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# FIRST RESPONDER TRAINER FOR HEV / EV

Training and Qualification of First Responders

# ELECTRIC VEHICLES ON THE ROAD - RESCUE FOR THE RESCUERS

The number of hybrid and electric vehicles is increasing worldwide. Vehicles involved in accidents present a particularly complex task, because the high-voltage system poses various, very specific dangers. As a rule, the first to come into contact with HV accident vehicles are the first responders. Only with the right know-how can they avoid endangering their own lives and the lives of others involved.

The qualification required for the proper and safe recovery of HV vehicles involved in accidents must be specifically tailored to the needs of the police, fire brigade, recovery services and others. Implementing such training is complex. Real vehicles are hardly available and even if they are, the special accident scenarios cannot be simulated on them under acceptable risk.

This is where the training system „First Responder Trainer for HEV / EV“ from Lucas-Nuelle comes in. It offers professionals an absolutely safe training concept. The system consists of a trainer and an e-learning course. On the hardware, rescue workers can carry out practical salvage tasks close to the operation, while the e-learning course interactively conveys the necessary background knowledge.

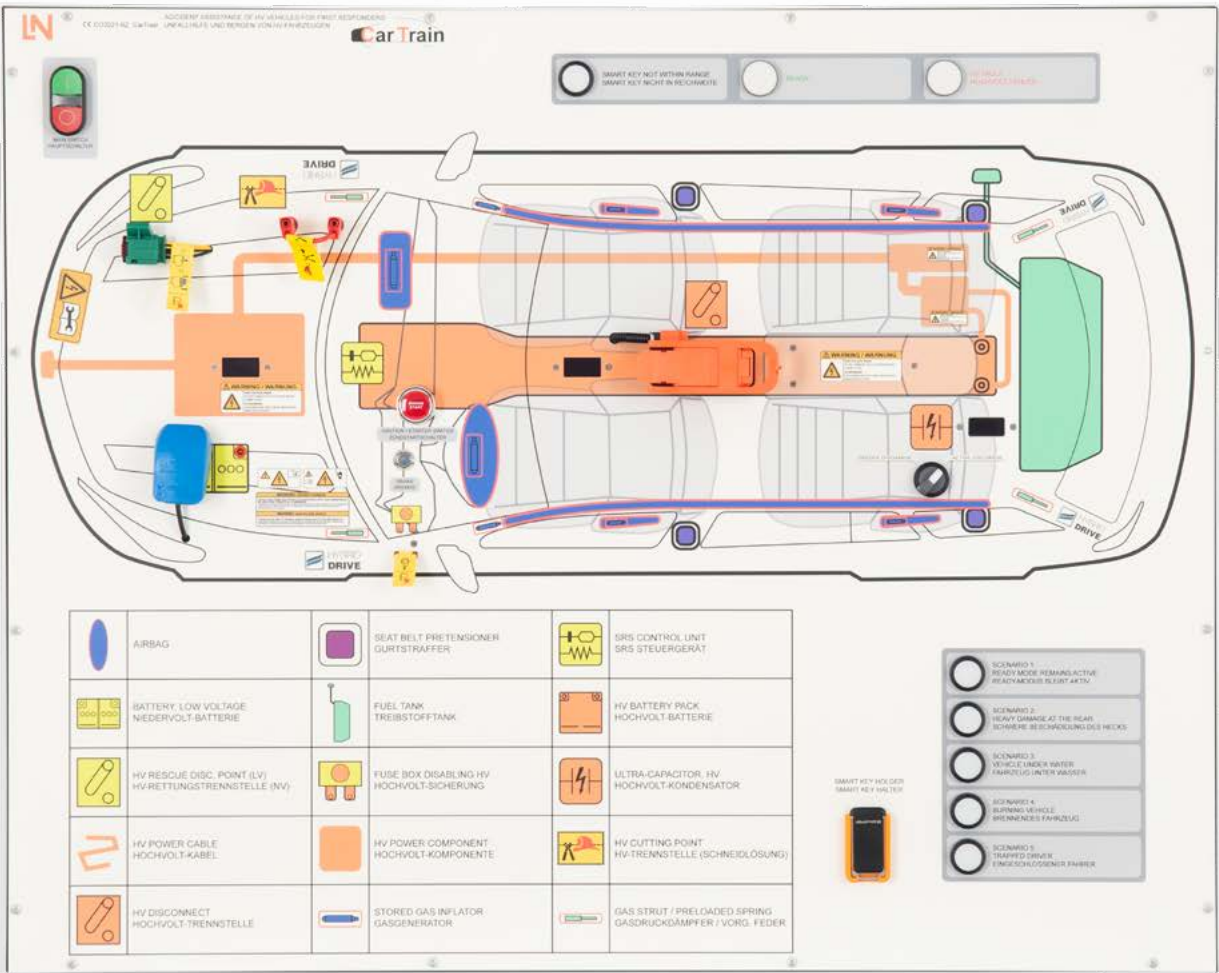
## SUCCESSFUL QUALIFICATION

The Lucas-Nuelle training system allows first responders to practise the correct procedure for recovering hybrid and electric vehicles over and over again - until it becomes muscle memory, ensuring maximum efficiency even when working under time pressure.

# SAFE HANDLING OF ELECTRIC VEHICLES



# QUICK AND SAFE SHUTDOWN OF THE HV SYSTEM



In conjunction with the e-learning course, the training system teaches the first responders the following competences, among others:

### Identify

- Reaching the scene of an accidental identifying hybrid and electric vehicles
- Identifying HV components in the accident-damaged HV vehicle

### Assess hazard potential

- Hazard assessment before the start of salvage
- Understanding the real hazard potential of HV vehicles
- Assessment of the hazard potential of an HV battery (in use)
- Hazard assessment before transporting a damaged HV vehicle

### Vehicle recovery

- Securing the vehicle key/shutting off the on-board electrical system
- Safe and fast shutdown of the HV system
- Procedure for damaged HV vehicles

### Rescue of persons

- Procedure for rescuing persons from HV vehicles
- Special first aid measures

### Apply protective measures

- Personal protection from electrical body current
- Special features when securing the accident site

### Rescue cards

- Use of rescue cards
- Establishment of a rescue card database
- Preparation of the rescue database for rapid deployment

In order for the occupants and the vehicle to be recovered safely, the HV system must be switched off. This step is also essential for the safety of the rescue forces.

The training system has all the common methods of the various vehicle manufacturers, which lead to the deactivation of the HV system:

- HV cut-off point
- HV disconnection point (cutting solution)
- HV fuse
- HV rescue disconnection point (NV)
- 12 V battery

# HANDS ON ACCIDENT SCENARIOS



HV battery thermography is a quick and effective method to correctly assess the current hazard potential of a vehicle involved in an accident. Especially if there is even the slightest suspicion that the HV battery is damaged, the temperature level or behaviour should be analysed and monitored as quickly as possible.

To ensure that this succeeds instinctively in the field, the training system offers the exclusive possibility of simulating a heating up of the HV battery. Completely safe and repeatable as often as desired.

The training system offers the possibility to activate various accident scenarios in order to plan and work through the appropriate procedure together:

- Scenario 1**
  - READY mode of the HV vehicle cannot be switched off
- Scenario 2**
  - Severe damage to the rear and HV battery (incl. simulated heating of the HV battery)
- Scenario 3**
  - Damaged HV vehicle
- Scenario 4**
  - Burning HV vehicle
- Scenario 5**
  - Trapped driver

# COMPLETE E-LEARNING CURRICULUM INCLUDED



- Software and curriculum are site licenses!
- No additional annual subscription fees!



The e-learning curriculum perfectly complements with the trainer as it contains all necessary theory as well as the handling instructions for the twenty different practical exercises. The course has a strong focus on interactive learning through the use of numerous videos and animations.

Complex topics are thus presented in a way that is easy to understand and the learner retains a high level of motivation throughout the whole course. Furthermore, the learner can check his knowledge at the end of each chapter by means of selected questions in the form of a knowledge test.

## Further advantages

- Site license – You can use the curriculum on as many devices within your training site.
- Free updates – You get free updates for your curriculum by download
- No extra costs - No additional annual subscription fees



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