



## 2005 LOTUS ELISE

**The Brits promise your road racer is finally on its way.**

BY RAY HUTTON

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We seem to have been promising a fully certified, street-legal Lotus Elise for years. That's because Lotus for years has been saying it's coming to the U.S.—since 1997, in fact. Well, now at last it is ready. The first federalized Elises should arrive in May.

The good news is that it is a better car than the spartan original. It has 60 percent more power but is only 14 percent heavier than the existing European model. It has the airbags, the anti-lock brakes, and the air conditioning that the car has lacked until now. Perhaps not so good is its sticker of \$39,000. It's a fair price for the nearest thing to a modern race car you can drive on the road but will discourage those who see it as a sexy little boulevard cruiser.

That's probably just as well because the Lotus Elise, as a closely focused driver's car, makes few compromises on behalf of the well-being of a passenger. You sit on a thinly padded seat in an aluminum tub (the Elise chassis is made from aluminum extrusions bonded together). There is hardly enough room for two, so the driver's seat is adjustable but the passenger's is fixed—and the cockpit space on the right-hand side is just two-thirds of that provided for the driver.



Elise enthusiasts—there are at least 60 owners of race-spec cars in the U.S. as of this writing—will accept that what it lacks in comfort is compensated for by the performance and handling. Lotus claims the federalized Elise will do 0 to 60 mph in 4.9 seconds and run to 141 mph; prototypes ran to nearly 150 mph. Not much this side of an exotic supercar will keep up with it on a racetrack.

The Elise was designed around the 1.8-liter Rover K-series engine found in the mid-engined MGF sports car, a good choice in 1996 but now getting on in years. Rover has never certified that engine for the U.S., and Lotus judged that a federal emissions program would be too expensive to undertake alone. It looked around for suitable alternatives, engines that were already in use in the U.S. Roger Becker, a veteran development engineer who started at Lotus under Colin Chapman, the company's founder, has been leading the U.S.-certification project. He picked up an old relationship with Toyota (which for three years in the 1980s owned 21 percent of Lotus) and secured a deal to use the 1.8-liter VVTL-i (variable valve timing and lift) engine from the Celica GT-S and its accompanying C64 six-speed gearbox.

Although the internals of the engine are standard Toyota (in fact made by Yamaha), Lotus fits different intake and exhaust systems and, significantly, has devised its own engine control electronics. The result is 190 horsepower (10 up on the Celica) at 7800 rpm and 133 pound-feet of torque at 6800 rpm.

We have our reservations about this engine and transmission in the Celica as it is difficult to keep the engine on the high-rpm cams as you accelerate through the gears. The performance is more accessible in the lightweight (2000 pound) Elise, due in part to Lotus's improvements to the electronics and gearshift. And for those accustomed to the Rover-engined Elise, the Toyota-powered car is noticeably quicker even before the cam phase change at 6200 rpm. Besides which, it sounds terrific, whereas the old K-series and its five-speed gearbox had a rough and rattly edge.

Installation of the Toyota engine required a new subframe and modifications to the rear of the aluminum chassis. The suspension—double control arms front and rear—needed only minor changes in spring and damping rates to cope with 154 additional pounds of weight. Becker and his associates were determined to maintain the Elise's pure responses and wonderfully balanced handling while making subtle changes to the dampers and bushings to cope with the worst of America's highways. U.S.-bound Elises will use a unique Yokohama tire.



Although its cousin, the Opel Speedster that Lotus makes in Europe for General Motors, has anti-lock brakes, Lotus has traditionally regarded both ABS and a brake booster as unnecessary frills for the Elise. But its engineers accept that pedal assistance is needed when vehicle weight rises above 1800 pounds, and that ABS is becoming a standard safety feature of most performance cars. Therefore, the challenge was to provide this latest Elise with ABS that would not intervene during intentional hard braking until the limit of front-tire grip. For the same reason, there is no electronic traction control nor is any planned. The steering does not have, or need, power assistance, although Lotus accepts that some customers may expect it.

Externally, there are few changes from the Elise that was launched in 2000. Identifiers include the twin tailpipes and the slightly raised grille on the front hood to clear the new brake booster. Inside, though, the car has had an upgrade with a new and more shapely instrument panel, injection molded rather than vacuum formed, which accommodates the passenger airbag. The radio is now at its center, and most of the ugly screw heads that were peppered around the earlier cockpit have been concealed. The convertible top is from the '00 car: easier to erect than the original but still a fairly primitive affair.

We drove a prototype U.S. Elise on the test track and on country roads around the Lotus factory in Norfolk, England. As we first wrote of a similar exercise with the original Elise, it's a hoot. For pure sports-car thrills, it's in the top five most-entertaining cars available. The same comments apply to the federalized Elise, which, although it is 450 pounds heavier than the original, is faster and better equipped but still has nearly perfect balance. It is the best Elise yet, and for Americans wanting a race car for the road, it's worth the six-year wait. Lotus Cars USA, which has been subsisting on the sale of a handful of Esprits a year, hopes to expand its annual sales to 2500.

## 2005 LOTUS ELISE

**Vehicle type:** mid-engine, rear-wheel-drive, 2-passenger, 2-door roadster

**Estimated base price:** \$39,000

**Engine type:** DOHC 16-valve inline-4, aluminum block and head, port fuel injection

Displacement: 110 cu in, 1796cc

Power (SAE net): 190 bhp @ 7800 rpm

Torque (SAE net): 133 lb-ft @ 6800 rpm

Transmission: 6-speed manual

Wheelbase: 90.6 in

Length/width/height: 149.0/67.7/44.0 in

Curb weight: 2000 lb

**Manufacturer's performance ratings:**

Zero to 60 mph: 4.9 sec

Zero to 100 mph: 12.6 sec

Top speed (drag limited): 141 mph