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PRESS RELEASE

Lightweight Forging III: International Lightweight Forging Initiative Meets in Aachen for Hands-On Workshop

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42 kg in a passenger car, 99 kg in a light commercial vehicle – following on from these impressive results from the first two phases of The Lightweight Forging Initiative, 39 steel manufacturers and forging companies from Europe, Japan and the US came together in 2017 for the third phase to uncover the lightweighting potential in a hybrid split-axle four-wheel drive vehicle as well as in parts of a conventional truck powertrain.

With this, an initiative has been set up that is unparalleled in the forging world. With 39 participating companies from three continents, it exceeds the size of all joint forging projects to date including, incidentally, the influential ULSAx projects, which analysed ultra light steel in the chassis approx. 20 years ago. With eight companies from Japan and one from the US, a global network has been generated in which the level of cooperation is likewise unprecedented among forging companies and steel bar manufacturers.

The third phase was launched in July 2017 and a hybrid passenger car disassembled at the automotive research company fka Forschungsgesellschaft Kraftfahrwesen mbH in Aachen, Germany. In addition, the individual parts of a truck transmission, propeller shaft and rear axle were documented. The Initiative with its project partners held a workshop at the end of January 2018 at the fka in Aachen. The program included presentations on electrification trends in the automotive industry, the design of transmission systems and on the potential lightweighting effect of high-strength steel. There was also plenty of scope for suggestions and discussions regarding the technical marketing of new steel developments. The three-day event also provided a platform for hands-on sessions, during which the 80 participants were able to inspect and discuss 4200 parts before going on to develop several hundred lightweighting ideas during the workshop itself.

Over the next few weeks, the lightweighting ideas will be refined by the participants, so that the overall results can be presented to the public in summer 2018. The aim is to promote communication about lightweighting along the entire supply chain (steel manufacture – forging – component manufacture – automotive application) in order to implement new and feasible lightweight forging design solutions.

Characters: 2,309

Caption to enclosed photo:
Project participants during the hands-on Lightweight Forging workshop in January 2018 in Aachen, Germany.



The Lightweight Forging Initiative
Since 2013, a total of 35 steel manufacturers, forging companies and an engineering service provider have joined forces under the auspices of the German Forging Association (Industrieverband Massivumformung e. V.) and the Steel Institute VDEh (Stahlinstitut VDEh) to form The Lightweight Forging Initiative. The goal of this Initiative, which is unparalleled worldwide, is to achieve weight-savings in cars and light commercial vehicles using innovative components made of steel. During Phase I, which took place in 2013 and 2014 with 24 participating companies, a medium-sized passenger car was analysed and the lightweight design potential of forged components identified. In total, a weight-saving potential of 42 kg was achieved in the powertrain and chassis. The Initiative entered Phase II in 2015 and 2016 with 28 companies and focused this time on a light commercial vehicle up to 3.5 t. Phase II was able to build on the success of Phase I by identifying a feasible lightweight design potential of 99 kg in the powertrain and chassis. Phase III of the Initiative kicked off at international level in summer 2017 with 39 companies from the US, Japan and Western Europe. The focus of this phase is on the lightweighting potential in the powertrain and chassis of a hybrid passenger car as well as in the transmission of a conventional truck. Further information may be found at: www.massiverLEICHTBAU.de/en/startseite/

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Industrieverband Massivumformung e. V. (German Forging Association)
Industrieverband Massivumformung e.V., with its 120 members, represents the interests of the industry with sales of 6.7 billion euros and almost 30,000 employees. A core task is organising collaboration across the member companies, most of which are medium-sized businesses, with the aim of working together to increase the competitiveness of the individual firms. Germany is the technology leader when it comes to forging and, after China, is the world's largest producer of forged parts.

Stahlinstitut VDEh (VDEh Steel Institute)
The association promotes cooperation among engineers on projects of a technical and scientific nature, with the aim of further developing steel technology and the material steel. Stahlinstitut VDEh focuses in particular on collaborative research. In international collaborative work, system manufacturers and suppliers are also involved. Today, Stahlinstitut VDEh members include around 5,300 university graduates in technical, scientific and commercial subjects or those in leading positions in industry and trade. Besides this, 150 companies have joined the association from the areas of iron, steel and associated materials.