2007
CBR600RR
PRESS INFORMATION

Introduction

Completely new from stem to stern, Honda's astounding new 2007 CBR600RR launches a blistering assault on the roads and tracks of Europe with a sleek and slippery new, aerodynamically designed race-ready form; a lighter and more powerful new 600cc Dual Sequential Fuel Injected inline-4 engine with the smallest dimensions in its class; a slimmer and lighter weight new Fine Die-Cast aluminium frame that realises both a shorter wheelbase and a longer swingarm; and an impressive list of high-performance features which all come together to herald the arrival of the electrifying new champion of the mid-displacement Super Sports class.

Packed with racing technologies handed directly down from Honda's mighty MotoGP champion, the RC211V, the astounding CBR600RR debuted in 2003 as a mid-sized sports bike designed primarily to reassert Honda's leadership in the highly competitive environment of World Supersport racing. Subsequently, its class-leading combination of top performance characteristics carried the CBR600RR to three consecutive World Supersport championships following the 2002 title held by the CBR600F-Sport, and total domination of its class in *every* year since its auspicious debut. It also excelled at providing one of the most exciting blends of top performance and remarkable riding ease to ever make a rider with a need for speed feel like a champion. Its incredible race-winning capability and far-reaching performance potential also made the CBR a thrilling and confidence-inspiring mount for those who simply love to ride…fast.

Time, however, gradually caught up with the CBR600RR, and the competition has grown to become especially intense in the hottest-selling category in the world of street bikes. In order to reassert its domination of the class, the CBR required more than just another makeover and the addition of a few new performance features to a well-proven design. Instead, the time had come to start again on a clean page to incorporate all the design, manufacturing and racing innovations gleaned over the years since the CBR saw the first light of day. The time had come to lay a king to rest and prepare the stage for the coming of a new champion.

Development Concept

A New Dimension in 600cc Super Sports Design

Setting out to create a more intensely competitive yet more widely enjoyable next-generation successor to the brilliant CBR600RR would be no mean feat. However, unhindered by the limitations of trying to improve on an existing machine, the CBR600RR's development team were given the freedom to explore the vast possibilities and hidden potential of drastically new design innovations in the quest for even greater advances in performance and handling.

Thus, formulating their ideas for an all-new middleweight Super Sports leader around the main design concepts of "Lighter Weight for Ultimate Control" and "New Dimensions in 600cc Super Sports Design," the team focused on achieving an even stronger power-to-weight ratio—with all its inherent benefits—through lighter weight and reduced drag everywhere. Engine, frame, bodywork, even the instrument panel; nothing was overlooked in quest for a lighter and faster CBR.

True to Function

As development progressed and initial drawings graduated to prototype production, other concepts came into play. The idea of achieving "Ultimate Fun on Winding Roads" played a big part in guiding the team's efforts in minimising extraneous weight and more effectively centralising the new Super Sports machine's overall mass. The concept of "True to Function" also played an decisive role in the complete redesign of the new CBR's chassis extremities and bodywork to achieve not only a visible sense of lightness and speed, but also the most focused and competitive performance ever, leading to the concept and goal of creating a CBR600RR that is "Fastest on the Track; Fastest Everywhere."

The pursuit of lighter weight everywhere was certainly the fundamental key to the new CBR600RR's design, and the results reveal themselves in the most compact inline-4 engine to ever power a middleweight Super Sports riding machine. With a targeted 8 kilogramme reduction in overall weight, engine components were lightened by a combined total of over 2kg, the frame was trimmed by a remarkable 4.5kg, other chassis components took away a further 1.2kg, and even the CBR's electronics were lightened by a small but significant 400g. No part, however small, was overlooked in the process of trimming weight for the desired advances in performance. The end result is lighter weight that translates to sharper acceleration and swifter, smoother handling.

Although the current CBR600RR is aggressively oriented toward high-rpm racetrack performance, the new model was designed to improve on these features while also making the machine's full performance potential more easily accessible to a wider range of riders. While the team certainly sought to improve on-track performance and handling for experienced riders on familiar roads, one of their main goals was to also improve the ability of less expert riders to fully enjoy the thrill of the curves, especially on unfamiliar winding roads being travelled for the first time, thereby expanding the CBR's range of riding enjoyment while dramatically increasing its full performance potential.

Factors considered in the determination of the best way to achieve this enhanced winding road riding enjoyment were of course the engine's feel of power and acceleration, particularly through a wide midrange, and quick, linear response to every input. Also, handling that provides an almost fluid response that reacts smoothly and instantly to rider inputs, which has been achieved through a 22mm shorter wheelbase, enhanced mass centralisation and the addition of a new HESD (Honda Electronic Steering Damper) system. Overall fit and finish also play a big part in the CBR's enjoyment factor, as does the exterior design's sense of aggressive style and overall attractiveness, which sets a new standard for audaciousness in the middleweight Super Sports class.

With its impressively designed new compact form, new smaller and more powerful engine, new lighter weight Fine Die-Cast aluminium frame and a host of other dynamic features like its new HESD, the 2007 CBR600RR sets the stage for another generation of world domination on the road and on the track, and everywhere the electrifying thrill of riding makes the pulse quicken. Stamped with the genetic imprint of its RC211V racing lineage, the new CBR600RR is positioned to let every rider feel in no uncertain terms that they too can be The Fastest on the Track… and the Fastest Everywhere.

Styling

From its compact, sharply angular nose to its sleekly curved tail, the new CBR600RR exudes the look of a future champion in the making. Every curve in its startling new form is the direct result of a new ‘True to Function’ design theme that guided its development team in stripping away everything not directly applicable to pure function and measurable improvements in performance. From nose to tail cowl, every piece of bodywork and related hardware was refined and redesigned with the goal of achieving unprecedented advances in mass centralisation and air management, not to mention improvements in the CBR’s power-to-weight ratio, for maximised overall performance on the street and on the track. The result is a total combination of chassis and bodywork design that has been dramatically lightened in look, positioning of mass and actual weight in the creation of an incredibly lightweight and compact new Super Sports leader.

Dramatic New Airfoil Styling

The new CBR600RR’s stunning bodywork sets a new precedent in Super Sports design with a large gap of separation visible between the front upper cowl and the fairing’s side cowls. This design innovation is based on air management design borrowed from the wings and fins used on both fighter planes and Formula One racers to more efficiently direct air around and through its more compact form while giving visual expression to the aerodynamic functionality of its wind tunnel-tested fins.

Improved Mass Centralisation

Exceptional efforts made in the quest for improved mass centralisation and lighter weight at the CBR’s extremities led to significant reductions in size and weight of nearly all the motorcycle’s main components, from its new front cowl to its lighter and more compact centre-up exhaust silencer and surrounding seat cowl.

For a start, the shape of the front upper cowl is now more compact, with its nose and surrounding form repositioned 30mm rearward and closer to the steering head for reduced inertial influence on turning and cornering response. The new lower cowl has also been made more compact, and now more closely surrounds the exhaust headers reaching down under the engine to direct airflow for more effective cooling while visually emphasising the CBR's improved aerodynamics. This slimmer form also extends to the radiator, which is now 40mm narrower in width and 33mm longer in height for more compact proportions while maintaining its excellent cooling capacity.

The rear seat cowl was also significantly reduced in size and slimmed in shape for a more compact form and reduced mass at the bike's extremities, which combines with the shorter, more compact exhaust silencer to make a major contribution to swifter, more responsive handling. In fact, the seat cowl is now so small in size that it seems to be merely resting atop the silencer for a lighter and more compact integrated look.

New Ram Air Induction System

Another important part of the new CBR600RR's aerodynamic design is its effect on the engine's power production, as can be seen in the middle of the front cowl, which is now highlighted by an impressively large air intake port built right into its nose, precisely where the pressure of air hitting the front cowl's nose at speed is at its strongest. Modelled on the system developed for the World Superbike-winning VTR1000 SP-2, this new port feeds directly through the new frame's open steering head casting to the CBR's larger-volume airbox. This new ram air system provides a direct, unimpeded flow of high volumes of cool, dense air to the intake tracts at high speeds, for a strong surge of torque-filled performance that tears up the twisties and dominates the track.

Positioned between this prominent port and the steering head is a large and very strong FRP intake port extension that has been made structurally strong enough to support the entire front cowl and its associated components, including its lightweight Line Beam headlights.

Improved Riding Ease and Manoeuvrability

Although the new CBR600RR's riding position remains essentially unchanged, the rider's hip position on the seat was moved rearward approximately 15mm for enhanced mass centralisation to match the positioning of the new engine, and the area where the seat joins the rear of tank has been made significantly narrower and smoother, with less protruding edges in the legs' contact area for easier manoeuvrability, especially in competitive racing conditions. The handlebars have also been raised 10mm compared to the previous model, enhancing riding ease for a wider range of handling capability and long-term comfort. The handlebar-to-seat distance remains essentially the same as before.

Lighting The Road

Further highlighting the CBR600RR's aggressive new form are the same distinctive pair of low-profile Line Beam headlights, which project a modern image in keeping with its racing roots. Less than half the height of the headlights seen on most road bikes, these lightweight, ultra-sleek units feature compact, high-illumination multi-reflector designs projecting through clear lenses to provide a brilliant night-time view of the road ahead.

Compact, grey-tinted indicator lenses cover amber bulbs for a sharper, more modern look, while the CBR's LED taillight, which was integrated into the underside of the tail on its earlier versions, now protrudes out from under the exhaust's upward slanting tail pipe for a cleaner and more functionally integrated image.

Colouring Concept

The new 2007 CBR600RR's livery is now closely modelled on its bigger brother, the CBR1000RR Fireblade, with four dramatic new colour variations to choose from. Leading with a dramatic red and black combination that accentuates the lines of its new Honda Wing mark graphics, the new RR makes a bold statement of the Honda Racing DNA coursing through its veins. In contrasting metallic grey on black, the CBR exudes a powerful image of total control, while an attractive two-tone blue and white variation grabs attention with its refreshingly modern style. Finally, a bold black and grey on white colour variation stamps the new CBR600RR as a fast-paced leader of road and track for now and the future.

Colours

- **Italian Red (with Graphite Black and Matte Ray Silver middle cowl)**
- **Graphite Black (with Matte Ray Silver Metallic middle cowl)**
- **Candy Tahitian Blue (with Pearl Sunbeam White and Matte Caledonite Blue Metallic)**
- **Pearl Sunbeam White (with Achilles Black and Axis Grey Metallic middle cowl)**

Engine

In the four years since its introduction, the CBR600RR's high-powered 600cc inline-4 engine has proven itself to be a force to be reckoned with both on the street and on the circuit. Delivering a broadly responsive range of power and acceleration, its compact configuration also helps realise optimal mass centralisation for a significant contribution to the RR's quick handling.

However, for the CBR600RR's next generation, even greater efforts to reduce size and weight were needed to achieve its new development goals of even sharper and more responsive handling, as well as significant increases in its power-to-weight ratio. So, an entirely new engine was designed and developed, incorporating much of Honda's most advanced race-bred high-performance engine technology to create a more efficient and powerful mill featuring the smallest size and lightest weight in its class.

The Smallest and Lightest Engine in the 600cc Class

Achieving the new RR's stated goals of sharper and faster performance necessitated not merely a reworking or redesign of an established engine configuration, but an entirely new rethink from first drawings to final assembly. The end result is, in a word, remarkable. Not only are the new engine's front-to-rear and top-to-bottom dimensions by far the smallest in its own 600cc class, its front-to-rear length is also smaller and more compact than any inline-4 engine in the 250cc class as well.

This new engine's smaller dimensions were achieved through a total rethinking and, among other changes, repositioning of the engine's main shafts within the crankcase in a tight triangulated configuration that narrows the crankshaft-to-countershaft distance by over 30mm. Combined with detailed changes elsewhere in its design, these closer dimensions make possible a drastic reduction in crankcase size and, by extension, weight. The crankcase castings alone weigh over 900g less than its predecessor, representing the largest part of the engine's exceptional 2kg reduction in weight compared to the current model.

Other modifications to reduce engine weight include a new magnesium head cover (330g lighter), new nutless connecting rods, new single exhaust valve springs matched to smaller and lighter lifters, a smaller new neodium ACG magnet and many more detailed changes that all add up to the realisation of the new engine's astoundingly smaller configuration and lighter weight.

Stronger Performance

Of course, for an engine designed to be competitive on the race circuit as well as on the street, the other primary goal in the development of the CBR600RR's new engine was gaining a stronger, more widely useable range of power and performance. Many of the new technologies and improvements made were developed and tested on the CBR1000RR Fireblade and adapted to the new engine, including modified intake and exhaust ports and changes to the intakes velocity stack lengths and taper, and to the ECU programming governing the control of its two-stage PGM-DSFI fuel injection system. The CBR's lighter weight new stainless steel exhaust system also features new in-line exhaust valve to control exhaust pressure for maximised performance.

Resulting performance is not only stronger throughout the engine's wide powerband, but also smoother and more linear for more easily accessible and widely enjoyable top performance. The new engine also features a noticeably stronger pull of torque between 7,000 and 10,000 that not only experts, but all riders can better take advantage of for more exciting winding road riding. Likewise, for those times when a greater range of acceleration is needed, such as on the racetrack, the engine's power peak has also been extended 500rpm compared to the current model.

Improved PGM-DSFI Dual Sequential Fuel Injection System

Amply supplied with large volumes of cool, dense air by its new nose-mounted ram air intake duct, the new CBR600RR uses essentially the same two-stage PGM-DSFI fuel injection system as before to ensure optimal fuel atomisation and cylinder charging at all engine speeds. One set of injectors installed at the entrance to the intake ports provides an ideal air/fuel mixture for quick starts and strong, smooth low-to-midrange acceleration. At higher engine speeds, when both the throttle and ram air intake are opened wide, the system's second set of injectors installed in the roof of the aircleaner kick in to deliver a minutely timed jet of fuel that cools the high-volume air intake to create a denser mixture that improves volumetric cylinder filling efficiency for stronger acceleration.

For 2007, the system's aircleaner has been increased in volume by 0.7 litres and its fuel feed lines have been simplified with new lighter moulded plastic tubing and connectors replacing the current model's brazed metal fuel lines. Also, a new IACV (intake air control valve) minimises excessive torque reaction and smoothes response to smaller changes in throttle input by realising more gradual reductions of air and fuel intake when the throttle is closed and then opened.