

## **The new Kart project, the view of Swissauto:**

In the year 1999, Swissauto has developed the Biland SA 250 Kart engine. The first 140 units were built at Swissauto in house. Still today, the Biland SA 250 is the most successful and most sold 4 - stroke Kart race engine worldwide. Originally, the Biland SA 250 was designed for automotive use in Hybrid cars. To convert it to the needs in Karting, many compromises had to be accepted based on its existing layout.

Based on this fact, ourselves was very surprised, that even after 6 years of production without major changes, this engine was still very competitive and successful to win most of the challenges worldwide in the year 2006.

Unlike the Biland SA250, the all new Swissauto 250 single cylinder engine is purely designed for the purpose of Kart racing only. The target was, to focus on the experiences out of this former project and to optimize the whole engine system to get a much more simplified, lighter and less expensive engine system.

In regard of the handling and mounting on the kart, we took the lead out of the most famous 2 stroke Kart engine of the last 10 years, the Rotax Max.

With the Swissauto 250, we developed a complete new engine, which shall respect all the needs of the Kart drivers, but also allow to be mounted with very few efforts and know-how to get a ready to race Kart. Of course, the new engine also needs to comply to the today's existing rules within the 4 stroke challenges worldwide to be homologated as a race engine.

Compared to the market wide existing 4 stroke engines, the new Swissauto 250 is significantly lighter, cheaper and simpler to mount and to handle on the Kart. But more important for us and for the customer is the comparison with the top selling 2 stroke engines on the market.

Earlier day's, there was a strong meaning that 4 - stroke engines are heavy complex and expensive, and therefore not suitable for the needs of Kart racing. The new Swissauto 250 engine System weighs about the same, it costs about the same price and it has a similar simple layout as the today's modern 2 - stroker; but it still owns all the typical 4 stroke benefits such as high reliability, good fuel economy and drastically reduced emissions.

The new concept of the swissauto 250 will prove that also in Kart racing the time has passed for 2 stroke engines.

Very important at all the cost and weight comparisons through the customer is to compare the whole system needed to have a ready to race Kart. Therefore all the parts which are needed to change a rolling chassis into a running kart must be considered. This means, all parts must be summarized and compared. In this case, the bare engine weight or the sub-system costs are not that important anymore. In our **project presentation swissauto 250** of the new engine, we show a weight comparison with the most competitive and actual 125 cc 2 - stroke engine, where all the engine parts, even all the bolts, mountings and liquids are on the scale, which are needed to run the Kart.

**Stroke Rotax MAX Senior:**



**Swissauto 250 Senior:**



While the 2 stroke base engine weighs only about 12 kg, the whole system brings another 14 kg to a total of around 26 kg of the whole system weight onto the scale.

Exactly the same can be figured out on the cost side to compare the running engine systems. Also there, it is important to count every component, every mounting bracket and every bolt, which must be bought that the customer gets a ready to race Kart. Even the labour time and efforts and the knowledge needed to build up the running Kart must be considered, because this must be paid from the customers as well.

Beside all the so far mentioned benefits, a race kart engine also needs to be competitive which is probably the most important criteria for race enthusiasts.

The new Swissauto 250 engine is significantly faster than the old SA 250 two cylinder engines. All comparisons done so far over the last 2 years of testing and development showed clearly, that the new engine is on a top level in Karting. At the first race on June 10th in France, our test driver André Scheidegger was able to set the pole position and to win the very first race with this engine by far with a big gap to all the other competitors.

Over a 100 persons so far drove this new engine; very good performance, smooth drivability were the overall very positive comments. But more important as a sales argument, also for the nice design and the competitive sales price we got many compliments for.

To deliver a reliable and well developed system to the customer, the engine was tested during over two years with various test drivers under different conditions as well as on our dyno's. The first 100 pre series units will be ready to be delivered about in the beginning of 2008.

The sales price for the customer within the whole EC will be at about € 2.930,- Euro (excl. the VAT and tax). This price includes the complete engine system as engine with mounting brackets, carburetor, fuel pump, air filter, complete exhaust, battery + battery box, Ignition system + wiring harness, radiator with brackets, clutch and sprocket.

The engine will be exclusively distributed over the Swissauto dealership network, which is being built up now. It is our target to deliver the engine through approximately 5 main representatives to the dealers and customers.