

LEXUS GENEVA MOTOR SHOW

PRESS KIT

WORLD PREMIERE OF THE ALL-NEW LEXUS LS 500h

INTRODUCTION

The Geneva Motor Show hosts the world debut of the new Lexus LS 500h, the full hybrid version of Lexus' new flagship sedan.

The model, revealed soon after the premiere appearance of the twin-turbo petrol V6-powered LS 500 at the 2017 North American International Auto Show (NAIAS) in Detroit, is a further manifestation of how Lexus has reimagined the luxury sedan, presenting brave design, exhilarating performance and a sophisticated appeal to capture the imagination of forward-thinking, younger customers.

The car's design successfully brings together the virtues of a long-wheelbase four-door sedan with a low, coupe-like profile, positioning the LS perfectly across the two growing sedan and coupe segments.

The cabin has benefited from an equally new approach, focusing on "progressive comfort," interpreting Japanese aesthetics and craftsmanship traditions in the context of an advanced, luxurious and innovative vehicle interior such as the original door trim ornamentation. Notably the LS 500 was honoured at NAIAS with the EyesOn Design Award for excellence in interior design.

Conceived as the new global pinnacle of the Lexus brand, the LS goes beyond what the world expects from a luxury car. Chief Engineer Toshio Asahi explained: "Developing such a flagship model required a massive paradigm shift. Rather than being bound by the conventions that had defined luxury cars in the past, we aimed to create a car with innovative, emotional and sensual appeal that would draw customers' eyes away from other luxury cars and provide entirely new values."

The LS 500h is equipped with the new Lexus Multi Stage Hybrid System, a technology that transforms the performance and driver appeal of hybrid, providing improved responsiveness and more rewarding, linear acceleration, particularly when moving off from stationary. At the same time, the inherent fuel and emissions efficiency of Lexus Hybrid Drive has been further improved.

The powertrain features a 3.5-litre V6 Dual VVT-i V6 petrol engine and two electric motors, together delivering maximum system power of 354hp/264kW. While the LS 500 will be available in Europe exclusively as all-wheel drive model, the LS 500h will be introduced in both rear and all-wheel drive versions.

The LS 500h is built on the new Lexus Global Architecture – Luxury platform, which ensures a low centre of gravity and optimum weight distribution, contributing to the car's essential stability and handling agility, which in turn deliver increased driver rewards. The fundamental high rigidity of the chassis allows the new multilink suspension to be tuned to achieve a great handling performance and the supreme comfort for which the LS is renowned. In Europe, Adaptive Variable Suspension, with air suspension are a standard feature of higher specification models.

The car's dynamic performance benefits also from the co-ordination of braking, steering and stability systems through Lexus Dynamic Handling.

Advanced technologies are further used to deliver impressive safety performance. The LS 500h's Lexus Safety System+ package additionally includes a new advanced safety system, which features the world's first intuitive pedestrian detection function with active steering among other innovative technologies.

Omotenashi, expressing the unique sense of Japanese hospitality, defines the LS 500h's whisper-quiet and luxurious interior. Supreme comfort is provided by front and rear seats with multiple power adjustment, heating, cooling and massage functions. There is also an optional rear seat arrangement that includes an extending leg ottoman and the most generous leg room of any LS generation. Notably the new LS 500h is longer even than the current long wheelbase LS. The wheelbase increased from 3,090 mm to 3,125 mm.

Lexus *Takumi* craftsmanship also contributes to the special quality of the LS 500h's cabin, in luxurious new trims, materials and detailing, including a new pleating treatment and *Kiriko* glasswork on the inner door panels.

IMAGINATIVE TECHNOLOGY

- **Full hybrid powertrain with a 3.5-litre V6 Dual VVT-i petrol engine and Lexus Multi Stage Hybrid System**
- **LS 500 with new twin-turbo V6 engine and 10-speed automatic transmission**
- **Lexus Safety System+ with new advanced features**

Full hybrid powertrain with 3.5-litre V6 Dual VVT-i petrol engine

The LS 500h's Lexus Multi Stage Hybrid System combines a 3.5-litre V6 Dual VVT-i petrol engine with two electric motors, together delivering a total output of 354hp/264kW.

The engine makes optimal use of Dual VVT-i (intelligent variable valve-timing), with timing precisely gauged in line with driving conditions, helping secure high torque at all engine speeds.

Measures to reduce friction losses and thus improve engine efficiency include the adoption of narrow, lightweight roller rocker arms and low-friction timing chains, while D-4S direct fuel injection helps create optimum combustion conditions, contributing to good fuel economy.

Lexus Multi Stage Hybrid System

The new LS 500h is equipped with Lexus' Multi Stage Hybrid System, a breakthrough technology that transforms hybrid powertrain performance.

The system adds a four-stage shifting device to the Lexus Hybrid Drive combination of a 3.5-litre V6 petrol engine and two electric motors. The result is more direct response to driver inputs and an elevation of dynamic performance driving pleasure, while maintaining the characteristic smoothness and efficiency for which Lexus hybrids are renowned.

In a conventional full hybrid vehicle, engine output is boosted by the electric motor via a reduction gear, but with the new Multi Stage Hybrid System the power from the V6 engine and the hybrid battery can be amplified by the four-stage shifting device, allowing much greater drive power to be generated when accelerating from stationary and achieving a 0-100km/h acceleration in 5.4 seconds. High-speed cruising can be enjoyed at lower engine rpm and the LS 500h is able to run at higher speeds – up to 140km/h – with the petrol engine shut off.

The design of the system places the multi-stage shift unit immediately behind the power split device, on an axis aligned with the engine crankshaft. Although the unit has four speeds, the D range has a simulated shift control pattern that delivers the feel of driving with a 10-speed

gearbox. As vehicle speed rises, engine speed increases with a linear, direct and continuous acceleration feel, free from the “rubber band” effect witnessed in some continuously variable transmissions. In the 10th gear range, the CVT control allows for high-speed cruising at lower engine revs for quiet, smooth and fuel-efficient performance.

The transmission further benefits from an improved version of the AI shift control found in conventional automatics. This enables intelligent, optimum gear selection to be made in line with driving conditions and driver inputs, for example when going up or downhill. The system also includes DMI (Driver’s Mind Index). This means it can adjust gear shifts to suit the driver’s style and behaviour, without the driver having to select a different drive mode to get the kind of performance they want from the transmission.

Thanks to the Multi Stage Hybrid System’s design, the driver is able to take advantage of an M mode to select and hold gears manually, using paddle shifts mounted behind the steering wheel – a function not previously available on a Lexus hybrid. Thanks to the co-ordinated control of the Power Split Device and the gear shifting mechanism, the gear shift will start instantaneously with the computer receiving the signal from the paddle shift, giving an exceptionally quick response.

Lithium-ion hybrid battery

The LS 500h is fitted with a compact, lightweight, lithium-ion hybrid battery. It is 20 per cent smaller than the nickel-metal hydride unit featured in the current Lexus LS 600h, yet has a higher power density. It increases the luggage capacity by 25l (versus LS 600h).

Using lithium-ion technology has also reduced the component’s weight, helping reduce the car’s overall mass, thus supporting overall fuel economy, emissions performance and handling balance.

It is the first Lexus hybrid battery to feature a satellite construction design, in which the cell voltage monitoring function has been made separate from the battery ECU. This allows for efficient use of what would otherwise be empty space inside the battery pack to house the wiring harness and battery cooling blower, thus reducing the unit’s overall dimensions. The cooling blower itself has been made more powerful and thinner in size.

LS 500 with twin-turbo V6 engine

The LS 500 is powered by a new twin-turbo 3.5-litre V6 petrol engine, matched to a 10-speed automatic transmission – a first for a luxury sedan. Highly efficient turbocharger and

fast combustion technology combined produce high power to rival a V8 engine – 415hp/310kW and a maximum 600Nm of torque – together with notable fuel efficiency.

The LS 500's 10-speed automatic transmission, first seen in the Lexus LC 500 luxury coupe, is a torque converter automatic, yet with shift times that rival those of dual-clutch transmissions. The wide bandwidth afforded by its closely spaced ratios is ideal for all forms of driving, helping provide an optimal gear for all conditions.

The driver can execute shifts using paddle controls, but many will prefer to use the advanced electronic control system, which anticipates the driver's input and chooses the ideal ratio by monitoring acceleration, braking and lateral G-forces.

When accelerating from standstill, the close ratios of the low gears and the shortened shift time generate a rhythmical and exhilarating feel as the car gains speed. The twin-turbo engine's high torque matches ideally with the higher gear ratios for effortless, relaxed motorway cruising, while very quick downshifts provide direct acceleration with no lag in G response.

Lexus Safety System+ with new advanced safety system

The LS is equipped with the Lexus Safety System+, additionally featuring a new advanced safety system. It extends the range of active systems available to the driver to help prevent accidents happening, covering the risks presented by four of the most common types of accident: rear-end collisions, collisions with pedestrians; accidents caused by lane departure and accidents at intersections. It operates by combining information from omnidirectional sensors around the vehicle, including stereo cameras, monitoring all operating situations from parking manoeuvres to collision avoidance.

It includes the world's first intuitive pedestrian detection function with active steering. If a pedestrian is detected on the road ahead and a collision is imminent, this system will automatically apply the car's brakes and steer around the person, while keeping to its traffic lane. The driver will be alerted to the system's operation by a warning on the colour head-up display.

In terms of passive safety, the LS' robust structure provides a high degree of passive safety to protect occupants in a collision, and the car is equipped with up to 14 airbags.

Lexus CoDrive, a high-level driving support system, is also being introduced in the new LS. This provides steering control in accordance with the driver's intention and continuous driving support on motorways.

EXHILARATING PERFORMANCE

- **New Lexus Global Architecture – Luxury platform supports excellent ride, and handling, comfort and cabin quietness**
- **Greater vehicle agility and stability from a lower centre of gravity**
- **Strategic use of strong, lightweight materials**
- **Multi-link front and rear suspension tuned for handling stability and ride comfort**
- **Adaptive Variable Suspension, air suspension, and Lexus Dynamic Handling all help secure better ride comfort, rear stability and handling**

Lexus Global Architecture – Luxury platform

More than ever before, luxury sedan drivers demand greater handling agility and performance feel, without sacrificing comfort. It's one of the hardest balances to achieve in a vehicle, yet Lexus's new GA-L platform meets the challenge. The platform made its debut in the LC coupe and now, with a longer wheelbase, underpins the new LS.

The GA-L platform is the stiffest Lexus has yet created, providing a perfect foundation for improving handling, ride smoothness and cabin quietness. The design of the GA-L platform allows the car's centre of gravity to be made lower, with most of the mass, including the engine and passengers, moved to a more central and lower position in the chassis. This has a direct, positive impact on ride, handling stability and comfort and contributes to a more rewarding and engaging experience at the wheel for the driver.

Collision safety was also the key for development of the GA-L platform. Cabin deformation and the amount of impact energy transferred to the occupants have been minimised. Body structure was enhanced with the use of new bonding technology, lighter materials such as high-tensile strength materials and aluminium bumper reinforcement.

Multilink suspensions tuned for handling stability and ride comfort

The LS has a history of outstanding suspension compliance, yet Lexus saw opportunities for new gains to be made in this area as well.

The front suspension system has double ball joints on the upper and lower arms to permit control of the smallest movements from driver inputs and road conditions. Beyond sharing the workload, this arrangement helps optimise suspension geometry to increase wheel control

and gain more precise steering response with better initial effort. At the rear these ball joints are replaced by bushes to ensure superior ride comfort.

To reduce unsprung weight, and thereby promote agility and comfort, aluminium is used extensively in the suspension's construction.

BRAVE DESIGN

- **Luxury sedan with a distinctive coupe silhouette, emphasising the model's stronger dynamic performance and increasing its appeal to younger customers**
- **Low coupe profile achieved without sacrificing headroom and comfort for rear seat occupants**
- **New LS longer and lower than its predecessor – available exclusively in long-wheelbase form**
- **New interpretation of the Lexus spindle grille design**

Following the “Yet” philosophy, that has guided the design thinking for successive generations of the LS, Lexus has created a design that offers the room and comfort of a prestige three-box sedan, yet with the stylish silhouette of a four-door coupe – a look that holds a stronger appeal for younger luxury customers.

Lexus designers took full advantage of the opportunity provided by the low centre of gravity and optimum weight distribution from the LS's new GA-L platform to produce a lower profile and a long wheelbase, giving the car a stretched, ground-hugging appearance. Compared to the current LS, the new model sits about 15mm lower, while the hood and boot are 30 and 40 mm lower respectively. The new LS is only offered in long wheelbase form: at 3,125mm, the wheelbase is in fact 35mm longer than on the current long wheelbase LS 600h L.

The LS is the first Lexus sedan to feature a six-side window design, marking a break with tradition. This approach has helped achieve a sleek silhouette and a low-lying fluidity in the design. The LS is also the first Lexus to be fitted with flush-surface windows that integrate smoothly with the side pillars.

The LS displays a unique rendition of Lexus's signature spindle grille, designed to convey an aura of dignity that befits the model's position at the pinnacle of the Lexus brand. The grille has a mesh texture that appears to change in different light, created through months of intense CAD development and the hand-adjustment of thousands of individual surfaces to gain the optimum effect.

LUXURY INTERIOR INSPIRED BY *OMOTENASHI*

- **Welcoming, spacious cabin design, inspired by *Omotenashi*, the unique sense of Japanese hospitality**
- **Special focus on rear seat comfort and ease of access**
- **Extensive measures to achieve exceptional interior quietness**
- **Mark Levinson 3D Surround Audio**

Welcoming and luxurious interior

Omotenashi, the Japanese concept of hospitality, is a common thread that has run through all LS models. In the context of a luxury automobile, it means taking care of the driver and passengers, anticipating their needs, attending to their comfort and protecting them from hazards.

For the new LS, creating a new standard of flagship luxury was not simply a matter of adding more features. Inspired by *Omotenashi*, Lexus sought to deliver a cabin that welcomes and envelops the occupants and treats the driver like a partner. The watchwords for the design team were “progressive comfort”.

New seat designs, including 28-way power front seats with heating, cooling and massage functions, exemplify this approach.

The organically shaped dashboard design clusters information displays at a uniform height to support the “seat-in-control” layout – the driver can operate all systems without having to change their posture. In addition to a 12.3-inch navigation display, the LS can be fitted with an optional 24-inch colour head-up display – the largest in the world - that projects a variety of key vehicle information and performance data into the driver’s forward line of vision.

The infotainment system has a more inviting graphic user interface and is controlled using the next generation of Lexus’ Remote Touch control system. The intuitive operation is designed to mirror the way a smartphone is used; it can also recognise “handwritten” commands – outline letters traced using a finger on the touchpad.

Because the new LS is lower than previous models, Lexus has equipped the optional air suspension with an access function. Activated when unlocking the car with the smart key, access mode automatically raises the vehicle and opens the seat bolsters to welcome the driver behind the wheel.

To preserve headroom within the car's lower roofline, the LS is fitted with is an outer, slide-type sunroof.

Focus on rear seat comfort

Lexus also lavished attention on the rear seats, producing a design that provides seamless continuity between the trim and seatbacks. There are heating, cooling and massage options for rear seat occupants, while power-controlled rear seats are available with a Shiatsu massage function and a raised ottoman leg rest. These form part of an extensive rear seat luxury package that offers more legroom than in any previous LS. With this optional package, the seat behind the front passenger can be reclined up to 48 degrees, and raised up to 24 degrees to make it easier to exit the vehicle.

Lexus has designed the LS cabin for utterly quiet cruising, with new sound suppression methods used to further hush the environment compared to previous LS models. Active Noise Control quiets the cabin by detecting the sound of the engine coming into the vehicle and cancelling certain frequencies, using antiphase sound from the audio speakers.

Exclusive audio systems

The serenity of the cabin provides an ideal stage for the Pioneer premium audio system. Featuring a sophisticated 'Quantum Logic Immersion' sound tuning technology and ceiling array, the Mark Levinson system creates a 3D surround audio for a concert-like experience.

TAKUMI CRAFTSMANSHIP

- **Highest levels of interior quality and finish**
- **New trims, patterns and materials**
- **Hand pleated door trims inspired by *Origami***
- **Glass ornamentation using Japanese *Kiriko* techniques**

The quality, precision and pride in perfection that define Lexus' *Takumi* craftsmanship are richly evident in the luxury detailing in the new LS, as befits a flagship sedan.

Lexus has produced a unique aesthetic for the new LS which can be witnessed in elements such as the interior lighting and an exceptional attention to detail in the finish and appearance of everything you see and feel.

Inspired by Japanese culture and traditions

Japanese culture provided the inspiration for a new approach to creating trim elements, combining traditional influences with advanced manufacturing techniques. This can be seen in signature touches, such as ambient lighting inspired by Japanese lanterns and armrests that appear to float next to the door panels.

Natural woodwork and the application of sophisticated sliced wood and laser cutting technologies have been used to produce new interior finish options, including Art Wood/Organic, Art Wood/Herringbone and Laser Cut Special. The grain pattern of Art Wood is achieved by combining different colour woods and is an original Lexus design, created using Takumi craftsmanship skills. The LS' new cross grain finish is larger with sharper contrasts between light and dark, creating a more vibrant effect. The new Laser Cut Special emphasises the contrast between precise metal lines and natural wood.

The hand-pleated door trims were inspired by *Origami*, the Japanese art of creating three-dimensional forms from a single piece of paper. The door panels were originally rendered in paper by a skilled fabric artisan. The finished three-dimensional pattern captures the Lexus "L" motif in its intricate and precise folds, conveying a different effect when seen in daylight or the cabin's night-time illumination.

For the ornamentation panel, the aim was to express Lexus' *Time in Design* philosophy. To achieve this, the team called on the skills of *Kiriko* artisan glassworkers who produced hand-carved designs that capture the contrast created by light and shadow. Through painstaking trial and error, a design was chosen that looks beautiful and sensual from any angle. Although fragile in appearance, the glass has been treated using reinforcement technology to ensure it is robust for use in a vehicle interior. The hand-carved design was reproduced using advanced glass production technology, which precisely scans and digitises tens of thousands of facets. In the next step the glass ornamentation undergoes a series of treatments such as polishing and strengthening conducted by specialised Japanese Takumi craftsmen.

LEXUS IN MOTORSPORT – THE 2017 RC F GT3

- **All-new 2017 RC F GT3 competing in racing championships in the USA and Japan, as well as selected European events**
- **European Premiere at the Geneva Motor Show**

Lexus is increasing its focus on motorsport in 2017 with the RC F GT3, aiming to strengthen the performance image of its brand with a growing audience of race enthusiasts worldwide.

The all-new car, now homologated by the sport's governing body, the FIA, will participate in racing championships in USA and Japan, as well as selected European races.

In the USA, Lexus has supplied two Lexus RC F GT3 to the 3GT Racing team, to compete in the GTD class of the IMSA WeatherTech SportsCar Championship Series.

In Japan, two cars are contesting the GT300 class of the Super GT Series with the LM corsa team.

In Europe, Farnbacher Racing and Emil Frey Racing, the two teams which competed in VLN Endurance series with RC F GT3 prototype vehicles last year, will continue their development work this season, aiming to compete at higher levels in GT3 racing in Europe in the future. On this basis, they will compete in European races in 2017, including selected events in the International GT Open series.

Last year, Lexus became the first Asian carmaker to win a VLN Endurance Championship race at the Nürburgring Nordschleife, with a RC F GT3 prototype claiming overall victory at the VLN9 race on October 8.

Lexus also achieved outstanding results last year with the RC F GT500, another racing car derived from the RC F. The 2016 RC F GT500 dominated the Super GT series in Japan last year, with Team SARD and drivers Heikki Kovalainen and Kohei Hirate respectively claiming the team and drivers' championship titles in the GT500 category.

Technical Specifications

Engine	5.4-litre V8
Power	373+ kW (500+ DIN hp)
Torque	N/A
Transmission	6-speed sequential racing gearbox
Wheels	13x18 ft, 13 x 18 rr - centre-lock 13 x 8in front and rear with centre lock
Brakes	iron rotors

Overall Length	4,845mm
Overall Width	2,030mm
Overall Height	1270 mm
Wheelbase	2,730mm
Kerb Weight	1,300kg

LEXUS LC 500 AND LC 500h

- **LC to reach showrooms in Europe from August 2017**
- **Full hybrid LC 500h to achieve benchmark fuel economy of 6.4l/100km and 145g/km CO₂ emissions**
- **LC Launch Edition displayed at the 2017 Geneva Motor Show, a limited-run model with special features including F-White exterior, Breezy Blue interior and 21-inch wheels**

Deliveries of the new LC to European customers will start from August this year.

Throughout the car's development, Lexus made it a top priority to preserve the essence of the original LF-LC concept's styling, delivering a flagship coupe that displays radical, brand-defining Lexus design.

What is under the skin is equally significant, the new LC being the first model to be built on the Lexus Global Architecture – Luxury platform, which endows the car with a low centre of gravity and optimum weight distribution. This contributes to superior handling agility and stability and the kind of rewarding drive customers expect from a prestige coupe.

Lexus' advanced powertrain technologies ensure efficient performance from both the full hybrid and V8-powered versions of the LC. The LC 500h is set to deliver fuel economy 6.4l/100km and 145g/km CO₂ emissions, while for the LC 500, powered by a 477 DIN hp/351kW 5.0-litre V8 petrol engine, the respective figures are 11.5l/100km and 263g/km.

Lexus' Geneva Motor Show presentation will include a Launch Edition version of the new LC, a limited-run model that will be produced to celebrate the introduction of the luxury coupe in Europe.

The Launch Edition versions of the full hybrid LC 500h and the V8-powered LC 500 are distinguished by a F-White exterior paint finish with contrasting Breezy Blue interior. They are also fitted with 21-inch alloy wheels that otherwise will be exclusive to Sport and Sport+ grade LC models.