

# Modules – Front cover for passenger cars and commercial vehicles



## GENERAL FUNCTION

ElringKlinger's front covers combine maximum functionality with minimum weight.



Suitable for e-mobility applications



## TECHNOLOGY

Front covers are produced by injection molding of thermoplastics with various glass fiber contents. The material properties of thermoplastic allows multi functional integration by using different kind of welding processes. Furthermore, plenty of other components like fixation bolts, heat shields, insert mounts and gaskets can be assembled to the main body. The variety of different assembly processes allows to create a ready-to-assemble product with a high function contribution.

### ▪ INTEGRATION OF STRUCTURAL COMPONENTS

ElringKlinger's knowledge in hybrid components and full plastic structure parts can be used in designing front covers. The function of the engine mount can basically be added as a main function to the front cover. (For further details, please see fact sheet "Plastic engine/transmission mounts").

### ▪ RADIAL SEALING INTEGRATION

Due to ElringKlinger's high knowledge on tooling technology, the design of plastic modules allows to integrate the radial sealing into the front cover with highest precision on position tolerance.

### ▪ HEAT RESISTANCE

With the right material mixture a high heat resistance is possible. The combination of high performance thermoplastics, gasket materials and the integration of in-house heat shielding are leading to feasible use of plastic covers even in hot conditions.



## ▪ MULTI FUNCTIONAL INTEGRATION

The plastic injection process and physical properties of thermoplastics allow an easy multi integration compared to other technologies like aluminium die-casting. Furthermore, the injection molding process leads to a bigger freedom in designing specific structures.

## ▪ DESIGN

Beside technical functionality the front cover can also be a design part of the engine. Different surface textures added by graining in combination with painting processes or integration of exchangeable name plates, offer plenty of possibilities for designers.



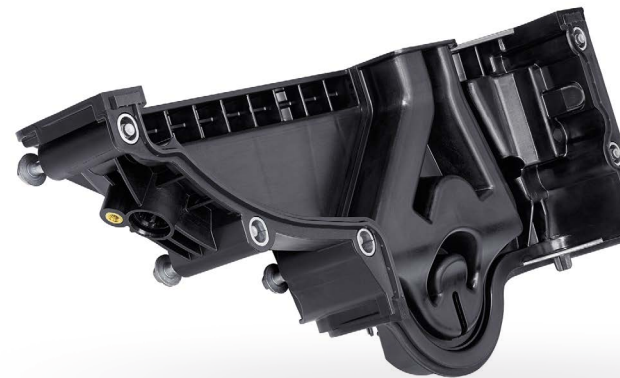
## BENEFITS

### PRODUCT BENEFITS

- High weight reduction potential
- Multi function integration (sealing, mounts, fixation bolts, wire clips, heat shielding)
  - Possible combination with intake manifold
  - Space saving by smallest wall thickness
- Better NVH performance due to high damping factor
- Good thermal conductivity
- High dimensional accuracy
- Easy assembly with low cycle time for customers
- High degree of design freedom

### MANUFACTURING PROCESS

- Short cycle times / high automatisaton
- No rework necessary
- High process stability and repeatability



## ELRINGKLINGER – YOUR PARTNER FOR FRONT COVERS

Product Development (Design, Engineering and Simulation) – Process Development – Tool Shop – Tool Sampling/Prototyping – Testing – Change-Management – Series Production – Part Measurement



## YOUR CONTACT

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