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INTRODUCTION

The Range Rover Sport SVR is the fastest, most powerful and most dynamically focused Land Rover ever produced.

Whitley, 11th August. The first Land Rover to wear the new high-performance SVR badge, the Range Rover Sport SVR is capable of accelerating from 0-60mph in a breath-taking 4.5 seconds (0-100km/h in 4.7 seconds) and on to an electronically limited top speed of 162mph (260km/h).

The SVR's range-topping 5.0-litre supercharged V8 engine has been developed to produce 550PS and 680Nm – substantial 40PS and 56Nm increases – while its advanced ZF 8HP70 8-speed automatic transmission and four-wheel-drive chassis have been optimised to complement the astonishing performance, whatever the weather.

In initial tests, Land Rover's most dynamic SUV has lapped Germany's legendary Nürburgring Nordschleife racetrack in 8 minutes 14 seconds, one of the fastest times ever recorded by a standard production SUV.

The new SVR unleashes the full potential of the Range Rover Sport's lightweight and robust all-aluminium architecture, while retaining the refinement, luxury and off-road capability for which Range Rover is world-renowned.

In two world firsts for Range Rover, an electrically controlled two-stage active exhaust provides a racecar-inspired soundtrack at higher engine revs without adversely affecting refinement during steady-state driving. Meanwhile, unique optional 22-inch alloy wheels with performance-optimised 295/40 R22 Continental SportContact 5 tyres complement the driver-focused chassis. As standard, new 21-inch alloy wheels with 275/45 R21 all-season tyres offer unparalleled all-terrain capability.

Exterior design enhancements ensure the SVR makes a striking visual impact, while simultaneously boosting cooling and aerodynamic efficiencies. A bespoke interior featuring unique sports seats provides further visual differentiation and ensures occupants are held securely in place during spirited driving.

Speaking ahead of its global premiere, John Edwards, Managing Director of Land Rover's Special Operations, said: "The Range Rover Sport SVR is a natural progression beyond the core vehicle's outstanding on- and off-road capabilities and leading-edge design. Its exhilarating performance will satisfy a particularly demanding customer set.

"A thorough range of revisions specially developed by Land Rover's Special Vehicle Operations combine to make this premium derivative even more distinctive both inside and out, as well as taking its dynamic capabilities to the next level without impacting on comfort, refinement or all-terrain versatility. The Range Rover Sport SVR is the world's most capable performance SUV."

The Range Rover Sport SVR builds on the success of the new Range Rover Sport, with its all-aluminium monocoque – a world first in the segment – which reduces weight by 39% compared with its predecessor and provides the ideal strong, stiff and lightweight structure on which to create the Range Rover Sport SVR.

The Range Rover Sport SVR has been created by Jaguar Land Rover's Special Vehicle Operations team and will be built alongside existing models and sold through the Land Rover dealer network.

Range Rover Sport SVR – designed, engineered and built in Britain – amplifies the engineering integrity, robustness and attention to detail that are Land Rover hallmarks.

The Range Rover Sport was introduced in 2005, with over 500,000 examples built to date.

Section 1 - THE MOST POWERFUL LAND ROVER EVER

At the Range Rover Sport SVR's heart lies an evolution of the all-aluminium 5000cc supercharged V8 engine with its cast-iron cylinder liners and cross-bolted main bearing caps providing a combination of strength, performance and refinement.

The engineers at Land Rover's Special Vehicle Operations have carefully optimised the Bosch management system and retuned the supercharger's electronic bypass valve to increase maximum boost pressure during high-performance driving, while retaining the V8 engine's exceptional flexibility for off-road versatility and effortless on-road acceleration.

Power and torque increase by a substantial 40PS and 56Nm to 550PS and 680Nm, giving the SVR a 0-60mph time of just 4.5 seconds (0-100km/h in 4.7 seconds) and an electronically limited top speed of 162mph (260km/h) where conditions allow. A Nürburgring Nordschleife lap time of 8 minutes 14 seconds further underlines its capability.

The Range Rover Sport SVR's unique design enhancements also contribute: larger air intakes in the front bumper increase airflow to the two charge air coolers. This reduces the temperature of pressurised air generated by the supercharger before it enters the engine, maintaining excellent performance even in extreme conditions.

A solid platform provided by the aluminium monocoque, along with updated suspension and firmer bushings, has allowed Land Rover engineers to further increase the incredibly potent engine's responses. Once the driver lifts off the throttle, for instance, the air-charge is reduced far more quickly than in existing Range Rover Sport derivatives, leading to an instant response for greater driver engagement. In Dynamic mode, these characteristics are intensified thanks to sharper throttle response and more incisive gearshift logic. In addition, the fuel supply is no longer cut on the overrun, creating a characterful crackle through the exhaust.

The SVR's fuel economy and CO2 emissions are unaffected by the extra performance and remain identical to the V8 Supercharged derivative at 22.1mpg (12.8 L/100km) and 299g/km. This is due to the engine's advanced and highly efficient design characteristics, which include: class-leading levels of low internal friction; high-pressure direct injection with a centrally mounted, multi-hole, spray-

guided injection system; dual independent variable camshaft timing (VCT); and an advanced intelligent Stop/Start system that shuts down the engine at idle and restarts it when the driver releases the brake.

Section 2 - EVEN FASTER GEARSHIFTS AND DYNAMICALLY FOCUSED DRIVELINE

The Range Rover Sport SVR's smooth and responsive 8-speed ZF 8HP70 automatic transmission has been optimised for additional performance. Along with optional 22-inch Continental SportContact 5 tyres, revised chassis settings and a sure-footed four-wheel-drive system, the transmission receives additional torque in its lower gears to achieve a thrilling 0-60mph time of just 4.5 seconds (0-100km/h in 4.7 seconds).

Equipped with eight closely stacked ratios, the transmission's shift times have been reduced by up to 50% thanks to extremely rapid and precise fuel cut-offs during upshifts. This leads to shorter, more visceral and audibly crisper shifts while utilising engine inertia for a sense of acceleration throughout the gearchange. It also creates a more immediate connection to the vehicle, and ensures the engine is constantly within its powerband.

The transmission's adaptive shift strategy monitors acceleration and brake inputs, lateral cornering forces, kickdown requests and even the severity of gradients, before choosing one of 25 pre-determined programmes to seamlessly adapt to driver behaviour and road conditions. Sportier driving triggers more aggressive gearshifts and defers upshifts until higher revs, for instance.

To ensure the Range Rover Sport SVR doesn't suffer any loss of stability, the throttle is automatically blipped during high-speed downshifts, smoothing the transition between ratios. This function also allows the transmission to perform a series of rapid downshifts under hard braking with maximum refinement and control.

Corner Recognition maintains one gear through a bend to ensure outstanding stability while also ensuring an appropriately keen response once the bend straightens and the driver can accelerate.

Similarly, the transmission recognises a series of overtaking manoeuvres and maintains a lower gear to ensure instant acceleration for maximum safety and exhilaration.

Despite this performance focus, there is no impact on the Range Rover Sport's class-leading refinement: the ZF 8-speed transmission's torque converter ensures ultimate refinement in first gear, but is bypassed by a locking clutch from second gear. This creates a direct link between the transmission and the driven wheels, and a more urgent sense of engagement for the driver.

The transmission is controlled via either steering wheel-mounted paddleshift controls, or the gear lever. Drivers can default to full automatic mode, make occasional manual interventions, or push the gear lever to the left to gain manual control. In manual mode, gear changes are made via the paddleshift controls, or by pushing the gear lever forwards for downshifts and pulling back for upshifts, echoing the shift logic of racing cars.

In Dynamic mode, the shift strategy is further intensified: the transmission will not upshift at the redline and only downshift to prevent engine stalling.

The Range Rover Sport SVR has been engineered to deliver the incredible breadth of capability for which Land Rover is famous. The SVR is fitted with permanent four-wheel drive and a two-speed transfer case, with a low-range option for demanding terrain, and a 50/50 percent torque split front-to-rear.

Optimum traction is maintained with the aid of an electronically controlled multi-plate clutch in the centre differential, which distributes torque between the front and rear axles – up to 100 percent can be channelled to either axle in extreme conditions. Sophisticated electronic traction-control systems further contribute to the trademark Land Rover capability.

The transfer case offers selectable low- and high-range, using a two-speed fully synchronised 'shift on the move' system which allows the driver to change between the two at up to 37mph (60km/h) for exceptional flexibility. High-range provides a direct drive ratio of 1:1, while the low-range ratio is 2.93:1, providing an extremely low crawl speed.

To further optimise traction and stability the SVR's Dynamic Active Rear Locking Differential has been recalibrated. The differential now locks earlier and to an increased extent, satisfying performance-minded drivers and ensuring torque is transferred to the rear wheel with most traction, increasing agility.

Torque Vectoring by Braking is also uniquely recalibrated. It uses the car's brake system to imitate the effect of a torque-vectoring differential, constantly balancing the distribution of engine torque between the four wheels during cornering, for improved grip and steering, and reduced understeer.

The system monitors the vehicle 100 times per second via the Dynamic Stability Control (DSC) module. As the car accelerates through a corner, the system uses yaw sensors to detect the beginning of understeer. Imperceptible levels of braking are then used to correct the vehicle attitude, while engine torque is transferred to the outside wheels, which have more grip, thus maintaining traction and steering control.

Section 3 - LEADING-EDGE DESIGN

The bold exterior design and luxurious interior of Land Rover's premium sports SUV have been enhanced for the Range Rover Sport SVR with an extensive range of dynamic improvements.

Designed exclusively by Jaguar Land Rover's Special Vehicle Operations (SVO), the Range Rover Sport SVR makes a strong visual statement, courtesy of a wide range of enhancements. These include a new front bumper with muscular trapezoidal air intakes, dark Range Rover script on the clamshell bonnet, which also features revised bonnet vents, and a new grille in a dark finish that contrasts with the headlights' striking LED signature graphics. At the side of the vehicle, an all-new aluminium fender panel incorporates a distinctive new design of fender vent, while unique side mouldings add further muscularity. At the rear, prominent Range Rover Sport SVR badging and a pronounced high-level spoiler with an eye-catching centrally mounted brake light signal the vehicle's sporting intent. The unique rear bumper features a gloss black diffuser, which incorporates the SVR's unique quad exhaust pipes, instantly differentiating this high-performance derivative.

New wheel arch extensions contain the optional 22-inch multi-spoke alloy wheels, creating a muscular, broad-shouldered stance to complement the extra performance and handling capability.

Many of the design revisions enhance the SVR's high-performance capability. The larger air intakes in the front bumper create additional airflow for the charge air coolers that channel air to the powerful 550PS supercharged engine.

The new rear spoiler reduces lift, and has been carefully balanced with the new front bumper. Beneath the front bumper a new NVH comb is fitted, which reduces wind noise to ensure maximum occupant refinement and further improves aerodynamic efficiency. It also reduces front-end lift to ensure the front tyres retain high levels of grip during enthusiastic driving. The deeper front bumper's more aggressive lower section can also be removed for extreme off-roading.

Additional brake cooling has also been introduced for the six-piston Brembo brake set-up, ensuring optimal stopping power.

A choice of seven colour palettes is available, including the striking Estoril Blue, exclusive to the Range Rover Sport SVR.

A Santorini Black contrast roof is available as standard equipment and combines with body-colour side mouldings to emphasise the SVR's squat, muscular stance.

Meanwhile, exterior trim detailed in High Gloss Black and Stealth Pack headlights with black casings round-off the design enhancements, creating a premium impression and a visually imposing road presence.

Inside, Jaguar Land Rover's Special Vehicle Operations has strikingly differentiated the SVR from other derivatives, thanks to distinctive leather sports seats more typically found in high-performance cars. These comfortable seats offer additional lateral support during spirited driving.

Full 16-way electric adjustment is offered and the vehicle's Sports Command Driving Position and generous rear legroom are unaffected.

The sporting theme continues with the rear seats, which have been completely redesigned to echo the performance-oriented front seats. The result is an eye-catching four-seat aesthetic, with space for an occasional fifth passenger. The new rear seats recline for maximum comfort and offer full 60/40 folding capability and up to 1761 litres of load space.

The seats are finished in luxurious Windsor leather with ribbed, quilted centres, Ebony Black top stitching, eye-catching reflective piping, and all feature the Range Rover Sport SVR logo. Four striking interior colourways are available: Ebony; Ebony and Cirrus; Ebony and Pimento Red; Ebony and Tan.

As standard, the vehicle is supplied with turned aluminium interior trim details, but owners can specify carbon fibre trim for the door panels, centre console, dashboard and steering-wheel bezel.

"The Range Rover Sport SVR is the ultimate in premium performance," said Land Rover Design Director and Chief Creative Officer, Gerry McGovern. "Crafted by Land Rover's 'Special Vehicle Operations', its performance-focused design revisions clearly differentiate the most powerful Land Rover ever produced from existing

derivatives with its ground-hugging, assertive stance and additional road presence. This striking evolution retains the trademark DNA for which the Range Rover Sport is so widely acclaimed.”

Section 4 – EXHILARATING SOUND TRACK

In a first for Land Rover, the Range Rover Sport SVR is equipped with a two-stage active exhaust featuring electronically controlled valves. The system optimises sound quality, performance and aesthetics.

The new exhaust features larger diameter underfloor pipes – up from 55mm in the Supercharged V8 to 60mm – for enhanced flow characteristics. This is just one of the measures used to help the highly tuned V8 powerplant achieve its staggering 550PS output. Quad exhaust pipes protruding from a redesigned rear bumper visually differentiate the top-of-the-range premium SUV from other Range Rover Sport derivatives.

A new racecar-like soundtrack audibly distinguishes the Range Rover Sport SVR, with a purposeful, modulated pulsing at lighter throttle openings combined with a higher-frequency, increasingly urgent staccato sound as peak performance is unleashed.

Crucially, the electronically controlled active valves largely eliminate exhaust flow noise, creating pure engine sound through to peak engine revs. This is not possible with passive valves.

At lower revs, the electronically controlled valves close off two tailpipes for maximum refinement. As engine speed and load increases – typically around 3000rpm – the valves open, allowing greater flow through all four exhaust pipes and increasing the volume and quality of the acoustics without introducing an abrupt change of character. A symposer further enriches sound quality, filtering desirable induction noise into the cabin.

Together with bespoke engine tuning that cuts the air charge far more quickly when the driver lifts off the throttle, the new exhaust also creates a pronounced crackle on the overrun for an even more vivid driving experience.

The driver can select a quiet mode, whatever the engine speed.

The new active exhaust system has been designed to ensure the Range Rover Sport SVR's outstanding off-road performance is unaffected should owners decide to exploit its 850mm wading capability.

Section 5 – SECURE HANDLING THAT EXCITES

The Range Rover Sport has been praised for its high levels of comfort and extremely agile handling. The SVR takes that capability to the next level courtesy of extensive development on British B-roads, derestricted autobahns and the Nürburgring Nordschleife.

The result is a chassis that provides tighter body control, higher cornering velocities and an increased sense of connection to the road. Indeed, peak cornering g-force has increased from 1.1g in the V8 Supercharged to 1.3g, a pronounced improvement easily detected by performance-minded drivers. Yet the Range Rover Sport SVR retains exceptional levels of on-road comfort and class-leading off-road capability.

“Our goal was not to reinvent the Range Rover Sport, but to build on its core capabilities and create a premium performance SUV that’s even more compelling to drive,” said Land Rover’s Chief Engineer, Vehicle Integrity, Mike Cross. “I believe we’ve achieved that target. The Range Rover Sport SVR has class-leading off-road attributes, high levels of occupant comfort and, crucially, takes the existing model’s dynamic competence to an entirely new dimension. Whatever the weather, the performance is truly exhilarating.”

• Enhanced suspension and steering

Land Rover engineers have tuned the Range Rover Sport SVR’s chassis for enhanced agility. Constructed mainly from lightweight aluminium components, the suspension is fully independent and double-isolated, with wide-spaced double wishbones at the front and an advanced multi-link layout at the rear.

The Range Rover Sport SVR also features cross-linked, four-corner air suspension and Adaptive Dynamics with continuously variable magnetorheological dampers. Adaptive Dynamics monitors vehicle movements at least 500 times a second, adjusting the damping force almost instantaneously in response to changing road-surface conditions and driver inputs.

The air springs feature a modified piston profile to ensure even sportier handling and composure, while the Adaptive Dynamics damper settings have been optimised for an unrivalled combination of increased agility and occupant comfort. In both cases, recalibrated management software complements the changes. Rear suspension

subframe bushes, updated by 20% ensure an appropriately connected response to all driver inputs.

Despite offering the level of performance normally associated with low-slung performance cars, the vehicle's high levels of comfort and off-road capability have not been sacrificed: the ride quality retains its compliance and the ride height is unaltered, with an adjustable range from 50mm in access mode up to 235mm for off-roading. Wheel travel also remains identical, with a class-leading 260mm of movement at the front and 272mm at the rear. Wading depth continues to be a best-in-class 850mm. Six Terrain Response 2 settings continue to be available: General, Dynamic, Grass/Gravel/Snow, Mud/Ruts, Sand, and Rock Crawl. Alternatively, the Auto setting intelligently selects the most appropriate mode.

The revised Electric Power-Assisted Steering (EPAS) system featuring variable-ratio, speed-sensitive assistance complements the chassis revisions, with added weight for a more immediate and connected feel at high speeds.

Unlike hydraulically assisted power-steering systems, EPAS does not rely on an engine-driven pump, reducing fuel consumption and CO2 emissions.

- **Optional high-performance road tyres**

Two wheel and tyre packages are uniquely available. All vehicles will be specified with Range Rover Sport SVR-specific 21-inch alloys and all-season 275/45 R21 tyres. However, a unique 22-inch alloy wheel is available. The stunning new multi-spoke wheels are fitted with road-biased 295/40 R22 Continental SportContact 5 performance tyres, allowing owners to make an informed choice based on how the vehicle will be used. The 22-inch wheel option is one inch wider than existing 22-inch Range Rover Sport designs, giving a dramatic, muscular stance.

If the optional 22-inch Continental tyres are specified, wet-weather performance is enhanced, while traction, grip and lateral-cornering are outstanding on dry tarmac to ensure an exhilarating experience.

- **Active-Roll Control tuned for flatter, faster cornering**

Working in conjunction with the vehicle's updated air springs and Active Dynamics continuously variable dampers, the two-channel Active-Roll Control (ARC) has been specially tuned to enhance the Range Rover Sport SVR's high-performance capability. Indeed, the SVR is so much more competent on tarmac that Land Rover engineers had to completely re-scale existing ARC graphs to take account of its increased cornering ability.

Replacing traditional anti-roll bars, ARC employs actuators powered by a hydraulic pump to keep body roll in check, adapting to body accelerations up to 1000 times a second. Compared with earlier iterations with a single actuator, ARC uses two actuators to respond independently to lateral roll at each axle, providing even greater precision.

When its management software senses vehicle roll, ARC supplies an opposing torque, keeping the body stable and composed for heightened driver enjoyment and control. ARC is crucial in allowing the Range Rover Sport SVR to corner flatter and faster than any other Land Rover in history.

To maintain a natural feeling, the body roll target is no lower than existing Range Rover Sport models, but radically revised settings have been required to maintain this target due to the far greater cornering speeds the SVR is capable of maintaining.

The system has also been tuned to deliver a progressive breakaway at the limit, particularly when the optional 22-inch Continental tyres reach their much higher grip threshold. This ensures the vehicle remains easy to control up to and beyond the tyres' limits – while cornering at high speed on a racetrack, for instance.

Dynamic mode further reduces body roll for maximum handling capability and driver exhilaration.

While ARC is tuned to behave uniquely for the Range Rover Sport SVR during performance driving, it automatically reverts to the same software map as other Range Rover Sport derivatives once off-road use is detected by sensors monitoring body accelerations, wheel positions and vehicle height. This greatly reduces 'head-toss' at speeds up to 25mph and maintains excellent off-road capability.

Section 6 – DEVELOPED AT THE NÜRBURGRING

With 13 miles (20.8km) of challenging twists and turns, high-speed straights, daunting crests and compressions, as well as frequently treacherous weather conditions, the Nordschleife is the ultimate test for any performance car.

Due to the track's extreme nature, unique demands are placed upon a vehicle's chassis and powertrain. The SVR was subject to exhaustive testing, with prototype vehicles completing nearly 1000 laps around the legendary German circuit.

During testing and development, the SVR recorded a Nordschleife lap time of just 8 minutes 14 seconds, a staggeringly fast time for a production SUV.

Fresh from its punishing test regime in Germany, the production-ready SVR made its dynamic debut at the Goodwood Festival of Speed in the UK, powering up the 1.16-mile course, and enthraling motorsport fans with its racecar-inspired exhaust note and stunning acceleration.

Orders can be placed from October 2014 at an on the road price of £93,450 and first deliveries are expected in Q1 2015.

ENDS