

Alkè's versatile electric vehicles



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Case study on the choice of the right battery for multifunctional electric vehicles. The story of Alkè.

Alkè was founded in 1992 in Northern Italy and it produces electric vehicles for on road transport, logistics and other multifunctional or special uses.

Among the segments covered by the company are communal uses, such as municipal services, waste collection, and hospitals; and industry and logistics, such as industrial plants, logistic services, and last-mile delivery.

These vehicles are used also in the touristic sector, as for example in holiday resorts, hotels, and campsites, as well as in agricultural applications such as vineyards, horse-riding centers, and others. Alkè delivers also explosion-proof machines for the oil & gas industry, tunneling, and mining.



The electric multipurpose vehicles by Italy-based Alkè found application also in off-road segments.

Alkè's most popular vehicle is the ATX 340, available in the E/ED/EH/EDH versions. It is a robust and high-performance machine with cargo capacity of 1630 kg and it can pull a trailer weight of up to 4500 kg.

Alkè said that this machine is ideal for intensive use: it is homologated for on road travel but is excellent for off-road use, on difficult terrains and steep inclines. It can mount several implements, such as crane, hydraulic tailgate, or pressure washer, and is therefore adaptable to various segments including industry, public works, and tourism.

The ATX 340 is also the Alkè's vehicle with more autonomy, up to 200 km, and mounts lithium batteries by the Italian specialist Flash Battery, which supplies two energy solutions with 21.5 and 10.8 kWh tailored to the specific Alkè vehicles' needs.

Choosing the right battery pack is certainly key for the performance of full electric vehicles, and Alkè explained that the choice fell on lithium units by Flash Battery which were configured according to the company's requirements. Alkè also commented that these batteries are fit for the various uses that its machines are utilized for, which are often quite different from one another.

These battery pack types are mounted on Alkè vehicles on the market since some years and have proven to be reliable and durable. According to the manufacturer, final customers fully recognize the higher performance of lithium battery-powered electric vehicles and even clients that initially wanted to order only lead-acid batteries, now prefer lithium ones.

Particularly interesting in the lithium packs by Flash Battery, according to Alkè, is the availability of tensions and capacities that fit the working requirements of very different applications. The battery heating system is also a key feature which allows the vehicle to operate between -25 and +45 °C ambient temperature, thus covering diverse markets spanning from the Scandinavian countries to deserts in the Middle East.



Flash Battery's customised solution for Alkè: a 10.8kWh, 210Ah battery for multipurpose vehicles.

When starting its cooperation with Flash Battery, Alkè could profit of application case studies that the supplier had already tested in demanding duty-cycles or high and low ambient temperatures. Already in the first meeting, Flash Battery had analyzed different user cases and was able to propose a number of solutions to design a battery pack customized to Alkè's needs.

The battery management system is very user friendly as well, which is a fundamental requirement for Alkè, along with its capability of handling all possible application cases.

As a matter of fact, in addition to ensuring an ultra-fast balancing time (>30 min), Flash Battery's patented battery management system (BMS) guarantees stable performance over time, prevents faults, and performs self-diagnosis and predictive maintenance, providing a comprehensive check of the battery pack.

Among the challenges Alkè encountered with the design of its electric vehicles were the increase in autonomy, the reduction of vehicle weight to increase performance and load capacity, and noise reduction; clients are particularly interested in this last aspect and expect a vehicle that is completely noiseless.

Today Alkè is a major player in the international electric vehicle industry and its vehicles are sold in more than 40 countries across all continents; some European countries are among the most successful export markets for the company, among which Germany, France, Spain, Portugal, and the UK.

Technological innovation is a pillar in Alkè's approach to the market and its Research & Development department cooperates to international research projects as a specialist in electric mobility.



Battery-electric multipurpose vehicle by Alkè

Important technological synergies such as the one established with Flash Battery are further confirmation of the manufacturer's approach to continuous innovation.

Since the start of the company over 20 years ago, Alkè has presented an innovation to its electric vehicle platform about every five years, in order to promptly anticipate the demands of an ever-evolving market.