



Not just one of the best cars Lotus has ever made but one of the greatest sports cars ever to grace our roads.

Words: Brett Fraser Photography: Max Earey/Brett Fraser

Believe the hype. The Lotus Elise was, is, and always will be one of the best road-going sports cars in the world. In terms of driving dynamics it's both an intellectual and an artiste, a four-wheeled exemplar of the expression 'less is more'.

The little Lotus is pure of purpose and efficiently executed; what it provides is no more or less than is required to create a sublime driving experience. Its responses are precise and immediate; its ability to fuse its soul with yours is unsurpassed. And it's that almost spiritual bond that makes an Elise feel every bit as special as any ferrari, Porsche or Lamborgfiini with five times the horsepower. If you love driving, you'll adore the Elise.

Necessity fashioned the Elise, because it nurtured invention. By the early 1990s Lotus was in crisis. Again. Bugatti owner, Romano Artioli, had bought the Norfolk firm from General Motors despite losses running at up to £30million a year. He could have (and maybe should have) closed down the car-making operation and concentrated on the automotive engineering division, yet Artioli believed that a world class Lotus sports car was the best advertisement that the company could have. Make one, he told the team, only for less money than Ford would spend on a new door handle for the Fiesta.

Given more budget, the development guys confess they might have had grander ideas. Cash-strapped as they were, they reverted to the main principle of Lotus founder, Colin Chapman

- light weight, achieved through ingenious simplicity. Hence a chassis made from extruded

aluminium, glued together. Hence the Roversupplied K-series engine, chosen because it was light and compact. Initially there were sophisticated featherweight composite brake discs, abandoned only because the supplier couldn't cope with higher-than-anticipated production numbers. All brilliant stuff, all contributing to a car that drives like no other.

You can now buy that brilliance for as little as E6500, a sum that gets you the basic 1.8-litre K-series-powered with a humble yet ample 118bhp. There are gutsier versions of the S1 Elise, with 135bhp, 143bhp, 160bhp and a raging 190bhp, all of which are hugely appealing, but it's the more affordable and plentiful basic model that best illustrates how you can make comparatively little go an awful long way.



### ENGINE AND GEARBOX

Lotus chose the Rover-sourced 1796cc K-series 16-valver because it was compact, light and adequately powerful for a car originally designed to weigh just 750kg; even though Hethel missed that weight target, 118bhp is still plenty to shift the little Lotus along at proper sports car pace, especially as it's backed up by 122lb ft of torque that peaks at a useful 3000rpm.

Although the K can be rewed through to 7000rpm, its power curve actually tops out at 5500rpm, the consequence being that you seldom feel inclined to take it much beyond 6000rpm as there's nothing to be gained by going further. And that makes for a fairly low-stressed powerplant, but not necessarily a low-maintenance one.

When buying, check for a paper trail to say that the engine has been inspected every 9000 miles and that, crucially, the head gasket was changed at around 54,000 miles — head gasket failure is the K's one major weakness. The coolant system itself also warrants close inspection, as it's not a large capacity system and is prone to leaks from numerous areas. The front-mounted radiator, for instance, is under threat from stone damage, and the coolant system's clamps, as originally fitted by Lotus, can pop off the hoses — Lotus specialists will be able to supply better quality items.

Elises produced late in 1998 had faulty coolant tank pressure caps; these ought to have been replaced by now, so look at the underside of the cap to ensure that the rivet on its underside is positioned dead-centre. And while the cap's off, check it for the milky goo that suggests the engine has at some time overheated and mixed oil with the water. If it has, either walk away or suggest a price adjustment.

Still on the subject of the waterworks, have a peek at the inlet manifold.

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Still on the subject of the waterworks, have a peek at the inlet manifold gasket; black ones tend to leak and replicate the symptoms of a failing cylinder head gasket, green ones are non-permeable. Oil leaks are rare, but to check for evidence of them on the underside of the engine you will need to put the car up on ramps and remove the alloy undertray.

Should the Elise you're looking at suffer from a sticking throttle – as evidenced by a reluctance of the revs to die away between about 2500rpm and 1500rpm – check if it's got an altermarket air filter. If it has, try slackening off the jubilee clip that holds its piping to the plastic throttle body, as it can obstruct the free movement of the throttle butterfly. In the case



of a car with a standard air filter, it may be that the plastic throttle body distorts when hot – Rover introduced an alloy throttle body in 2001 that you can replace it with.

Even when new the Elise's gearchange was hardly a paragon of precision; with age expect it to have deteriorated considerably. As with the cooling system, there's a plethora of potential problem areas. The original clutch pipe expanded when hot, reducing the hydraulic pressure – it should have been replaced by now, but if it's a red plastic tube rather than a braided steel pipe, then it somehow slipped through the recall net and could be tricky/costly to replace. On the other hand a truly rubbish shift may be due to stretched linkage cables that require adjustment or, on some 1999/2000 models, a rubber mount for the bracket that takes the cables underneath the gearbox could be perished and loose – the undertray needs to come off for you to check this.

Bear in mind, though, that even a good S1 shift is likely to seem vague and ropey compared with most modern gearboxes. But while you shouldn't expect the alloy lever to move with silken precision across the gate, neither should you settle for a lever with which you have to fight to select a ratio; never trick yourself into thinking 1'll get used to it' simply because you like the rest of the car, get the owner to fix it before you buy.



### SUSPENSION AND BRAKES

The allure of the Elise is all about its handling, so you want the car you're buying to be in prime condition in the chassis department. Which, in an older, high mileage model, is going to be a pretty tall order... Of course, you could just think 'sod it' and determine from the outset that you're going to fork out extra for the Hethel-developed sports suspension upgrade, which would be a very good move. But let's suppose, for a moment, that you'll have to make do

with what's on offer.

More so than just about any other road car, perfect suspension geometry is critical on the Elise. So first off, look for the obvious signs that it might be askew – scuffed alloys, uneven tyre wear, hints of body damage that could suggest an 'off'. In an ideal world you'd take the car to a Lotus dealer to have the suspension laser measured, but you should at least try to get it up on a ramp to see if the wishbones look straight, the main alloy chassis unbent and unrippled, and the steel rear subframe free from cracks; also look at the rear toe links that should have been replaced as part of a factory recall and are painted red if they have been. As with any serious drivetrain inspection, you'll need to take the undertray off to be able to see very much.

Even low mileage Elises can have knackered steering racks, so check for signs of excessive play through the steering wheel, or jack the car up and give the front wheels a good shake with both hands. While you're at it, inspect the rubber steering rack gaiters, because if they're split they'll need

replacing and that means taking the whole rack out, a lengthy and potentially

replacing and that means taking the whole rack out, a lengthy and potentially costly process.

While you're in the wheel waggling mood, any vertical movement in the wheels when the car's jacked up can suggest worn ball joints, and it's worth taking a peek at the wishbone bushes at the same time. Also check over the pivot blocks for the anti-roll bar (at the front only), because if the original nylon items haven't been replaced by later rubber units, this could be the source of an annoying rattling sound from the front end.

Mind you, that rattling could also be the original Koni dampers; most \$1 Elises should by now have been fitted with factory-recommended Bilstein replacements, so if that rat-a-tat-tatting is getting on your nerves, you know what to do.

Very early \$1 Elises were fitted with Metal Matrix Compound — MMC — brake discs. These advanced composite discs were lightweight, excellent at dissipating heat and designed to last the lifetime of the car; if the car you're looking at has them, they'll be very light in colour, have no rust and won't be drilled or grooved. But they're a mixed blessing because they require a very specific pad material that is no longer made — if you're really lucky you may find some at a breakers. Use any other pad, and they'll chew through the discs. In other words, when the MMC pads are dead, so is the whole braking system. Steel discs may be dynamically inferior, but fiscally preferable.



### EXTERIOR

Stone chipping, especially on the nose and along the sills just ahead of the rear wheels, is the curse of every Elise, and if the paintwork isn't a uniform colour it may simply be due to the owner attempting to tidy up the rash. On the other hand, if the glassfibre is cracked, be suspicious – even if the chassis below is untouched, if you end up having to replace the front or near clamshells then you'll need to be on spectacularly good terms with your bank manager.

Beware of corroded headlamp reflectors and rusty headlight mounts – a quick prod with your finger should tell you if the latter are okay – because while the components aren't dear, actually fitting them is a nasty job. Something you can do for yourself, however, is repaint with Hammerite the two mesh grilles either side of the exhaust that cover over the rear fog light and reversing light; they rust badly and new ones are expensive. You may have to drill the retaining screws out, though, but once you've removed the grilles at least you can clean the reversing and fog lights.

Retail price for a new windscreen is upwards of £1000, so if there are any cracks or serious chips, get the buyer to replace it on their insurance – many policies have screen cover these days which doesn't affect your no-claims and should only cost about £70 for the excess.

Check the hood carefully for rips and tears and get the owner to show you how it goes on and comes off, just to ensure that it still does and because if you've never used an \$1 hood before, the procedure isn't an obvious one. One Elise floible to be aware of here is that even a really well-fitting hood is only likely to offer temporary respite from the effects of a determined downpour.







# DRIVING ONE TODAY

The Elise S1 is a dozen years old. Car technology has moved on a lot in that time. And still there's little that can match the Elise driving experience. That's the beauty of engineering and dynamic purity for you.

That said, you have to 'get' the Elise, be comfortable with what the practical expression of 'no compromise' actually means. And that starts with physically getting into it. For some people the inelegant dance and extreme limb folding required to slot a human adult behind its small diameter steering wheel is an unacceptable price to pay; for the rest of us the strange ritual is

what sets the Elise apart from ordinary sports cars, a sentiment that Caterham drivers will understand wholeheartedly.

Once you're in, however, the Elise fits like a bespoke suit, its pedals and steering wheel aligned directly ahead of you, its big sills serving as both armrest and reassuring protection. The steering wheel is just the right diameter and thickness, the gearlever is situated right where your arm naturally falls. A simple binnacle is host to an easily read Stack speedometer and tachometer; other information is also displayed there, but it doesn't distract from the two things

you really want to know about.

The Elise world is wonderful until you fire up the K-series. Hmmm... It isn't harsh or rough or nasty, it's just dull. Disappointingly so. No wonder so many of them now have aftermarket inductions kits and sports exhausts.

But from the second – the inch – it first moves, the Elise confirms the legend. The suspension follows every contour and lump of the road surface, yet somehow filters out the bumpiness while retaining the essential topographical information. Flex your wrists gently to the left or right and the nose immediately

SUPERCARS AND SCOOBIES ARE GOING TO BE PERPLEXED BY YOUR CONTINUED PRESENCE IN THEIR REAR VIEW MIRRORS

obeys, responsive without being nervously darty. Every movement the chassis makes, side to side, up and down, is beautifully measured and controlled. There's no discernible slack and no unyielding hardness, either.

With its strong mid-range torque,

comparatively low power peak (5500rpm), and uninspiring soundtrack, the K-series isn't a thrilling engine, but the inherent lightness of the Elise means that – up to 100mph or so – supercars and Scoobies are going to be

equation and you may well be flashing them out

of the way.

But outright speed isn't really the point of the Elise. It's a selfish pleasure in that it hardwires you into its chassis and makes you appreciate that what you do with the throttle, brakes, gearbox and steering actually makes a difference; there are no electronics clouding the issue, so a corner negotiated at the edge of adhesion, the chassis balanced between brilliance and oblivion, is all down to your personal input.

you off the road as unforgivingly as a striking cobra; on a long journey its noise levels will beat your eardrums and rattle your brain. When it rains, chances are you'll get as wet with the hood on as with it off; even with the hood off, heat-soak from the engine bay will make you sweat. There's little luggage space and little in the way of creature comforts.

But despite these drawbacks and despite its age, the original Elise is an undiminished talent; drive a good one and you may well wonder why some folk spend tens of



# **UPGRADES**

Although you get the purest driving experience from the basic 118bhp Elise S1, power-mongers set their sights on the little Lotus almost from day one. Over the years the factory itself created several more powerful derivatives – the Sport 135 was excellent, the K-series VVC-propelled 111S almost as good, the Sport 160 dire unless you spent all your time on track, and the Sport 190 with its VHPD – Very High Power Derivative – engine an absolute animal and ferociously expensive.

Speak to any of the somewhat talented Lotus test drivers and they'll tell you that the best mods you can make to your S1 involve the chassis, not

the engine. And if you really want your Elise to go quicker they suggest a driver training course – yes, we know they're probably working on commission, but having attended a Lotus Driver Training Day, we can vouch for what a huge difference it makes to the speed of your Elise.

### ENGINE

A sports exhaust and air filter or induction system may not have a massive impact on your Elise's power output, but they'll add enormously to its character and sound – in your mind you've got another 20hhpl

power output, but they'll add enormously to its character and sound – in your mino you've got another 20bhp!

There's no lack of companies willing to tune your K-series. Power Train Projects (PTP), for instance, can go all the way to 2.0-litre and 235bhp – providing you can stomach £15,158 plus installation costs. And Turbo Technics has a supercharger conversion that takes the standard engine to 190bhp.

The potential trouble with K-series tuning is the amount of aggro and expense you can come up against. Some conversions don't include the ECU or injectors; finding the right ones and getting the correct setup can be a nightmare. The rewards can be great but you need proper guidance – virus suggest a visit to http://members.aol.com/dvandrews/kengine.htm for a comprehension look at tuning the K.

Those issues are why engine replacements from Audi, Ford and Honda have become populor, although Ford's Duratec rather less so than the other two. Turbocharged 1.8 litre Audi engines are available in 260bhp, 305bhp and 360bhp states of tune, but have to be teamed with the original gearbox.

The 2.0-libu i-VTEC motor comes complete with a Horida stateped gearbox and, if you pay extra for a Japanese Domestic spec motor.

also features a limited slip diff. Brooke-Kensington offen, this library is provided and supercharged some proper guidance. Some provided and supercharged some proper guidance in the provided slip diff. Brooke-Kensington offen, this provided slip diff. Brooke-Kensing

### SUSPENSION

team is recognised as one of the best in the world, we'd recommend you try the factory-approved versions. Even the factory-developed sports suspension is acceptable for road use, but remember to play around with the settings of the adjustable anti-roll bar – on its hardest setting the nose is remarkably darty.

If your \$1, is on the existing the setting the road use.

If your S1 is on the original suspension, then a change to the S2 setup lowers the car, makes it less

### BODYWORK

It is possible to buy the body panels to turn your S1 Elise into an S1 Exige, although it would probably be more rewarding and

would probably be more rewarding and scarcely any more expensive to simply shell out for the real thing in the first place.

Front splitters are available for the S1 as well as rear venturis, but unless you're big into your track days and are really, really quick, it's hard to see why you'd bother. Better to invest in a good respray and have vulnerable panels covered in some sort of protective film like Paintshield or Armorfend. Oh, and invest £50 in a shower cape – when you're parked up it's better at keeping the rain out than the hood is.

### WHEELS & TYRES

There aren't many aftermarket wheel options available for the Elise – although Rota (through Eliseparts.com) does do a goodlooking set – and there's absolutely no value in changing wheel size.

As for tyres, Lotus has worked closely with Yokohama to produce rubber specifically for the Elise – and labelled 'LTS' on the sidewall-so it makes sense to stick with them.

For general and track use take the Advan Neova, while if most of your miles are on the track or you fancy some minor league motorsport, then try the grooved slick A038-R.

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### BRAKES

Brake discs for the S1 are a slightly unusual size, meaning it's not as easy to find alternatives as it is for the S2. However, Lotus's own cross-drilled ventilated steel discs are even fitted to the Sport 190, so are clearly up for caning. Eliseparts also has aluminium belled discs that, in unison with Pagid RS14 pads, are said to be capable at taming up to 200bhp on track.

Elise-Shop.com offers drilled, vented 'bespoke motorsport' discs for the S1, again for use in conjunction with Pagid RS14 or RS42 pads, and recommended for heavy track day play or racing. There's also a cheaper non-drilled version of the disc; EBC's Sport drilled and slotted discs offer a budget option, too.

# BUYING GUIDE: LOTUS ELISE SPECIALIST VIEW

# EXPERT VIEW: SIMON SCOTT-RUSSELL, BROOKE-KENSINGTON LTD

Bicester-based Brooke-Kensington has spent the past decade attending to the servicing and repair needs of the nation's Elise owners, and more recently has developed a Honda 2.0-litre î-VTEC engine and six-speed gearbox conversion to replace the K-series in S1 and S2 models. Simon Scott-Russell has worked on the little Lotus from the outset and, together with his colleagues, has amassed a mountain of experience and information about how to cost-effectively keep an S1 Elise in fine fettle.

"We currently look after more than 400 regular customers from all around the UK and over the years there's not a job we haven't done, over and over again! The experience we've gained by doing that means that there are now many jobs we've found quicker and easier ways of doing, thereby reducing our prices.

our prices.

"The cost of running an S1 is a very important consideration. Although the price of S1 Elises has risen considerably in recent times, until last year it was possible to pick one up for as little as £6500. To many lads coming out of hot hatches that may have seemed like a bargain. But you need to put money aside for repairs, because an Elise for that money is likely to have big miles and has probably not been well cared for.

"I can almost guarantee, for instance, that all four wheel bearings — originally from an Austin Maestro, I believe — will need replacing. And if the engine cover remote release cable is busted, as many are, then while the

part is a reasonable £29 or so, it's a two-hour job to fit...

"Elise \$1s\$ are now old enough that most have had the worst problems ironed out already and original components replaced with much higher quality components. Despite scare stories about them on some of the forums, we only replace a couple of steering racks a year, and even then mainly through accident damage. Ditto steering rack gaiters, although we have now perfected a technique for changing them that only takes half an hour and doesn't require removing the rack, as used to be the case.

"Wheel bearings and suspension ball joints are the things we see most often. Again, though, thanks to years of trial and error we can now replace them comparatively quickly and without taking the wishbones off. As for the dreaded head gasket, we charge about £700 to replace it, and the latest Land Rover-supplied replacement is such good quality you're unlikely to see it fail. Some of our customers have 150,000-mile Elises that have never had a head gasket failure because they've spent money on the right things.

"For lubricants we use Comma Synergy 5/40, as recommended by the likes of Caterham, and for customers prepared to spend a bit more, there's the option of fully synthetic 10/60 Castrol Edge. As for tyres, the Yokohama Advan Neova, developed specially for the Elise, transforms the handling. And for customers wanting to modify their cars beyond the normal sports filters and exhausts, the \$2 suspension conversion is an excellent first stage."





ENGINE

Capacity:

Layout:

Four-cylinder, in-line, 16-valve, DOHC, transversely mid-mounted

Max power: Max torque: Bore/stroke:

118bhp @ 5500rpm 122lb ft @ 3000rpm 80x89.3mm

10.5:1

1796cc

Compression ratio:

Transmission:

Five-speed manual,

rear-wheel drive

CHASSIS

Suspension:

Front: Double wishbones, co-axial coil spring/telescopic damper

unit, anti-roll bar

Rear: Double wishbones, co-axial coil spring/telescopic damper unit

Brakes:

Front: 282.5mm ventilated discs either of aluminium metal matrix (MMC) or steel construction, twin-

piston callipers

Rear 282.5mm ventilated discs either of aluminium metal matrix (MMC) or steel construction, single-piston callipers

Tyres:

Front: 185/55 R15 or 195/50 R15 Rear: 205/50 ZR16 or 225/45

Steering: Rack and pinion, non-assisted

PERFORMANCE

Max speed:

0-62mph:

125mph 5.5 seconds (0-100mph - 18.0

seconds)

Weight: Fuel economy: 730kg 32mpg

Number produced:

Approximately 12,000 of all S1

derivatives

### Parts and servicing prices:

Mini service: Full service: £510 Cambelt change: £200 + VAT £500 + VAT Clutch change:

Air conditioning service: What air conditioning?!

(All prices are courtesy of Bicester-based Brooke-Kensington Ltd and include labour - contact details listed below.)

### Clubs, contacts, resources:

Organisation

Contact

Brooke-Kensington Ltd www.brooke-kensington.co.uk www.clublotus.co.uk Club Lotus

South East Lotus Owners' Club Lotus Drivers' Club

www.seloc.org www.lotusdriversclub.org

Hangar 111 (parts/accessories) Dutch Lotus Elise

www.hangar111.com

Reference Keen ex-owner www.lotus-elise.nl ww.elises.co.uk

### OWNER'S VIEW: IAN LAIN

When the Elise was first launched I was fortunate enough to help with driving duties on the 1996 Performance Car of the Year event organised by the previous incarnation of this magazine. In the pub at the end of the first day I'd placed the Elise second, despite not having driven it – I'd been blown away by a Maserati and despite what the road testers were saying about the Lotus, I didn't believe it could really be all that good.

It was, of course – it won the PCOTY accolade that year – and not even being crashed into by another car as I was taking the winning Elise back to the factory could put me off the idea of ownership. Not that I could afford it at the time, but in 2000, having just restored a Lotus Excel myself, the Elise bug bit again. Fired by the notion that I simply had to have one, I bought the first car I saw. Daft, I know... It was the dark metallic green with light tan leather upholstery that featured in all the first press hand-out photographs. 35,000 miles on the clock, E16,500. It had been owned by a bloke who had spent a lot of time in France and had missed most of the recalls. I wasn't too concerned because I thought that after the Excel the Elise would be a simple thing to work on myself; it actually took eight years before I was confident enough to lift a spanner to the Elise. These days the various Elise forums are invaluable because whatever goes awry, someone has always posted a cure for it.

a cure for it.

Not much has gone wrong with it, although gradually I have had most of the 'fixes' done – the clutch pipe, the door stays, the steering arms, the rear suspension tie rods. Last year I had the S2 suspension fitted, which has utterly transformed the ride and handling for the better, on the road, at least. And the year before that I had the quick-shift gear linkage fitted as the standard shift is the only thing I don't like about the car – well, that and the awdul roof!

I've always admired the torque of the K-series engine and I've never had a problem with mine. I just wish it had more character. I may eventually replace it with the Honda I-VTEC conversion and I can see myself keeping the car forever.



### PRICES

There are a couple of things about the Elise to bear in mind before parting with cash. Firstly, because the car is best enjoyed in fair weather, it's subject to a substantial seasonal swing in prices. In other words, it's cheaper in the depths of winter. And secondly, low mileage isn't a guarantee of condition – if the car has only done 20,000 miles it could be that not all of the problems have yet been identified and sorted. Conversely, the 100,000-miler may be in its prime because most of it has already been replaced. Always ask what work has been done.

Currently, dealers are asking as much as £12k for low mileage – 23,000 miles – examples, and anything between £8-10k for cars with between 45,000 and 65,000 on the clock. Private sellers, predictably, are more realistic. On a trawl through the classifieds we saw a 1996 S1 with 31,000 miles for a very reasonable £7495. The lowest priced cars we discovered were both £6495, one having racked up 120,000 miles, the other 82,000.

To be on the safe side we'd recommend you budget £10,000 for your S1 Elise; keep the change from the purchase price close to hand for those unexpected remedial measures.

### WORTH CONSIDERING

Generally considered the sweetest of the uprated \$1s, the factory produced Sport 135 is rumoured to crank out as much as 145bhp. It also features a close-ratio gearbox, sports exhaust and drilled discs. The factory officially made less than 100 during 1998 and 1999, although the engine mods were later offered as an aftermarket option. You rarel see Sport 135s for sale, so if you do, go and have a peek.

A more prolific factory-produced uprated \$1 is the 111S. This 1999 derivative is powered by the VVC version of the 1.8-litre K-series and is officially rated at 145bhp. Like the Sport 135 it has shorter ratios and cross-drilled discs. Although not quite as dynamically in the groove' as the Sport 135, with a total production run of 1487 you're far more likely to find one for sale.

DRIVE A GOOD ELISE AND YOU MAY WELL WONDER WHY SOME FOLK SPEND TENS OF THOUSANDS ON SECONDHAND FERRARIS

