

THE MISSING LINK

The MT-10SP isn't hardcore enough for trackdays, but by his own admission, Dominik Klein's 192bhp 'MT-10RR' was a bit too much... Now, he's built the happy medium, and let PB try the MT-10 he built for himself

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YOU CAN HAVE too much of a good thing. It's human nature to want more, more, more of everything: food, money, bikes... One man who knows about excess is Dominik Klein – not necessarily consumption, but creation. The German Yamaha dealer doesn't just PDI and roll out stock Yamahas; he's a long-time tweaker, improver and builder of fast Yamahas. All of them considered mechanically, and finished neatly aesthetically.

One of his best creations, maybe even his very best, was the MT-10RR: an Öhlins-suspended, light-wheeled, 192bhp missile. He took the MT-10's deft, accessible but ultimately limited performance, and squeezed in a lot of the R1's cutting-edge magic to create something easy to ride but with incredibly high limits, if difficult to keep on the floor...

The result surprised even him: built as a submission to PS magazine's (think PB, but in German) 'Tuner GP', he'd also built a tasty 2017 R6 he thought he'd keep for himself. But the lairiest MT-10RR the world has seen changed his mind...

"I wanted to build myself an R6 for track use, but after riding both the bikes I built for the Tuner GP, I changed my mind, and I wanted an MT-10. But I wanted it to be less extreme than the RR," says Klein.

The easy solution was to not use the R1's engine again, as it packs 35bhp more than the MT-10 out of the box and makes an upright naked even harder work. But the rest of the bike is where useful lessons could be learnt from the RR, which went to an owner prepared for its inappropriate power...

A key element Dominik wanted to keep was the electronic rider control systems. On the face of it, that sounds simple: the motors are the same, with the same connectors – just unplug the MT-10's more basic, wheel speed sensor-based system, plug in the R1's more sophisticated wiring harness and find a home for the six-axis inertial measurement unit that enables the finer control. A used, 2017-spec R1 was raided for everything needed.

Mechanically, that's almost true. The IMU is squeezed under the seat, more or less where it is on an R1, to give it the best chance of working fully. There's lots of fiddling required, and it also needs the TFT dash and R1 switchgear in place of the MT-10's LCD panel, which needs mounting brackets. But the R1 engine is significantly different in the way it's tuned and runs: the mapping couldn't make sense of the MT engine.

THE ORIGINAL MT-10RR

FEATURED IN PB earlier this year, Dominik's first attempt at a wild MT-10RR was incredible: 192bhp with WSB-grade chassis components, it was almost impossible to fault. Power, handling, stopping and grin factor were huge.

As was the bill, and commitment required...

But it did show where the MT-10 could be taken to, and the lessons learned have filtered down to Dominik's own more useable, vastly more affordable personal project.



"We had to write the flash maps entirely for this bike – I lost many days to dyno work getting it working! It wasn't easy to find a way to program the bike, but it works now."

The result is full electronic functionality, with the exception of ABS, which Dominik wanted to ditch anyway. He also used the FlashTune software to enable an autoblipper: though he didn't have a two-way sensor at the time of build, so for now it has two one-way sensors fitted to the shift linkage to get his personal machine out on track this summer.

The engine isn't touched internally: Dominik built his own 4-2-1 exhaust with an Akrapovic silencer to let it breathe better: with the extensive mapping work also doing the job of matching the fuelling to the pipe, it's making 160bhp at the rear wheel, but keeping the MT-10's smooth, inertia-rich feel compared to the frisky behaviour of the R1 with its titanium rods and other lightweight internals.

The motor doesn't hold the MT-10 back in general terms; the chassis is where it soon hits limits on track, so it's here Dominik directed most of his experience with Iwata's super naked. Incidentally, his affection and knowledge of MT-10s is

'It has an MT-10's smooth, inertia-rich feel, rather than the frisky nature of an R1'

but 5mm longer) linkage (aluminium, instead of steel) and wheels (same weight, but stiffer with the moment of inertia focussed closer to the spindle) bolt straight in for easy improvement, with potential for more.

Take the shock linkage: an area that almost nobody considers, but it's a crucial, um, link, between tyre, chassis and rider. Stock Yamaha links – on both R1 and MT-10 – have play from the factory, which can be felt as a knock if you lift

unusual in Germany. Unlike the UK, where they work beautifully on our roads and we're still buying as many as YMUK can ship in, the German bike-buying public aren't interested. Oh well – that means more for us...

Further trawling for used R1 parts formed the basis of the chassis changes: a swingarm (almost identical,

the tail piece to the point the shock tops out. A tiny amount of slop in these little bearings magnifies in effect over the length of the swingarm, robbing ride height, feel and control. A simple switch to more precisely made parts eliminates the play and lets everything work better. The manufacturer, Emil Schwarz, claims better feel, grip, tyre life and more. Stands to reason. And, to lend further credence to the argument, Dominik is a long-time convert to the pricey kits.

The rear shock is from UK firm K-Tech (*proudly waves Union flag*), the DDS-Lite boosting the softly-damped back end considerably. Spring rate has gone from 90Nm as standard to 95Nm. The forks are original Yamaha legs and stanchions, but with a black nitride coating outside and Öhlins TTX25 cartridges inside. Like the rear end, suspension movement is either reduced, better controlled or subject to less stiction as appropriate. And, as a subjective aside, the all-black style looks hard as nails... An Öhlins damper hides under the nose, discretely stopping slaps.

An 18mm Magura HC3 master cylinder is in command of standard Yamaha calipers; the adjustable ratio function is



Magura's hydraulic clutch conversion replaces the MT-10's standard cable-operated set-up

Bridgestone slicks, rear shock mods and Magura handlebars lend the bike a lofty riding position

Longer R1 swingarm adds 5mm; precision shock linkage has zero bearing play. This stuff makes a big difference

Extensive fuel mapping man hours deliver a 160bhp motor that marries sublimely with new exhaust system



This is Dominik Klein's own bike. But Yamaha would do well to apply some of his learnings to their 2019 MT-10

'You're flooded with feedback, where a stock bike is a bit remote and floaty'

➤ set to an effective 17mm bore size. Brembo Z04 pads do their thing on stock R1 discs.

Magura handlebars give a slightly more aggressive riding position, and Lighttech rearsets move feet out of the way to banish ground clearance issues. Dominik also prefers the action of Magura's hydraulic clutch kit to the stock cable-operated effort, so it has one of those, too.

The bike looks disarmingly stock: although it's still repainted in a hybrid of standard and SP model colours, the use of R1 and aftermarket parts in subtle hues means it doesn't immediately scream 'trick'.

However, like a porky nightclub doorman, when you grip it, it instantly feels tougher than it appears... Dominik gave me a go on his freshly-built toy at this year's Tuner GP at the Lausitzring – Germany's answer to Rockingham, but a bit longer, faster and more bumpy. It's an odd track and not necessarily one you enjoy, but it tells you a lot about a bike.

A standard MT-10 on track is much as it is on the road – friendly, easy and reasonably quick. But, while the performance is broadly enough for public roads, you'll find ground clearance, suspension and braking in particular to be a bit lacking: it's not built to be a superbike, so it doesn't behave like one.

What Dominik has done doesn't necessarily create a

Yamaha Tuono: it's still quite tall, with high bars and many other basic design elements that make the MT-10 what it is – for better, and worse. But with much sportier parts and settings underneath, it no longer reaches limits of cheap components: it manages to be fast as well as feeling playful and easy to ride.

Running on a set of Bridgestone slicks, you're instantly flooded with feedback and reassuring grip, where a stock bike is a bit remote and floaty, even on sticky tyres. Race-grade fork internals and shock have an undeniable effect, but the details like the R1 swingarm, linkage and zero-play bearings all play their part.

It's quite tall on the track tyres and shock, and the girthy feel of the MT-10 makes it feel a bit top-heavy at slow speed, but it does mean it tips in and leans for Germany. Unlike an MT-10 (or an R1, for that matter), it also seems able to select and change lines at will. On a busy track, you can pick your way around slower bikes. I imagine: the circuit was full of German club racers, and in the first session I got absolutely drilled by locals with circuit knowledge...

Direction changes are its natural habitat, and such a bike on the nadgery sections of UK tracks could be a real weapon. Cadwell's irritating chicane could be a real hunting ground for a bike like this. I think it could stand to sit a little lower or on more relaxed geometry – it has agility to spare and I think there'd be even more feel and mechanical grip if you sacrificed a little of it for a lower centre of gravity.

The brakes highlight just how much Yamaha's ABS systems (both the basic system on the MT-10 and the R1's terrible linked system) rob in terms of feel and power. The calipers on the bike are technically from the R1, but they're hydraulically identical to an MT-10's. The Magura master cylinder's ratio means initial bite is soft, but a harder squeeze really hammers the Brembo pads into the discs, and once you're dialed into ➤

Taller, slick tyres give this bike a satisfyingly alarming rate of turn-in

2018 Klein Yamaha MT-10R

ENGINE Stock MT-10. R1 ECU and complete electronics suite. Scratch-written FlashTune maps to suit, with up/down quickshifter. Bespoke Klein exhaust headers, Akrapovic silencer.

CHASSIS: Stock MT-10 frame, R1 swingarm (+5mm), R1 linkage, Emil Schwarz chassis bearing kit. Öhlins TTX25 cartridges in stock forks. K-Tech DDS-Lite shock. R1 mag-alloy wheels and discs. Stock 2 x 320mm discs and radial four-piston calipers, Magura HC3 variable-ratio master cylinder, Brembo Z04 pads. Öhlins steering damper.

THIS, THAT AND THE OTHER: R1 dash and switchgear. Magura handlebars, Lighttech rearsets, Magura hydraulic clutch conversion, carbon frame protectors, PP Tuning engine protectors, alcantara seat cover, MT-10SP-inspired paintjob. Approximate cost: 18,000 Euros (£16,050) using a second-hand donor bike and R1 parts.



Akrapovic silencer is mated to Klein's custom 4-2-1 exhaust headers

Brakes are ABS-less beauties: Brembo Z04 pads on R1 discs worked on by an 18mm Magura master cylinder

YZF-R1 wheels are no lighter than the MT-10's, but they're stiffer, and the moment of inertia is nearer the spindle

'It shows the MT-10 can be made more trackday-ready without ruining its character'

though it did get frisky in fifth a couple of times on the Lausitzring's back straight, where another circuit layout crosses it, creating a lip and bumps. It might just be a case of dialing in some more steering damper, though so much power in a tall, unfaired bike on firm suspension isn't exactly a recipe for stability anyway.

The IMU electronics are much better, though I suspect the older-spec wheelie control is confused by the MT-10's chassis dynamics and seems to engage more than necessary. The traction control leaves you alone more often and does the job – it could just be a placement of the ECU, or the wheelie

the feel it's a master of late braking. No electronic interference or diversion of the fluid through pumps, regulators and the other ABS clutter reminds you just how good these brakes are in their more natural state.

Surprisingly, it doesn't wheelie naturally. The small change in wheelbase has helped temper the MT-10's loopy tendencies, which helps with forward motion and makes it more stable,

control algorithms (fairly basic on this generation of R1 ECU anyway) just don't work with the bike. It's an improvement, but the lift control isn't really helping matters here.

It could do with lower handlebar clamps and a slightly shallower handlebar reach – it's still quite upright and MT-10ish, and for a bike like this, trading some of that road bike nicety to be more dialed into the front tyre would help. Talking of control, I'm not personally a fan of the hydraulic clutch. It's never called upon thanks to the up/down quickshifter, but for getting away it's too vague, although incredibly light if you've got the grip strength of a newborn and desire such a thing. The stock cable set-up isn't weighty, and is far more precise – I'd leave it in place.

But it's Dominik's own bike, and that's how he likes it. To illustrate the point, he took it out at the end of the test, once me and my German hosts had our fill, and tossed it in the gravel. Minimal damage done: he didn't seem too disheartened and he'll be back out enjoying it again soon.

What it does show is that the MT-10 can be made tougher and more trackday-ready without ruining its character – Dominik's personal ride still feels like an MT-10, but without the limits. PB is guessing the MT-10 will get an update for 2019: Yamaha have previously intimated that the current SP could pave the way for a higher-spec model if the demand was there. Well, Dominik has proven the worth of the idea, and now we're demanding it. Make it so, Yamaha. **PC**

Amazingly, despite the relatively short wheelbase, you really have to provoke this kind of behaviour



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