



The E1pc is cloaked in reshaped C1 bodywork. The fairing rake is lower, the "tank" has been chopped and the swingarm is more compact, too.

COOLER THAN I.C.E.

WORDS: Aaron Frank PHOTOS: Roland Brown

Michael Czysz builds a Digital Superbike

The MotoCzysz E1pc is sleek, sculpted and impossibly shiny, with the same techno-sheen as a new Apple computer. Thin white batteries, stacked like ribs where you expect to see a cylinder head, make the bike resemble some *Predator*-like mechanical animal. From the faired fork legs to the blinking blue battery lights to the trio of electric motors peeking out of the bellypan, you can't help but imagine this is the motorcycle of the future.

Forget that the E1pc failed to finish the TTXGP—it barely made it down Bray Hill before suffering a catastrophic motor failure. By almost any other measure, this was the most impressive machine entered in that event. The design was unmatched, the level of fit-and-finish would shame Ferrari, and that gorgeous exterior con-

cealed innovative electronic solutions. This is not the last you'll see of this bike.

Built in just five months from a highly modified MotoCzysz C1 chassis—the C1 is Czysz's internal-combustion-engined (ICE) prototype GP bike—the futuristic E1pc looks like something Valentino Rossi's son might ride to his first world championship. The C1 frame has been reconfigured to carry 10 1-kWh lithium-ion-phosphate battery packs (with room for an 11th under the seat), and three Agni electric motors mounted in sequence under the battery packs.

"One engine can't deliver enough torque to accelerate the bike like we wanted," Czysz says. "Two might. Three, no question." Delivering big power was a program priority. "This is the Isle of Man; we wanted to bring a true high-

performance bike." Czysz says the E1pc powerplant produces a staggering 300 lb.-ft. of initial torque, and holds a nominal 150 lb.-ft. to its 5000-rpm rev limit.

MotoCzysz manufactures the innovative battery packs in-house. "I didn't expect that we would have to build the batteries," Czysz says, "but no one could build them to our design, on our timeline." Each battery pack is mounted with a quick-release mechanism to allow "hot-swapping"—exchanging spent batteries for fresh ones in just seconds, instead of waiting hours for a permanent-mounted battery pack to recharge. "No one else has anything like this yet," Czysz says, proudly. Each individual battery pack also incorporates a lighting array that allows Czysz to instantly assess the battery-management system at a glance. "Each



American TT veteran Mark Miller (shown here beside designer Michael Czynsz, in sunglasses) was contracted to pilot the Elpc digital superbike.

battery pack has 400 separate welds inside. I know instantly that all the cells, from the very first to the very last, are up and running.”

The only exposed wires are short stub harnesses running from the top of each battery to a central CAN-bus inside the frame backbone. The next version will be completely wireless, Czynsz says, with an integrated coupling connecting each battery directly to the CAN-bus. This is an important safety consideration, given the amount of energy each battery contains, and the possibility of a wire failing or being compromised.

Ultimately, even three motors weren't enough to harness the E1pc's battery out-



“Hot-swappable” battery packs incorporate LED lighting that indicates battery-management system integrity, fuse status and battery life at a glance.

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put. Brush failures in the Agni motors—one of the few components the MotoCzynsz team outsourced—sidelined the bike both in practice and during the race. “The motor magnets are graphite, and they're fragile,” Czynsz says. “Probably fine for a scooter, but our bike literally rips the magnets right off. I wouldn't use a brush motor again, at least not in this application.”

The striking machine still made a lasting impression at the TTXGP, with American rider Mark Miller blasting away from the start with a ferocity unmatched by any other entry. In a race that rewarded efficiency over outright power, Czynsz's go-big strategy may have been flawed—but he's not apologizing. “Bottom line: We made a sportbike, not an economy bike,” the racer's racer says.

Understandably disappointed by the DNF—and visibly distraught the day after the race—Czynsz says this TTXGP experience isn't a total loss. His firm has since added battery engineering, design and manufacturing to its list of available

services, and he's in discussions with an unnamed “large manufacturer” to explore a hybrid sportbike that would combine his electric and ICE expertise.

Czynsz embraces this post-internal-combustion world for reasons both pragmatic and passionate. “I have to be involved in electric vehicles,” he says. “If I still want to influence the history of motorcycling, I need to look at things people are interested in. Right now, in global terms of where the money, attention and energy are flowing, that's electric vehicles—not, unfortunately, my original goal of MotoGP. This is where I've got to be.”

Czynsz also sees potential to improve the riding experience. “Look at all the electronics that we put on an internal-combustion engine to make it rideable,” he says. “Here, we only have the electronics. That excites me from an engineering standpoint, and a rider's standpoint, too. The technology obviously isn't there yet, but soon we'll have bikes that are even faster—and calmer—to ride at the same time. This is a gigantic step.” **MC**



The 6X Flex fork is an all-new, tuned-flex design. “It was a bit of a job,” Czynsz says, “but we wanted the latest spec, not the same old C1 fork.”



A unique, pushrod-activated rocker mechanism allows Czynsz to quickly and easily alter ride height and rear suspension progressivity.