

Modules – Ladder frame for commercial vehicles



GENERAL FUNCTION

ElringKlinger's ladder frames for commercial vehicles combine maximum functionality with minimum weight. Besides the function of sealing towards the cylinder head the technology enables the integration of the wire harness and plenty of other features.



TECHNOLOGY

Ladder frames are produced by injection molding of thermoplastics with various glass fiber contents. The injection molding process allows multi functional integration and a big freedom of geometries. Furthermore, plenty of other components like fixation bolts, heat shields, insert mounts and gaskets can be assembled to the main frame. The variety of different assembly processes allows to create a ready-to-assemble product with a high functional contribution.

▪ MULTI FUNCTIONAL INTEGRATION

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

▪ FUNCTION COMBINATION

In combination with the cam cover design, a combined technical solution of both components can be provided.

▪ WIRE HARNESS

The wire harness can easily be assembled to the ladder frame and provides a "plug and play" solution to the customer.



▪ HEAT RESISTANCE

A high temperature resistance is possible with the right material mixture. The combination of high-performance thermoplastics, sealing materials and the integration of in-house heat shields result in the practical use of plastic covers even under hot conditions.




BENEFITS

PRODUCT BENEFITS

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

MANUFACTURING PROCESS

- No rework necessary
-  High process stability and repeatability



ELRINGKLINGER – YOUR PARTNER FOR LADDER FRAMES

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



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