

Lotus Engineering

Driving Dynamics







What is Driving Dynamics?

What convinces a customer to buy a vehicle?

A multitude of factors contributes to the decision, including price, build quality, specification, running costs, reputation, image, branding and marketing.

However, in many cases the test drive is what persuades a customer to make the purchase. Therefore everything that influences the driving experience is crucial:

- How the car performs, responds and moves
- The sound it makes
- How it feels and how it makes the customer feel

Lotus has a deep understanding of how to unite all aspects of driving dynamics – ergonomics, vehicle dynamics, aerodynamics, NVH, performance – to create the overall driver experience that will lead to a sale.

At Lotus we are skilled at manipulating each element of driving dynamics to create a driving experience that matches our client's expectations with those of the vehicle's end-users.



Putting the pleasure into driving

Lotus is renowned as a world leader in driving dynamics. No one offers a more complete understanding of the interaction between vehicle and driver, all the way through from the initial design stage to on-road development testing.

Understanding all the technical influences on the driver's perception and experiences of the car is essential to getting it right.

Developing the vehicle from a customer's viewpoint leads to a more balanced optimum solution – so the customer reaction never comes as a surprise.



Developing brand identity

Vehicle manufacturers are constantly striving to build or maintain a brand identity – what we refer to as ‘DNA’ – to differentiate themselves and their products.

Unsurprisingly, the dynamic attributes of a vehicle make up a significant part of this DNA; it is often the difference between success and failure.

Lotus’ methods and expertise extend far beyond sports cars and have been successfully applied to every type of vehicle from coaches to SUVs, family hatchbacks to racing cars.

From our intrinsic involvement in the development of Lotus cars, Lotus Engineering has a unique understanding of the importance of this identity and of meeting customers’ needs.

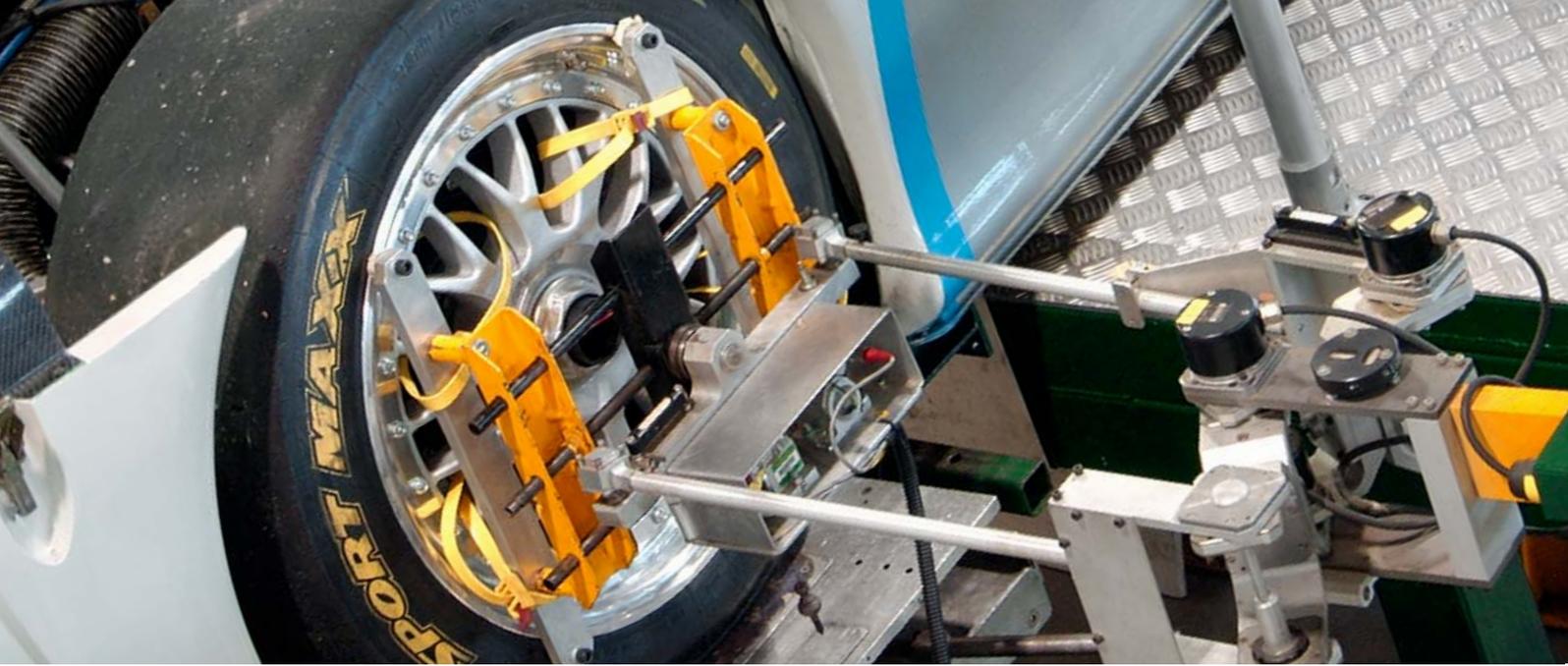


Meeting and exceeding customer expectations

With a wealth of experience in widely differing markets around the world, Lotus has unsurpassed knowledge and expertise to engineer the dynamic qualities of a vehicle to meet localised brand criteria.

For all product types or brand identity requirements, we aim to improve the vehicle so that the driving experience becomes a positive customer attribute and an enhancement to that vehicle's position in the market.

To achieve this we integrate all the key attributes that influence the driving experience in a manner unmatched by our competition. This holistic approach is what differentiates Lotus.



Lotus Suspension Kinematics and Compliance Measurement System (SKCMS)

The importance of accurate assessment

Accurate assessment of vehicle attributes is key to both the definition of targets for new vehicles and focused development and problem solving.

At Lotus, subjective feedback from our expert vehicle assessments are correlated with state-of-the-art objective and simulation techniques developed by our own engineers.

Our in-depth understanding of how each area of driving dynamics integrates with the other areas gives us an unparalleled ability to advise clients on how their product aspirations can best be achieved.



Lotus Elise front suspension

Getting the basics right

The final 'feel' of any new vehicle is critically reliant upon the blend and balance of all the factors influencing driving dynamics.

To achieve this equilibrium we use a combination of unmatched industry experience, detailed objective testing and specialised computer aided engineering and dynamic analysis tools, many of which we have developed in-house.

Specialist engineers from various disciplines at Lotus work closely together to arrive at the optimum solution. This integration of the different technical functions combined with our focus on the end-user driving experience makes the Lotus approach unique.



Damper valves

Total solutions for satisfied customers

Lotus has an enviable track record in developing world-class vehicles; currently the Elise and Exige are considered benchmarks for driving dynamics.

We have also contributed to the development of many major car manufacturers' new products. Whatever stage the project is at, Lotus can influence the driving dynamics of the vehicle, improving customer satisfaction.

Attempting to achieve their ideal blend of attributes, many manufacturers find that refinement considerations limit how far vehicle dynamic optimisation can be taken.

Active control technology – a field in which Lotus was a pioneer and continues to be a world leader – offers potential solutions within those limitations.

This technology has the power to revolutionise vehicle dynamics. Lotus remains dedicated to pushing its boundaries.



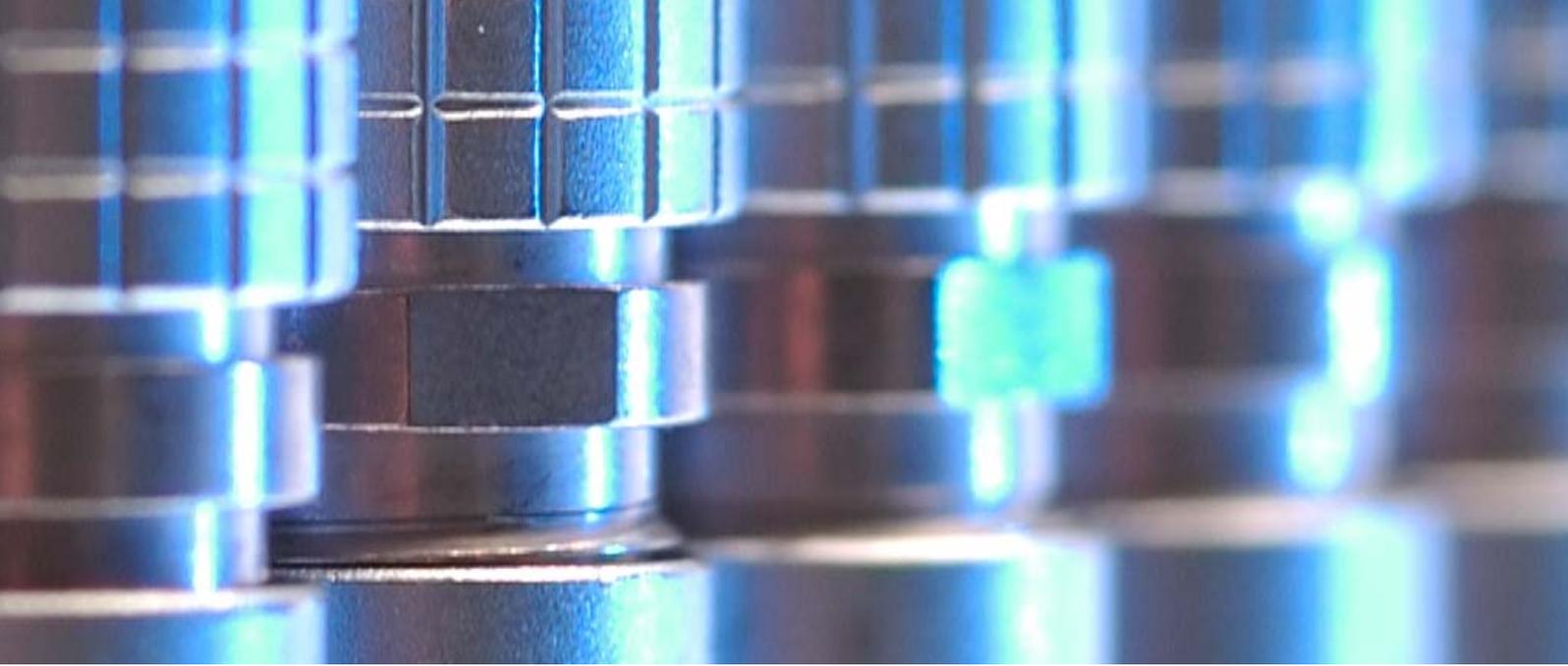
Actively embracing the future

Control systems – whether to increase a vehicle’s capability or to enhance specific parameters – are an integral aspect of today’s driving dynamics. Safety requirements have largely driven the adoption of these technologies.

In the future these same systems will, along with some emerging technologies, further enhance product differentiation. Vehicle character may become definable via chip settings; highly personalised attributes will be possible.

Although these technologies will offer a wide range of exciting new opportunities, the underlying integrity of the vehicle will still be critical. Fundamental issues will remain that are of interest to everyone involved in developing successful driving dynamics.

Comprehensive integration will be the key design and development activity. And whether the technology is active or passive, we believe that it is essential that the focus of these endeavours remains the end-user.



Active control system connectors

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