6 Gear segment and spring
- 7 Shaft
- 8 Throttle valve plate
- 9 Screws
- 10 Throttle housing
- 11 Friction bearing
- 12 Cover lid
- 13 Cable clip
- 14 DC electric motor
- 15 Cover clips

