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5EXi Machine! Exclusive First Impressions



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Luego's new XT





SEX MACHINE

Developed by Marlin Cars, Kool Kars mid-engined 5EXi promises electrifying performance, unique styling and an economy price tag. Here are our exclusive first impressions.

Ian Stent reports.

(Extract from Which Kit magazine Dec '03)

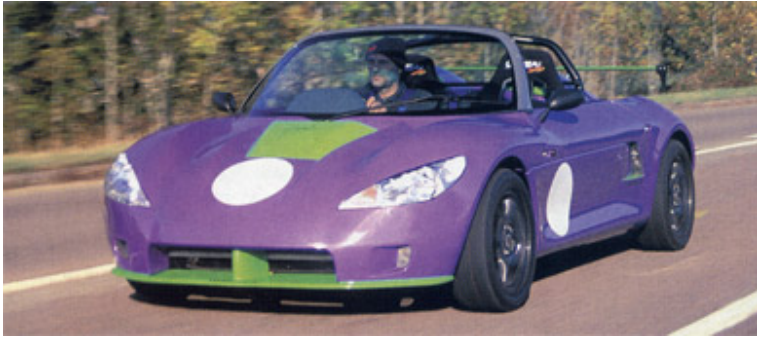
Launched at last year's Stonleigh kit car show in May, the Kool Kars 5EXi has rapidly progressed from prototype to fully-fledged production car. Just five months later and we find ourselves looking over the first road-going demonstrator and discussing the finer points of its construction and cost implications. It's an immediately impressive start.

The new car is a major departure for a company more familiar with front-engined traditional roadsters, although the company's Mark Matthews has risen to the challenge in a typically meticulous and detail conscious fashion. The brief for the new car has been an interesting one, not because of any engineering or design parameters, but primarily from a cost perspective. Such is its performance potential, it would have been all too easy to price the new 5EXi in the early to mid-teens area – let's say around £12,000. After all, for a mid-engined, high performance roadster with highly individual styling, that doesn't sound too bad, does it?

But Marlin's brief has been rather more restrictive. To complete a car to the specification of the car you see here, including 2-litre 200bhp-plus turbo engine, kit car enthusiasts can realistically expect to be on the road from around £7,500-£8,000. If you were concentrating before, perhaps you'll listen more carefully now. £8000 for a car with this potential sounds not only impressive but also mind-bogglingly difficult to achieve. Which is where Marlin's careful development of the project comes to the fore.

While the space-frame chassis looks simple, lightweight and effectively designed, the secret to the 5EXi's affordability lies in the bits bolted onto it. When Marlin searched for a suitable donor car it discounted the old favourites and looked elsewhere, just as it had for its own sportster when launched with BMW components last year. For the mid-engined 5EXi it needed something different again, and this time landed on the Rover 200. Available with a wide range of engines, from 1.1-litre K-series up to 2-litre turbocharged T-series, the fading Rover is such a bargain basement second-hand purchase it's almost embarrassing.

The written-off 220 turbo donor car for the demonstrator cost just £200 and another Vitesse has just been bought for £100 including 8 months MoT (from which most of the parts can be used but with a few items still required from a deed 200). Performance donor cars don't get any cheaper.



But it's not just the engine package that helps to keep the 5EXi build costs low, because the new kit uses a huge amount of other components from the same source. In addition to the basic engine and gearbox you'll also be retaining the engine's exhaust manifold, complete induction system, wiring loom and mounts. Unlike so many modern twin-cam engine installations in other kit cars, here there is no requirement for a carb conversion or switch to a new aftermarket ECU. The standard package drops straight in.

Elsewhere you'll find the donor's...

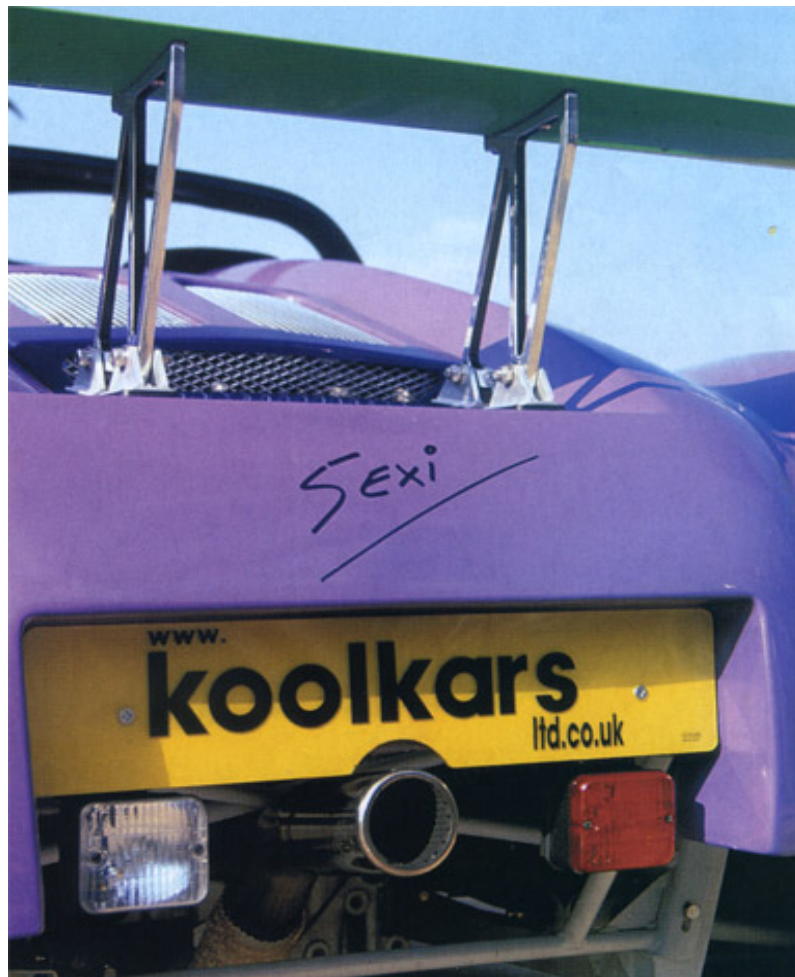
- Drive shafts
- Hubs (front used at the back, rears used at the front)
- Brake discs and callipers
- Radiator and electric fan
- Complete windscreen wiper motor, arms and wiper assembly
- Fuel pump and fuel sender unit (to be used in new aluminium tank)
- Steering column complete with column switches (Kool Kar's own rack)
- Ignition switch and key fob (allowing for retention of the standard factory alarm)
- Pedal box assembly, brake servo and master cylinder
- Gear lever and preliminary rods
- Handbrake lever and preliminary rods
- Handbrake lever and cables
- Complete heater assembly and dashboard controls
- Horn
- Dash instruments
- Wheels and tyres

It's a hugely impressive list, especially when you appreciate that virtually all of these components are used in their standard form, with no or only minor modifications prior to installation. What's also clever is that these items don't compromise the 5EXi's sporting potential because the company hasn't limited itself to the donor's suspension components.

Instead, the 5EXi has bespoke double wishbone suspension at each corner along with fabricated hub carriers and aftermarket coil-over dampers. The latter have been specially designed to be used upside down so as to reduce unsprung weight (a trick learnt from the performance motorbike market where front forks have been fitted this way for some years).

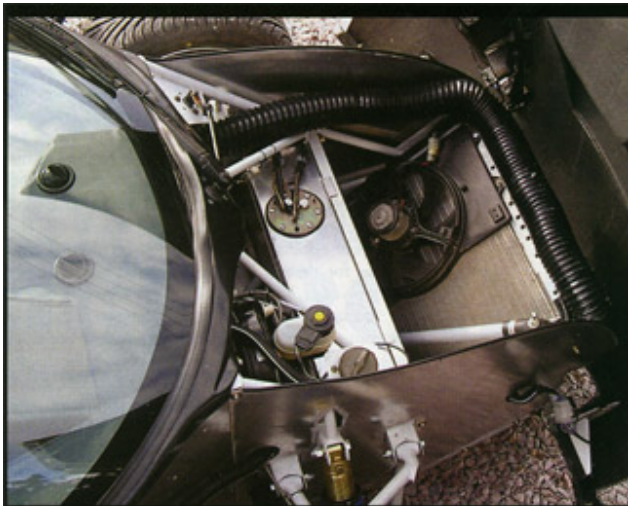


In addition to these bespoke suspension components and basic chassis structure, other major components include the comprehensive bolt-down roll cage which also doubles as a windscreen surround for a Lotus Elise screen. The chassis is then comprehensively panelled in aluminium (Zintec for the floor panels), some of which are designed to be structural. But while the 5EXi may be designed with economy in mind, modern production techniques can now ensure that quality comes free. All aluminium panelling is laser cut, including all major holes and, where necessary, they come pre-folded or curved. In some instances these are incredibly complex panels such as the front bulkhead. There's no way you could achieve this sort of precision at home.



The bodywork is, as you'd expect, produced in fibreglass and is offered with a coloured gelcoat finish, albeit in only a limited number of primary colours. The main front and rear panels hinge to give excellent access to all the suspension and ancillary components. In addition, once the relevant wiring loom plug has been disconnected, both panels can be completely removed from the car thanks to some cunning design that requires no un-bolting and only one person to do the job – very neat. In fact, all major panels can be removed from the 5EXi in a matter of minutes, with the large side panels quickly unbolted and lifted away. Of course, this also means that the car can be completely assembled without any panels getting in the way.

There are actually a large number of panels involved in the body (twelve in total), with more significant ones including the complete dash panel (which is designed to house the donor's instrumentation and heater controls) and the windscreen capping piece. This neat moulding, when used in conjunction with a lower windscreen surround, merely clamps the Elise screen in place, making later removal (in case of damage) simplicity itself. Marlin is confident that the design will be watertight and also provide a good leading edge seal for the soft-top which has yet to be productionised. Complete with zip-in side panels, the company hopes it should provide a high degree of weather protection.



Optional extras for the new car appear to be few, although the dinky rear wing is one, along with the curved aluminium storage bins located along either side of the cockpit. It all tends to point to an affordable end product that doesn't require endless upgrades in order to achieve something equivalent to the inevitable impressive company demo car.



OK, so enough of the theory. What's the new 5EXi like in the flesh? Once you've recovered from the slightly gaudy colour scheme of the demo car you can begin to appreciate what the new car has to offer. The design is essentially an accomplished one – the lack of doors may be a detracting factor but the curved windscreen suits it well and the Peugeot 206 headlights are a great touch. Even the original Rover alloys don't look out of place. Paint it metallic silver or some other modern colour and we think it would be a genuinely impressive looking machine (although that would add to the cost).



Access to the front and rear suspension etc via the hinging panels is excellent and the panels are designed in such a way (with fibreglass tabs) that they line up perfectly and are well located when clipped back in place. Under the rear deck you can see all the donor components quite clearly while the quality of the fabricated suspension etc seems typically professional. T-series and K-series engines require different engine mounts and Marlin has already engineered the chassis for both installations. While this car is devoid of any silencer, the tabs are in place for a single silencer which will run transversely across the back of the car, with two outlets and a single pipe coming back under the engine to join up with the donor's manifold and down pipe. The system has also been designed to accommodate a catalytic converter for those who are using a more modern donor car.

Of big concern to us was the method by which gear selection would be taken back from the original gear lever to the 5-speed Rover 'box. Mid-engined changes can be questionable at best and are often the weak link to enjoying an otherwise accomplished package. While

this car retains the donor's lever and primary rod linkage, from the rear bulkhead back it has been developed around a cable operated change. This is the ideal arrangement, making installation and adjustment easy, while maintaining a clean change between cogs. If we've got any complaint about cable changes, then they can sometimes feel a tad lifeless and often seem to lack the spring assistance one is used to in a more conventional set-up. But for the mid-engined configuration it's invariably a million times better than the bodge-up of metal rods and rose joints that we sometimes come across.

Up front we really like the look of the modern donor-sourced radiator with its standard fan. Combined with good ventilation through the bonnet, it certainly promises a drama-free run, even on hot summer days. Holding on to the donor's fuel pump and tank sender is also a good touch that should result in reliability. The relatively high sides of the 5EXi make getting in and out more challenging than it might be, but the neat design of the rollcage counters this with excellent places to hold on to and balance as you lower yourself into the cockpit. The interior on this first car is of the stripped-out racer variety and it suits the no-doors image of the car. Interior space is good although we found the trimmed seats to be overly constricting. The side bins are useful and there's actually generous space behind the seats for larger oddments storage. The latter might be a good reason to use some other seat which offers a hinging back, since with these fixed bucket seats the space is largely wasted.

The driving position is good, although the throttle pedal was slightly strangely located, with all major controls falling naturally to hand. The Rover instrument binnacle looks fine while the drab gelcoat grey dash looks, well, ...drab. Have it colour coded to the body, or in black, and it would be much improved. On the plus side, the Rover heater controls look good and the company has even managed to retain the original Rover rubberised dash tray.

In our eagerness to bring you this exclusive in-depth look at the new 5EXi we'd pushed Marlin's setting-up time to the brink and beyond, the company being the first to admit that it hadn't completed all the

suspension geometry adjustment it would have wanted. As such, any serious assessment of its on-road ability will have to wait for a further month or so, at which point we'll return. That said, we were able to run up the road and it's immediately clear that there's loads to look forward to...

Performance from the 2-litre twin-cam turbo engine is already shatteringly effective in its new lightweight home (target weight being around 530kgs). Traction, thanks to the mid-engined configuration, is excellent and this will surely be as fast as any sane human will wish to go on public roads – it is hugely quick. With the heavily curved windscreen there's also minimal buffeting, which as a consequence, means you can be travelling at very high speeds without really appreciating it. Assessment of the 5EXi's other dynamic abilities will have to wait for another day if we're to make any sensible evaluation, but even in its current work-in-progress set-up things are looking promising. Watch this space, as they say.

On-road antics aside, the new Kool Kar 5EXi is already an impressive package. With Marlin Sports Cars engineering experience behind it there's much to admire with this new car. Quality of the components looks typically top notch, the way in which the car goes together appears to have been cleverly thought out and the comprehensive use of the Rover donor components is a stroke of genius – helping to reduce the build cost without compromising the integrity of the car's sporting ability. Once the final suspension set-up has been honed, this will be yet another mightily impressive kit car. We can't wait.

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