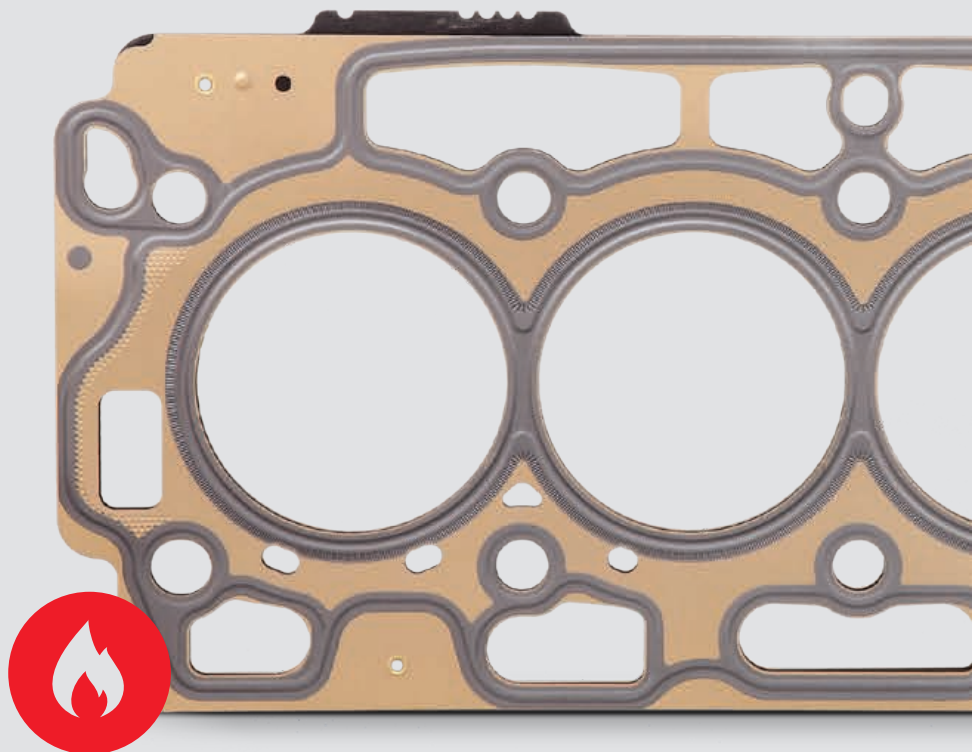


THE BEST OF BOTH WORLDS

ElringKlinger geared up to the transformation that is sweeping through the automotive industry early on and has oriented its product portfolio to the technologies of the future in all of its business units. Throughout its core competencies of stamping, punching, forming, coating, and plastic injection molding, the Group offers high-tech solutions for both worlds: for vehicles powered by combustion engines as well as for alternative drive systems.

Cylinder- head gasket

No vehicle with a combustion engine would be drivable without a cylinder-head gasket. While such gaskets do not appear to be particularly complex at first glance, they involve an astonishing amount of know-how. The reason being that the much more extensive pressures and significantly higher temperatures in modern engine generations necessitate high-precision stamping, forming, and embossing in the micrometer range so that the gaskets are fully functional and seal the engine reliably and permanently.

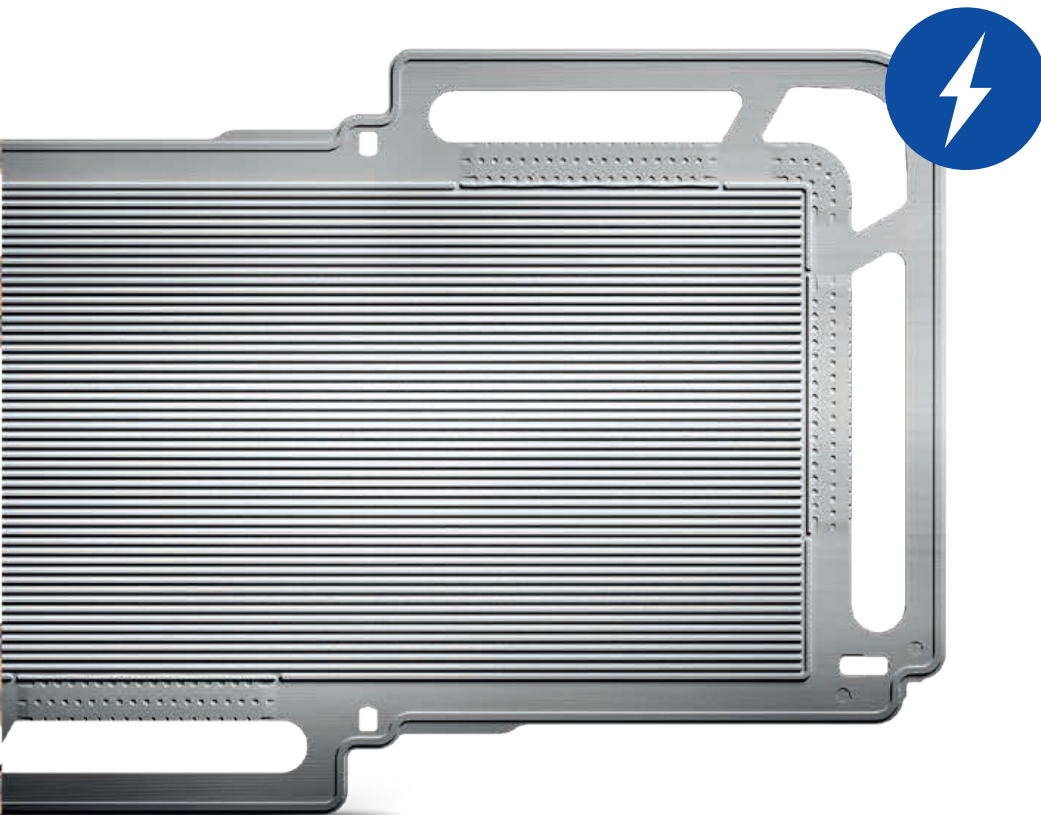


 Classic drives

 New drives

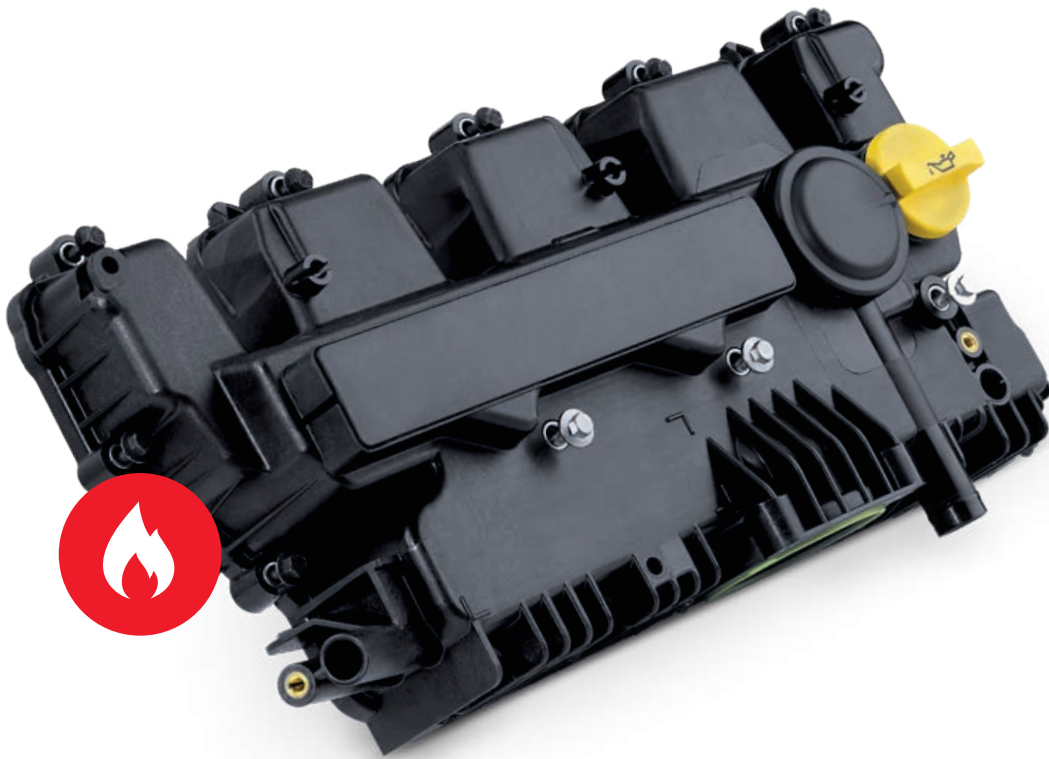
Bipolar plate

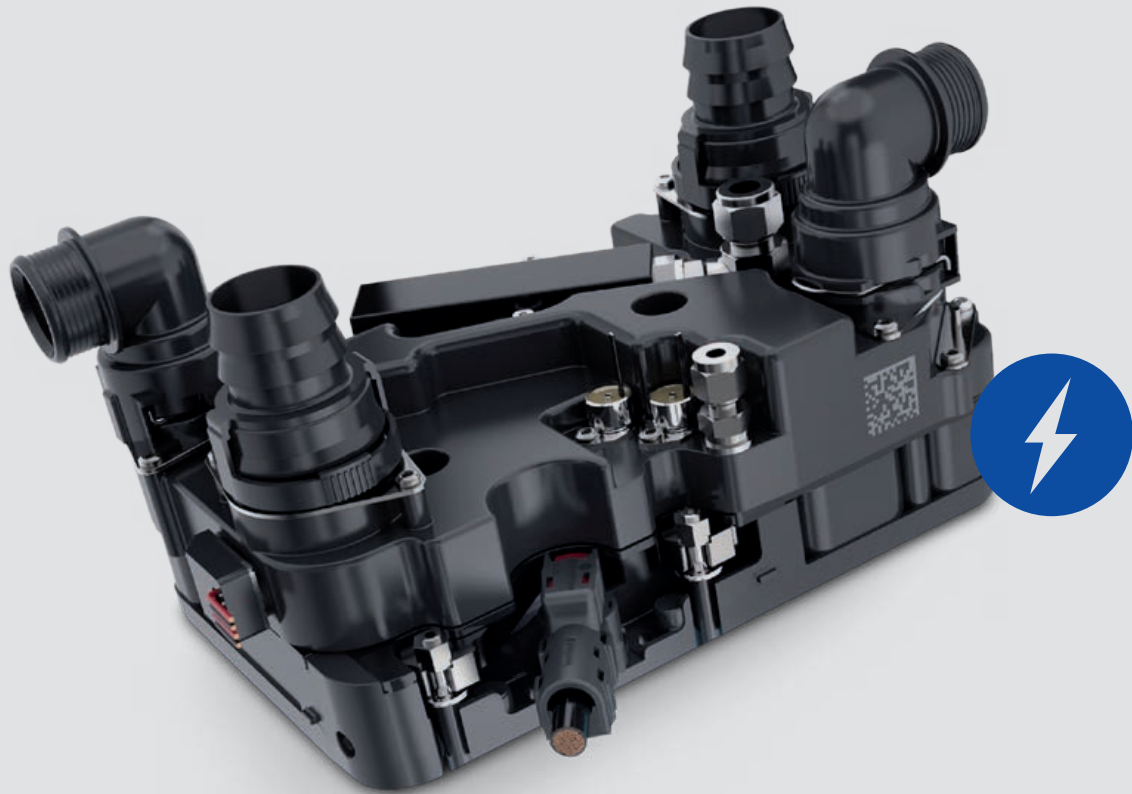
Alongside the membrane electrode assembly (MEA), two-layer metal bipolar plates are the core element of fuel cell stacks. In stacks of up to 450 cells, they form the heart of a fuel cell system. Each bipolar plate contains high-precision embossed flow profiles, through which hydrogen is supplied on one side and oxygen on the other. Acquired over a number of decades in the field of precision stamping and punching technology, the Group brings its gasket know-how to bear in order to produce these micro-channels.



Cylinder-head cover

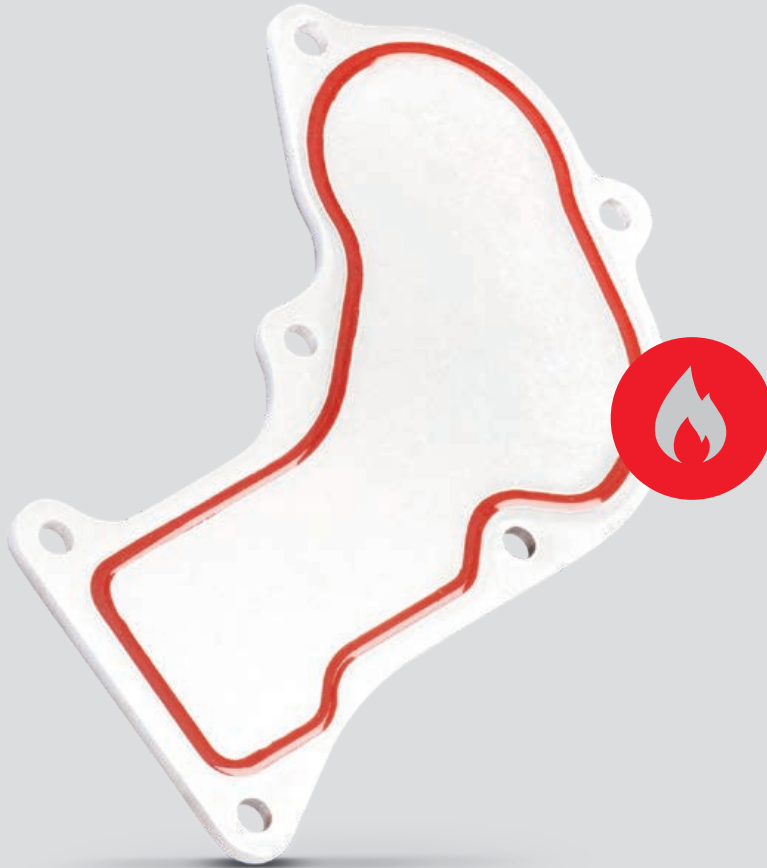
The requirements in terms of functionality, safety, and stability are demanding, particularly when components mounted close to the engine are involved. High temperatures and high pressures therefore necessitate the use of high-performance plastics, which offer crucial advantages in comparison with conventional solutions: besides their considerably lower weight, higher thermal insulation and better function integration options are points in favor of the lightweight design variant. ElringKlinger has perfected the requisite competence in injection molding tools over a number of years.





Media module

The unit responsible for fuel cell technology also benefits from ElringKlinger's proven material and tool expertise for underhood parts. Like the cylinder-head cover, the newly developed media module also simplifies the integration of the fuel cell's complete media supply system into a complex plastic assembly. The high-performance plastic component is mechanically stable, chemically resistant, and additionally weight-optimized. A range of system components such as pressure and temperature sensors are also integrated directly into the module and facilitate management of the overall system.

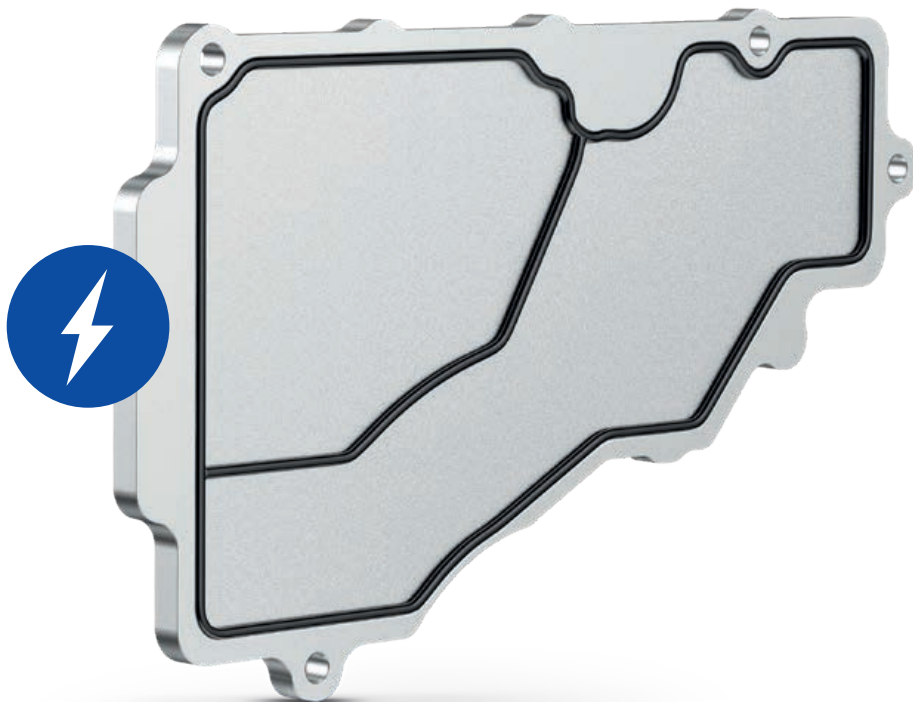


End cover

Specialty gaskets are used in the vehicle wherever components are connected or adjacent to one another. The different sealing systems are as diverse as the possible locations in which they are used. The end cover, for example, is fitted both on the combustion engine and on the transmission to securely seal the oil circuit. The material and the design are tailored precisely to customers' specific requirements. An embossed groove and the elastomer sealing compound additionally offer protection against excessive pressure and external influences.

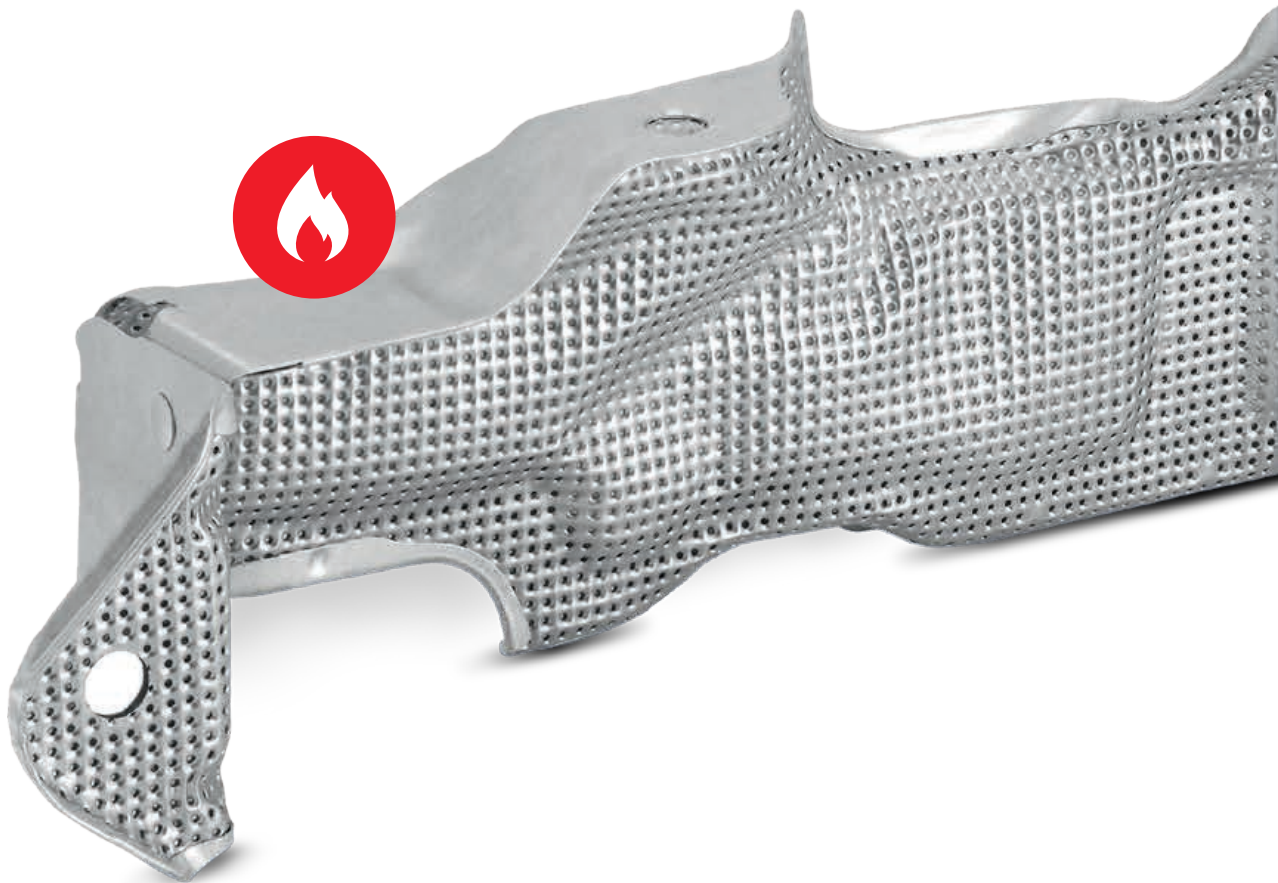
Service cover

Whether in the form of a service cover for the electric drive unit, as a housing cover in the drive electronics, or as covers on battery systems – specialized gasket technology from ElringKlinger is also used in the world of e-mobility. The company uses its profound engineering knowledge and extensive experience of materials to meet the requirements of sealing and electromagnetic shielding. An elastomer sealing compound, embossed protective strips, and molded-on spacers ensure that the components are reliably sealed.



Exhaust tract shielding

High temperatures in vehicles increase the number of shielding systems that are required. Consisting of metal and an insulation material that serves as an intermediate layer, the complexly shaped and custom-fit, multilayer shielding systems protect surrounding components from excessive thermal stress while simultaneously ensuring that the temperatures at which the catalytic converter operates optimally are reached as quickly as possible in the exhaust system.





Battery shield

Intelligent temperature management also plays an important role in e-mobility because lithium-ion batteries necessitate extensive safety precautions to minimize potential hazards. By developing the new stainless-steel battery cover, the developers have transferred their know-how in handling extreme temperatures to the world of alternative drive systems. The integration of this battery shield thus protects surrounding components from a thermal chain reaction caused by a thermal runaway.