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The Lotus Exige S – breathtaking performance from the fastest accelerating Lotus ever to come off the production line

# **Summary**

A small lightweight sportscar weighing just 935 kg (2057 lbs), powered by a 162.5 kW (218 hp, 221 PS) high revving supercharged engine, giving a zero to 100 km/h time of just 4.3 seconds (0 - 60 mph in 4.1 seconds). It comes straight off the production line and isn't an "aftermarket special".

Is this the quickest ever real-world production car?

It is certainly the quickest Lotus production car - so far!

The Lotus Exige S is the latest addition to the Exige range and is a real sportscar that redefines the term "Extreme Performance". With 90.5 kW / litre (121.4 hp / litre, 123 PS / litre), it is one of most powerful production cars in the world for its engine size but most importantly it has full type approval for all the markets in which it will be sold. The Lotus Exige S is not a limited edition, nor is it an aftermarket special – it is manufactured from start to finish in the world leading and award winning Lotus Manufacturing facility at Hethel, Norfolk.

Because the basic car is so immensely strong but lightweight (935 kg, 2057 lbs), giving a power to weight ratio of 173.8 kW/tonne (233.2 hp/tonne, 236.4 PS/tonne), performance is phenomenal, with 100 km/h being reached from a standing start in 4.3 seconds (0 – 60 mph in 4.1 seconds) and 160 km/h (100 mph) being reached in 9.98 seconds (estimate) before topping out at 238 km/h (148 mph). Inspite of this phenomenal performance the fuel economy is impressive with an official combined figure of 9.1 litres / 100 km (31.0 mpg) - extra urban is an impressive 7.2 litres / 100 km (39.2 mpg). Lotus believes that there is no car on sale anywhere in the world that has such good performance combined with such good fuel economy! Not that many customers will be buying this car principally for its fuel economy!!







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Being a Lotus, straight-line performance is not the most important factor, but every day driving on normal roads, or around a circuit is. There are very few cars on sale today that can match the speed, agility and safety of the Exige S in both day to day and track or circuit driving.

However the Exige S is not just a track day warrior. It is a sportscar that would be at home on the back roads, freeways and autobahns, as well as on city streets. With an extremely "torquey" engine and the classic Lotus suspension set-up of soft compliant springs and firm controllable dampers, the driving experience is an uncanny combination of telepathic-like handling with a taught and comfortable ride. There is really no car that handles quite like a Lotus.

Clive Dopson, Managing Director of Lotus Cars says, "The Exige S represents the ultimate "extreme" production Lotus, with performance that trumps other supercars costing twice or even three times as much. That it does so with the fuel economy of a family hatchback, stands as a testament to the Lotus concept of performance through light weight. Its an unbeatable package and an unbeatable drive."

## The Lotus Exige S in more detail

### The Driving Experience

For what is probably the quickest "real world" production car, the driving experience has to be pretty special. The lightweight composite seats with ProBax technology hug the driver and passenger giving the right amount of support and security to cope with acceleration, braking and cornering forces of well over 1g. The steering wheel is a small off-centre leather clad unit (both the airbag wheel and the non-airbag wheel) and is set in just the right position for comfort, driver dexterity and feedback. The gear stick is located just 15 cm (6 inches) from the steering wheel for quick, accurate and safe gear changes and the lightweight steel and aluminium pedals are located in just the right position for heel and toeing. The Lotus Exige S doesn't have a multitude of user adjustment to the wheel or seat position – Lotus believes that the driving position is pretty close to perfect anyway!





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What does acceleration feel like in a Lotus Exige S? First of all the feeling of acceleration is mildly addictive. Few vehicles, aside from racing cars, motorbikes and extreme theme-park rides, can pull this amount of g-force under acceleration, braking and cornering. This gives a safe, but fun (even exhilarating) experience that you can only get from such a finely honed

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The Engine

sportscar.

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The heart of the Exige S is a Roots-type supercharger and air to air intercooler attached to the tried and tested 4-cylinder, 1.8 litre 2ZZ-GE VVTL-i engine. Using a development of the supercharger and intercooler package developed first for the already legendary Lotus Sport Exige 240R, the Exige S has peak power of 162.5 kW (221 PS, 218 hp) at 7800 rpm, 215 Nm (158.6 lb ft) of torque at 5500 rpm (but 80% is produced at just over 2000 rpm). Maximum engine speed is 8000 rpm (8500 rpm transient for up to 2 seconds). 162.5 kW (218 hp, 221 PS) is the figure that has been achieved by Lotus Engineers whilst retaining full vehicle type approval for the markets in which it is sold.



A slightly redesigned air intake and roof scoop has been added to the Exige S to ensure that the air to air intercooler works as efficiently and effectively as possible in all climates and environments.

A single oval exhaust exits from the centre of the undertray.



### Aerodynamics is the key



The Lotus Exige S uses the same aerodynamic package as the standard Exige. Like all Lotus cars, the Lotus Exige S isn't all about straight-line performance.

The Lotus Exige S is one of the quickest cars on normal roads and also around a circuit. Key to this incredible performance is the aerodynamic package, which creates 41.2 kg (90.64 lbs)





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of downforce - 19.3 kg (42.46 lbs) at the front and 21.9 kg (48.18 lbs) at the rear - at 160 km/h (100 mph). This downforce ratio between front (47%) and rear (53%) is balanced and remains constant at the speeds of which the Exige S is capable.

This class leading aerodynamic package is provided through the contribution of the following components:



Completely flat underside of the car – provided by the elegantly simple, strong yet light weight extruded and bonded aluminium tub

Anodised rear diffuser which helps promote the "Venturi effect" underneath the car

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• Deep front splitter, which sits just 108 mm (4.3 inches) from the ground (giving just enough ramp angle clearance) whilst still maintaining the aerodynamic properties and, of course, the aggressive stance.

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 Fixed rear wing that is set at the optimum 11.5 degree angle for the best compromise between downforce and drag.



### The Legendary Chassis and Body

The Lotus Exige S is built around the revolutionary and award winning extruded and bonded aluminium tub, with a light weight steel rear subframe, as used in the Exige. The chassis tub itself weighs just 68 kg (150 lbs) and has a stiffness of 10,500 Nm per degree.

The body of the Lotus Exige S remains unchanged from the Exige, as it is already a winning formula that is both effective and stunning to look at.

However, the key body components of the rear wing, front splitter and side air intakes are body colour coded to differentiate it from its naturally aspirated cousin.







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### Closely Related to the Lotus Sport Exige GT3.

At the end of 2005, Lotus developed and built the Lotus Sport Exige GT3 to suit the new FIA GT3 sportscar championship regulations. Weighing in at just 750 kg and producing around 285 hp, the Lotus Sport Exige GT3 is suitable for this new power to weight ratio racing.

The Lotus Sport Exige GT3 also uses a Roots type supercharger, an air-to-air intercooler (both are race prepared) and the 1.8 2ZZ-GE VVTL-I engine. The base engine and supercharger system is identical in the Lotus Exige S.

So with the Exige S acting as the base, a competitive GT3 sportscar has been successfully developed!

#### Engine Down-Sizing is key to the Exige S

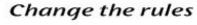
One of the key demands of the automotive industry is to produce engines with not only low emissions and good fuel economy but also extremely good performance. These two demands for performance and economy are not normally compatible unless there is a significant change in the engine development strategy.

Lotus Engineering's Powertrain Division, has been conducting extensive research into "engine downsizing". Engine downsizing is the concept of using advanced technologies to enable a small engine to produce the power and torque of a much larger engine, with the obvious reduction in weight, fuel consumption and emissions.

Lotus has recognised that there are changing market and legislative demands in this area, and has developed a solution to the problem: supercharging a high compression ratio and high speed engine.

Lotus Engineering had to ensure that there were minimal changes to the normally aspirated 2ZZ-GE engine, which arrives fully dressed from Toyota for the Exige and the Elise 111R. The lightweight 2ZZ-GE engine, with a compact metal matrix composite alloy cylinder block, is a









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perfect unit on which to conduct the necessary research, as it runs to a high 8500 rpm, with a very high compression ratio of 11.5:1. The only changes needed to be made to the engine were the addition of a low pressure supercharger (and the longer drive belt that this requires), the intercooler and a new intake manifold, plenum and induction system.

An electronic drive-by-wire throttle ensures the quickest engine response possible whilst keeping the emissions clean and as low as possible, to meet relevant legislative demands.



The Roots-type supercharger (with a sealed-for-life internal mechanism meaning that it does not require the use of the engine's oil) is run from the crankshaft, and has an integral bypass valve for part load operation.



Charge air (air under pressure from the supercharger) is cooled through an air to air intercooler (the cooling air enters via the redesigned roof scoop) before being fed into the engine itself. All charge air ducting has been kept as short as possible with large diameter pipes making sure that the bends in these ducts are not too tight, to the benefit of throttle response and efficiency.



The whole vehicle has been tested extensively around the world in hot and cold climates as well at renowned proving grounds and testing facilities.



#### The Lotus T4e Engine Management System.



The Lotus T4e Engine Management system is used in the Lotus Exige S. This engine management system has been programmed to optimise the supercharged engine.



The lightweight C64 six-speed gearbox (with an aluminium casing) is fitted with the closest ratios and gearset afforded by the transmission. The gearbox offers a fast, precise and light gearshift, ensuring drivers have total control and flexibility to apply the power exactly as and when required.







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### **Equipment and Options**



#### **ProBax Seats**

ProBax seats help to significantly improve the postural position of the driver and passenger by maintaining the natural curvature of the spine, so improving comfort and improving the body's blood flow.



#### **Touring Packs**



The Touring Pack includes electric windows, black suede effect interior with leather highlights, full carpet set, high specification DAB Radio and CD/MP3 player, sound insulation, auxiliary front driving lamps and interior stowage net.



The Super Touring Pack includes the contents of the Touring Pack plus an upgraded interior trim with driver and passenger airbags, high specification leather covered steering wheel, front speakers located in the fascia top panel, engine start button, trinket tray stowage unit, cup holder, leather handbrake sleeve, leather handbrake gaiter and gear shift knob and embroidered logo premium floor mats.



### **Sports Packs**

The Sports Pack includes switchable Lotus Traction Control (LTC) - see later for a full explanation of LTC. In addition, it is equipped with sports seats and a T45 steel roll-over hoop and harness bar for the aftermarket fitment of four point harnesses for track use only.

The Super Sports Pack includes the contents of the Sports Pack plus black coloured ultra lightweight seven-twin spoke forged (6.5J front, 7.5J rear) alloy wheels (giving an unsprung







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weight saving of 2.7 kg (6 lbs) for each front wheel and 1.3 kg (2.8 lbs) for each rear wheel – compared to the already lightweight cast wheels), track suspension with Eibach springs and Bilstein one-way adjustable dampers – with a single adjuster for bump and rebound – and adjustable ride height), adjustable front anti-roll bar and a double-shear rear traction control arm brace.



#### Stand alone options

#### **Lotus Traction Control and Limited Slip Differential**



A switchable Lotus Traction Control System (LTC) is available for the Exige S. The LTC works through the Lotus T4e Engine Management System to reduce power when required to maintain traction. Unlike many traction control systems, LTC has been tuned to complement the skills of the driver without taking over. The Lotus LTC is active above 8 km/h (5 mph) and operates much more quickly than many brake based systems. The system can be deactivated with an illuminated button, which is located adjacent to the gear lever. A Torsen type limited slip differential (LSD) is also available for tight and twisty driving (such as in auto tests). The LSD is only available if LTC has been specified and is not available by itself.



#### Air-conditioning



Air-conditioning is available as a cost option (standard in some markets) and weighs in at a featherweight 15 kg (~33 lbs).



#### A Comprehensive Range of Colours

The range of colours, from standard solid shades to metallic and fashionable lifestyle colours is available. Colours include black, shades of silver, shades of blue, a vivid Aspen White, non







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metallic British Racing Green, a hot Chilli Red, a high metallic Solar Yellow and a harmonious Autumn Gold.

The total number of colours available is 20, excluding the bespoke custom colours.



### **Market Positioning and Pricing**



The Lotus Exige S, being a fully homologated vehicle for the markets in which it is sold, introduces a more powerful and higher performing series production variant of the Exige to the market. The rest of the Exige range consists of the 141 kW (189 hp, 192 PS) Exige, the Lotus Exige Cup 190 and its supercharged variant the Exige Cup 240 (both of which are developed and converted by Lotus Sport, the performance arm of Lotus Cars) and the Lotus Sport Exige GT3 (developed and built by Lotus Sport specifically for the FIA GT3 championships).



#### The Lotus Exige S is priced at:

UK: £33,995 including VAT (Manufacturer's Suggested Retail Price)

Mainland Europe: 44,147 Euros excluding individual market taxes (Manufacturer's

Suggested Retail Price)

Japan: JYP 6,909,000 including tax (Manufacturer's Suggested Retail Price)





March / April 2006

Mainland EU:

April / May 2006

Japan and APac:

May / June 2006

USA:

There are currently no plans to launch the Exige S in the USA market

**Ends** 

See separate Lotus Exige S Specifications, Technical Details and Options

Notes: Cont.: >>







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#### Notes:

Technical Specifications for the Lotus Exige S can be found here:

http://www.grouplotus.com/mediactr/pr download.php?pid=263

High-resolution pictures of the Lotus Exige S, can be downloaded from the media centre of the official Group Lotus website at http://www.grouplotus.com/mediactr. The image library is for registered users only. Members of the press may register for the media centre.

Please follow the attached hyperlink for pictures of the new Lotus Exige S. Registered media will need to login first.

http://www.grouplotus.com/mediactr/image library.php?id=1&mid=4&rec=12&pg=4

Or use the media centre search function typing in Exige S



### **About Group Lotus plc:**

The main operating subsidiary of Group Lotus plc is Lotus Cars Ltd., which has two operating divisions - Lotus Cars and Lotus Engineering:

Lotus Cars builds and commercialises Lotus sports cars, Elise and Exige and manufactures the advanced composite front and rear crash structures for Aston Martin V12 Vanguish.

Lotus Engineering provides comprehensive and versatile consultancy services to many of the world's OEMs and Tier 1 suppliers, offering a full engineering service from initial concept and project design through development to full production prototype build.



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