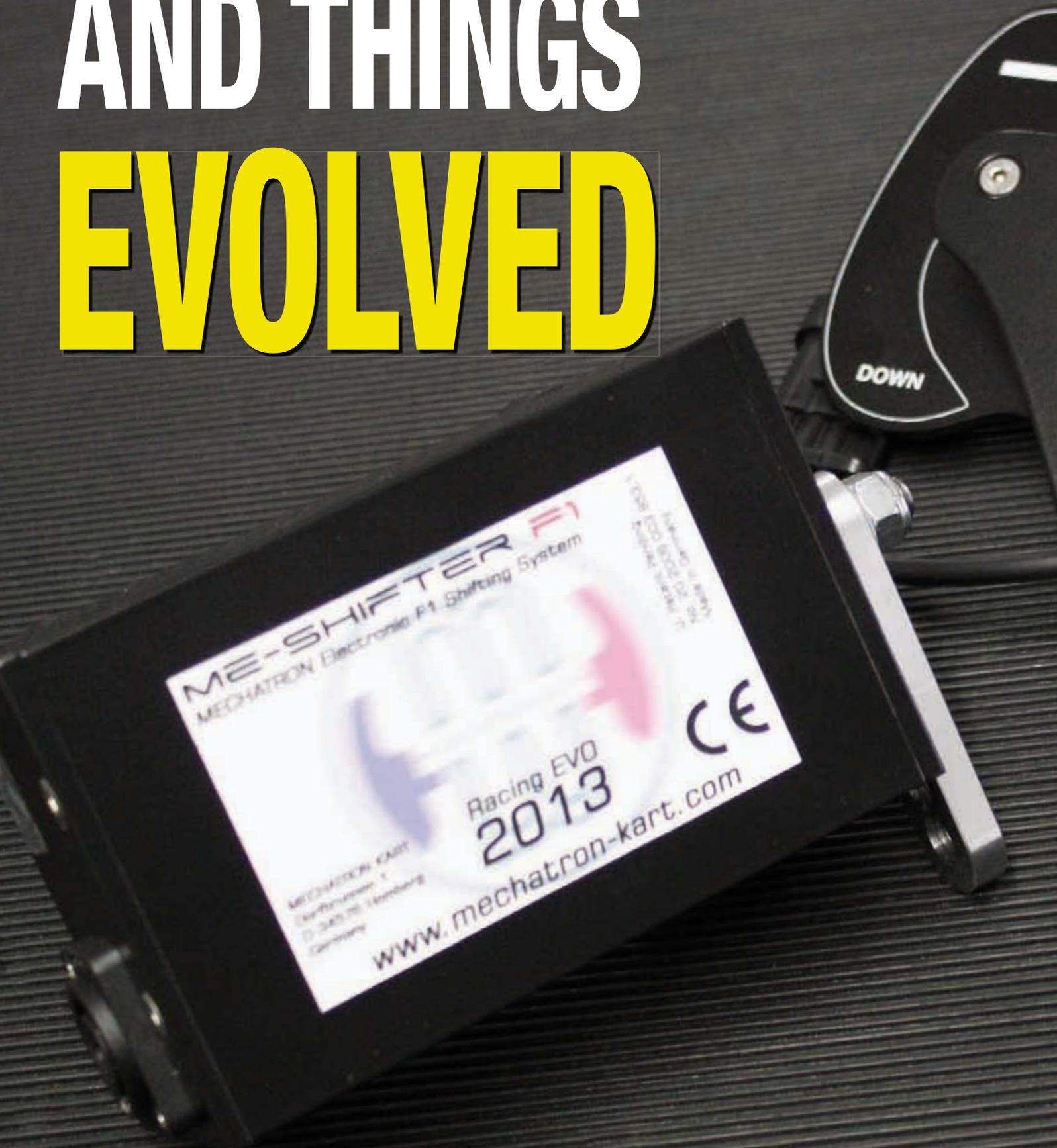




AND THINGS EVOLVED



ME-SHIFTER F1
MECHATRON Electronic F1 Shifting System

**Racing EVO
2013**

CE

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After testing Mechatron ME-Shifter F1 gear-shift system back in 2008, we returned to the Frankfurt-based German factory to see how this incredible piece of equipment has evolved. ME-Shifter F1 designer Paul Gross talked us through the major improvements.

When the first electronic gear shift systems were put into the market, we did a detailed track test with Mechatron Kart, Daniele Delli Compagni, Francesco Laudato and the Unipro Team for Data Analysis, to test the best known gear-shift system "ME-Shifter F1" (Vroom International 06/2008).

Considering that the shifting system was still of recent production back then (the first prototype was released in 2005) we had a great impression of how the system worked, and came to the conclusion that in fact it worked very well and it improved many aspects of driving a 125cc shifter kart. However, our professional test drivers Delli

Compagni and Laudato found some details where they felt there was still potential for improving the system. In this issue, exactly five years after our track test, we returned to Mechatron Kart to ask how things have evolved since then.

We therefore asked Paul Gross, designer of the ME-Shifter F1, to give us some insights into the development steps applied to the system since our last test. And honestly, we were a bit astonished of how many details have been changed in an already efficient system. And in the end, the goal of an even better F1 experience seems to exceed expectations with the new ME-Shifter F1.



Tell us how you've kept busy in the last five years. How did things evolve with Mechatron Kart and the ME-Shifter F1?

"It was an amazing time with a lot of things happenings In 2008 we already were well known in the world of shifter karting, having an established dealer network worldwide. This was thanks to a great marketing work of my former partner, Eric Denner, who won over some of the best drivers of the world to test the system and support us with their feedback. In 2008 we had Ken Alleman as first driver using this system at the KZ1 European Championship in Mariembourg. All this helped me a lot to focus on the necessary technical improvements for the future, to make this system also interesting for racing use by the top class drivers. Since

then, we had around 10 improvements applied to the system. That makes 2 each year in average."

But the system is still not allowed for KZ2 use...

"Unfortunately, no. But I don't give up hope that the rules might change one day. We have many drivers who would use the system in official races after they made some training sessions with it. Technically, the system is absolutely ready to meet the requirements needed to challenge at least one hard racing season, more likely some, without the need of expensive changes. So I don't think the initial cost would be prohibitive if put in relation to a season's budget. And if we have a look at safety, in

my opinion the paddle shifting system is a real improvement, allowing drivers to always keep both hands on the steering wheel. And more than that, having an eye to most Formula classes where some karting drivers might go in the future, they would adapt their skills in driving a vehicle equipped with paddle shift right from the beginning. But in the end, it is not my decision whether it is allowed or not."

These thoughts were not too new to us, but we wanted to know more about what really changed since our last report. So we had a closer look at the technical side, based on the information of the main improvements applied to the system provided to us by Mechatron.

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YEAR BY YEAR

2009

UNIDIRECTIONAL IGNITION INTERRUPT

Based on Francesco Laudato's main criticism about the system, that at downshifts un-burnt fuel mixture gets through the combustion chamber due to the ignition which is cut off for a very short amount of time, the ignition cut now only takes place at up-shifts. This slightly improves the acceleration when getting back to a straight after a slow corner

DOUBLE DOWNSHIFT AND N-GEAR SELECTOR

The Electronic Control Unit offers great possibilities of which actions the Servomotor can do. So why not using it?

The Double Downshift function allows to quickly drop two gears by just holding the downshift paddle for 0,3 seconds. This way, the Servomotor does the downshift timing and the driver can focus on braking and prelude perfect cornering.

The N-Gear control is used when getting back to the paddock or stopping at the grid before a start. Just hold the (-) paddle for 2 seconds and the servomotor inserts the N-gear without the need that the driver must care about any timing.

2010

ISP MODE

By giving the Servomotor more intelligence in 2009 by new software functions, we found out that it is not wrong to also enable the driver to adjust it at his needs. So we developed the ISP Mode, which makes it possible to adjust the System in two different ways. First, the driver can choose from three different pre-programmed shifting characteristics, mainly to adapt either on kart (racing), kart (hobby) and formula/4-stroke engines.

Second, the driver can also adjust the N-Gear selector, if necessary by hardware differences.

SHIFTING PADDLE REDESIGN

Do we care about looks? Yes we do! The shifting paddles appeared in a new, beautiful design. CNC-milled from thin aluminum plates, then black powder-coated and finally laser engraved.





It was an amazing time with a lot of things happenings. In 2008 we were already well known in the world of karting...

2011

MECHANICAL OPTIMIZATION

The internal gearbox of the Servomotor was optimized regarding manufacturing details. Parts are now chipped out of a solid piece instead of sintering by metal powder. This significantly increased elasticity, making the Servomotor more robust for rough handling during a strenuous racing weekend.

WEIGHT REDUCTION

Slightly but mentionable: We redesigned some other servomotor parts and reduced weight with optimized geometry and changing the material. The lever is now made of high-strength aluminum instead of steel, some internal parts changed their shape as well. Overall gain in weight: -0.112kg

2012

SHIFTING PADDLE SWITCHES REDESIGN

Driving in a rainstorm? No problem with the new switches and connector type applied in the EVO 2012 shifting paddle. These are protection class IP67 making it able to use them under water without problems. Second, these new switches are actuated by a miniature steel plate which can be bent for adjusting. This way, the driver can adjust the "trigger point" of his paddle, making it react faster or slower, just at his needs.

2013

NEW ECU SOFTWARE

The EVO 2013 Software now enables a new dimension of interacting with the system to adjust it perfectly to the driver's needs. The theory behind this improvement is the philosophy, to give the driver full decision power of how to adjust the system to his Kart. With each 10 different Setups for up- and downshift (both can be configured independently) plus 5 Setups for the Neutral finder, in overall the system theoretically enables $10 \times 10 = 100$ different Setup combinations, to reach the mechanical shifting-time limit at each and every possible chassis-engine combination. And for those who do not want to make that much configuration but only drive, the systems comes in the standard Setup, which uses to work great in most standard karting applications.

Report Antonio Payer - Photos: Sebastian Uitz

GEARBOX SHIFTED

We tested the new Mechantron Kart electronic gear M.C. Shifter F2 systems, mounted on the opening wheel (Agomera) and excitement abounded, as an extraordinary team got together for this test. In fact, with us there was Francesco Landini and Daniele Davoli Campagna at the wheel; Elena Lorenz, responsible for data analysis and Paul Grossi who designed the system. Our test was carried out at the circuit La Mota, Bari, where we were greeted with a warm welcome on an unpredicted sunny day.

TECHNICAL THOUGHTS ON SYSTEM CONCERNING ENGINE

The gear lever and the wheel to be used to shift the gears are the main components of the system. The gear lever is made of high-strength aluminum and is designed to be used in a variety of configurations. The wheel is made of steel and is designed to be used in a variety of configurations. The system is designed to be used in a variety of configurations.

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KART TESTED

Configuration	1st Gear	2nd Gear	3rd Gear	4th Gear	5th Gear
Standard	10.5"	11.5"	12.5"	13.5"	14.5"
Setup 1	11.0"	12.0"	13.0"	14.0"	15.0"
Setup 2	11.5"	12.5"	13.5"	14.5"	15.5"
Setup 3	12.0"	13.0"	14.0"	15.0"	16.0"
Setup 4	12.5"	13.5"	14.5"	15.5"	16.5"
Setup 5	13.0"	14.0"	15.0"	16.0"	17.0"

Setup 02

Configuration	1st Gear	2nd Gear	3rd Gear	4th Gear	5th Gear
Standard	10.5"	11.5"	12.5"	13.5"	14.5"
Setup 1	11.0"	12.0"	13.0"	14.0"	15.0"
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Setup 3	12.0"	13.0"	14.0"	15.0"	16.0"
Setup 4	12.5"	13.5"	14.5"	15.5"	16.5"
Setup 5	13.0"	14.0"	15.0"	16.0"	17.0"

YOU DRIVE. **IT SHIFTS.** TOGETHER YOU WIN.



Electronic Shifting System (KZ1)

ME-SHIFTER F1



Complete Package
with equipment

only **897,-€**

[recommended retail price]



**NEW ECU
SOFTWARE!**
mechatron-kart.com



KZ Electronic Control Unit



F1 Shifting Paddle



HQ Aluminium Holder



ME-SHIFTER F1



Shifting Rod, Wire Harness



NiMJT6000 Racing Power Pack

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