



- **F1-Design**
- **Lithium-Batteries**
- **Electric engine**  
with 4 power levels
- **Adaptable**  
for body sizes from  
125 - 195 cm

### **Technical specifications**

- High-strength 12 layers carbon chassis
- LiFePO<sub>4</sub>-Batteries [50 V / 40 Ah / 30 kg / max. output power 10kW /max. input power 6kW / up to 10'000 charging cycles thanks to an intelligent battery management system].
- 50 Volt Lynch electric engine with a performance ratio of over 90% and a peak performance of 16kw
- Maintenance-free belt drive
- 40mm hollow axle
- Hydraulic brakes
- Bridgestone tires
- Carbon seat
- Reinforced and adjustable stub axles
- Steel steering wheel
- 120 kg without batteries
- Adjustable 4 levels electronic engine control

### **Options**

- Battery charger
- Radio-controlled power limiting system
- Available in various colors

## **FAQ**

### ***Why tomkart?***

- The tomkart weighs, including Lithium-Batteries, only 150 kg. The batteries can be recharged very fast.
  - Due to the easily adjustable seat- and pedal- construction, the tomkart is ideal for both children and adults and fits body sizes from 125 cm up to 195 cm.
  - The tomkart is suitable for all driving skills (incl. children) due to the adjustable engine control.
  - Because the tomkart has been constructed exclusively for electric operation!
  - tomkart is an outstanding Swiss quality product.
  - Only future-oriented technology is used in the tomkart.
- => tomkart is the perfect renting kart for children and adults!**

### ***Why electric karts?***

- No exhaust emissions.
- No costs for expensive air ventilation systems.
- Low noise emissions.
- High torque at low rpm.
- High safety standards for customers and track operators.
- Accepted by ecologically thinking customers as well as by public authorities.

### ***Why Lithium-Batteries?***

- High amount of charging cycles.
- Little weight due to high energy density (70 Wh/kg).
- Very powerful due to high power density (700 W/kg).
- Fast charging due to constantly high charge current up to 105A.
- High voltage stability.
- Low heat development.

### ***Why an adjustable 4 level electronic engine control?***

Because it is the perfect way to adapt the tomkart to all driving skills. The electronic engine control allows to define via a computer-interface 4 different power output levels. We recommend 3 forward and 1 reverse level for rental karts. The kart driver himself can change between forward and reverse driving by a switch in the kart cockpit. The track operator can change between the different forward power output levels by a key switch at the back of the kart or by the optional radio-controller. We recommend a maximum performance of 3.5 kW or 4.5 HP for the highest engine power output level for rental karts.

### ***Why a carbon chassis?***

The tomkart chassis is elastic but stays inherently stable. A steel pipe chassis however will deform irreversible after usage. The elastic tomkart carbon chassis always comes back to its original form.

### ***How long is the driving time of the tomkart before the batteries have to be recharged and how long does recharging take?***

A tomkart needs, in full rental use, about 1 Ah current per minute. With full batteries it is possible to drive about 30 minutes. We recommend a driving time of 8 minutes to not overstrain the customers. The charging time of the batteries is about 50% shorter than the driving time since charging can be done with higher intensity of current than driving needs.



### ***How long is the expected lifetime of the batteries?***

The answer to this question depends on various influencing factors such like the type of battery-charger or the characteristics of the kart track as well as the average driving time. On our rental kart tracks the batteries have a lifetime of up to 10'000 charging cycles. Thanks to the intelligent battery management system and in compliance with the operating instructions we are able to give a pro rata guarantee of 5'000 nominal-cycles (10 Ah/8-10 minutes driving time).

### ***How fast is the tomkart?***

With our recommended settings for rental karts the tomkart reaches 55 km/h. A top speed of more than 100 km/h is possible with the max. constant power output of 10 kW / 13.5 hp. The peak power of the engine is 17 kW / 23 HP.

### ***How many tomkarts do i need to operate a kart track?***

It is recommended to have 1 tomkart per 50 meters length of a track.

*Track of 300 m length → 6-7 karts can be on the track at the same time*

*Track of 500 m length → 10-12 karts can be on the track at the same time*

Per hour 4-5 heats at 8 minutes each are possible with 1 tomkart.

The tomkart is able to perform 3 heats at 8 minutes each without recharging the batteries. By recharging the batteries 2-3 minutes between the heats, 4-5 heats are possible before the batteries need to be recharged completely.

A proportion of 2 : 3 ensures a nonstop-operation of a kart track

*8 tomkarts on track : 12 tomkarts in total*

*4 red + 4 blue tomkarts, completely charged, begin the race, while 4 yellow karts are being charged in the pit lane. After 8 minutes and at the end of the first heat the red and blue karts come back to the pit lane. The red karts go to the charging point. The blue karts stay in service and leave immediately for the next heat, together with the fully charged yellow karts.*

*At the end of the 2nd heat the blue and yellow karts come back to pit lane. The blue karts, which already drove 2 heats without recharging go to the charging point. The yellow karts stay in service and leave immediately for the next heat, together with the red karts. etc.*

### ***How much does a tomkart cost?***

The basic model of the tomkart costs 7000 Euro. Additional costs of 3500 Euro are for the lithium-batteries. It is necessary to point out that the costs for the needed amount of electric current to operate the tomkart for the expected 10'000 charging cycles will be 500 Euro only. For the same performance with fuel or gas costs of 4500 Euro up to 7500 Euro have to be included in the calculation.

2-3 tomkarts need 1 battery-charger, which costs around 1600 Euro.

Over the whole lifetime, the tomkart is less expensive than a kart operated with fuel and has neither noise-emissions nor exhaust-emissions. Especially for start-up companies the tomkart is unbeatable because no expensive air ventilation system has to be installed.

## ***The El-Kart company***

The El-Kart AG is a well established company in the Swiss karting business.

The company is constructing electric vehicles since 20 years and operates since 15 years karting tracks and develops electric karts. All of this experience and knowledge has been brought into the new tomkart, which has been developed and tested in over 2 years work on our karting tracks in Winterthur and in Spreitenbach. More information about the activities of the El-Kart AG can be found on [www.kart.ch](http://www.kart.ch).

