Body Department

In addition to drive-train and chassis the body represents the third major assembly group of a vehicle. Therefore we consider the body department as one of our central scope of duties. Our tasks range from developing components, modules and systems to the development of complete vehicles. Above all duties with regard to passive safety, lightweight construction and also durability requirements are processed.

According to our strategic orientation, the simultaneous exploitation of theoretical, numeric and experimental methods is fundamental to our competitiveness. In line with the industrial development process of vehicles the customers can call on our service competence during the phases of conception, construction, simulation and testing.

The main focus of the theoretic works of the body department is to be found in advanced product engineering. The duties range from benchmarking and conceptual studies up to the execution of development activities as well as production readiness. For this reason we cooperate with competent partners, who are highly qualified in series design or manufacturing technology.

Within the framework of computer-aided design and structural analysis we develop new concepts for complete vehicles, their bodies, components and structures. Furthermore to analytic approaches different CAD- and FEA-software applications in combination with powerful hardware resources are available.

Apart from carrying out linear and non-linear structural analyses, we also have topology and topography optimization and durability analysis tools at our disposal, too. The scope of our experimental methods covers a large part of test bench capacities, which are mandatory for body development. Numerous test benches form the basis of these capacities, which largely built up in a modular way, so as to ensure a flexible handling according to the customers' needs. The variety of our experimental methods can be illustrated on the basis of a few examples.

One of our major tasks consists in determining static and structural characteristics of bodies. We execute stiffness-, and strength-analysis by means of quasi-static crushing tests and durability tests. These kind of procedures are applied to both partial body structures and complete vehicles. Among the test bench equipment the servo hydraulic test bench takes an outstanding position.

The numerous testing facilities are completed by different drop tower test benches and a crash test facility, which is extremely variable. It allows various crash configurations for either complete vehicles or component tests depending on the customers' requirements. These configurations comprise crash tests against deformable barriers, pole crashes, tests simulating curb stone impact or sled tests by means of a deceleration device.