

# 2016 Lexus RX Redefines Segment with Style, Ride Comfort and Luxury Utility

September 08, 2015

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PORTLAND, Ore. (Sept. 8, 2015) – Since the model’s launch in 1998, the Lexus RX has proved immensely popular with those needing the flexibility of a sport-utility vehicle combined with the driving comfort of a luxury sedan, all wrapped in an attractive, elegant package. The all-new RX’s mix of sharp creases and curves represents a bold evolution in the model’s styling, sharing the same design DNA with other recently-launched models in the Lexus lineup. Moreover, this perennial best-selling luxury crossover features hybrid and gasoline powertrains, sophisticated safety features, driver aids and welcome new convenience and technology features to make this one of the best Lexus luxury utility vehicles offering to date.

## **Exterior and Interior Design**

The front view of the new RX is characterized by an emboldened version of the Lexus brand’s signature spindle grille, featuring a chrome-plated border and triple L-shape-LED headlamps. The available L-shaped LED headlight is accompanied by 18 individual LEDs that surround the headlights and act as turn signal indicators. A compact Bi-LED headlight is standard. Also, Intelligent High Beam (IHB) is available as part of available Lexus Safety System +. Intelligent High Beam helps ensure optimal forward visibility during nighttime driving and automatically turns off the high beam headlamps when another vehicle is detected. When no other vehicle is present, the system turns on the high beams.

The spindle design theme of the front of the RX also defines its rear design, providing a high level of aesthetic balance and consistency to the vehicle’s overall demeanor. The LED rear combination L-shaped taillights envelope the tailgate while wrapping forward around the rear fender sections, resulting in a powerful and wide stance. Of particular note are the blacked-out C-pillars, which provide a floating-roof effect never before seen on a Lexus product. Other new exterior features are flush-fitting headlight washers, panoramic moonroof design, solid roof rails, redesigned SmartAccess door handles and convenient door handle illumination. Also, three new exterior colors have been added: Caviar, Autumn Shimmer and Nightfall Mica. All RX models feature a scratch-resistant self-restoring coat in the body paint, which uses a high-performance macromolecular polymer. The high elasticity of the material helps resist scratches, such as from fingernail marks around the door handles. The paint also possesses a high level of gloss retention to help enhance the initial gloss and color of the paint over a long period of time.

A choice of three distinct 20-inch wheels are now available with the RX.

Like the exterior, the interior of the new RX reflects an impeccable balance of functionality and opulence. Like virtually everything else on this exceptionally well-crafted and thoughtful redesign of the RX, there have been a number of enhancements to the interior trim. Available interior trims include Matte Bamboo, Espresso Walnut, Matte Linear Dark Mocha Wood, Striated Black Trim or Gray Sapele Wood with Aluminum, emphasizing the RX’s peerless new design theme. For the Striated Black Trim, a glossy black is used for the base, and a three-dimensional embossed pattern is then applied to create a high-quality film design with a sense of depth.

With an interior space optimized for five passengers, the new RX’s lowered rear floor section helps provide seating position comparable to that of the rear-seat passengers in the flagship Lexus LS luxury sedan. The new RX features enhanced rear cargo space—larger than competing crossovers within the segment—with room enough to fit large items including up to four large suitcases or multiple golf bags. New for this model year is the available Touch-Free Power Rear Door, a Lexus first, which allows users to open the rear hatch by placing a hand near the Lexus emblem.

Lexus designers and engineers have given a great deal of consideration to the layout of the redesigned center

console of the RX, which has led to enhancements in the usability of the switches and the accessibility of cup holders and storage areas. Based upon the concept of Lexus' Human Machine Interface (HMI), an available Heads-Up Display (HUD) incorporated into the design of the instrument panel helps the driver to concentrate on the road ahead. The redesigned instrument cluster offers the driver instantaneous information with a quick glance at its large and easy-to-read gauge faces.

### **Powertrains and Drivelines**

Adding to the versatility and capability of the all-new Lexus RX are several choices of powertrains:

- RX 350: a 3.5-liter direct-injected V6 gasoline engine (2GR-FKS) mated to an eight-speed automatic transmission.
- RX 450h hybrid: a 3.5-liter direct-injected V6 gasoline engine (2GR-FXS) and revised hybrid powertrain componentry.

### **3.5-liter Direct-Injected V6 Gasoline Engine**

The available 3.5-liter direct-injection gasoline-powered V6 engine (2GR-FKS) brings impressive performance, fuel efficiency and reduced emissions while delivering prodigious power with smooth and highly refined operating characteristics in normal everyday operation. Power is rated at 295 hp at 6,300 rpm with 267 lb.-ft. of torque at 4,700 rpm.

To enhance breathing and fuel efficiency, RX 350 uses an all-new cylinder head design with reshaped intake ports and combustion chambers for added efficiency in the engine's combustion process, a D-4S fuel injection system that enables direct injection to the cylinders with high fuel pressure, and a quick-shifting eight-speed automatic transmission, whose close gear ratios have been tuned to provide excellent punch off the line and robust passing power while maintaining excellent fuel economy.

To maximize torque throughout the rev range, Variable Valve Timing with intelligence Wide (VVT-iW) has been included on the intake side, while the exhaust side features VVT-i. The inclusion of VVT-iW has enabled the adoption of the Atkinson cycle to further benefit fuel economy, without sacrificing engine start-up in extremely cold conditions and during Wide Open Throttle (WOT) driving.

The V6's excellent power is delivered through a quick-shifting eight-speed automatic transmission, whose close gear ratios have been tuned to provide excellent punch off the line and robust passing power while maintaining excellent fuel economy.

### **3.5-liter Direct-Injected V6 Hybrid Engine and Lexus Hybrid Drive**

A paragon of efficiency with plentiful power when needed, the completely reengineered 3.5-liter direct-injected V6 hybrid engine (2GR-FXS) is an evolution of the base six-cylinder drivetrain, now producing a combined system output of 308 hp at 6,000 rpm with 247 lb.-ft. of torque at 4,600 rpm.

The RX 450h also features newly shaped intake ports and combustion chambers that generate a high degree of tumble inside the cylinders and improve combustion.

The hybrid-powered drivetrain in the all-new Lexus RX is the latest, most advanced iteration of the Lexus Hybrid Drive system. Its key components and control systems have been enhanced and reengineered to deliver impressive fuel economy, low emissions and excellent on-road performance that will satisfy the most demanding driving enthusiast.

The transmission includes a hybrid front transaxle with new features including a transmission oil cooler for motor cooling, a pre-loaded differential for performance and enhanced control. The rear transaxle (for models

equipped with AWD), which combines an electric motor with a reduction drive, features a new three-shaft configuration and aluminum case and cover to reduce weight. Thanks to these upgrades, the Lexus Hybrid Drive system achieves excellent driving performance, quietness and fuel economy.

Among other updates to the hybrid system are a design evolution of the Power Control Unit (PCU) and HV Engine Control Unit (ECU) that delivers enhanced energy efficiency; driver-friendly operation and refined performance; implementation of a lighter, efficient hybrid system coolant electric water pump; and packaging changes to the hybrid battery that result in a more compact design to save space. Also, the control functions of the E-Four rear drive electric motor (AWD models) have been enhanced for better response when accelerating during turns.

## 1. AWD Systems

- For RX 350 AWD, Dynamic Torque Control AWD has been adopted, which processes information from a number of sensors, including wheel-speed sensors and steering angle sensors, and instantaneously routes engine power to the rear wheels to help maximize tractability on varying surfaces and road conditions.
- The sophisticated Lexus E-Four system is integrated into the RX 450h hybrid. This system also allows for reduced energy and fuel consumption by limiting the use of the all-weather drive only when necessary and allowing the rear electric motor to act as a generator to charge the battery when the vehicle is in regenerative brake mode.
- An added feature on the new RX, for both hybrid and gas models, is that the torque distribution levels at the front and rear of the vehicle, as well as to each individual wheel, are displayed on the Multi-Information Display (MID) when the system is in operation.

## Chassis and Driving Dynamics

To further enhance driving performance as well as feedback to the driver, a number of updates have been made throughout the structurally sound and highly-refined platform of the all-new Lexus RX. Although the new RX utilizes basically the same underbody platform of its predecessor, it has been given revamped front engine mounts to the sub-frame structure. The side engine mounts have been relocated to enhance the vehicle's lateral responsiveness, resulting in the engine sitting tight in the compartment, which provides for sharper steering feel and enhanced overall cornering reaction of the chassis. And, this newfound agility comes at no sacrifice to the RX's trademark smoothness and quietness.

### 1. Suspension

The RX utilizes a front-strut and rear double-wishbone suspension system that has seen major improvements engineered to provide better steering response and ride comfort, for which the RX has been known.

#### • **Optimization of the front and rear suspension balance**

To simultaneously enhance performance and ride quality, the distribution of the stiffness in the springs and sway bars were changed from the previous model to provide an ideal balance of stiffness and compliance. Along with the changes to the engine mounts, the rigidity of the front sway bar was increased. By changing the front and rear spring rate balance, the vehicle was able to maintain a flat posture and decrease vertical pitching.

#### • **Improvements in steering feel and response**

The refinements of various suspension parts enable the RX to be responsive to the driver's steering inputs. By increasing the rigidity of the front axle and hub bearings, as well as retuning all the bushings, steering feedback from the tires to the driver's hands has been significantly enhanced. The grip level and traction of the tires were also changed, helping the RX to respond crisply during turn-in and enhance its overall agility. At the rear suspension, the rigidity of the bushings was modified to help reduce understeer and allow the RX to be agile without sacrificing control.

## **2. Brakes**

The new RX was developed to offer enhanced braking and brake feel.

- **RX 350**

A dual-stage brake servo booster was adopted, which provides clear feedback when the brakes begin to work as well as moderate feedback force, realizing excellent brake feel and enhanced controllability. A new actuator, V3-ACV, was added to decrease stroke when the brake pedal is applied.

- **RX 450h**

The ACT ECB2.5 actuator was modified to help enhance the transition of the braking g-force.

## **3. Steering**

To match the changes made to the suspension and platform, the steering system was modified for precision and responsiveness. The driver's seating position was lowered; the steering wheel was moved closer and made more vertical to accommodate long distance commuting. The adjustable range of the electronic steering tilt and telescopic steering column was expanded to allow tall drivers to sit in a comfortable driving position.

Although the motor-in-column Electric Power Steering (EPS) structure was maintained, the shaft stiffness between the column and rack gear was increased for better feedback of road information through the steering wheel. The newest EPS management system was adopted for wider control range of initial steer, return-steer and cornering in accordance to variable speed ranges and reactive force. This enables the car to have a light and comfortable steering feel, but at the same time deliver control, enhancing driver communication with the vehicle. Without changing the outer diameter of the steering wheel, the grip diameter and geometry were finely tuned to enhancing handling characteristics for everyday use.

## **4. Adaptive Variable Suspension (AVS)**

A premium equipment option, AVS adjusts the damping force according to road conditions and irregularities. By adding a linear solenoid with an oil pressure valve to the AVS shock absorber, a shock-free variable suspension system was made possible. Actively changing the absorbance level allows the suspension to respond quickly, as it helps the RX to achieve a flat riding feel in a broad range of driving environments.

The suspension also responds to acceleration, braking and steering initiated by the driver, allowing the person at the wheel to feel one with the car.

## **5. Drive Mode**

The Drive Mode Select system allows the driver to choose between distinct drive settings depending upon vehicle model and equipment. The settings regulate the damping force of the suspension system, adjust engine output, re-map the throttle and modify other key parameters of the engine and chassis. “ECO” mode moderates engine power output, throttle response and the climate control system for increased fuel efficiency. “NORMAL” provides an even balance between engine performance and fuel economy. In “SPORT,” the driver is treated to performance through enhanced throttle response and enhanced acceleration while sharpening the feel of the EPS system. The “SPORT S” setting (available with vehicles equipped with the Adaptive Variable Suspension system) offers even a higher level of performance with aggressive throttle mapping, quicker drivetrain response. (In RX 450h models with AVS, this is accomplished when the hybrid system allows for enhanced accelerator response and feeling of powerful acceleration.) The all-out “SPORT S+” setting combines the powertrain enhancements of the “SPORT S” mode while sharpening the feel of the EPS system and a stiffer suspension setting for flatter cornering. “CUSTOMIZE” offered for the first time by Lexus, enables the driver to individually choose the powertrain and chassis mode for F SPORT models.

## **6. Rigid Body Structure**

A number of cutting-edge technologies have been applied to the RX’s platform to help optimize structural integrity as well as overall rigidity. These include increasing panel joint strength through the use of high-tech body adhesives and laser screw welding; liberal use of high-tensile strength steel throughout the vehicle including key areas such as the underbody cross members and front (A-pillar) and middle (B-pillar) sections; the implementation of a new process called “annular frame construction” for strengthened frame sections within the vehicle around the front and rear doors; and redesigned body frame sections and additional spot welds around the rear portion of the vehicle for enhanced strength and handling.

These design updates can help enhance occupant protection and handling while helping make a quieter cabin, thanks to increased structural rigidity throughout the platform.

### **Driver Aids/Safety**

A number of optional advanced driving aids and safety technologies are available on the new Lexus RX including:

- Dynamic Radar Cruise Control
- Lane Departure Alert with Steering Assist
- Vehicle Sway Warning
- Intuitive Parking Assist
- Panoramic View Monitor
- Intelligent High-beam System
- Blind Spot Monitor with Rear Cross Traffic Alert
- Adaptive Variable Suspension

A plethora of safety features and technologies are included for all RX models including: SRS airbags consisting of dual-stage and dual-chamber driver’s and front passenger’s airbag, driver’s knee airbag, front side airbags, rear side airbags and full-length side curtain airbags for front and rear passengers; a tire pressure monitor system with available tire inflation display function; active front headrests; vehicle theft-deterrent; and engine immobilizer system.

Braking and traction control systems that include four-wheel ventilated power-assisted disc brakes, a four-sensor, four-channel Anti-lock Braking System (ABS) with Electronic Brake force Distribution (EBD), Brake Assist (BA), Traction Control (TRAC), Vehicle Stability Control (VSC) and Hill-start Assist Control are also included. Additionally, Smart Stop Technology automatically reduces engine power when there is simultaneous application of the brake pedal and accelerator pedal under certain conditions.

### **Lexus Safety System +**

Available Lexus Safety System + is a comprehensive package that helps mitigate collisions across a wide range of vehicle speeds. It integrates several of Lexus' existing active safety technologies including: the Pre-Collision System (PCS) with Pedestrian Detection that detects sudden stops initiated by the vehicle in front, warning drivers of potential contact with obstacles ahead; Lane Departure Alert (LDA) with Steering Assist; Intelligent High Beam (IHB) that helps ensure optimal forward visibility during nighttime driving; and All-Speed Dynamic Radar Cruise Control.

The Pre-Collision System warns the driver via an audible warning as well as a visual alert through the Multi-Information Display (MID) when it detects an imminent collision, and automatically applies the brakes to reduce impact force or avoid the collision altogether. The Pre-Collision Brake Assist detects an imminent collision and increases the brake force when the driver depresses the brake pedal. The amount of additional brake pressure provided when the driver depresses the brake pedal is increased in stages according to the level of possibility of a collision.

Auto Brake helps provide the driver additional assistance. If an obstruction is detected by the sensors, and the system judges that there is a possibility of collision, a pre-brake warning illuminates the brake lights to notify the following vehicle that the driver's vehicle will decelerate. If the probability of collision increases and the driver does not apply the brakes or steering input, the pre-collision brake is activated, helping to avoid the collision or reduce collision damage. If the collision is avoided, and the vehicle has stopped, the brake force is maintained for a maximum of two seconds until the driver operates the accelerator or brake pedal.

### **Audio/Multimedia Systems**

The standard audio system includes an eight-inch display, HD Radio™, Bluetooth® audio, voice recognition microphone, micro SD card slot, an AUX mini jack, two USB ports and nine speakers, with frequently used switches placed closest to the driver.

The available 12-speaker Pioneer audio system offers crisp, clear sound broadcast throughout the cabin through speakers along the sides of the instrument panel through and 20-cm subwoofers and newly-developed 18-cm woofers in the front doors.

Discerning audiophiles will enjoy the available 15-speaker Mark Levinson Premium Surround System, with its advanced Clari-Fi™ compressed music restoration technology, Green Edge™ high-efficiency conversion technology and Unity™, which brings the high-range and mid-range cone positions as close together as possible to realize a smooth connection between mid- and high-range sounds.

RX offers an optional eight-inch and 12.3-inch navigation system. The available eight-inch high-definition Thin Film Transistor (TFT) liquid crystal display features a high level of contrasting clarity as well as minimal color variation when viewed at different angles from either the driver or the front passenger seat.

The 12.3-inch system features an Electro Multi Vision (EMV) display with a large high-definition Thin Film Transistor (TFT) liquid crystal display, enhanced Lexus Multimedia with new-look graphics and the handy computer mouse-like Remote Touch Interface.

## **F SPORT**

The 2016 RX F SPORT elevates the sporty image of the RX to an entirely new level. Available for RX AWD models only, F SPORT includes a number of special visual and performance features that set them apart from other versions. The first thing the driver will notice is the exclusive instrumentation cluster that consists of an eight-inch Liquid Crystal Display (LCD) that's characterized by a large, easy-to-read circular gauge that artistically combines a tachometer and a digital speed indicator.

All RX F SPORT models boast excellent handling, thanks in part to the Adaptive Variable Suspension (AVS) system—which controls the damping force of the shock absorbers at each individual wheel in response to road surface conditions and driver inputs. The sound generator enhances the RX 350 AWD F SPORT driving experience, using air intake pulsations to tune the sound of the engine to produce frequencies that are perceived to be pleasant to the ear during acceleration in the mid- to high-rpm range.

The interior of the RX F SPORT has been styled to match the vehicle's sporty disposition. You'll find highly supportive quilted seats that are exclusive to the F SPORT, as is an exclusive interior color choice, Rioja Red. The unique perforated leather-wrapped shift lever and three-spoke sport steering wheel with F SPORT badge, aluminum interior trim accents, and drilled non-slip lightweight aluminum accelerator and brake pedals and foot rest add extra flair to this exciting model's invigorating character.

The exterior features an exclusive black-out mesh grille, lower spoiler section and satin-finish chrome-plated lower protector with black side mirrors to match the grille. The vehicle's new front fascia design accentuates a low center of gravity, as does the new satin-finish chrome plated lower bumper section at the rear of the vehicle. Exclusive 20-inch 10-spoke aluminum alloy wheels and subtle but distinctive F SPORT badging round out its expressive exterior. A total of eight exterior colors are available, including an F SPORT exclusive, Ultra White.

## **Warranty**

- 48-month/50,000-mile basic limited warranty with roadside assistance for 48 months/unlimited miles.
- 72 months/70,000 miles powertrain and restraint system coverage.
- 72 months corrosion perforation protection coverage, regardless of mileage.
- Eight years/100,000 miles hybrid-related components, including the HV battery, battery-control module, hybrid control module and inverter with converter.