

Clockwork Orange



You are a professional rally-prep guru, with 20 spare Mini bodyshells, a stack of competition-spec Astra bits, and you've entered a rally carnival in Barbados...

Words and photography Carlin Gerbich

The Mini is no stranger to rallying but very few have ever hit a special stage with the presence of this wide-arched, Vauxhall-powered Rover Mini Cooper SPI created by Dutch race and rally preparation specialist Frans Verbaas. Based in Oud-Beijerland, near Rotterdam

in southern Holland, Verbaas Preparations has been specialising in building, developing and running rally cars for clients for over 20 years and the Mini is the latest in a line of world class cars to have come from their company headquarters over recent years. "The business has got bigger over the years," says Frans, "We're now preparing a →



Big steel wheelarches house the massive 17x7 Team Dynamics alloys.



"Frans learnt to drive in a Mini and his first rally car was a Cooper S 1300"



Frans is happy with the Mini/ Opel hybrid car he's built.

(Mitsubishi) Evo X car for a customer, and we've also built Lancias, Sierras, Imprezas and Escorts for people who want them. But the Mini is for me." The company has recently been awarded the Dutch franchise for Citroën's C2R2 rally car, and has a continuous list of other projects on the go.

But it was with Minis that the company cut its rallying teeth. Frans's father owned a Mini dealership and ran a sideline business in hire cars and Minivans in the 1960s and '70s. Frans learnt to drive in a Mini and his first rally car was, naturally enough, a Cooper S 1300 which he built with the help of his dad and brother to compete in local rally sprints and other events.

Frans switched to an Opel Astra in 2002 when British rally preparation firm BTR, headed by Tim Ashton, sold off its stock to make room for its expanding Mitsubishi Evo

and FTO business. BTR Prep, based in Castledford, Yorkshire was charged with building cars and supplying technical support staff and technicians for Opel Team Belgium's rally team between 1990 and 1995 — and had won the 1993 F2 World Championship with Bruno Thiry and its Group A cars. BTR Prep also had considerable success in Russia and Turkey with not only the Astra F2 kit car but also its Group N production class cars, so when the company decided to get rid of its Astra cars and parts, Frans stepped in and scooped up as much as he could.

Having run various Astras in numerous rallies and ralliesprints in Holland, Belgium and the UK, Frans felt the need for a challenge and a return to his roots. He had also twice competed in the Barbados Rally Carnival with Astras, first a Group N GSI in 2003 (DNF) and then an F2 kit car (fifth in class, 27th overall) — and said the all-inclusive regulations, coupled with the island's hospitality, meant he wanted to return with a car that the

motorsport-mad locals would appreciate.

Hybrid planning

With a collection of around 20 spare Mini bodysells stored around the company's 5600-square foot workshop (equipped with lathes, milling machines, damper dynos — and everything else required to produce world class rally cars) and a stack of Astra rally parts on hand, it didn't take Frans too long to start formulating plans for his hybrid rally car. He began by measuring the engine bay and chassis of a 1993 Mini Cooper SPi that had been lying dormant under a dust sheet for several years and calculating what needed to be done to incorporate as much of the Astra as he possibly could.

There was never any doubt in Frans's mind about using the Astra engine in the Mini. The C20XE is one of the most reliable in motorsport, and is a far cheaper way of developing sensible levels of power than building a full, race spec, A-Series engine.



The mean rally Mini is close to pumping out 200bhp.

"There was no doubt about using the Astra engine in the Mini"

Frans also considered fitting a race prepared 1600cc GM engine and competing in a lower class, but decided against it.

"The idea was to have a high revving, say to 9000rpm, 1600cc engine that made about 220bhp," says Frans, "but to make such an engine costs £10,000, and there is a lot of driving in traffic and hills between stages in Barbados, so this type of engine is not very good for that. It's not so reliable."

The Group N 2-litre C20XE fitted with throttle bodies, however, is a largely standard engine that develops, according to a post Rally Barbados rolling road session, 183bhp at the wheels at 6-6500rpm — with a potential 30bhp more on tap at around 7750rpm. All without the prohibitive cost of attempting to eek every ounce of power out of a smaller, finely-focused engine.

Frans reasoned that adapting the car to accept the Astra's front subframe was a better way of incorporating the engine, gearbox and suspension into the Mini than configuring

Barbados Rally

Mention rallying and the first thing that pops into most people's heads is wet and cold Welsh forestry stages. But every year a band of smart rally enthusiasts side-step the muddy service parks of traditional rural rally territory and head to the Caribbean island paradise of Barbados for two weeks of sun-tanned action.

Barbados has been welcoming international motorsport competitors for over 50 years and this year marks the 20th running of an annual international special stages rally on the island.

It's certainly an exotic place to compete but that doesn't mean it's expensive. The £1600 entry fee covers shipping, entry fees, third party event insurance and inbound port charges (Barbados). A special deal with event sponsors means flights on Virgin Atlantic are around £480, and accommodation is available at below season rates.

The locals are dedicated to making the event as friendly, open and stress-free as possible, and this is reflected in everything from their hospitality to their all-encompassing technical regulations. Class structure is essentially based on FIA rules (with a few local adaptations) so any car built to MSA UK Blue Book guidelines is eligible. If, for some reason, it doesn't fit then organisers have a catch-all category called Group B which is fairly flexible. More often than not, however, Group B is where many cars that simply don't make the weight for their class end up.

Frans Verbaas's Mini was built to comply with Super Modified 10 (2-litre, two-wheel drive, Group A) regulations but, because it was more than 100kgs underweight — and Frans didn't want to pack the car with additional weight, the car was relegated to Group B where it was pitched against a Vauxhall-powered Lotus Exige driven by local hot shoe Greg Cozier, a Cosworth-powered rear-wheel-drive Ford Puma (Andrew Hurley, England) and a lightweight Peugeot 205 (Norman Catwell, Barbados). Second in class behind Cozier was a



With such ferocity we wouldn't be surprised to discover the car running on Red Bull.

well-earned spot.

Rally Barbados consists of two events over two consecutive weekends in May: the Shell V-Power King of the Hill sprint (May 23, 2010) and the rally itself (May 29 and 30), sponsored by Barbados-based fuel, lubricant, bitumen and LPG company Sol. Sol distributes its products throughout the Caribbean (from the Cayman Islands in the north, to Grenada in the South, Belize in central America to Guyana and Suriname in South America) — so its support of the event is considerable.

The rally itself consists of very short sprint stages and is a two-day event. It's not easy for newcomers to adapt: there's very little room for error on the island's slippery tarmac, particularly after a short rain shower, and, with no stage longer than 7km (just over four miles), there's absolutely no opportunity to make up for lost time. It's a challenging event and one in which only two Europeans have ever conquered: Irishman Kenny McKinstry (1993 and 1996) and fellow countryman and current IRC champion Kris Meeke.

If you'd like to know more about Rally Barbados and its 20th Anniversary celebrations in May 2010, check out www.rallybarbados.com for details on how you can enter.



Spectators could sit and soak up the rays while enjoying the competition.



After some last minute tweaking the Mini finally got to show off its stuff.



his own. It meant that he could use parts he already had and was familiar with without having to replace them with bespoke parts and having to restock the workshop or service van. The expensive Pilbeam uprights could be used, so too could the Astra kit car's brakes, wheels and tyres — and the driveshafts were exactly the same length.

"I thought about it for a long time," Frans explained. "The important thing for me was that the car still looked like a Mini. I didn't want to have a Clubman front on the car just to make the engine fit: it needed to look as much like the original car as we could."

They started by cutting out the Mini's rotten floor and redundant firewall and assembling the bodyshell on a jig to help support it during the transformation. New floors were sourced through Mini Spares and welded into place, while the new firewall was constructed to accommodate the Works Astra's front subframe, engine and transmission. Frans fitted his own bespoke rollcage welded from lengths of steel tubing and triangulated for optimum strength, and positioned the front struts so that the top-mounts poked through the tops of the wings and are located by the car's rollcage.

This was done partly through necessity: the Astra's subframe and suspension is a little wider than the Mini is able to accommodate without compromising suspension

geometry — and partly through good design, because it offers far more suspension travel than standard. It also means Frans can quickly change suspension geometry settings or dampers should he need to, without opening the bonnet.

It did, however, trigger the car's biggest exterior change: the squared, Group B-esque wheelarch extensions that house the car's 17x7-inch Team Dynamics alloys and AP Racing brakes. Because weight was not going to be an issue (class minimums for Barbados are 910kgs: the Mini weighs around 800kgs), Frans made the arches from steel instead of composite.

"Sure, you can get nice shapes with carbon, but I wanted it to be strong and easy to repair," he explained. The shape was

"The car was 70 per cent complete when shipped out"

refined using cardboard to produce a template, then the steel sections were cut and welded into place, while a length of welding wire was used to protect the edges.

One of the most difficult jobs was positioning the Opel Kadett steering column, but the chassis jig took a lot of the guesswork out of the process. "We could mount everything to see how it would fit instead of hanging everything in the air and guessing roughly where it needed to go," say Frans. "It's really the only way to get things accurate."



Roof air intake.

Front tower mounts.

Custom rollcage is made to fit perfectly.

Despite his best efforts, engine bay space was still at a premium. The original Astra GSi exhaust manifold was still too close to the radiator, so Frans modified it by first bending it slightly so that it would sit further away, repositioning the fan and welding on a collecting tank at one end to increase water capacity. With ambient temperatures in Barbados of around 32 degrees C during the event, Frans was acutely aware of the need to ensure the engine wouldn't cook itself.

Built to order

Verbaas is a Koni stockist (his workshop is 500m from the Koni factory), so used the company's dampers, built to his own specifications, at either end of the car. The rear A-arm suspension was modified to produce a perfect balance of stability and grip.

The car was "70 per cent complete" by the time he loaded it up with parts and brought it to the UK for shipping out to Barbados. Engine mapping was completed in Surrey by Steve Broughton at SBD on the way to Portsmouth where it was loaded on to a Geest liner and shipped to Barbados. Finishing touches to the set-up were done during a few test sessions on the island prior to the event.

"Like anything, you think you have lots of time but, in reality, you end up getting it close to where you want it and spend time when you get there making sure everything is right," explains Frans.

"I must say, it felt pretty good out of the box, and we had no real problems on the rally, so second in Group B (see sidebar) was pretty good. We found out later that I was shifting a bit too early, so there is more power available, but the balance was good and the



The 2-litre Opel unit has been severely wedged into the engine bay.

car was very fast," he said.

Other little niggles are relatively easy to sort out. Inlet temperatures are around 55 degrees C which Frans says is a little too high. The bonnet louvres were designed to draw hot air away from the engine bay, but they didn't work as well as expected either. "We didn't have time to make a carbon box for the inlet, so once we do this, that should bring the temperatures down about 10-15 degrees," he says.

The roof vent flap didn't work as well as he'd hoped either: the angle of the windscreen means the airflow shoots straight over it, and the only thing that flows into the car is dust. Frans has already got a solution for that in place.

That said, Frans was exceptionally happy

with the way the car performed on its debut outing. Second in class behind local driver Greg Cozier in his Vauxhall-powered Exige.

"We have some work to do with the dampers and suspension," says Frans. "The first day's rougher roads were very hard on the suspension so we probably need to go with a softer set-up to let the car drift a little more. It was better on day two with the smoother roads, so I think we have the balance right for then."

Frans intends to be back in Barbados in 2010 to better his result this year. "We've made a few changes and we should be a lot faster next time."

Turn up to your local meet in this and watch the crowds come flocking.



TECH SPEC

BODY 1993 Mini Cooper SPi main bodyshell with modified front end for Vauxhall Astra subframe assembly, suspension, engine and transmission, seam-welded steel bodyshell, steel wing and sill extensions with Gurney-style side-foils front and rear, Williams F1 carbon rear wing, aluminium alloy sump guard, Lexan side windows, F1-style carbon wing mirrors, aluminium rear underfloor diffuser, bonnet ventilation louvers, exposed strut top mounts made by Verbaas Preparations, steel roof vent with mesh filter, FIA-approved rollcage by Verbaas Preparations, triangulated construction and assembled using 45x2.5, 40x2, 40x1, 28 x1 lengths of tubing.

ENGINE Opel C20XE 1999cc inline four cylinder block, naturally aspirated, standard pistons, con-rods and crank, gas-flowed 16v head with standard valves and cams, steel Group A sump, Laminova oil cooler, standard head gasket, modified Astra radiator (curved, fan relocated and expansion tank fitted), MBE 9A4 ECU, Siemens injectors (4), FSE fuel pump, ATLD fuel cell with foam interior, running on 98 octane fuel, engine mapped by Steve Broughton at SBD, Surrey.

TRANSMISSION Sadev ST90 six-speed sequential geared to 165kmh/103mph top speed and driving the front wheels only, Sadev plate-type differential, AP clutch cover and Helix Plate (hydraulic actuation).

SUSPENSION Front: Pilbeam designed MacPherson strut arrangement, Rose-jointed links and Koni Racing 2817 gas-filled dampers built to Verbaas Preparations spec, 40Nm springs, Corsa steering column with electrical assistance. Rear: A-arm arrangement with Koni Racing 2812 gas-filled dampers and 30Nm springs.

WHEELS AND TYRES 17x7 Team Dynamics aluminium alloys (ET40) with 200/615/17 Kumho Ecsta racing tyres in K10 and K20 compounds running at between 1.5 and 1.8 bar.

BRAKES Front: 295x28mm steel AP Racing discs with four-pot AP Racing (Group A) brakes and Pagid RS 4-2 carbon-based pads. Rear: 256x20mm steel AP Racing discs with two-pot AP Racing (Group A) brakes and Pagid RS 4-2 carbon-based pads.

INTERIOR Racetech Kevlar/carbon races seats with Schroth multi-point harnesses, SPA dished steering wheel, Verbaas Preparations-designed aluminium pedal box and steering column-mounted sequential shifters, vertical fly-off handbrake, MBE driver display, SPA extinguisher system.