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Kart Racing Market From Fast Kids to Life-Long Customers

RACING ELECTRIC KARTS: Opportunities & Challenges

Many kart manufacturers today, including Sodikart in France, Swiss Hutless and Tomkart in Switzerland, OTL in Italy, Shaller Enjuneering (that's how Shaller spells it) and Electra Motorsports in the USA, have developed an electric kart specifically for the rental market. Not many, however, have worked on the design of high-performance electric karts destined for organized competition among dedicated race teams, including those running gas-powered karts.

However, Massimo Tucci, of Hydra, an Italian design company for electronic systems and industrial consulting, has worked with the Aecivitas Team to build an electric kart able to compete in the FIA Alternative Energies Cup.

The main reasons why electric karts have captured the interest of many karting entrepreneurs are no exhaust emissions, low noise, high torque at low rpm, high safety standards for customers and track operators, and the fact that they are better accepted by ecologically minded customers as well as public authorities. The key components of electric karts can be divided into three main elements: electrical motor, the controller, and the batteries. The frame of a gas-powered kart is then modified.

"Electric karts are very fun to drive because the torque is unmatched, the vehicle is ready to use, and there's excellent acceleration," explained Tucci. "Driving is challenging, and for those more technically oriented, there are opportunities to work on the powertrain or to modify recovery energy in braking (KERS—Kinetic Energy Recovery System), and, where possible, change acceleration and supply of power profiles. The limit is still to be found."

Marco Falci, the first winner in the world with an electric kart in a race for 125cc gas-powered karts, explained, "The high-performance electric kart is one of the most responsive, precise handling vehi-

cles on the market right now. The exhilarating acceleration and performance has got to be experienced to be believed. All know that the first driver to get the power down in a corner will have the greatest speed and best track position at the end of the straight. The electric kart has evolved a lot, with tight and responsive handling for precise corner entry, while the power to accelerate rewards the driver with clean, thrilling passes."



Electric karts offer a variety of advantages when it comes to racing, including low noise, low fuel costs, and low emissions. For racers, the acceleration factor makes them a blast to drive, and electric karts have indeed beaten gas-powered karts in competition.

Tucci explained, "Determining the ultimate speed of those vehicles is not an easy subject. The kart that we have built has the biggest performance in acceleration and it is very competitive. It can go from 0 to 100 Km/h (0 to 62 mph) in 2.5 to 3 seconds. Right now the maximum performance can be more than 140 to 160 Km/h at top speed. In regular or slow karting circuits, it is a winner. In race karting circuits, however, it hasn't reached the right level of competitiveness yet."

Electric kart events are organized by the FIA Alternative Energies Cup, a "world" championship for vehicles with alternative propulsion; the National Electric Drag Racing Association (NEDRA) in the US; and the ERK Championship in Japan.

—Arianna Maugeri