The Pinnacle of F: 2020 Lexus RC F and RC F Track Edition

April 04, 2019

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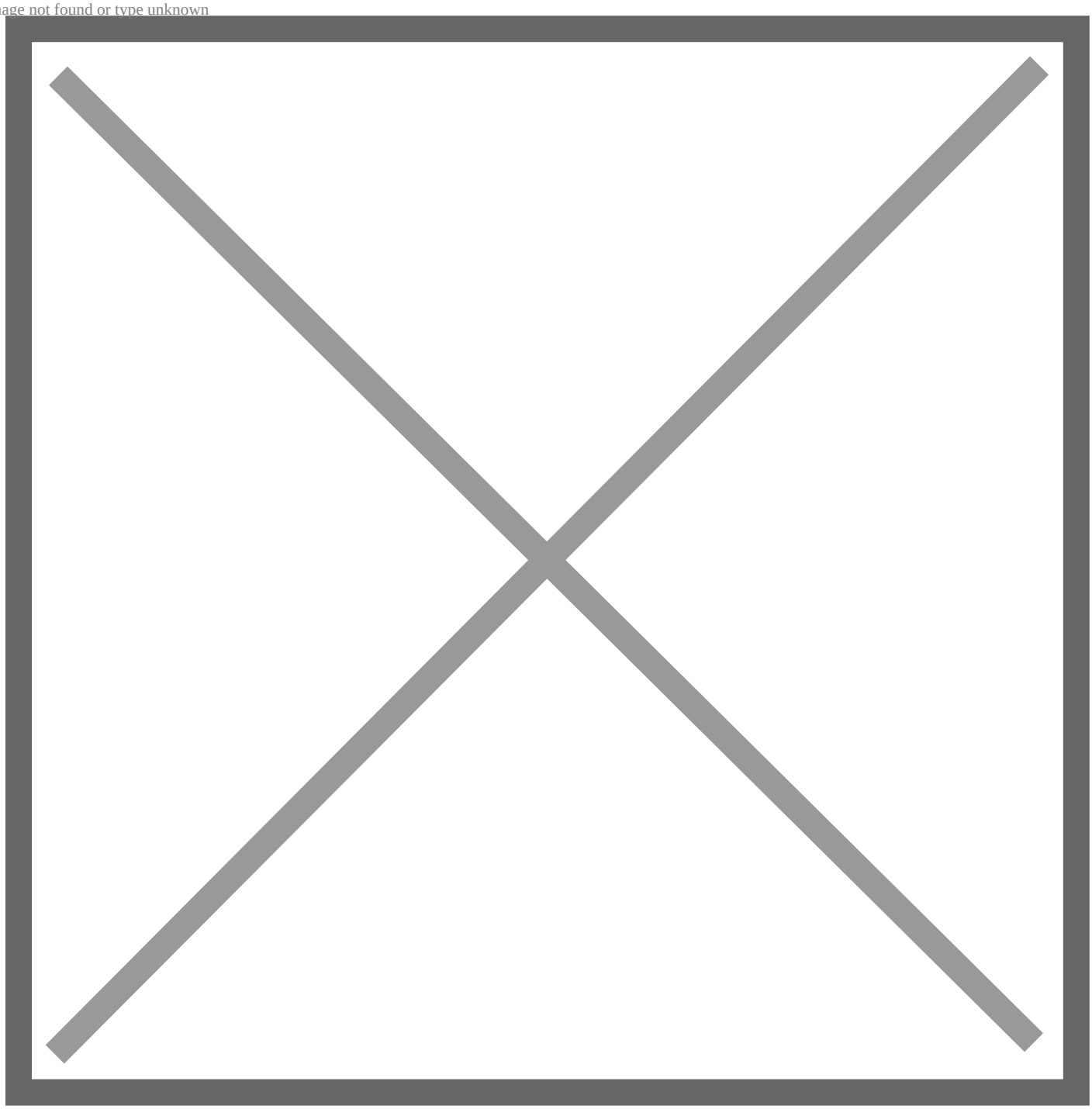

PLANO, Texas (April 4, 2019) – For the 2020 model year, the Lexus RC F coupe is lighter, more capable and more eye catching than ever before. A wide range of enhancements expands its performance envelope while updates to the overall design further refine the appearance of the broad-shouldered coupe.

New to the lineup for 2020, the Lexus RC F Track Edition is a limited production model for hardcore enthusiasts. It blends the luxury and craftsmanship of the standard RC F with performance upgrades typically reserved for exotic sportscars. It's the latest milestone for the F performance brand that will continue to evolve as an important pillar of the overall strategy at Lexus.

"The new RCF and the Track Edition, in particular, benefit from constant development since their original launch. With the latest enhancements, these models help further distinguish the F brand by offering fast, durable, highly capable performance cars that rely on a range of technologies to help make their performance accessible to drivers of all skill levels," said Koji Sato, Executive Vice President, Lexus International.

Refreshed and Redefined – The 2020 Lexus RC F

The 2020 Lexus RC F coupe incorporates a wide range of changes that result in improved performance and a more refined appearance. Although not a full redesign, the engineers for the RC F seized the opportunity to expand its performance envelope without sacrificing day-to-day drivability. At the same time, the design team incorporated elements from both the RC F GT3 and RC F GT500 race cars to improve the RC F's aerodynamics and resculpt its aggressive lines.

Precise Targets for Weight Reduction

One of the first targets for the engineering team was reducing weight without compromising the coupe's sense of refinement and solidity. A more specific objective was to take weight out of the car at its extremes, as even the most modest changes at the front and rear of the car result in significant reductions in rotational inertia. Numerous components under the hood were scrutinized for weight reduction before the engineers chose the intake manifold as one key focus given its location at the top of the engine. An updated machining process was developed that removes 700 grams of excess aluminum on the underside of the manifold without altering its airflow characteristics.

Other weight saving measures under the hood include the use of a smaller compressor for the air conditioning system and newly designed aluminum spring support brackets that save an additional 700 grams of weight compared to the previous steel part. In order the construct the two-piece bracket, a TOX® connection is used to join the two aluminum sections, a process that produces a tight joint without applying heat. TOX fittings have previously been used to join aluminum body parts, but this is the first time Lexus has used the joining technology on a suspension component.

At the rear, a redesigned bumper reinforcement was developed that combines carbon fiber and aluminum to produce an equally strong, yet lighter (-500g) support piece. By bonding the carbon fiber to the extruded aluminum structure, the overall yield stress is increased while at the same time allowing the use of thinner aluminum. The carbon fiber section is produced in-house on the same production line that provided CFRP for the LFA supercar. Additional weight at the rear was taken out through the use of hollow half shafts in place of the previous solid shafts which shaves another 4 pounds with no reduction in shaft strength.

Small Chassis Changes Yield Significant Results

To capitalize on the reduced weight, the engineers also retuned the chassis with very precise changes that work together to give the car a more responsive feel. One example is the revised steering rack mounting bushings. In a typical high g load cornering situation, deflection of these bushings has the potential to throw off the toe settings of the front wheels and cause understeer. To reduce this effect, the engineers have increased the bushing stiffness by 150% compared to the previous RC F, a change that improves both the initial steering response and overall road feel.

A similar change was instituted at the rear of the car through the use of stiffer subframe bushings to reduce deflection under high g loads that can alter the camber angle of the rear wheels and produce understeer. Greater control of the rear wheel toe angles is achieved with a new aluminum bracket that takes the place of the previous steel part while shedding 500g of weight. Careful attention was paid to the aluminum part's diecast construction to give the bracket added stiffness despite its lighter weight.

Although it's not part of the suspension, the rear engine mount was also redesigned to eliminate any sensation that the engine is "lagging behind" the chassis during aggressive changes in direction. The new mount actually reduces the stiffness of the rubber itself, but increases the overall control through the use of a wider, more stable design.

All 2020 RC F models connect to the road through Michelin® Pilot Sport 4 S tires sized 255/35R19 in front and 275/35R19 in the rear. They are some of the most sophisticated performance tires ever produced by Michelin, and in this case, they are specifically tuned for the RC F to increase overall grip and reduce understeer. Compared to the standard Pilot Sport 4 S tires, the RC F's design is differentiated by a revised shoulder profile, extended bead and trapezoidal shape. The grooves in the tire also have a different shape, depth and location compared to the off-the-shelf Pilot Sport 4 S. Another departure for the RC F spec tire is an increased level of dry grip thanks to revised silica content levels at the outside edges of the tread.

A Unique V8 Gets Even Better

Boasting one of the last naturally aspirated V8s available in a luxury coupe, the RC F has a unique sound and feel that few of its competitors can replicate. Now rated at 472 horsepower (+5) at 7,100 rpm and 395 pound-feet of torque (+6) at 4,800 rpm, the 5.0-liter V8 (2UR-GSE) is a core element of the RC F's personality. With that in mind, the engineering team focused on small, yet meaningful changes that add character and refinement without detracting from the visceral connection to the high revving V8.

To enhance throttle response, a redesigned airbox employs three notable changes compared to the previous RC F. One upgrade is the installation of aero stabilization fins inside the main piping to reduce friction induction pressure loss that can result in less accurate readings by the mass air flow sensor. These small fins help to reduce the boundary layer that forms when fast moving air is moving through the inside of the air cleaner duct. By reducing the boundary layer, the fins effectively increase the volume of the intake path and reduce velocity changes that can cause less accurate sensor readings.

A new design for the hydrocarbon filter that resides in the airbox is another update to the RC F's intake system. Smaller and less restrictive than before, the updated HC filer further contributes to smoother airflow throughout the system. Yet another change is the point at which the secondary port on the air intake opens. In the previous RC F, it didn't open until the engine hit 3,600 rpm, but in the 2020 model, the threshold has been reduced to 2,800 rpm for enhanced engine sound and better low-speed drivability.

In addition to refining the precision of the throttle response, further attention was dedicated to the programming of throttle curve itself which is now more linear than the previous model. The first-generation RC F had throttle tuning that was designed to deliver a quick response from a short pedal stroke to emphasize its powerful feel. For the 2020 RC F, the throttle tuning is more balanced throughout the pedal stroke for greater predictability and more precise control.

Complimenting the revised throttle mapping is a higher final drive ratio that keeps the engine in the heart of its powerband. Moving from a 2.97 rear end gear to a 3.13 ratio gave the engineers the leeway to relax the throttle curve without giving up the sense of immediacy in the previous setup.

For the ultimate in standing start acceleration, the RC F now includes electronic launch control as standard that deliver an estimated 0-to-60 mph time of just 4.2 seconds. With a push of the button on the console, the system

automatically adjusts the traction and throttle control for maximum acceleration from a stop. All the driver has to do is press and hold the brake pedal, engage the system, floor the accelerator to bring up the engine speed and release the brake.

Form and Function in Equal Measure

A strong, distinctive design from the start, the freshened RC F gets subtle, evolutionary changes that emphasize "race bred functionality" while remaining fully integrated with the latest Lexus design direction. Up front, the revised air intakes on each side are larger and are designed to funnel more air to the oil coolers than before. Along the side, a new concave design at the end of the rocker panel not only adds a new character line, it helps smooth airflow past the rear tires while extended side splitters are designed to enhance high-speed stability.

Visual changes include newly optional LED headlights shared with the LC coupe and integrated daytime running lights that together provide excellent visibility along with a memorable light signature. The shape of the RC F's grille has been altered by adding a lower lip opening that stretches across the bottom to create a visually shorter front fascia. At the rear of the car, new taillights integrate neatly into a reshaped bumper to give the RC F a cleaner, more chiseled appearance.

RC F Track Edition: A Higher Degree of F

More than a mere accessories package, the limited production RC F Track Edition features a precisely engineered set of upgrades that work together seamlessly to push its performance to a new level. Developed with input from Lexus race teams in the Super GT and IMSA series, the Track Edition is designed to deliver exceptional performance that enthusiasts can easily exploit in a wide variety of conditions.

Achieving that level of predictable performance was made possible by rigorous engineering and the assembly precision of Takumi masters who oversee production of every RC F. All aspects of the car were scrutinized for improvement, but the Track Edition doesn't forego refinement for all-out speed. It remains an uncompromised luxury performance coupe with the ability to impress both on the track and off.

Removing Weight Where It Counts

Like the standard model, weight reduction was a key area of focus for the Track Edition. With a total curb weight of 3,781 pounds, the Track Edition weighs 176 pounds less than the previous RC F. Combined that with the 472 hp V8, and the Track Edition has the best power-to-weight ratio (8.01:1) in its class.

More than simply a crash diet, the weight reductions were focused on delivering significant dynamic improvements. This led to a focus on reducing unsprung weight since any weight that can be removed from the mass not supported by the suspension pays huge dividends in handling and steering feel.

With that goal in mind, every RC F Track Edition comes standard with Brembo® carbon ceramic brake rotors and six-piston Brembo calipers. The rotors are significantly lighter than their steel counterparts, contributing to a 48.5-pound total reduction in unsprung weight. Carbon ceramic rotors are also better able to withstand the extreme heat cycling associated with performance driving and their minimal wear characteristics result in less vibration at high speeds.

On the Track Edition, the calipers are painted red to distinguish them at a distance from the standard orange calipers used on the standard RC F. One change that is shared by all RC F models is a new brake pedal design that offers a longer stroke that allows for more precise control and a less abrupt initial bit on application.

Additional weight reduction was achieved with the switch to a set of ultra-lightweight 19" BBS forged alloy wheels. They feature a design derived from the RC F GT3 race car with a matte black finish and bright machined lip. A milling process is used to create the complex shape of the wheel spokes that helps to reduce the overall weight of each wheel by 1.5 pounds compared to the standard wheels.

A standard titanium muffler and connector pipes is yet another area where the Track Edition sheds weight. Rarely seen on production cars, the use of titanium sheds 15 pounds from the rear of the Track Edition. This particular muffler is also tuned to deliver a linear sound over the entire rev range to take advantage of the unique acoustic characteristics of titanium. The exhaust tips are made from stainless steel, but are coated in a blue finish for a unique look.

The extensive use of carbon fiber is another weight saving measure that you can see as well as feel. All Track Edition models come standard with a carbon fiber roof and hood along with switching to a carbon fiber partition behind the rear seats. Many of these carbon fiber pieces are made on the same line that supplied the Lexus LFA during its two-year production run.

Harnessing the Wind for Improved Maneuverability

Another key area of improvement unique to the RC F Track Edition is its aerodynamic signature. A variety of changes were instituted aimed at delivering both a nimbler feel and improved predictability during aggressive driving. To achieve these goals, the engineering team focused on reducing lift at the front and rear of the car as well as managing the air moving around the car to improve stability and reduce drag.

Up front, the carbon fiber front splitter uses two different methods for reducing the coefficient of lift (CL). Canards at each corner generate small air vortexes as the air passes around them. These vortexes create low pressure areas that together reduce the CL by 0.009. Across the front, a small lip spoiler is used at the bottom of the splitter that guides the air more smoothly underneath the car which reduces the CL by an additional 0.021.

At the rear of the car, all Track Edition models come with a fixed rear wing made from carbon fiber in place of the active spoiler offered on the standard RC F. The fixed wing is not only lighter than the active spoiler, it does double duty by simultaneously reducing both the coefficient of lift and drag. It reduces lift through the use of a wing shape that is concave on the top and convex on the bottom. The shape of these surfaces slows down the air over the top of the wing to increase pressure and speed up the air underneath the wing to decrease pressure.

The result is a CL reduction of 0.034 compared to the active spoiler, or up to 58 pounds of downforce. At the same time, the shape of the wing smooths out the air over the back of the car which results in a 2% reduction in drag.

Combine the slippery shape and reduced weight with the standard launch control system and the RC F Track Edition is capable of delivering a 0-to-60 mph time of 3.96 seconds. Top speed remains limited to 168 mph.

A Unique Look and Feel

In order to give the Track Edition a more exclusive look on the inside, the interior comes standard with Circuit Red leather-trimmed seats with Alcantara® accents. The soft Alcantara trim is also used on the center console and armrests. Red carbon trim on the doors and dashboard is also exclusive to the Track Edition along with red carpeting.

Only two exterior colors will be available: Ultra White and Matte Nebula Gray, an exclusive color only available on the Track Edition. Standard RC F models are available in six colors: Ultra White, Atomic Silver, Caviar, Infrared, Flare Yellow and Ultrasonic Blue Mica 2.0.

Both the 2020 Lexus RC F and the RC F Track Edition have started production and will be available at dealers soon. Pricing for the 2020 RC F starts at $64,750 not including destination. The 2020 RC F Track Edition starts at $96,650 not including destination.