

BACK TO THE *FUTURE*



Words Dan Furr Photography Matt Woods

Cloaked in a subtle but custom Cooper-esque exterior, Dan's Stunning Ibis White wonder is packing 21st century tech and a 150bhp Yamaha R1 engine...

Although there's been countless attempts to update it over the years, it would be rather unusual to describe a classic Mini as 'modern'. However, you might be tempted to do exactly that when it comes to Dan's carbon-clad, bike-engined pocket rocket. Not only has the 33-year-old bodybuilder from Hertfordshire equipped his pride and joy with a freshly-rebuilt Yamaha YZF-R1 motor, he's also used the very latest in design know-how to bring the rest of what was once a tired Flame Red Mini City bang up to date. ➔

THE BUILD

Once a humble Mini Flame, Dan's Mini has been through various guises before being stripped for a major rebuild. Learning on the job, Dan did almost everything bar the paint, creating an absolute stunner over a nine-year period.



Mental power, but with authentic classic Mini looks.



Unique lift-effect bootlid took years of work.



Clever boot mechanism and modified fuel tank.



Nine years in the making, Dan's built a stunner!

"It's the car I learned to drive in. I even passed my test in it!"

"I'm a CGI animator by trade, and I've been able to transfer the skills and knowledge I utilise for work over to my Mini project," Dan explains. He cites 3D printing as a recent addition to his arsenal of expertise, and one that has provided the means to produce items as wide-ranging as custom headlight casings, heater vents and a bespoke steering column cowl. Dan has thought long and hard about how to realise his vision regardless of previous experience, with his desire to learn and improve every part of his Mini culminating in one of the most impressive builds we've ever seen.

HUMBLE BEGINNINGS

The car hasn't always benefitted from state-of-the-art technology, however. "I bought the Mini shortly before my 17th birthday," Dan continues. "It's the car I learned to

drive in. I even passed my test in it!" But as thrilled as he was to be behind the wheel of a bona fide classic, there was no getting away from the fact that the car had seen better days. "Body panels were showing their age and the paintwork was past its best. I decided to invest in fresh metal and a Volcano orange respray," he says.

Sportpack arches were added to the mix, resulting in a Mini barely recognisable as the '90-plate City that Dan had originally bought for the princely sum of £500. And the car's appearance would change once again following its owner's burgeoning interest in the summer show scene. "I fitted a wide-arch ERA Turbo body kit after being exposed to wild and wacky Minis at the various events I was attending," he reveals. "I painted the kit's fibreglass parts myself, but the colour match wasn't brilliant, so I

The rear end has been given the Mk1 treatment, but there's no unsightly fuel filler neck!



decided that another professional respray was required."

A 1275cc engine with twin carbs had been installed previously, but the opportunity to strip the City to a bare shell before a new lick of paint offered the chance to fit a much newer engine. Add to that Dan's long-time enthusiasm for performance motorbikes, and you can see how a front-mounted Yamaha R1 conversion from Pro-Motive was a natural choice – all 150-plus bhp of it. The Worcestershire-based firm first built its own car in 2004, before officially launching as a business in 2006. It was the first to produce a front-wheel-drive R1 kit, and it remains a popular choice. You get powder-coated engine and driveline mounts, an application-specific gear level linkage and cable, a reverse gearbox and selector, a bespoke tubular exhaust manifold, a custom diff, remote breathers, hydraulic clutch conversion components, a custom radiator, silicone hoses, stainless clips, a chain guard and loads of other performance parts. "It's a top-notch kit, but it does command a fair wedge, meaning that I went mad on overtime in order to raise the cash required for the purchase!" Dan laughs.

The kit suits the Yamaha RZF R1 engine from 1998-2003, and Dan was able to source a suitable unit with just 32k miles on it. The 998cc lump (a nice coincidence!) was then painstakingly stripped, modified and reassembled, and now features a balanced crankshaft, 40mm Keihin throttle bodies and a quartet of cone air filters. There's also

LED lights are controlled by an iPhone app!



Door badges were designed and made by Dan.



Carbon-fibre roof provides a modern twist on the classic duo-tone Cooper look.



Superb centre-lock Force Racing wheels.



a 2.25-inch stainless centre pipe mated to a Maniflow side-exit rear silencer with an outwardly rolled tailpipe. Dan had no previous experience with engines, but that didn't stop him. "There was a chap on YouTube who had 24 videos back-to-back of how to rebuild that particular unit," he recalls. "So I just copied him, and took my time. To be honest, if you research enough you'll get it done."

The car makes use of the R1's six-speed straight-cut transmission and clutchless

gear changes via paddle shifters. Dan designed these himself using CAD after being inspired by a Lamborghini he played with during a track day jolly. Based on the workings of a disabled motorcycle rider's shift kit, the shifters were made by a motorbike firm in Hampshire and are fixed to a modified MGF steering column. The column stalks actually use the workings of Mini MPI items, but with bespoke aluminium casings that Dan made himself. They sit pretty alongside stainless push-



Dan's looking forward to showing the car at Mini events, and getting out on the track!

button switches and matching mechanical levers for the boot, bonnet and flip-front. "The levers were made by a good friend who has access to a lathe," says Dan.

LEARNING CURVE

As you may expect, a complete overhaul of the Mini's body was required long before any of these trick updates could be installed. And though Dan couldn't weld, he soon learnt how to do that, too. The rear end was given the MkI treatment, and he employed heavy-duty galvanising chemicals to treat the body – the kind that are claimed to be the kind used on motorway crash barriers. When it came to the nose of the car, a two-piece carbon-fibre flip front was installed, but not before Dan reinforced it with carbon-Kevlar sheeting to bring it up to his standards. "I was surprised at how flimsy the front end bodywork was before I strengthened it," he sighs. "The carbon-Kevlar has worked wonders, but it still look six months of careful fitting and re-fitting to get the flip-front to sit exactly how I wanted it."

These custom levers were made using a lathe.



Cobra classic buckets fit the car's retro theme.



Custom paddle shifters and aluminium stalks.



The car is beautifully trimmed, and the ICE install superbly neat.

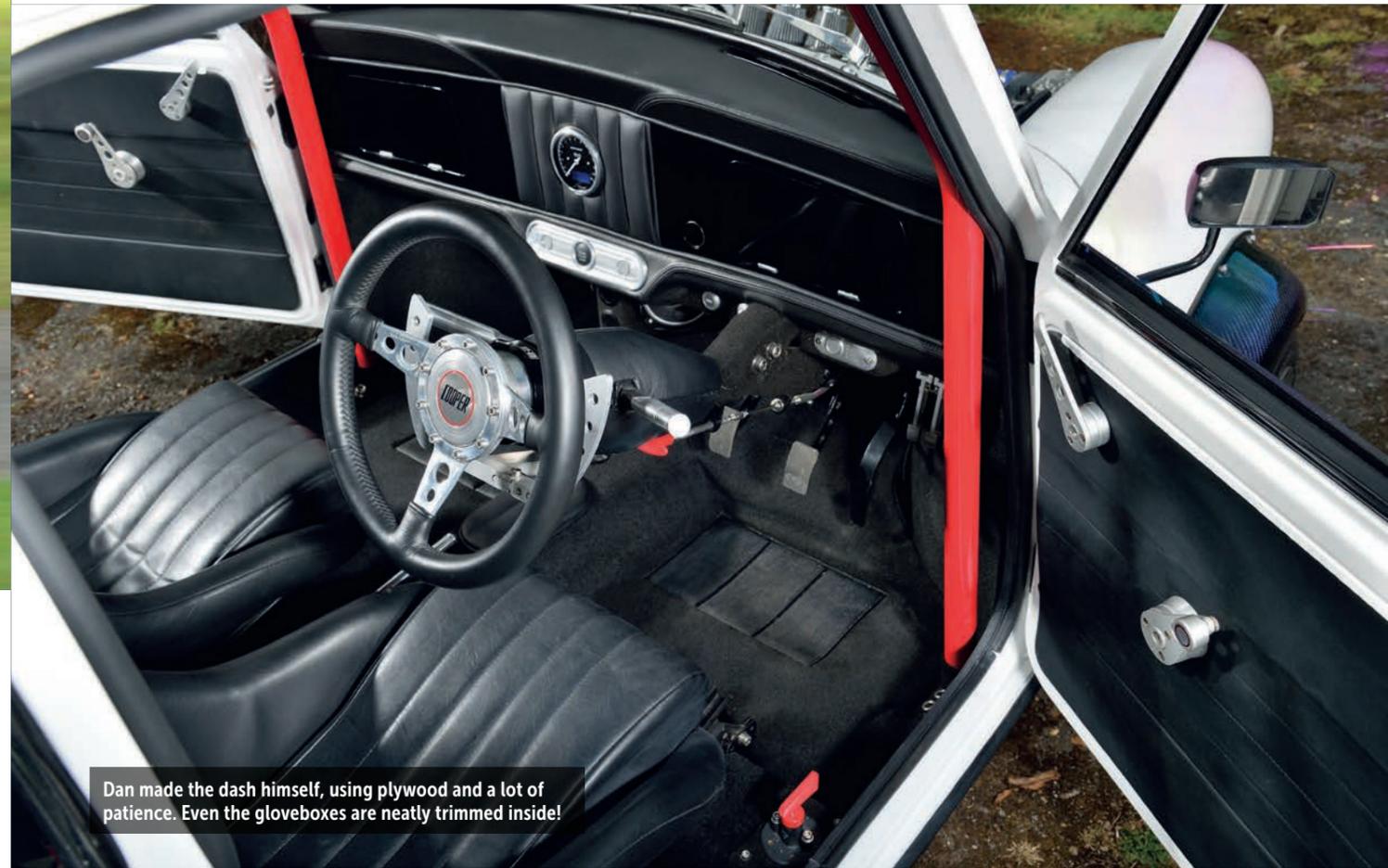
Indeed, great care has been taken to ensure it still looks like a proper Mini. "I wanted the front end specifically two-piece to look more authentic," says Dan. "The bonnet is my design in the way it locks, using pieces of stainless steel and threaded bars that I got on the lathe and carved down into pins. The pins are on the inside of the bonnet, which then slides into recesses, with another pin on a spring that goes in to lock them in place. I don't believe there's anyone else who's done it this way. You can't see the fixings from the outside, but it's not like those totally smooth Minis where you get rid of every lip. I wanted it stealth, so it looked like a nice, flash Mini but with no giveaways as to what lies beneath."

Also impressive is the way the front flips up rather than forward. "I bought the hinge and hydraulic system as a kit from Superfast Minis in the States," Dan adds. "I did that

quite early on and would probably design it myself now, but it gave me the opportunity to work on other things, like the bootlid."

In fact, two years of planning went into the car's bespoke lift-effect boot opening mechanism. "There were times when I was ready to throw in the towel on that part of the project," says Dan. "I was close to conceding that the bootlid was designed to drop down and that there was nothing I could do to about it!" However, his persistence paid off, with a unique feature that makes the car even more special. "I have a vision of what I want, and then I just think how I can make it, basically," he adds.

To achieve the desire for a clever and subtle balance between retro and modern, the orange paintwork has been replaced with a flawless coat of Audi Ibis White, and there's a MkI grille and badging to complement it. "The door logos were a



Dan made the dash himself, using plywood and a lot of patience. Even the gloveboxes are neatly trimmed inside!

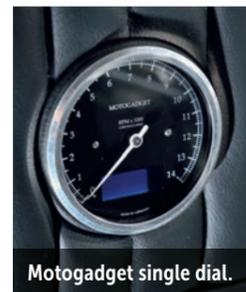
happy accident," Dan admits. "I got the blowtorch too close to the door when wiring, so I thought about what to do and ended up with this design. It's got the Cooper S logo and, if you look closely, Yamaha R1. I thought it was a nice way to incorporate both machines."

Elsewhere, a lightweight carbon-fibre roof provides the contemporary twist on the classic duo-tone look, and the wheel arch extensions have been coated to match. "I bought the arches in fibreglass and got them to the exact shape I wanted, especially for the front," Dan explains. "I then sent them off to get carbon wrapped, with a very thin layer of carbon-fibre put over the top. I've had a go myself, and it's really hard to do!"

The arches house awesome centre-lock Force Racing split rims in 7x13-inch flavour, while the Yokohama A048R tyres to provide a big hint towards Dan's future plans. "I intend to exhibit my Mini at as many meets as I can get to over the course of the next couple of years," he says. "And after that time, I hope to engage in a serious amount of track action!"

TOTALLY TRICK

In readiness, the suspension and brake set-ups have upgraded way beyond the usual levels. "Everything underneath is as much KAD as possible," says Dan. "I used the hubs, the vented discs, drive flanges, all the



Motogadget single dial.



Bespoke switch panel and heater.



The custom touches are everywhere.

"I have a vision of what I want, and then I just think how I can make it..."

rear disc set-up and a rear anti-roll bar. The radius arms came from Specialist Components, and the front callipers are Wilwood four-pots to make use of the bigger wheels."

If that wasn't impressive enough, the Mini has also been fitted with fully-adjustable 075 aluminium coil-overs all round, plus ultra-trick titanium front suspension arms and Rose-jointed tie-rods from Force Racing. There's also a Mini Spares rear beam, as well as some aftermarket rear camber brackets. Well, sort of. "I took them to an engineer and had them copied in stainless steel," says Dan. No stone has been left unturned in the hunt for perfection!

Inside, Lexan polycarbonate windows, a rollcage and an integrated fire extinguisher have been installed in advance of his attack of the asphalt too. But this is no scruffy, stripped-out racer. The beautifully finished cabin also houses Cobra Classic seats, a Moto-Lita three-spoke steering wheel with a Cooper centre, an OBP pedal box and a JL Audio sound system with Bluetooth iPhone connectivity. "The dash I made completely by hand," Dan reports. "I drew it in 3D, got myself some plywood from B&Q, heated it up, cooled it down – all trial and error. It took me about 10 or 11 months to make. I was always worried about the centre dial looking too small so that's why I went for ➔

TECH SPEC

BODY 1990 Mini City, body treated to galvanising chemicals prior to priming, Mk1 rear light conversion, carbon-fibre roof and carbon-wrapped wheel arch extensions, custom 3D-printed door badges, carbon-fibre two-piece flip front with carbon-Kevlar strengthening sheets with Superfast Minis hinges, strengthened A-panels, bespoke bootlid opening system, LED numberplate lights, Plastics 4 Performance Lexan window kit, external fuel filler neck deletion, Yamaha motorcycle fuel filler flap, F1-style door mirrors, custom Bluetooth-operated daytime running LED headlights (with switchable red LEDs and Ice White halo rings) with 3D printed rear housings, custom illumination functionality, Spiyda LED indicators, Austin Cooper S badges. Paint: bare metal respray in Audi Ibis White.

ENGINE 1999 998cc Yamaha YZF-R1 DOHC 20-valve inline-four, fully rebuild and chemically cleaned, balanced crankshaft, quad 40mm Keihin throttle bodies, cone air filters, ceramic-coated exhaust manifold, custom 2.25-inch stainless centre pipe, Manifold side-exit rear silencer with 3-inch rolled tailpipe, modified aluminium radiator, auxiliary electric water pump and radiator fan, custom coolant pipework, blue silicone hoses.

TRANSMISSION Front-wheel drive, Yamaha R1 six-speed straight-cut gearbox, multi-plate wet clutch, electronic paddle-operated gear change, clutchless shifting, final drive 530 chain, AUTO-BLiP chain links.

BRAKES Wilwood four-piston callipers with custom brackets, KAD alloy front hubs and drive flanges, KAD vented and grooved discs (front) KAD billet 7075 aluminium disc conversion (rear), stainless braided hoses, factory servo deletion, OBP pedal box with remote mechanical bias bar, custom handbrake assembly, stainless handbrake lever, remote fluid reservoirs.

SUSPENSION Fully adjustable 7075 aluminium coil-overs, Specialist Components billet radius arms, heavily modified front subframe powder-coated red, KAD rear anti-roll bar, Force Racing titanium tie-rods, bottom and top arms, Mini Spares aluminium rear beam axle, custom stainless rear camber brackets.

WHEELS AND TYRES 7x13-inch Force Racing split rims with black centres and silver lips, red centre lock system, Yokohama A048R 175/50x13 tyres.

INTERIOR Cobra Classic seats with matching rear seat padding, Moto-Lita three-spoke leather steering wheel with Cooper centre, Snap-Off boss, custom 3D printed steering cowl trimmed in black leather, modified MG MGF steering column, custom Piano Black dashboard with leather centre trim, Safety Devices roll cage, Newton Commercial trim (headlining, pillar padding, carpets), Trilogy aluminium push switches, custom switch console, custom mechanical levers (for boot, bonnet, flip front), keyless smartcard entry, ignition start button, custom MPG module and gauge, LED glovebox lighting, kit car heater matrix with custom 3D-printed vents, custom billet wiper and indicator stalks, stainless rear view mirror, aluminium door furniture, custom paddle gear shifters, custom reverse mechanical cable pulley.

ICE JL Audio sound system (six-inch subwoofer in custom enclosure beneath rear bench, XD-700 amplifier, C2-525X two-way front speakers, C5075-CT tweeters, C2650 rear component speakers, CL441DSP clean sweep module), modified Kinivo Bluetooth iPhone module.

It's a flip front, but not as we know it! Reinforced front end uses a hydraulic lifting kit sourced from the USA, but all the other fittings are bespoke.



Quad Keihin throttle bodies with neat filters.



Camber brackets were re-made in stainless steel.

"The start button and the keyless entry required a whole new way of thinking..."

the material in the middle, to mimic the seats and the direction of the piping. The dial itself is from a German company called Motogadget. It took me a long time to find the right, classic-looking dial. It couldn't be some crazy, lights everywhere thing – I wanted something really sleek."

The dash also houses a stealth gear indicator, while the upholstery was done by a Hertfordshire firm, Huke Trimming, which also modified the carpets to cater for the lack of gearlever. The carpets themselves are Newton Commercial items, as is the Audi-style cloth headlining, which also covers the A, B and C pillars. Elsewhere, much of the exposed metalwork was covered in acoustic carpet by Dan in his lock-up. It really is a proper job.

In terms of extra trickery, all the custom switches, dials and audio install join a shiny

push button start module too, which works in tandem with nifty keyless smart card entry. There are even home-made projector headlamps featuring LED rings that change to any RGB colour selected on a linked iPhone app! "The wiring loom is completely custom," says Dan. "Knowing I wanted to add a lot of features, I redesigned it, then redesigned it about four more times through the process of building the car. The start button and the keyless entry required a whole new way of thinking, relays galore."

One of the more intense jobs – literally – was modifying the fuel tank. "I saw the filler neck as a sore thumb," Dan reports. "I cut it off, and in doing that the fuel tank jumped about 15 foot in the air, despite cleaning it through four times. I used a Yamaha tank as a donor and welded it to the Mini tank, then used a solution from Frost Automotive to

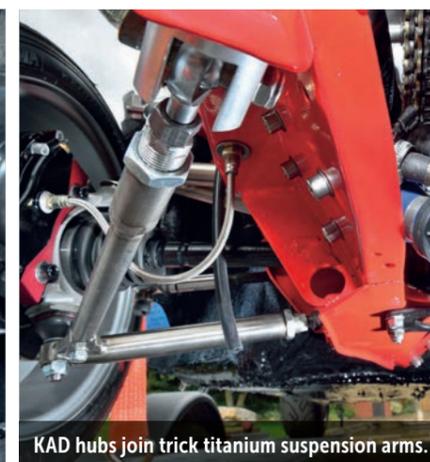


The install is incredibly neat, and finished to perfection. Not your average 998cc Mini...



Fully adjustable coil-overs are fitted all round.

make sure it was sealed. I also made the fuel gauge. It's a little circular one to suit the aero push buttons I've got in the car, with four LEDs. I worked out how to use flashing modules, so when the fuel gets below a certain level it beeps and then starts flashing at me."



KAD hubs join trick titanium suspension arms.

WORTH THE WAIT

As you've no doubt surmised, Dan's mega Mini has been anything but a quick build. As well as creating almost all of this phenomenal car himself, he has to get to central London for work every day, and also found time to become the British Champion in a bodybuilding show last year! However, determination means he's seen it through. "It's madness," he says. "It's taken me nine years. From the start I knew I had to have everything I've ever dreamt of. So I just had to sit and save, getting tools as Christmas or birthday presents. I've done this on as much

THANKS TO:

Dan would like to thank: "My wife for her help with the project, my family for their support, Jack S and Kevin P for the shoot location, Peter S, Lee G, Gavin K, Dudley J, Martin R, Stu C, Nick and Chris L, Geri A, John G, ProMotive, Arc Angels, Force Racing, Chris at Spiyda Designs, Shapeways 3D Printing, Saff at Sound Evo, Dave at Huke Upholstery, Oz at Moss for the flip-front latch design and a big thanks to Gary at West Herts Customs"

of a budget as possible, learning as I went. And I've basically ended up doing most of the car three or four times over. It's trial and error, but at the end of the day it's only a human being that you'd take it to anyway. I wanted to make one of the best-looking Minis in the country – I don't know what others think, but I'm so pleased with it. It's my pride and joy."

It's not hard to see why. The lofty number of unique and cutting-edge features that Dan's introduced to the proceedings have produced a simply stunning Mini that not only boasts shattering performance, but retains much of the model's traditional cosmetic appeal. And to us, that sounds like the best of both worlds! 