



# XFR-S

MEDIA INFORMATION



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A blue Jaguar XFR-S is shown from a rear three-quarter view, driving on a winding asphalt road that passes through a natural rock tunnel. The car's license plate is XCN 949. The background features rugged, rocky mountain peaks under a cloudy sky. The image has a motion blur effect, particularly on the left side, suggesting high speed.

**“ SPORTING CHARACTER IS EVIDENT IN ALL JAGUAR SALOONS. IN THE XFR-S THAT CHARACTER HAS BEEN AMPLIFIED, THE RESULT BEING A TRULY ENGAGING CAR WITH A COMBINATION OF TECHNICAL INNOVATION, ASSERTIVE DESIGN AND STAGGERING PERFORMANCE THAT WILL SATISFY THE MOST DEMANDING OF DRIVERS.”**

Adrian Hallmark, Global Brand Director, Jaguar



## FAST FACTS

■ The XFR-S is Jaguar's fastest, most powerful and agile sports saloon ever

■ **The XFR-S builds on the already acclaimed XFR to create an even more focused product**

■ Power and torque of the 5.0-litre supercharged V8 have been increased to 550PS and 680Nm – up 40PS and 55Nm over the XFR, and with no impact on fuel consumption or emissions

■ **The XFR-S will sprint from zero to 60mph in 4.4 seconds (0-100km/h in 4.6 seconds) and on to an electronically limited top speed of 186mph (300km/h)**

■ An eight-speed transmission with 'Quickshift' functionality enables optimal acceleration throughout the speed and rev ranges

■ **Comprehensive front and rear suspension upgrades maximise response with lateral stiffness up by 30%**

■ Electronic active differential and Dynamic Stability Control systems have also been recalibrated to enhance handling characteristics

■ **New, wider, 20-inch 'Varuna' forged alloy wheels are shod with bespoke tyres to maximise grip**

■ Aerodynamic changes, with extensive use of carbon fibre construction, reduce lift by 68% and give the car an assertive appearance

■ **Exclusive interior materials include carbon leather and contrasting highlight micro-piping and stitching**



## SUMMARY

**T**he second model in Jaguar's ultra-high performance R-S range, the XFR-S joins its XKR-S sibling in the exclusive 300km/h club and is a vivid expression of Jaguar's longstanding and legendary sports saloon lineage.

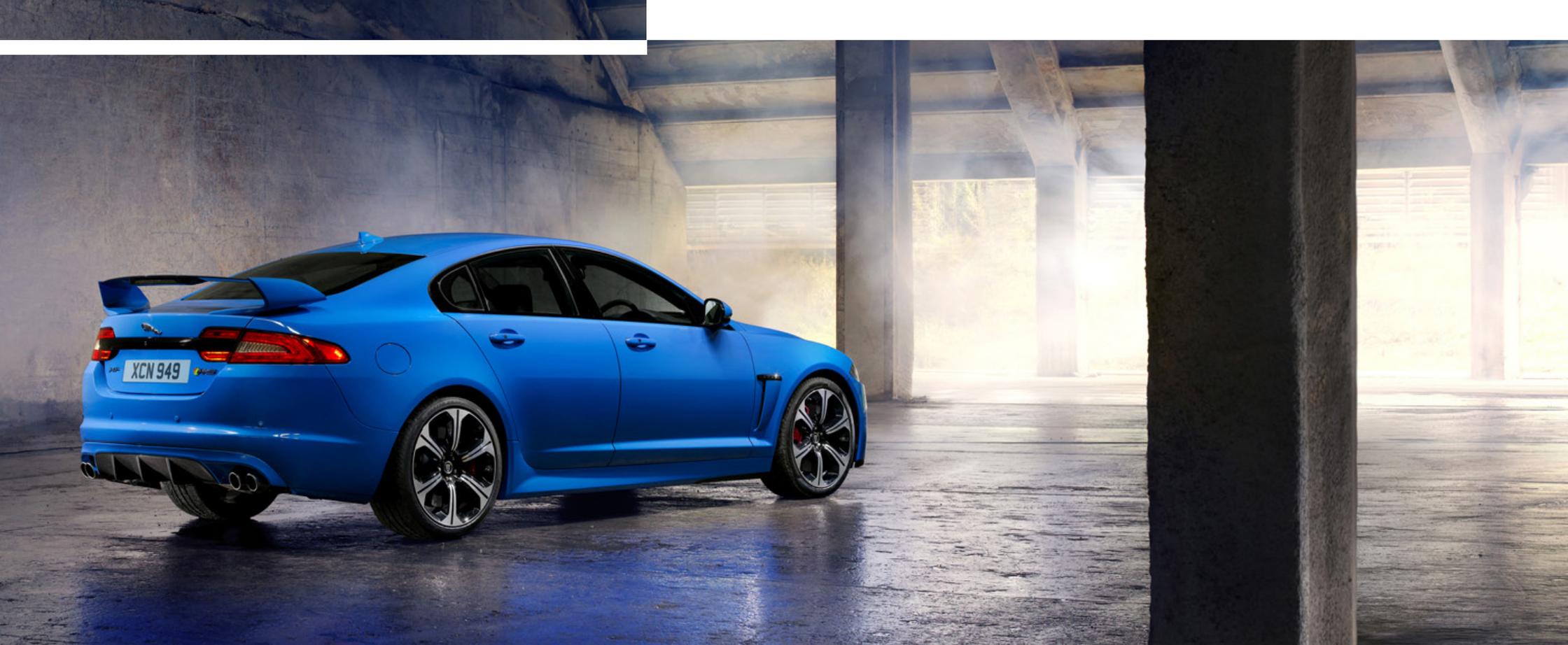
The XFR-S incorporates engineering features from both the XKR-S and the all-new F-TYPE two-seater sports car to create the most driver-focused, agile and responsive iteration of Jaguar's award-winning XF saloon range. The XFR-S has been developed by Jaguar Land Rover's specialist ETO division - its bespoke powertrain, chassis and body enhancements enabling it to push the performance boundaries.

Electrifying performance is provided by the

5.0-litre supercharged V8 petrol engine which now boasts 550PS and 680Nm - up 40PS and 55Nm respectively over its XFR installation. The increases have been achieved through revisions to the engine management system and optimisation of the flow of air both into and out of the engine.

Fitted with an eight-speed transmission incorporating Jaguar's 'Quickshift' technology (developed for the F-TYPE), the increase in engine output allows the XFR-S to accelerate to 60mph in 4.4 seconds (0-100km/h in 4.6 seconds) and on to an electronically limited top speed of 186mph (300km/h).

Airflow has been carefully managed in order to both allow the engine to operate at peak efficiency and let the car cleave the air cleanly and safely. The resulting body changes have created a distinctively



**“ IN DEVELOPING THE XFR-S THE ENGINEERING CHALLENGE WAS TO EXTEND THE CONSIDERABLE DYNAMIC ABILITIES COMMON TO THE ENTIRE XF RANGE. THE BESPOKE CHASSIS, POWERTRAIN AND BODY ENHANCEMENTS MEET THAT CHALLENGE AND GIVE THE XFR-S ITS FOCUSED PERFORMANCE EDGE.”**

Andrew Whyman, Chief Programme Engineer, Jaguar XF

assertive appearance, beginning with the deeper front bumper with its larger lower air intakes, vertical vanes and carbon fibre front splitter.

Deeper sills and unique ‘aero-blades’ ensure a clean passage of air along the side of the car and on to the deeper rear bumper sides while a carbon fibre rear diffuser between the signature quad tailpipes extends underneath the rear of the XFR-S to reduce lift. It is aided in this by a bootlid mounted spoiler, two designs being available. Overall lift is reduced by 68%.

The unique 20-inch lightweight forged alloy ‘Varuna’ wheels are wider front and rear and are shod with specially developed Pirelli rubber, giving the XFR-S a more muscular stance and increasing its grip and stability. Allied to this are extensive suspension revisions which serve to increase

lateral suspension stiffness by 30% for greater steering precision and responsiveness.

Revisions to both spring rates and the adaptive damper tune increase the feeling of connectivity with the road surface, providing confidence-inspiring handling and a supple, controlled ride. Recalibrated active electronic differential and Dynamic Stability Control settings allow the enthusiastic driver to make the most of the huge potential of the XFR-S.

The car’s intent is underlined by the technical palette of materials used on the interior. This includes carbon leather on the seat bolsters and arm rests and a Dark Aluminium fascia, both of which are exclusive to the R-S range. Providing a further unique touch are a choice of contrasting colour stitching and micro-piping which can be matched to the exterior paint scheme.

## POWERTRAIN



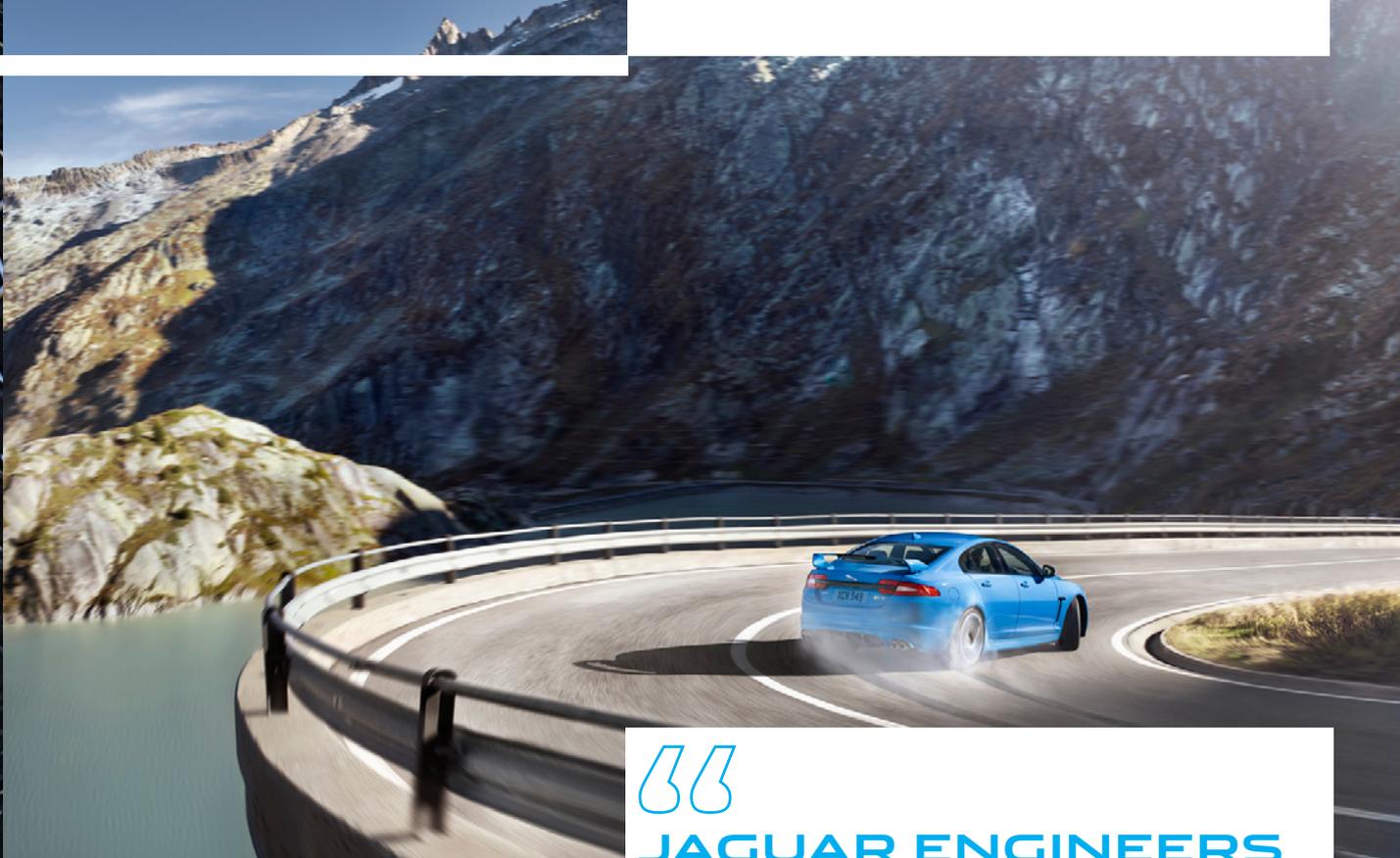
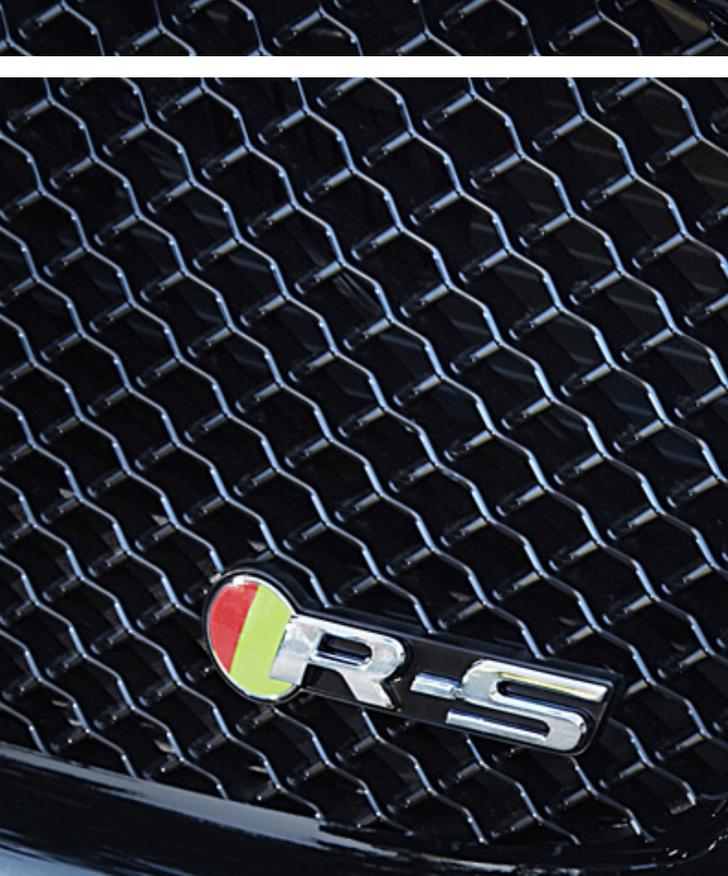
### 5.0-LITRE SUPERCHARGED V8

**T**he XFR-S features Jaguar's acclaimed 5.0-litre supercharged V8 petrol engine in its most potent form matched to an eight-speed transmission with Quickshift functionality. This all-new combination provides a visceral blend of vivid acceleration, driver involvement and control plus entry to the exclusive 300km/h (186mph) club of ultra-high performance cars.

The all-aluminium quad-cam engine delivers not only extreme performance but also tremendous efficiency thanks to the technologies incorporated into it, including spray-guided direct injection (SGDI) and dual independent variable cam timing (DIVCT).

“**THE XFR-S IS A VERY HARMONIOUS PRODUCT IN THE WAY IT LOOKS, THE WAY IT HANDLES AND THE WAY THE POWERTRAIN RESPONDS. THE CAR HAS INSTANT RESPONSE TO ANY DRIVER INPUT AND AS A RESULT FEELS CONNECTED FROM THE OUTSET.**”

Tim Clark, Technical Specialist for Performance and Driveability Attributes, Jaguar



“**JAGUAR ENGINEERS  
HAVE TUNED THE  
THROTTLE RESPONSE  
TO SUIT THE MORE  
FOCUSED NATURE  
OF THE XFR-S.”**

The high-pressure die-cast lightweight aluminium block is stiffened with cast iron liners and cross-bolted main bearing caps, providing refinement to match its power. The four-valve cylinder heads are constructed from recycled aluminium, between them sitting the Roots-type twin vortex supercharger fed by two intercoolers. These feature their own water-cooling circuit to reduce the temperature of the pressurised air to optimise power and efficiency.

In order to help liberate the additional 40PS and 55Nm of torque over the standard XFR, larger front air intakes in the lower bumper of the XFR-S allow greater volumes of air to be fed into the engine. The intake system also features a symposer that channels more of the induction noise into the cabin, adding to the aural excitement of driving the XFR-S.

The result is a 0-60mph time of 4.4 seconds (0-100km/h in 4.6 seconds) and an electronically-limited top speed of 186mph (300km/h).

The exhaust system has been optimised in order to channel the waste gases away from the engine with the greatest efficiency. The central silencer has been replaced with an X-piece and near straight-through rear pipes combining to provide an enhanced exhaust note with the added benefit of a motorsport-style crackle on the overrun.

A number of key driveline components have been updated in order to both adapt the XFR-S for the greater power and torque outputs and stiffen the entire drivetrain to make its responses more immediate; these include updated driveshafts, a larger central bearing on the propshaft and a new torque convertor.

This series of changes has allowed Jaguar's engineers to tune the throttle response to suit the more focused nature of the XFR-S. Applying learning from the new F-TYPE sports car, the response to throttle inputs has been made significantly quicker. The end result is an intimate connection between the driver's right foot and the engine. Engaging Dynamic Mode increases this still further with a greater engine response for a given movement of the accelerator pedal.



## EIGHT-SPEED QUICKSHIFT TRANSMISSION

Maximising the benefit of the engine recalibration is the eight-speed automatic transmission with Quickshift technology.

Developed for the F-TYPE sports car, Quickshift ideally suits the XFR-S's focused and involving remit. When the enthusiastic driver changes up a gear manually by using the steering wheel-mounted paddles, the Quickshift strategy ensures the quickest, crispest shifts via rapid and precisely timed engine torque intervention.

When downshifting (either manually or when in Sport mode) the engine management system automatically blips the throttle to ensure the XFR-S remains balanced and composed, particularly important on entry to a corner. This function also allows the transmission to perform multiple and

very rapid downshifts during hard braking.

When operating in automatic mode, the transmission can detect the manner in which the car is being driven by monitoring acceleration and braking, cornering forces, throttle and brake pedal activity, road load and kickdown request. On detecting a more enthusiastic driving style, the transmission will automatically make the gearshifts more aggressive and move the shift-up point higher in the rev range.

Corner Recognition senses when the car is negotiating a bend, the transmission holding the correct gear for the exit. The transmission will also recognise when the car is performing a series of overtaking manoeuvres requiring rapid changes in throttle position and, rather than change up,

remain in a lower gear ready for the next demand for acceleration.

The eight-speed transmission also allows the XFR-S to be offered as standard with Jaguar's Intelligent Stop/Start system. This automatically shuts down the engine when the car comes to a halt and the brake pedal is depressed. When the brake is released, the system will restart the engine in less time than it takes for the driver's foot to move to the accelerator.

A twin solenoid system, it allows for 'change of mind' functionality, bringing the engine back up to speed even during its run-down phase if, for instance, the car is coming to a halt at a junction and the driver sees an opportunity to join the traffic flow.



## DYNAMICS

**“ WITH THE XFR WE HAVE A VERY CREDIBLE, COMPETITIVE PLATFORM WITH WHICH TO WORK. WHAT WE HAVE GIVEN THE XFR-S IS GREATER HANDLING CAPACITY, GREATER PRECISION AND GREATER CAPABILITY. IT’S A CAR FOR DRIVING PURISTS - IT WILL FEEL ENGAGING WITHIN THE FIRST 50 METRES BUT REMAINS ACCESSIBLE AND CONFIDENCE-INSPIRING AT ANY SPEED.”**

Mike Cross, Chief Engineer, Vehicle Integrity, Jaguar

**T**he dynamic characteristics of the XFR-S were informed by the engineering development of both the XKR-S and the F-TYPE, the result being an incredibly agile, responsive and involving super saloon.

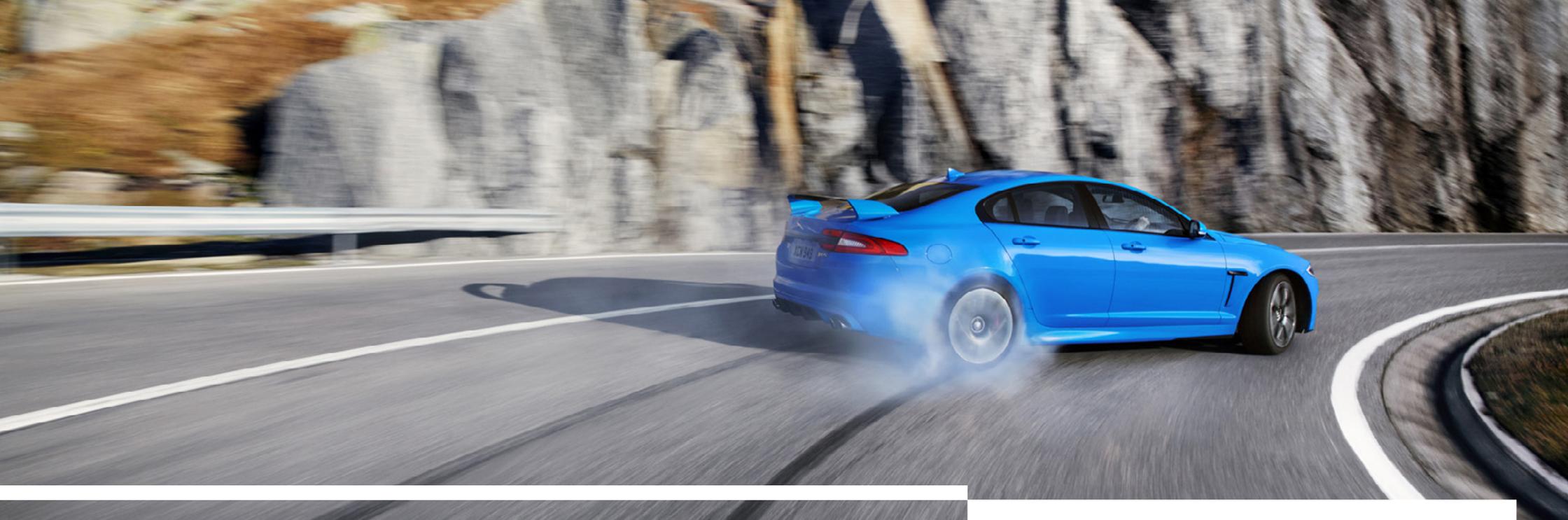
Both front and rear suspension systems have been updated and carefully tuned over tens of thousands of miles at Jaguar’s testing centre at the legendary Nürburgring, the high-speed bowl at Nardo in Italy and, of course, the engineers’ favourite roads around the Gaydon Research and Development centre and in north Wales.

Overall lateral suspension stiffness has been increased by 30 per cent front and rear, with front and rear spring rates increased by the same amount.

Front suspension knuckles have been revised in line with those found on the XKR-S to achieve the increased camber and castor stiffness which, along with new wheel bearings, optimise steering and handling precision. The steering system has additionally benefited from the fitment of the valving developed for the F-TYPE.

At the rear a new subframe has enabled revisions to suspension geometry which, allied to stiffer bushes – new rear knuckles and working in tandem with the stiffer springs – increase stability and response.

In order to achieve the maximum benefit from the suspension revisions, the XFR-S has new lightweight, forged 20-inch ‘Varuna’ alloy wheels. These are half an inch wider at the front and an inch wider at the rear in comparison to the wheels



found on the XFR but their construction means there is no weight penalty to be paid.

The tyres, developed in conjunction with Pirelli exclusively for the XFR-S, are 10mm wider all round, being 265/35 and 295/30 front/rear. The difference between the wheel rim and tyre width increases has the effect of pre-loading the sidewall to improve handling and steering response without adversely affecting refinement.

Working in harmony with the updated suspension, wheels and tyres are revised electronic programmes controlling the Adaptive Dynamics, active electronic differential and Dynamic Stability Control systems.

Jaguar's Adaptive Dynamics system actively controls vertical body movement, roll and pitch rates through the use of continuously variable dampers. The system monitors driver inputs and the road conditions, adjusting damper rates in response up to 500 times a second to optimise stability and agility. The driver's selection of Dynamic Mode offers enhanced body control

through moving the damping rates to the firmer end of the available range.

The Jaguar active electronic differential - which can apply full locking torque almost instantaneously when necessary - has been recalibrated in order to exploit the greater grip offered by the wider rear tyres, the more precisely controlled suspension and the engine output. Working in parallel with the differential, the 'Trac DSC' setting of the Dynamic Stability Control system now offers the enthusiastic driver more opportunity to explore the outer edges of the handling envelope while nevertheless providing a discreet safety net.

Providing equal levels of confidence is Jaguar's High Performance Braking System which offers an unmatched combination of power, stability and fine modulation. The 380mm front and 376mm rear discs are internally ventilated for assured repeated stopping power and on XFR-S benefit from additional cooling provided by under-body air channelling.



Exclusive interior features carbon leather and contrast stitching and micro-piping



## DESIGN

**“ THE DESIGN TEAM WAS VERY CONSCIOUS THAT IT WOULD BE THE AERODYNAMIC SOLUTIONS REQUIRED TO DELIVER THE PERFORMANCE OF THE XFR-S THAT WOULD DICTATE ITS AESTHETICS. THIS IS A CONCENTRATED AND FOCUSED CAR AND THE DESIGN REVISIONS AND THE MATERIALS USED ALL REFLECT THAT.”**

Wayne Burgess, Studio Director, Jaguar Design

**R**eflecting the changes under the skin, the appearance of the XFR-S has been subtly modified in order to allow the car to achieve its full potential. The new, deeper front bumper incorporates larger lower central and side air intakes - the former framed in carbon fibre - in order to provide adequate airflow into the engine bay. Carbon fibre is also used to form the front splitter at the lower edge of the bumper, the first of a number of aerodynamic changes designed to smooth the passage of the car through the air at very high speeds.

The extended side sills and aeroblade mouldings behind the front wheels serve to create a sharp break-off point between the lower bodywork and



the road surface in order to keep the airflow attached to the car's sides for as long as possible.

The same thinking dictated the deeper side mouldings behind the rear wheels. This extended rear bumper also incorporates a central, carbon fibre diffuser, deeper than the item found on the XFR and which travels further under the rear of the car to reduce lift.

Rear lift is also reduced through the fitment of a bootlid-mounted spoiler to manage the airflow off the top rear surface of the car. Two options are available, both of which have been designed with the aid of computational fluid dynamics to provide perfectly balanced aerodynamics. The larger of the two rear wings is constructed with a carbon fibre aerofoil centre section.

The combined result of the bodywork revisions is a reduction in overall lift of 68%.

The wider, six-spoke, lightweight Varuna forged alloy wheels provide the XFR-S with a purposeful,

broad shouldered stance and come as standard with a dual finish. A ceramic polish is applied to the outer surfaces, its eye-catching appearance contrasting with inner gloss black areas. As an option the wheels can be supplied in either full gloss black or technical grey finishes.

The assertive appearance of the XFR-S is further enhanced through the use of gloss black trim in place of chrome around the grille, within the side vent, around the front and rear screens, windows and across the bootlid. The mesh in the front grilles is also a purposeful gloss black.

XFR-S customers can choose from an exterior palette comprising five colours: French Racing Blue, Ultimate Black, Stratus Grey, Polaris White and Italian Racing Red.

This colour palette is complemented inside the XFR-S with Warm Charcoal leather trim on the seats and doors enhanced through the use of carbon effect leather. Exclusive to R-S cars, this is



Bootlid spoiler and other bodywork revisions reduce lift by 68%



Unique R-S sports seats hold both driver and passenger securely

used on the seat bolsters and arm rests and reflects the use of exotic carbon fibre on the aerodynamic elements of the car. The seats themselves are embossed with the R-S logo and can be finished with a choice of contrast colour micro-piping and stitching in either red, blue or ivory. The same subtle enhancement runs across the top of the dashboard, the fascia of which is finished in a Dark Aluminium unique to the R-S, complete with badging.

The XFR-S is fitted as standard with a 380W, 12-speaker surround-sound system from British audio experts Meridian. Recognised by audiophiles as a leader in audio reproduction and fidelity, the system uses digital signal processing to create a sound field that is second to none. An optional 825W and 18-speaker system features Meridian's proprietary Trifield System which places every occupant at the centre of their own perfectly focused surround-sound arena.



**XFR-S CUSTOMERS CAN CHOOSE FROM A PALETTE COMPRISING FIVE COLOURS: FRENCH RACING BLUE, ULTIMATE BLACK, STRATUS GREY, POLARIS WHITE AND ITALIAN RACING RED.”**

## JAGUAR XFR-S

Engine	5.0-litre V8 supercharged petrol
Capacity (cc)	5000
Bore/Stroke (mm)	92.5/93
Peak Power (PS@rpm)	550@6500
Peak Power (kW@rpm)	405@6500
Peak Torque (lb/ft @rpm)	502@2500-5500
Peak Torque (Nm@rpm)	680@2500-5500
Transmission	Eight-speed 'Quickshift' automatic
Intelligent Stop/Start	Yes
0-60mph (secs)	4.4
0-100km/h (secs)	4.6
Top Speed (mph   km/h)	186   300 (electronically limited)
Combined Economy (EU mpg   l/100km   US mpg)	24.4   11.6   18
CO <sub>2</sub> Emissions (g/km)	270

\*Manufacturer's figures

## EDITORS' NOTES

The XFR-S is the latest car developed by the Jaguar Land Rover's specialist ETO division. The division is responsible for extending the Jaguar and Land Rover brands with a series of 'special edition' models as well as a range of personalisation options allowing owners to tailor their cars.

The designers and engineers in ETO work alongside the JLR Product Development teams on future products with a focus on offering additional luxury, performance and capability, exploring different facets of the brands' personalities. Previous Jaguar models developed by ETO include the XKR-S and the XJ Ultimate.

**All images were captured on closed roads with a professional driver. Please do not attempt. Always obey local speed limits.**



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