

# Cooper's Super Charger!

With a surname like Cooper – and working for parts supplier Moss Europe – was there ever any doubt that Oz Cooper would own a tuned Mini?

Words: Andy Butler. Photos: Zoë Harrison

## Oz Cooper

- ▶ **Age:** 43
- ▶ **Occupation:** Classic Mini Product Manager for Moss Europe
- ▶ **Cars you'd love to own:** McLaren F1
- ▶ **Dream job:** Got it!
- ▶ **Mini obsessed:** Of course
- ▶ **Minisomnia:** Nope, I just fall asleep under it
- ▶ **Fave food:** Curry or pizza, I can't decide
- ▶ **Fave film:** The Matrix
- ▶ **Fave drink:** JD and Coke on the rocks
- ▶ **You in three words:** Old, funny, obsessive



Eat Me! Flip front gives awesome access for servicing, and can be removed in a spanner-shake

Years ago, Oz Cooper was deeply into motorbikes. Big, hairy-arsed, yank-your-arms-from-their-sockets machines, like the legendary Yamaha V-Max, were how he got his kicks. But when he bought an 850 Mini – a car with an engine 350cc smaller than his favourite bike and only 34bhp – that all changed.

"The 850 was awesome and got me hooked on Minis instantly," he smiles, "but, more to the point, it was dry and safe in the rain!" Aha.

Over the next few years, he had loads of cars, including several Minis, and this one arrived in 1993, a scruffy 1970 saloon with a 1275 motor, bought as a cheap runaround. He tickled it up and ran it for three years before a rear-end shunt launched him into a total restoration. The Mini resurfaced in 1998.

Having spent all that time, and plenty of cash on the project, he took his circuit-focused Mini

on a trackday to give it some welly in a legal way. Only it wasn't safe enough. A trainee Alonso ran out of talent, ran out of brakes, and ran into Oz. After only three months' use, the Mini was badly damaged. Gutted? Just a bit.

After such a kick in the family jewels, he lost heart with the car, and it sat outside his parents' home for almost nine years. Eventually, after building himself a decent garage at his new house, he rescued Mini and set about rebuilding it. Did he have a master plan? "No. I just kinda got on with it and this is how it turned out. The only thing I wanted was to make it a bit of a sleeper."

Bodily, there is little left of the original car. Rust and double accident damage accounted for most of the major panels, while a leaking Britax

sunroof kyboshed the roof. New steelwork sorted the body from the A-pillars backwards. The roof and flip-front are both one-piece carbon-fibre mouldings, as are the new wheel arch extensions.

The snout is held closed by a couple of catches on its lower rear corners, and the front is located in rubber bungs to stop it flapping around. Undo the catches and the whole moulding can be popped forwards a couple of inches before hinging smoothly upwards on silent gas rams, giving great engine accessibility with real style. >>

Funny how the Mk1 brightwork still does it despite big arches and fibre front



Now that is sitting just nice





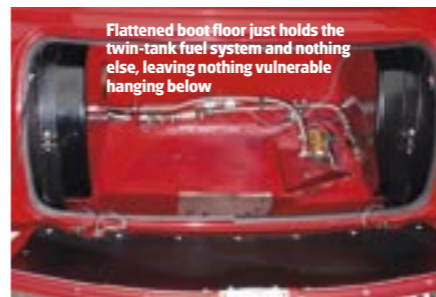
Venerable SU carb may prove to be a limiting factor as far as ultimate power goes, but it's a compact and affordable solution



Expanded carb clearance box leaves enough room for the Eaton blower, so let the supercharged fun commence!



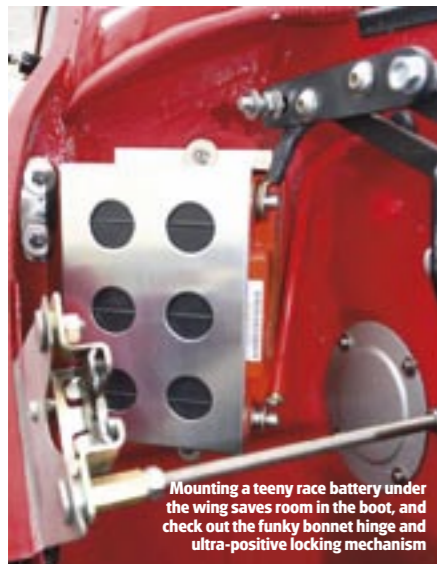
Super-strong engine steady fights almost 200bhp of rock and roll



Flattened boot floor just holds the twin-tank fuel system and nothing else, leaving nothing vulnerable hanging below



Oz's hat, made to resemble the front of his Mini



Mounting a teeny race battery under the wing saves room in the boot, and check out the funky bonnet hinge and ultra-positive locking mechanism

» If that gaping maw isn't enough, the whole thing comes off after undoing two bolts. Why go for a flip-front instead of conventional wings and bonnet? Simple. "I wanted to get rid of all the known rust spots on the car," he explains. "Mini is sadly well known for the wings and A-panels going rusty, so I replaced the whole lot with lovely carbon-fibre. No more rust!"

Once the engine cover has been dispensed with, we can see more of Oz's handiwork. The 1275 motor has been fully rebuilt with its original

EN40 crankshaft, which has been knife-edged, wedged, lightened and the bottom-end fully balanced. Powermax pistons sit on custom-made billet rods, and three main-bearing straps and a full complement of ARP fasteners hold everything together.

Having rebuilt countless Mini engines and gearboxes, Oz did all the work himself, and he also ported and polished the cylinder head. This had been fitted with oversized valves, which are in turn popped by a Kent 310 Scatter camshaft. This is about as wild a camshaft as you can get, but he is happy with it. "Yes it's a completely insane choice of cam, but with a very well-balanced engine [ie: everything is designed to work together, not just to be vibration-free - AB] it is very usable in the car."

The star of the engine bay is the Eaton M45

supercharger, although it's tucked away at the back where you can hardly see it. Another Moss product, it's intended for use on the MG Midget's A-series motor, and Moss's own website apologises to Mini owners as this is strictly for fitting to in-line engines. "Everyone said it wouldn't fit a Classic Mini," Oz comments. "So, I wanted to prove a point – anything is possible!" Basically, the unsuitability boils down to a lack of space for the charger, but "I'd already cut the bulkhead to create an airbox which would allow the car to run

a Dell'Orto. I just made it bigger." A one-off OBP adjustable pedal box also frees up room for the air filter assembly, but Moss is looking to amend the kit so it will be suitable for all Minis soon.

The

supercharger works with a modded SU carb, and electronic ignition comes from a vac-less Aldon dizzy with Lumenition electronic ignition. The gearbox is a full JKD straight-cut animal, with dog engagement to handle loads of power and harsh shifting, and a Quaife LSD keeps the power equally distributed without speed-sapping wheelspin.

In contrast to the carbonised bodywork or the force-fed engine, the chassis is quite mildly tweaked. Coil-over dampers all round have replaced the standard gear, which in turn made the rear subframe redundant, so that's been

»

## "...replaced with carbon-fibre. No more rust!"

Hidden battery cut-off switch can disable the Mini quickly for safety or security



Over-pressure relief valve dumps excess boost if Oz closes the throttle rapidly. It doesn't get used much



Crankcase vents lead to catch tank to stop oil mist feeding into the combustion cycle



Big power needs big brakes. KAD four-potters can almost make this Mini stand on its snout





Harnesses are inconvenient but well advised for a car with this kind of power



Plush rear seats are made redundant by harness belts. Still, it saves giving lifts



Trying to listen to the stereo is a bit optimistic, but when the navigation module goes in at least Oz will be able to see where he's got to go



Rear speakers hide away under the rear seat



Super-clean cabin only shows a modern touch with all the carbon fibre. The bare minimum of gauges means Oz isn't distracted from pedalling quickly



Halogen lights are an absolute must on something that shifts this quickly and the larger light surround looks ace



A genuine carbon-fibre replacement roof skin. Cool? Yes. Lightweight? Yes. Mind-numbingly expensive? Err, yes



Superchargers don't mute the exhaust like turbos so make the best of that great noise



Miniscule mirrors were chosen more for low drag than high visibility



Does my bum look big in this? Nah, it's just right! And we're sworn to secrecy about where the Supercharged badge came from. But Oz could tell you, for a price

### Technical Specification

1970 Supercharged saloon

» **Engine:** Non-original 1275cc Mk3 Cooper S motor, overbored 1293cc . 12G940 head ported, polished by Oz . Kent 310 Scatter cam . Kent vernier timing wheel . Titan 1.5:1 roller

rockers . 1.46in inlet, 1.22in exhaust valves . Powermax pistons . custom billet conrods . EN40B crankshaft knife-edged, wedged,

lightened, balanced . Vandervell big-ends, main bearings . lightened flywheel . custom induction system . modified SU HIF44 carb . Eaton M45 supercharger . modified inlet manifold . 304-grade stainless steel exhaust manifold . custom 2in stainless steel exhaust . high-capacity water pump, non-bypass . alloy side-mount race radiator . Revotec cooling fan, modified switch . Facet high-capacity fuel pump . modified Aldon 43D4 vac-less distributor . Lumenition performance electronic ignition . Lucas sports coil . 10-row oil cooler, thermostat . pulleys reworked to gain maximum boost . running 9psi boost

» **Gearbox:** AP Racing sintered four-paddle clutch . lightened backplate . grey cover . JKD 1:1 straight-cut drop gears . four-speed straight-cut dog box . central oil pick-up . baffled casing . anti-swarf magnets added to casing . Quaife LSD . 2.9:1 final drive . comp ratio 8.4:1

» **Suspension:** Front: original subframe braced, seam-welded . Moss Europe Super Flow polyurethane mountings/bushes throughout . Protech coil-over conversion . Moss Europe lower arms, tie-bars . rear: Mini Spares beam axle conversion . Protech coil-overs

» **Brakes:** Front: KAD four-pot callipers . 7.5in vented discs . EBC Yellow Stuff pads . rear: Superfin drums . Mintex M1155 race shoes . OBP custom pedal box, bias adjustment . Goodridge braided stainless steel hoses . copper brake pipes . DOT5 silicone fluid

» **Wheels/Tyres:** 6x10in Ultralite alloys . 165/70x10 Yokohama A032R tyres

» **Interior:** Rollcentre eight-point weld-in/bolt-in rollcage . Cobra Cub front seats, rear seats trimmed to match . Securon three-point harnesses . Moss Europe grey carpet set . Trigger handbrake . Quickshift gear lever . alloy door furniture . Smiths magnolia-faced gauge set – speedo, tacho, water temp, oil pressure

. carbon-fibre dash, centre console . Moto-Lita John Cooper steering wheel, billet boss . electric windows . central locking controlled by full-closure alarm

» **Exterior:** Refurbished, seam-welded and heavily-modified 1970 shell . all new steel panels except front bulkhead, rear panel . bare-metal respray, Tartan Red by Oz . F1-style carbon-fibre door mirrors . Curley Specialised Mouldings custom carbon-fibre roof panel, flip-front, rear valance, parcel shelf, modified Euroarch-style carbon-fibre wheel arches

» **Performance:** Previously 133bhp at flywheel (without blower), now running 188bhp at flywheel



Lucas sports coil shows you don't need high-tech

» swapped for a beam axle. Adjustable arms at the front allow plenty of geometry adjustment to match the toe-and-camber-tweakable rear.

Brakes-wise, Oz has used a pair of early KAD sand-cast four-pot callipers and vented 7.5-inch discs up front, and Superfin drums over Mintex performance linings at the rear. These brakes allow him to keep the 10-inch rims he prefers without sacrificing anything in the anchor department. "They are very good indeed. The harness is there so you don't go through the heated screen when I hit the brakes!"

If you were expecting a full-race interior with no fripperies, think again. Yes, there's an eight-point rollcage and Trigger handbrake, but leather-trimmed low-back bucket seats are matched by the rear bench, there's a pop-out telly attached to four speakers – a guy's got to have some toys, right? – and an old-school dash with real instruments instead of a digital display. There

are even a couple of unusual luxury add-ons, too. But not all creature comforts come with a terrible cost in added weight and bulk. Au contraire...

"Electric windows weigh less than the standard mechanism, and central locking is cool. You walk away and just press the button."

And, in case you're wondering, he is planning on getting the Mini back out onto a race circuit. It would be a shame not to let it rip when there's 188bhp at the flywheel, and he very philosophically adds, "If it got smashed again I would simply rebuild it, bigger and better!" Let's not go there, shall we, Oz?

**Oz would like to thank:** Everyone at Moss Europe, Stuart at Rollcentre (+44 (0)1480 464052, www.rollcentre.co.uk) for the rollcage; James at Goodridge (+44 (0)1327 858799, www.goodridge.net.uk) for the custom brake hoses; Kevin at Protech (+44 (0)1225 705553, www.protechshocks.co.uk) for the coil-overs; Ian and Clair at Curley Specialised Mouldings (+44 (0)1622 833181, www.curleyuk.com) for the custom carbon-fibre panels; Grant at Optimum Balance Products (+44 (0)1487 812301, www.obp.uk.net) for the one-off pedal box; The Mini Forum (www.theminiforum.co.uk) for keeping me going with support for the project; Specialist Components (+44 (0)1953 859785, www.specialist-components.co.uk) for various donated goodies; and if I missed anyone off, I'm sorry.