

## Diagnosis of Electric Vehicles and Hybrids

- **mega macs software includes roughly 300 hybrids und 113 pure electric models**
- **High-voltage vehicle safety certification required**

**Ihringen, April 18, 2019.** The current transition towards E-mobility is reflected in the increased hybridization of vehicle drives. Workshops are therefore well advised to get ready for working with high-voltage vehicles. After all, the maintenance requirements for vehicles with an E-drive are equal to that of traditional combustion engines – if not higher. Like other vehicles, pure electric cars need a well-functioning battery and thermal management system as well as sophisticated sensor technology for assistance systems, brakes, suspension and comfort systems. All of these systems require service and repair. However, this has to be done with greater caution since high-voltage of up to 1000 volts is potentially life-threatening.

As far as the diagnosis of EVs and hybrids is concerned, users of a current mega macs from Hella Gutmann do not need to worry. The list of roughly 50,000 vehicle models covered by the mega macs diagnostic software includes a continually growing number of vehicles with alternative drive systems. In May 2019, the mega macs software comprises more than 400 EVs and hybrids from Audi, BMW, Chevrolet, Citroën, Honda, Hyundai, Kia, Lexus, Mercedes, Mitsubishi, Nissan, Opel, Peugeot, Porsche, Renault, Smart, Toyota, Volvo und VW. The portfolio of drive systems includes plug-in hybrids, full hybrids, EVs with range extender and all-electric vehicles.

### Diagnosis, Data and Technical Support

With a mega macs diagnostic tool, independent workshops already possess the necessary stock-in-trade for extending their services to EVs and hybrids. However, to be able to offer this service, at least one employee must have the qualification 'Person who has received electrical instruction' or 'High-voltage technician'. To be able to carry out non-electric work like service and repair jobs on E-vehicles or hybrids, the high-

voltage system must first be de-energized. Only qualified personnel are authorized to do this.

When working on EVs and hybrids, the technician is also guided by his mega macs. The diagnostic tool communicates with ECUs, transmits data and proposes solutions. Based on the individual vehicle diagnosis, the tool proposes the necessary steps to solve a particular problem. Work steps, which for safety reasons must only be carried out by personnel trained in high-voltage vehicle safety, are highlighted by prominent warning messages. Since it can be taken as a given that independent workshops can expect an increased demand for work on vehicles' high-voltage systems, Hella Gutmann is preparing considerable additions to diagnostic depth for its high-voltage portfolio as from autumn 2020.

Comprehensive service and support complement the diagnostic functions of the mega macs. Around 90 specialized automotive technicians of the Technical Help Line regularly attend training courses – including trainings on vehicles with alternative drives. Currently, HELLA Academy proposes a technical training on HV systems on intrinsically safe vehicles. It takes place on two locations in Germany. Other trainings are currently in preparation.

**Note:**

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**Hella Gutmann Solutions GmbH, Ihringen:** The company has about 500 employees, is headquartered in Ihringen/Breisach, Germany, and belongs to the Hella Gutmann Group, which is a corporation of HELLA GmbH & Co. KGaA. The product range focuses on professional equipment for automotive workshops, car dealerships and automotive testing agencies. Core products are data, software, devices and tools for diagnosis, exhaust emission tests, headlight adjustment, system checks as well as the corresponding measuring technology. About 45,000 automotive companies in 24 countries work with the tools and professional knowledge of Hella Gutmann Solutions on a daily basis. They benefit from the high German quality standards and customer-oriented services such as the Technical Help Line, technical training, technical data and sales & marketing support.

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