

Hydroforming hybrid – Front-end carrier and adapter



GENERAL FUNCTION

ElringKlinger's front-end section produced as a hydroforming hybrid design can serve as a support for the intercooler, headlight modules, windscreen wiper water reservoir, horn, distance radar module or air intake. It also supports the bonnet.



Suitable for e-mobility applications



TECHNOLOGY

Hydroforming hybrid (HFH) is a combination of thermoplastic injection moulding with a upstream hydro-forming process of metallic hollow structures/pipe profiles. ElringKlinger substitutes steel/aluminium welded or aluminium/magnesium-die-cast constructions through hybrid arts, which combine aluminium or steel tubes with thermoplastic materials.

▪ EXCELLENT WEIGHT-PERFORMANCE RATIO

Compared to existing technologies like welded metallic structures, HFH parts give excellent crash performance and structural part stiffness combined with low weight.

▪ LOAD PATH BASED DESIGN

Metal structures, e.g. magnesium, aluminium- or steel sheet-components can be attached in addition, to stiffen areas with highest load requirements.

▪ FUNCTIONAL INTEGRATION

The plastic injection process allows very easy further functional integration such as local fixation points, guiding features, support features, mounts, etc.



BENEFITS

PRODUCT BENEFITS



▪ High weight reduction potential



▪ Load path oriented design



▪ Further functional integration easily possible

▪ Various material combinations possible

▪ High dimensional accuracy



MANUFACTURING PROCESS

- Short cycle times / high automatisaton
- No rework on structures necessary
- High process stability and repeatability
- Long production history with HFH / global standards on production processes



ELRINGKLINGER – YOUR PARTNER FOR HFH COMPONENTS

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



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