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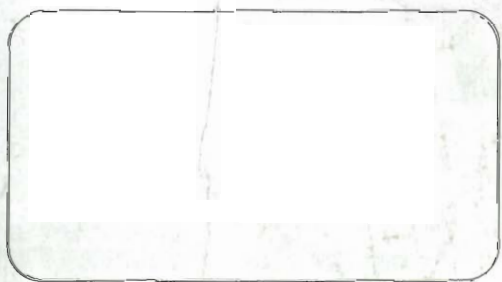
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AT PETERSEN PUBLICATION

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Velocitus



Maximus

Life aboard Herbert Kainzinger's 200-horsepower V-Max



By ROLAND BROWN PHOTOGRAPHY BY PHIL MASTERS



Herbert Kainzinger had come to Italy's Misano racetrack to ride his fearsome 1680cc V-Max special himself, and hadn't planned to let anyone else out on it. But the local bike journalist was so persuasive that eventually Herbert relented.

Big mistake. At the start of his second lap, the guy cranked into a left-hander and opened the throttle too quickly—sending himself into orbit, and Kainzinger's bike bouncing into the gravel trap in a shower of splintering carbon fiber.

The crash was unforgivable, but easily explained: this is, after all, a machine that makes even a factory Superbike look tame by comparison. During the year he took to rebuild the 'Max, Kainzinger (who's based in the German town of Bürstadt, near Frankfurt) detuned it slightly. That still left the big V-4 delivering 198 rear-wheel horsepower and a thunderous 130 foot-pounds of torque to the back wheel via its ingenious chain-drive conversion. >

Wild File



Speed-sensitive Hyperpro steering damper, digital Stack instrument console (with lap timer), carbon-fiber fly-screen and an empty, twisting road. Take our wives, please.

Even more impressive is the fact that this V-Max—in the right hands—is totally at home on a racetrack. Kainzinger is, after all, a former national-level roadracer and GP mechanic. These days, as an upmarket tuner and specials builder, he likes to mix business with pleasure by attending track days at various GP circuits with his 'Max and blowing stunned sportbike riders into the weeds. Then he pulls into the pits, parks the bike and takes orders for everything from chassis and engine bits to complete super-tuned specials. "If I haven't done good business by the end of the day, I haven't been trying hard enough," he grins.

The tale is totally believable when you take a look at the 'Max and its specifications. Let alone ride it, for this black motorcycle is about as far removed from a standard Yamaha V-Max as it's possible to get. Thanks to scores of special parts and copious use of carbon and titanium, the Kainzinger 'Max weighs just 412 pounds [187kg] dry—barely heavier than the best modern sportbikes, and a massive 165 pounds [75kg] lighter than a stock V-Max. This bike's wheelbase is 1410mm (55.5 inches), just 5mm more than a CBR900RR's, and its steering geometry figures of 24 degrees of rake and 96mm of trail (both are adjustable) are right on the superbike average. Combine those dimensions with the Yamaha's substantially strengthened frame and top-quality cycle parts, and suddenly you can see why it's more than a match for most race-replicas.

Kainzinger is used to working on fast motorbikes. He was chief mechanic to top international racers, including Jochen Schmidt and Ralf Waldmann, before leaving GPs to concentrate on his own tuning business five years ago. Most of his customers have much-modified 900RRs, Bimotas and the like, but after reluctantly doing some tuning on a friend's V-Max, Kainzinger was so impressed with the V-four's potential that he bought a crasher and pulled it apart.

The Yamaha's 1680cc capacity comes from Cosworth pistons with

huge, 90mm diameters (standard is 76mm), running in new Nikasil-coated aluminum liners that fit inside the heavily machined cylinders. The pistons raise compression from 10.5 to 13.6:1, and are held by titanium con-rods from Austrian specialist Pankl, which also supplies Ducati's Superbike squad and numerous F-1 car teams. A modified BMW 5-series car radiator keeps things cool.

Carbon air scoops commence the totally reworked intake system, feeding a power-boosting chamber inside the dummy carbon tank. A quartet of 41mm downdraft Keihin feeds mixture to radically reworked combustion chambers, via big titanium inlet valves that, since Kainzinger detuned the bike slightly, are operated by standard cams. The hand-formed titanium exhaust system ends in a pair of Two Brothers carbon cans on the right side.

The crankshaft and gearbox are essentially standard, but the final-drive system certainly isn't. Kainzinger's painstakingly designed chain-drive conversion was produced by grafting a sprocket onto the end of the gearbox countershaft, which conveniently turns in the correct direction, and devising an aluminum plate, complete with a bearing, that supports the end of the countershaft while supplying much-needed rigidity to the surrounding area.

Similar ingenuity went into the rest of the chassis, notably with the black aluminum cross-plates that link the now solidly mounted



Big gulp: Giant carbon scoops ram atmosphere into a chamber inside the dummy carbon tank. Black, aluminum cross-plates help the frame handle the nearly 200-horse output, and a BMW car radiator keeps things cool.

engine to the much-modified frame. Some of Yamaha's original steel tubes remain, but most have been reworked or replaced, notably at the steering head, where a custom-built adjustable headstock allows rake to be varied between 23 and 25 degrees.

The fork is a specially lengthened and modified WP inverted unit, and in back the 'Max wears a pair of shocks from German firm TechnoFlex. These are adjustable for both high-speed and low-speed compression damping, as well as the normal preload and rebound damping. PVM, another German firm with a growing reputation, supplies wheels and brakes: a combination of magnesium 17-inch wheels, lightweight 320mm front discs and six-piston calipers.

From the fairly tall seat the V-Max feels like no other bike on earth. Even before you start the engine, the tiny clutch and front-brake master cylinders combine with the classy digital Stack instrument console (incorporating digital speedo, tach, lap-timer and various gauges); wide WP fork tops; trick, speed-sensitive Hyperpro steering damper; flashings of carbon; and, most of all, the obvious lack of weight to make the 'Max feel seriously sporty. So too does the big motor's throaty V-4 bark, and the way its titanium rods and lightened alternator help the revs pick up with startling speed given a blip of the throttle.

I'd been looking forward to testing this bike since before it was crashed—but first impressions weren't what I'd expected at all. The huge, almost effortless power was instantly impressive. But when following the photographer's rental car on twisty country roads, the 'Max wasn't very happy. It tracked imperfections in the road, occasionally twitched in annoyance and generally felt like a frisky racehorse complaining at being made to go pony-trekking.

Ironically, given its slothful ancestry, the problem was simply that the 'Max was set up for the racetrack (much more so than any standard sportbike) and needed to be ridden much more aggressively. As soon as I left the car behind and upped the pace, the suspension began working properly and the whole bike felt infinitely better—although in the first couple of tight bends it responded to my nudge of the handlebar by flicking onto its side so fast that I had to make a quick correction to pick it up again.

The answer was to forget any notion that this Yamaha was related to a V-Max, and simply ride it like a sit-up-and-beg YZF-R1. Before long I was feeling totally at home charging up to a corner, applying the fiercely potent front brake with a light squeeze of the lever, and carving through the turn with the bike remaining totally under control, its suspension unfazed and its sticky Pirelli Dragon Corsas gripping tenaciously.

At higher speeds the handling was a revelation, far exceeding anything I'd imagined possible from a bike related, however distantly, to a V-Max. But even with a race-compound, 190-section rear tire, a hot day and excellent road surface, I was careful not to get carried away with the loud handle on the way out of bends, because this bike can be seriously vicious. Kainzinger says it makes more torque just off idle than a GSX-R750 does at maximum revs.

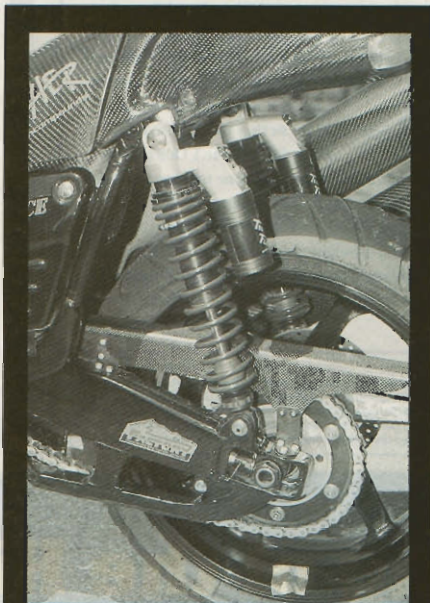
There was so much power available everywhere that I barely scratched the surface of the 'Max's straight-line potential on the winding hill roads south of Frankfurt. The bike punched forward so hard that it jumped past 100 mph almost instantaneously, the motor's balanced internals making it feel very smooth despite the absence of the standard Yamaha's rubber mounts. Given this bike's power-to-weight ratio and its broad spread of torque, there's no way any stock streetbike could get close to it in a straight line—even without the quick-shifter that Kainzinger fits for the track.

Lack of space meant that I didn't approach the top speed, which, despite fairly unhelpful aerodynamics, must be at least 180 mph. "I've seen more than 300 kilometers per hour [188 mph], but it's not comfortable at that speed," says Kainzinger. "Before I detuned it I couldn't set up the carbs' main jets, because when I accelerated at 250 kilometers per hour it just wheeled! The hardest part of building the bike was finding a good setup, but now it's a little easier to ride."

What the V-Max really needed was the chance to stretch its legs on a wide stretch of tarmac with plenty of fast bends, so it was easy to see why Kainzinger spends much of his time caning it around the grand prix circuits of Europe. The fact that the bike helps generate so much business gives him the perfect excuse, too—although he won't be responding to the many inquiries by building any similar V-Max-based bikes, or even selling V-Max tuning parts.

"Owners of CBR900s and R1s are interested in technology, but V-Max owners are on a different wavelength—it's a waste of time dealing with them," he says. Nor is Kainzinger going to sell this unique machine, which he values even higher than its insured value of more than \$75,000. "At a show in New York a guy came up and offered me \$100,000, but I turned him down."

After riding the amazing Kainzinger V-Max, it's certainly not hard to understand why.



The beauty of this beast lies in Kainzinger's chain-drive conversion. He'll do your 'Max, too—for a year's pay and your first-born child.

MC

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