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BATTERY EXTINGUISHING SYSTEM TECHNOLOGY (BEST) EXTINGUISHING SYSTEM FOR EV BATTERIES

The Rosenbauer BEST is an extinguishing system for high-voltage lithium ion batteries in electric vehicles. Tried and tested since 2018, it is the safest, most efficient, and fastest extinguishing option on the market to cool batteries and quickly stop thermal runaways.

With its easy positioning and approach, the operator is a safe 25' away from the EV when activating the system. The piercing stinger penetrates the battery housing, flooding it with water at 8 gallons per minute. A proven reduction in water, compared to the alternative of a surround and drown method, which has shown the need of 6,000 - 8,000 gallons of water being required for an equivalent outcome.

With as little as 500 gallons of water, the Rosenbauer BEST can extinguish a vehicle battery fire.

Safe. Efficient. Fast.



BEST COMPONENTS

The system consists of two main components - the extinguishing unit and the operating unit, which are connected to one another by hoses.

BEST FEATURES & BENEFITS

SAFE

The firefighters only spend a short period of time in the direct vicinity of the electric vehicle to be extinguished. This short time near the vehicle reduces the risk of contamination from the smoke if the battery is evaporating gas.

EFFICIENT

The extinguishing system brings water exactly where it is needed - to cool the cells and modules in the battery housing. Extinguishing the fire is very resource efficient and the spread of smoke gases is minimal.

FAST

Thanks to the 8 milisecond firing speed of the piercing stinger, all currently known and tested battery housings can be quickly penetrated.

COMPATIBLE

Using traditional apparatus compliments, the BEST is propelled by standard SCBA bottles to activate and enter EV batteries.

TESTED UNDER REAL CONDITIONS

During research and development, numerous fire tests were carried out with a large number of battery systems and complete vehicles. The system was tested on all common cell types (round, pouch or prismatic cells) in the platforms of American and European cars and trucks. The batteries tested had a capacity of up to 120 kWh.

PROVEN IN PRACTICE

Factory, professional, and volunteer fire departments have been testing the extinguishing system and are providing important feedback from their experiences.

NORMAL PRESSURE EXTINGUISHING SYSTEM

The extinguishing system simply needs a water supply with a pressure of 60-150 psi.

OPERATION OF THE EXTINGUISHING SYSTEM

Upon assessment of the vehicle fire, it is possible that the battery is not affected. Always assume standard operating procedures of a vehicle fire and only use the BEST if the battery is affected. If there are clear signs that the battery is affected, the BEST tool should be deployed and used as quickly as possible.

The following symptoms are indicators of a battery fire:

- c Smoke from the area of the battery (depending on where the battery is installed)
- c Jet flame from the area of the battery
- c Unique noise coming from individual cells during thermal runaway (whistling, hissing, banging)
- c Thermal imaging camera (TIC) showing increased temperatures at the battery housing and areas

The extinguishing unit with the piercing nozzle should be placed directly against the battery, where it can be quickly and directly penetrated. If the vehicle needs to be raised to get the unit under, simply use a car jack, spreader, or cribbing for example, then use a pike pole to push it into position. The unit can also be used inside the cab or from the trunk depending on the location or access to the battery. The extinguishing time depends on the size and architecture of the battery and can be between 10 and 60 minutes.

TECHNICAL DATA

Water Flow	8 gal/min at 100 PSI Flow Range from 6.6 Gal at 60 psi up to 13 gal at 215 psi
Hose Length	26' 3" as standard
Air Supply	Standard SCBA Bottle
Weight Ext. Unit	Approx. 46.3 lb
Weight Control Unit	Approx. 48.5 lb
Weight Hose Package	Approx. 52.9 lb



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