

BENTELER small-overlap crash solution brings more safety for vehicle occupants

- BENTELER presents an innovative solution for greater safety through controlled deflection from an object in a collision.
- The passenger-protection solution is ready for series production, independent of the drive type and can be flexibly adapted.
- BENTELER meets requirements of the American Insurance Institute for Highway Safety (IIHS) and the ADAC Small Overlap Crash Test "Frontal Collision with small overlap" (08/2018).

Paderborn, September 8, 2021. Frontal collisions in vehicle accidents often result in serious injuries to the occupants. In future, an innovative solution from automotive supplier BENTELER will ensure greater safety in so-called small-overlap crashes. These are accidents that involve an oblique impact of only around 25% of the vehicle. Controlled release of the control arm link helps deflect the vehicle from the obstacle where they would otherwise become locked together. This reduces the force exerted on the occupants in the event of a collision.

The small-overlap solution is also part of the Integrated E-Chassis Module (an axle with integrated drive for e-cars) developed jointly with Bosch. Bosch will be exhibiting this module at the IAA from September 7 to 12 (Hall B3 Booth C30).

Greater occupant safety: ready for series production, future-proof and drive-independent

The BENTELER solution is based on conventional processes, is compact, cost-effective and ready for series production. In the event of an impact, a shear mechanism with an interlocking bolt ensures that the vehicle is deflected from the obstacle. This ensures that the vehicle structure and occupants, only have to dissipate a small amount of the crash energy. Existing systems can be adapted with only small modifications. The interlocking can be adapted prior to series production, allowing the mechanism to be adjusted as necessary once final crash results are available from the pre-production vehicle.

Chassis developers at international car manufacturers are addressing the changing vehicle structure requirements of hybrid and electric drives. "Suspension systems with a single front control arm meet the requirements of e-mobility. Our solution can be used with both electric and non-electric vehicles. However, since the kinetic energy is greater for heavier e-cars, deflecting the vehicle from the obstacle in small-overlap collisions becomes even more important. Our mechanism supports this approach and thereby contributes to the safety of drivers and passengers," explains Peter Stastny, Team Leader of BENTELER Automotive's front subframe competence center.

Crash solution meets needs of car buyers and safety requirements of automotive associations

Together with reliability, safety is the most important criterion when buying a car. According to a Statista (German market research portal) study, it is even more important than value for money. This is particularly true for small cars. In crash testing as early as 2012, the American Insurance Institute for Highway Safety (IIHS) showed the risk of serious leg injury in the event of a small-

overlap crash, especially for the driver. Since then, this crash requirement has been a condition for the American automotive market. What is already mandatory in America is still being developed in the rest of the world. The ADAC has also recognized the problem of small-overlap accidents, which are the second most common type of accident in Germany. The control arm shear mechanism being presented by BENTELER resolves this safety problem.

BENTELER has patented the series-ready solution in Germany, the USA and China. The mechanism was developed for use with recyclable steel together with students and staff at the School of Lightweight Automotive Construction at the University of Paderborn, under the leadership of Prof. Dr. Thomas Tröster.

BENTELER shows how the small overlap solution works on its LinkedIn channel:

<https://www.linkedin.com/company/benteler-group/posts>

Sources:

*<https://de.statista.com/statistik/daten/studie/171605/umfrage/wichtige-kriterien-beim-autokauf/>

**https://www.adac.de/infotestrat/tests/crash-test/small_overlap_crashtest/default.aspx

Contact:

BENTELER Group

Birgit Held

Vice President Corporate Communications/Marketing

Phone: +49 89 3740 8137 / Mobile: +49 162 2427 264

E-Mail: public.relations@benteler.com

BENTELER Automotive

Dr. Yves Ostrowski

Head of Communications/Marketing

Paderborn, Germany

Tel.: +49 5254 81 307610 / Mobile: +49 172 5727257

E-Mail: public.relations@benteler.com

About BENTELER

BENTELER is a global, family-owned company serving customers in automotive technology, the energy sector and mechanical engineering. As metal processing specialists, we develop, produce and distribute safety-related products, systems and services worldwide.

In the 2020 financial year, Group revenues were €6.358 billion. Under the management of the strategic holding BENTELER International AG, headquartered in Salzburg, Austria, the Group is organized into the Divisions BENTELER Automotive and BENTELER Steel/Tube. Our around 27,000 employees at 98 locations in 28 countries offer first-class manufacturing and distribution competence – all dedicated to delivering a first-class service wherever our customers need us.

BENTELER. The family of driven professionals. Since 1876.

www.benteler.com



About BENTELER Automotive

BENTELER Automotive is the development partner for the world's leading automobile manufacturers. With around 23,000 employees and more than 70 plants in about 25 countries we develop tailored solutions for our customers. Our products include components and modules in the areas of chassis, body, engine and exhaust systems, as well as solutions for electric vehicles.

<https://www.benteler-automotive.com/en/>