

2008 CBR1000RR







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*The new 2008
CBR1000RR's
taut-lined bodywork
boasts a distinctly
compact design*



C B R 1 0 0 0 R R D E V E L O P M E N T

2008 reveals the next chapter in Honda's literbike legacy

Whether you choose to call it a legacy, a heritage, a family tradition or perhaps something else of similar ilk, Honda's CBR1000RR takes center stage in 2008 in a big way, signaling a new era in sportbike design for Honda. This year the CBR1000RR carries key qualities from its predecessors that have been sharpened, refined and elevated to the next level, establishing new standards for function and style.

More than ever before, the 2008 CBR1000RR reinforces a long-standing Honda legacy of creating breakthroughs in the literbike class. Reaching back 15 years to the beginning of the CBR-RR era (the CBR900RR), Honda engineers established that light weight is a gift that keeps on giving, yielding cascading benefits in multiple areas of performance. Adherence to this ideal has yielded an ongoing procession of machines that distill open-class horsepower into compact packages barely larger or heavier than the best 600cc sportbikes. This ideal has never been better embodied than with the CBR1000RR; smaller, more compact, faster, lighter, featuring a slipper clutch and other driveability-enhancing systems, this newest RR holds stunning advantages in open-class power-to-weight ratio, acceleration and handling.

Enjoying a long-standing legacy is one thing, but it's quite something else again to roll up your sleeves and bring that vision closer to perfection. With each

successive step, the pathway to ever-decreasing size and weight plus ongoing increases in power becomes more and more difficult to navigate. There are no silver bullets to be found; all the easy answers have been consumed by previous generations.

With the 2008 CBR1000RR, a wealth of incremental improvements across the board ultimately nets big changes when the final tally is taken. Smarter engineering propagates simple and efficient solutions to new designs. Look closely at the CBR1000RR and you'll find component designs that are simple and understated; these are true gems full of performance, culminating in a whole new machine from the rubber up. Here is a quick rundown of the major changes for 2008:

P E R F O R M A N C E F E A T U R E S

- New lighter and more compact 999cc inline four-cylinder engine.
- New separate cylinder block with Nikasil-coated cylinders.
- Lightweight, larger-diameter titanium intake valves.
- Lightweight larger-bore forged pistons featuring a low-friction molybdenum coating.
- Newly developed slipper clutch with unique cam-assist mechanism to reduce clutch lever pull.
- Idle Air Control Valve and Ignition Interruption Control system for smoother throttle response.
- New twin-tunnel ram-air induction.
- New low-mount exhaust system with integrated exhaust valve.
- New lighter and slimmer four-piece Hollow Fine Die-Cast frame.
- New lighter-weight, gull-wing-shape, hybrid aluminum swingarm.
- New lighter-weight, monoblock, radial-mount front disc brake calipers and lighter, six-point-mount floating rotors.
- New lightweight wheels.
- New smaller and lighter second-generation HESD steering damper.
- Improved rider ergonomics.





- Front turn signals integrated into folding mirrors enhance aerodynamics.
- Lightweight aluminum sidestand.
- New lighter, more compact 7AH battery.

STYLING FEATURES

- New lighter, more compact aerodynamic bodywork design.
- New, more aggressive-looking line-beam headlights and cowl design.
- More compact front cowl, positioned closer to the steering head.
- Smaller, lighter and more compact seat and tail cowl.

NEW, MORE COMPACT CYLINDER HEAD

Beginning at the heart of the CBR1000RR, the engine is both lighter and more compact than the powerplant in the previous-generation CBR1000RR. The 2008 engine is lighter by 2.5kg (more than 5 pounds), and the completely new cylinder head is a full 15mm shorter than before. To accomplish this feat, the exhaust valves were shortened 3mm (which also makes them lighter), and as a result, the camshaft is placed lower in the cylinder head for enhanced mass centralization.

New, lighter-weight camshafts are manufactured using a new, chilled, thin-wall, ductile steel casting process that reduces camshaft wall thickness (from 4mm to 2.5mm) to save 0.5kg (1.1 pounds) while maintaining the same levels of strength and rigidity.

For further weight savings and quicker, higher-revving performance, new larger-diameter titanium intake valves (29mm to 30.5mm) replace the steel poppets previously used and feature high strength to match their lighter weight.

NEW SEPARATE SLEEVELESS CYLINDER BLOCK

The CBR1000RR's engineering team designed an engine with a larger bore (75mm to 76mm) and a shorter stroke (56.5mm to 55.1mm) in order to achieve the stronger, higher-revving power output from 999.8cc (up from 998cc). However, the 2007 engine featured an integrated cylinder block and upper crankcase fitted with ceramic-composite cylinder sleeves. This previous design would not permit a 1mm-larger bore without requiring a wider cylinder block and therefore a wider engine. Not acceptable.

The solution? Nothing less than a complete redesign of the cylinders and crankcase to eliminate the cylinder sleeves. In place of the integrated one-piece cylinder block/crankcase, a new separate cylinder block was created, permitting the cylinder sleeves to be replaced with a super-tough Jet Circulation Plating applied directly to the cylinder walls. This elimination of the cylinder sleeves permitted the cylinder bores to be increased from 75mm to 76mm, reducing cylinder spacing from 6mm to 5mm while maintaining the same cylinder pitch and overall cylinder width as before. Effective cylinder weight was also reduced, contributing to the new engine's overall weight loss.

LIGHTER, LARGER-BORE FORGED PISTONS

Despite a 1mm-larger diameter, the CBR1000RR's new forged-aluminum pistons maintain the same weight as the pistons they replace. Carefully redesigned to be both structurally stronger and effectively lighter, these new pistons combine with a 1.5mm-shorter stroke to make an important contribution to the engine's higher revs and quicker acceleration. The compression ratio increases slightly in the new engine as well, from 12.2:1 to 12.3:1.

NEW LOW-MOUNT EXHAUST SYSTEM

One of the most obvious changes in the new 2008 CBR1000RR is its compact exhaust system, now positioned almost entirely beneath the engine to increase mass centralization as on the





RC212V, Honda's current MotoGP machine. In the interest of quicker handling, the CBR's previous center-up exhaust system was moved from its under-seat location to be as close as possible to the motorcycle's center of gravity and mass, thereby reducing the inertial effects of the system's weight and mass on the machine's ability to quickly change directions.

Maximum cornering clearance was also a critical element in the design of the new exhaust, and the bulk of the stainless steel system fits within the small triangular area described by the lowest point in the center of the belly pan and the two footpegs, with nothing protruding that might touch the ground and interfere with cornering angles.

The exhaust gasses then exit out the two ports at the end of its right-side secondary muffler, reaching up just below and behind the swingarm pivot. This complex secondary muffler has also been specially designed for optimum cornering clearance, rising well out of the area of contact when cornering hard to the right, and the new swingarm's distinctive pressed-aluminum right-side arm was formed in a new gull-wing shape to provide ample clearance.

To maintain top performance throughout the engine's wide rev range while still reducing noise output, the triangular-section secondary muffler features a very unique three-path chamber configuration. Electronic and pressure-controlled exhaust valves between the chambers automatically route exhaust-gas flow at various engine rpm to dramatically maximize low- to

mid-range performance, reduce noise and smoothly enhance driveability while providing exceptional high-rpm performance.

NEW FOUR-PIECE HOLLOW FINE DIE-CAST FRAME

In the quest for further weight reductions and better handling through improved mass centralization, the number of component parts used in the construction of the CBR1000RR frame was reduced from nine pieces to only four main castings. With fewer, slimmer and lighter parts, and fewer welds needed to hold them together, the new frame allowed significant chassis related weight savings of nearly 5.5 pounds. The frame's four sections include a new large steering-head casting with two large holes through which pass new straight-shot ram-air ducts, two side spars and a single large U-shaped rear pivot mount that wraps under the rear of the engine to surround the swingarm pivot and further ensure the frame's exceptionally rigid form. The new frame is significantly stronger, with lateral rigidity increased 13 percent, torsional rigidity up 40 percent and vertical rigidity up 30 percent. In addition, the new frame is now a full 30mm (1.2 inches) slimmer and is significantly more compact overall as well.

In the process of creating an entirely new frame, the rider's seating position was altered as well, lending a more natural and comfortable riding position. With the new CBR1000RR, the rider now sits more upright thanks to handlebars which are 6.5mm higher and 2mm farther forward. The improvement in ergonomics is immediately noticeable, and a very welcome change for long-distance riding.

NEW LIGHTER, MORE COMPACT BODYWORK

The new CBR1000RR clearly looks decidedly slimmer and more compact. It's obvious that form meets function here, with high-performance aerodynamics taking full priority over frivolous styling add-ons—although its racetrack-bred style still results in head-turning good looks. The new CBR1000RR's taut-lined bodywork boasts a distinctly compact design in the pursuit of enhanced mass centralization, a design that shortens and lightens its front and rear extremities in the quest for swift and responsive handling. To that end, the bike's frontal area and coefficient of drag have been greatly reduced, approaching numbers common to 250cc GP-class levels thanks to the additional help of a narrower front-fork span and a slimmer, taller radiator, which promote slimmer fairing dimensions.





The foreshortened nose of the front cowl was greatly reduced in size and overhang, and it now closely hugs the steering-head area. This more effective aerodynamic design also includes a pair of new performance-enhancing ram-air intake tracts smoothly integrated into the front cowl's form to direct a steady stream of cool, dense air straight to the airbox. To minimize noise and maximize low-end and mid-range performance, both ports are equipped with resonator butterfly valves that remain closed at low and mid-range engine speeds, then automatically open for increased airflow at higher speeds. Incorporating the front turn indicators into the mirrors further contributes to the fairing's simple, efficient, compact form and reduced coefficient of drag. The turn indicators are cleanly integrated into the upper portion of the rearview mirrors. In back, the new CBR1000RR's seat and tail have been drastically shortened and lightened, carrying obvious visual ties to Honda's second-generation MotoGP racer, the RC212V. The entire rear cowl subsection, with the rear turn indicators, taillight and license plate, unbolts for track days and racing, further strengthening the ties with the RC212V.

**GULL-WING ALUMINUM
SWINGARM**

To provide clearance for the new low-mount exhaust system, the CBR's strong and lightweight hybrid aluminum swingarm was redesigned with a new gull-wing shape formed into its pressed-aluminum right-side member. This new swingarm is 12mm longer than the previous CBR1000RR swingarm, with a 15mm-longer effective length that

endows smooth high-speed tracking with a 1407mm wheelbase for exceptionally responsive cornering characteristics.

SIGNIFICANT SAVINGS IN UNSPRUNG WEIGHT

The CBR1000RR's new, hollow-section, triple-spoke, cast-aluminum wheels feature thinner-wall spoke castings for a weight savings of 240g (8.4 ounces) in the front and 310g (10.9 ounces) in the rear—a huge savings in unsprung weight that begets extremely beneficial effects in both ride and handling. In addition, the CBR1000RR's powerful radial-mount front disc brakes now feature new four-piston brake calipers of a stronger and lighter new monoblock design for an additional 126g (4.4 ounces) of weight reduction per caliper and a much more rigid configuration. Inside, new chrome-plated aluminum brake pistons replace heavier steel units for an impressive total of 430g (15 ounces) of reduced unsprung weight in the calipers alone. These combine with narrower, lighter brake lines made of a new material and a modified brake-lever ratio to increase braking performance with a livelier, more responsive feel at the brake lever. Furthermore, the brake rotors front and rear were also lightened with new six-point floating inner rotors replacing the current 10-point units for a 90g (3.2-ounce) reduction in weight. The drilled rotor hole pattern, kept essentially the same throughout past years, has also been significantly changed, with several different hole sizes used across the surface to achieve both better feel and lighter weight in a design innovation that debuted on Honda's Suzuka 8-Hour Endurance racers.

In the suspension department, sound and fundamental preexisting designs carry over to the new CBR1000RR. Up front, handling is overseen by the same style of sturdy 43mm inverted HMAS cartridge-type front forks, which provide smoothly responsive performance coupled with excellent rigidity and low unsprung weight for precise and confident control. The span between the fork tubes has been reduced by 10mm (from 214mm to 204mm) and offset increased by 2.5mm (from 25mm to 27.5mm) for sharper response to steering inputs, while the front axle holders were modified with a more centered design that increases rigidity while further minimizing unsprung weight.

Integrated into the CBR1000RR's rigid but lighter-weight new gull-wing hybrid aluminum swingarm is essentially the same Unit Pro-Link® rear suspension system pioneered on





Honda's dominating RC211V MotoGP racer and also featured on the CBR600RR. Its highly advanced design helps isolate the frame from the shocks and stresses generated by conventional rear suspension systems, especially under aggressive riding and racing conditions. For 2008, some minor changes were made to the system's shape, but linkage ratios remain the same. In both front and rear suspension systems, new spring rates and damping rates were derived to deliver optimum performance.

LIGHTNESS IS WHERE YOU FIND IT

In 2004, the CBR1000RR introduced a startling innovation to motorcycle handling in the form of the Honda Electronic Steering Damper (HESD), which helps maintain high-speed confidence while remaining virtually transparent to handling and steering at slower speeds. A lighter, more compact, second-generation HESD made its debut on the 2007 CBR600RR, and now this next-gen damper is employed on the CBR1000RR.

Significantly more compact in construction than the first edition, this new HESD is even an additional 55g (2 ounces) lighter than the unit found in the 2007 CBR600RR. Like that setup, the CBR1000RR's damper tucks away beneath the fuel tank cover and mounts to the frame behind the steering head, where it connects to the upper triple clamp via an articulating arm that moves the unit's damping vane within its oil chamber. As before, handlebar movement directly actuates a vane within the damper's oil chamber to move oil from one side of the cham-

ber to the other through passageways regulated by a series of check valves and an electronic solenoid. As vehicle speed and acceleration increase, the solenoid adjusts oil flow to provide effective resistance against sudden movement of the front fork and handlebars, such as might occur when encountering a large bump in a high-speed corner. As vehicle speed slows, damping force reduces to virtually undetectable levels.

As two final examples of light-think/bright-think, consider the sidestand and battery on the 2008 CBR1000RR. Typically ignored in most performance evaluations, these two items usually fade into the background—but not with the CBR1000RR. The sidestand is now constructed of aluminum instead of steel—a weight-saving change that's elementally simple.

In another vein, motorcycle batteries traditionally pose weighty problems calling for special design measures. A typical 10-amp-hour battery can weigh close to 7 pounds and takes up a considerable amount of space that could be devoted to other components. On the new 2008 CBR1000RR, the engine's starter ratio and starter-motor characteristics were revised to produce the same strong engine-turning torque but with less electrical-current draw, changes that made it possible to achieve the same number of repeated—and quicker—starts with less required battery output. Therefore, the CBR1000RR carries a new 7AH battery that's smaller than the item carried in any other motorcycle in its displacement class, saving more than 2 pounds over conventional setups.

Smart thinking? You bet. That's the norm with this machine. Honda's engineers have once again extended a fine family heritage of innovation by reengineering even the smallest details to redefine the state of the super-sport art. By reducing the size and weight of this 1000cc CBR to heretofore-unknown levels, Honda has integrated power and handling in a way that establishes brand-new performance standards for the class. Through a seductive combination of light weight and rideability, Honda engineers have created a new level of breathtaking performance that will place the CBR1000RR far above all challengers in 2008.





2008 CBR1000RR TECHNOLOGY

Make it light, make it strong and make it go—better than anything else in the sportbike realm

The upcoming season brings a brand-new Honda CBR1000RR to center stage in the liter sportbike class in 2008. Weighing in as the lightest bike in its class and carrying the best power-to-weight ratio as well, this will be a bike to be reckoned with. In addition, it's now more compact than ever before. The new CBR1000RR literally brings literbike handling to new levels. Once again we witness an insurmountable combination of power and handling that harkens to a legacy of big-displacement Honda sportbikes reaching back to 1993 and the original ultra-compact and lightweight CBR900RR.

Just as important as all of the above, however, is a newly derived blend of three Honda technologies that bestow upon the CBR1000RR an exceptional degree of rideability as well. Thanks to an innovative level of whole-cloth engineering and sheer technological brilliance, Honda engineers have endowed the CBR1000RR with:

- an Idle Air Control Valve (IACV)
- an Ignition Interruption Control system
- a cutting-edge slipper clutch that incorporates a built-in mechanical assist system.

These features work together to create the most controllable acceleration and deceleration traits in the literbike class.

As a result, this triad of systems greatly assists in entering and exiting corners because disruptions

to smooth throttle operation are minimized. Moreover, these three engineering elements allow riders of all levels to hold the smoothest lines and help riders make smooth, quick throttle applications without undue distractions. As a result, skilled pilots lapping a track can pare chunks of time off the stopwatch, and all riders will enjoy smooth, more comfortable riding on the street.

By now, IACV is a familiar friend. Introduced last year aboard the 2007 CBR600RR, this system minimizes torque reaction and smoothes throttle response upon deceleration and acceleration by allowing a measured amount of intake air to bypass the throttle bodies' closed butterfly valves. This extra air-bleed circuit works to elevate engine idle speed fractionally for less engine braking on deceleration and also for a more even transition upon reapplication of the throttle. Bottom line: smoother throttle transitions when the throttle is opened and closed.

To augment this useful system, the CBR1000RR now also incorporates an Ignition Interruption Control system, which is technology new to Honda motorcycles. In essence, Ignition Interruption Control uses sophisticated ignition mapping to reduce abrupt transitions and the shock forces generated as gearset and driveline lash is taken up at small throttle openings. Sensors compare engine speed to the speed of countershaft sprocket rotation and also factor in the degree of throttle opening. When engine speed surpasses countershaft speed by a predetermined threshold, Ignition Interruption Control interrupts some ignition pulses. In addition, the amount of interrupt is specifically programmed according to the gear selected—each of the six gearbox speeds has its own profile. This interruption allows a more gradual buildup of power, which reduces the shock forces that would otherwise be felt as a surge of driveline lash. However, all this begins and ends within milliseconds—the rider never consciously feels the brief interruption. Instead, it simply feels as though throttle applications with the CBR1000RR occur with regular and remarkable smoothness.



Airbox with Dual Intakes



2008 CBR1000RR



2004 CBR1000RR





In addition to these two feats of throttle-application wizardry, Honda engineers also created a unique slipper clutch that acts in concert with these systems to further smooth off/on throttle transitions. In total, these three systems greatly enhance the CBR1000RR's rideability on the street or at the track. The sophisticated slipper clutch incorporated into the new CBR1000RR is exclusive to Honda and incorporates an innovative mechanical assist system to ensure a more positive engagement while also reducing the pull effort required at the lever.

Generally speaking, slipper clutches have been used in racing to moderate the effect of deceleration torque (or “back torque”) on the rear wheel during aggressive corner entries with heavy braking, thereby allowing engine braking to slow the bike without causing the rear tire to chatter. How is this accomplished? At the engagement area between the clutch center and clutch pressure plate, radiused surfaces act as cams to adjust forces incrementally. Under heavy deceleration, when back torque from the slowing rear wheel grows greater than the slipper clutch capacity, clutch slip occurs to relieve that excess portion of the engine-braking action and help eliminate rear-wheel chatter.

However, a common shortcoming inherent in conventional slipper clutch design—especially for street-going applications—is the large amount of pressure required to force the clutch plates back together once no more slip is required. Naturally, the most expedient means of counteracting this issue is to employ very stiff clutch springs—which then creates uncomfortably stiff clutch action. Such a penalty was not an option with the CBR1000RR, so Honda's engineers set out to find a better way.

Instead, with the CBR1000RR, when forces generated under acceleration act upon the clutch center and pressure plate in the driving mode, another set of cammed surfaces acts in the opposite direction to automatically *increase* the amount of pressure generated on the clutch stack by the clutch pressure plate. Think of it as something of a reverse of the slipper clutch concept—an elegantly simple engineering solution. As a result, clutch springs lighter than those in standard slipper clutches could be selected, yet clutch engagement occurs quickly, securely and reliably. Bottom line: The rider enjoys a marked reduction in clutch-lever load for a light pull at the clutch lever. And thanks to this more efficient design that augments clutch pressure, the CBR1000RR can also incorporate a cable actuation system, which yields twofold benefits: The cable system is lighter than a hydraulic clutch mechanism and also yields a direct mechanical link for better “feel” at the clutch lever.

With the 2008 CBR1000RR, Honda once again delivers the whole package—1000cc power, middleweight-class handling and a superior power-to-weight ratio, plus a new degree of sophistication for increased rideability.





FEATURES & BENEFITS

CBR1000RR

In 2008 Honda reinforces a long-standing legacy of creating breathtaking breakthroughs in the literbike class. The all-new CBR1000RR establishes a higher standard for weight reduction and compact, centralized mass to produce the pinnacle of sportbike performance and rideability.

NEW FOR 2008

- All-new 999cc inline four-cylinder engine.
- Lightweight titanium intake valves.
- New thinner high-strength pistons featuring molybdenum coating.
- New removable cylinder block with Nikasil-coated cylinders.
- Idle Air Control Valve (IACV) and Ignition Interruption Control for idle stability and smoother on/off throttle response.
- Unique slipper clutch features cam mechanism to reduce clutch-lever pull.
- New mid-muffler exhaust system design incorporates exhaust valve and catalyst.
- New-generation Honda Electronic Steering Damper (HESD).
- New lighter-weight front brake hoses with lighter front brake rotors.
- New monoblock front brake calipers with chromium-plated aluminum pistons.
- New lightweight aluminum sidestand.
- New four-piece Fine Die-Cast frame.
- New aluminum swingarm design.
- New twin-tunnel ram-air induction.
- New line-beam headlights.
- New front turn signals integrated into mirrors.
- New compact instrumentation.
- New lighter-weight wheels.
- New lightweight compact battery.
- New improved ergonomics.
- Iconic new Honda Wing tank badge.
- Exciting new colors include Red/Black, Black/Metallic Silver, Pearl Yellow/Black, Candy Dark Red/Metallic Silver.
- Black/Metallic Grey (2008 special color).



UNIQUE FEATURES

- Exclusive, MotoGP-derived Unit Pro-Link Rear Suspension (see Technology Section).
- Mid-muffler exhaust system design.
- Specially designed slipper clutch.
- Dual Stage Fuel Injection (DSFI) system features two injectors per cylinder (see Technology Section).
- Centrally located fuel tank increases mass centralization and allows more compact frame design.
- Line-beam headlights feature two-piece reflector design.

ENGINE/DRIVETRAIN

- Liquid-cooled DOHC 16-valve 999cc four-stroke inline four-cylinder engine features bore and stroke dimensions of 76mm x 55.1mm.

- Sixteen-valve cylinder head features 30.5mm intake and 24mm exhaust valves with a 12.3:1 compression ratio for efficient combustion and high horsepower.
- Larger titanium intake valves create a lighter valve train for higher rpm.
- Intake valves feature double-spring design for optimum performance at high rpm.
- Intake ports use new shot-peening technology that improves power and torque characteristics.
- Cam-pulser location between the middle cylinders allows a narrower cylinder head and frame.
- Direct shim-under-bucket valve actuation system ensures high-rpm durability and allows 16,000-mile valve maintenance intervals.
- Forged-aluminum pistons with molybdenum coating for reduced friction.
- Lightweight nutless connecting rods.
- Iridium-tip spark plugs improve fuel combustion and performance.
- Dual Stage Fuel Injection (DSFI) (see Technology Section).
- 46mm throttle bodies feature Denso injectors with lightweight valving for faster reaction time and 12 holes per injector to optimize mixture atomization, combustion efficiency and power.
- Auto-enriching system is integrated into Programmed Fuel Injection (PGM-FI) module, eliminating the need for a manual choke.





- New IACV minimizes torque reaction and smoothes response to small throttle changes through gradual reductions of air and fuel intake when the throttle is opened and closed.
- New Ignition Interruption Control system works with IACV and FI mapping to enhance driveability.
- Smaller and lighter ECU provides two 3-D fuel-injection maps for each cylinder and two 3-D ignition maps for cylinder pairs, creating ideal fuel mixture and spark-advance settings for superb rideability.
- MotoGP-derived twin ram-air system allows a high volume of cooler air to the 9.7-liter airbox for linear power delivery and incredible engine performance.
- Butterfly valves inside the ram-air ducts open and close depending on throttle opening and engine rpm for optimum performance.
- High-capacity radiator incorporates twin cooling fans and allows a more compact cowl for reduced drag coefficient.
- Maintenance-free automatic cam-chain tensioner.
- Starter gears located on the right side to produce narrow engine that allows for increased lean angle.
- Unique slipper-clutch design uses a center cam-assist mechanism for easier actuation. Unlike an ordinary slipper clutch where the pressure plate moves from side to side, the Honda clutch moves both the center cam assist and the pressure plate to provide additional slipper effect.
- Nine-plate clutch is compact and tough, featuring durable friction plate material.
- New extremely compact exhaust system incorporates a catalyzer and control valve in mid-muffler

design that reduces rear bodywork size and significantly improves mass centralization, reducing roll and yaw inertia.

- Durable #530 O-ring-sealed drive chain.

CHASSIS/SUSPENSION

- Lightweight Hollow Fine Die-Cast twin-spar aluminum frame utilizes MotoGP technology (see Technology Section).
- New aluminum subframe is lightweight and easily removed for ease of maintenance.
- MotoGP-derived Honda Electronic Steering Damper (HESD) (see Technology Section).
- 43mm inverted aluminum-slider Honda Multi-Action System (HMAS) cartridge front fork features spring preload, rebound and compression damping adjustability, and offers precise action and unparalleled rigidity (see Technology Section).
- Exclusive, MotoGP-derived Unit Pro-Link Rear Suspension (see Technology Section).
- Features radial-mounted four-piston calipers and 320mm floating discs in front and a 220mm rear disc with a single-piston caliper for exceptional stopping power.
- Front discs with 72 holes of four different diameters for lighter weight and improved feel.
- Super-light aluminum-alloy hollow-spoke wheels feature race-spec 3.5 x 17-inch front and 6.0 x 17-inch rear dimensions.
- Centrally mounted 4.7-gallon fuel tank is positioned low in the frame, increasing mass centralization and allowing a more compact design. This design positions the rider farther forward for optimum handling.



ADDITIONAL FEATURES

- Handlebars are 6.5mm higher and 2mm forward for improved ergonomics.
- High-capacity 400-watt AC generator.
- High-tech instrument display features tachometer and LCD readouts for speedometer, coolant temperature, odometer, two tripmeters, clock, mpg and average fuel consumption. A low-fuel LED light and shift-indicator light are located above the LCD.
- Line-beam headlight features two-piece reflector design utilizing two H7 bulbs for optimum light distribution and unique compact design.



- LED taillights for lighter weight and improved appearance.
- Plastic tank shell cover protects tank and airbox.
- Convenient ignition switch/fork lock for added security.
- Folding aerodynamic mirrors.
- Convenient push-to-cancel turn-signal switch.
- New maintenance-free battery is 2.2 pounds lighter.
- Transferable one-year, unlimited-mileage limited warranty; extended coverage available with a Honda Protection Plan.
- Purchase of a new, previously unregistered Honda USA–certified unit by an individual retail user in the United States qualifies the owner for a one-year complimentary membership in the Honda Rider’s Club of America® (HRCA®). Visit www.hrca.honda.com for details.

HONDA GENUINE ACCESSORIES

- Color-Matched Passenger Seat Cowl.
- U-Lock.
- CBR® Racing Cycle Cover.
- Carbon-Fiber Accents.

SPECIFICATIONS

MODEL:	CBR1000RR
ENGINE TYPE:	999cc liquid-cooled inline four-cylinder
BORE AND STROKE:	76mm x 55.1mm
COMPRESSION RATIO:	12.3:1
VALVE TRAIN:	DOHC; four valves per cylinder
INDUCTION:	Dual Stage Fuel Injection (DSFI)
IGNITION:	Computer-controlled digital transistorized with three-dimensional mapping
TRANSMISSION:	Close-ratio six-speed
FINAL DRIVE:	#530 O-ring-sealed chain
SUSPENSION:	FRONT: 43mm inverted HMAS cartridge fork with spring preload, rebound and compression damping adjustability; 4.7 inches travel REAR: Unit Pro-Link HMAS single shock with spring preload, rebound and compression damping adjustability; 5.4 inches travel
BRAKES:	FRONT: Dual radial-mounted four-piston calipers with full-floating 320mm discs REAR: Single 220mm disc
TIRES:	FRONT: 120/70ZR-17 radial REAR: 190/50ZR-17 radial
WHEELBASE:	55.4 inches
RAKE (CASTER ANGLE):	23.3°
TRAIL:	96.2mm (3.8 inches)
SEAT HEIGHT:	32.3 inches
FUEL CAPACITY:	4.7 gallons, including 1.06-gallon reserve
COLORS:	Red/Black, Black/Metallic Silver, Pearl Yellow/Black, Candy Dark Red/Metallic Silver, Black/Metallic Grey (2008 special color†)
CURB WEIGHT*:	TBD



*Includes all standard equipment, required fluids and full tank of fuel—ready to ride.
†Limited color run, less than 500.

Meets current EPA standards.
California version meets current California Air Resources Board (CARB) standards and may differ slightly due to emissions equipment.
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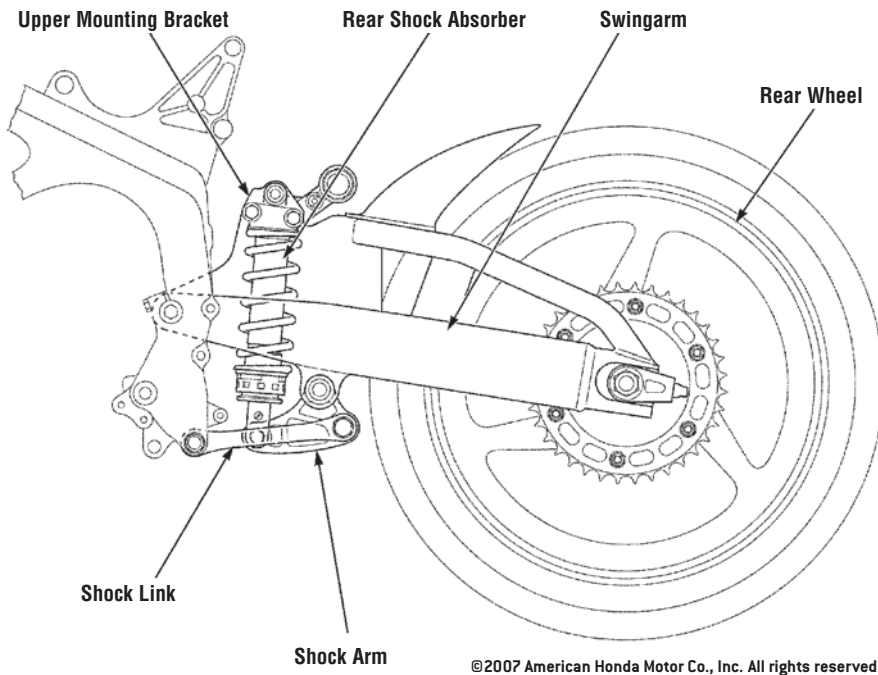




*More than ever before, the
2008 CBR1000RR reinforces a
long-standing Honda legacy of
creating breakthroughs in the
literbike class.*

UNIT PRO-LINK™ REAR SUSPENSION

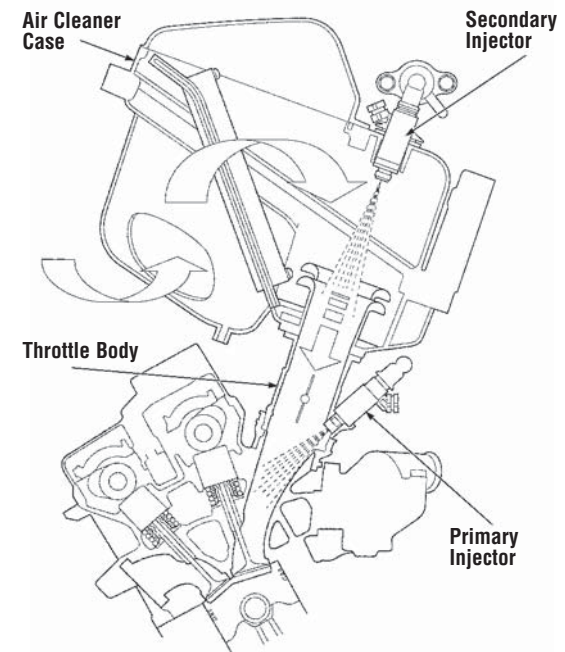
Unit Pro-Link rear suspension system is patterned after Honda's world-championship-winning MotoGP RC211V®. The upper shock mount is contained within the swingarm rather than being mounted to the frame. With no top frame mount for the shock, this unique system reduces negative suspension energy from being transmitted into the frame, allowing optimum frame rigidity and improved rideability out of corners. It also permits repositioning of the fuel tank lower and closer to the machine's center of mass.



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DUAL STAGE FUEL INJECTION SYSTEM (PGM-DSFI)

First appearing on the 2003 CBR600RR, Honda's high-performance DSFI incorporates HRC-developed two-stage fuel delivery to optimize atomization and cylinder charging at all engine speeds. DSFI system features two injectors per cylinder—one upper and one lower—controlled by an electronic control unit (ECU) that senses rpm and throttle opening. The lower injector enhances low-rpm performance while the upper injector improves mid-range and top-end horsepower. One set of injectors installed at the entrance to the intake ports provides an ideal air/fuel mixture for quick starts and strong, smooth acceleration at low-range settings. At mid-range and higher engine speeds, the system's second set of "showerhead" injectors installed in the roof of the airbox kicks in to deliver extra fuel to cool the higher-volume intake air charge. These injectors also create a denser mixture that improves volumetric cylinder-filling efficiency for stronger acceleration.





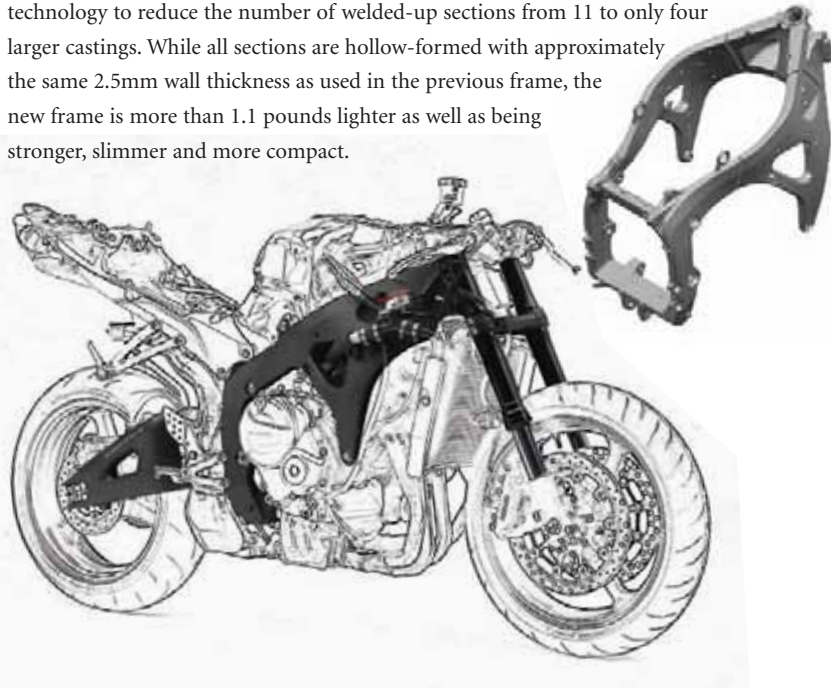
HONDA ELECTRONIC STEERING DAMPER (HESD)

The compact Honda Electronic Steering Damper (HESD) helps maintain smoothly predictable high-speed handling while having remarkably little effect at slower speeds. Given its size, the HESD unit can be easily shrouded beneath the fuel-tank cover (CBR600RR), immediately behind the steering head where it is mounted to the frame and connected to the upper triple clamp by an articulating arm that moves the unit's damping vane within its oil chamber.

In actual use, the HESD offers an exceptional level of technological sophistication and seamless operation, and allows the motorcycle to achieve new levels of handling performance by incorporating steering-geometry settings and a shortened wheelbase that would otherwise prove unfeasible without this innovative system.

HOLLOW FINE DIE-CAST (DC) FRAME DESIGN

With the introduction of the 2003 CBR600RR, Honda made a huge leap forward in the manufacturing of aluminum frames with the advent of Hollow Fine Die-Cast technology. Honda has long pioneered the use of all-aluminum frames for streetbikes and off-road motorcycles. Each requires different construction and tuning, but they often employ a collection of castings, forgings, pressings or extrusions. With previous conventional Fine DC techniques, the thinnest walls possible had been 3.5mm. With Honda's Hollow Fine DC technique an unprecedented 2.5mm wall thickness is possible, providing engineers with even greater latitude to tune frame members to specific rigidities to enhance handling. On the 2007 CBR600RR, Honda's engineers incorporated next-generation technology to reduce the number of welded-up sections from 11 to only four larger castings. While all sections are hollow-formed with approximately the same 2.5mm wall thickness as used in the previous frame, the new frame is more than 1.1 pounds lighter as well as being stronger, slimmer and more compact.



HONDA MULTI-ACTION SYSTEM (HMAS)

Motocross damper units need to be big to pump a lot of oil and cushion hard landings, but streetbikes require something different. Honda engineers developed Honda Multi-Action System (HMAS), a technology of lower pumped-oil-volume dampers that provides a major contribution to tracking response and ride quality. Both the HMAS cartridge front fork and rear damper feature Honda-exclusive internal piston construction. This innovative design employs smaller-diameter pistons to keep oil velocity high for improved damping characteristics and an expanded range of adjustability.





1993 CBR900RR



1995 CBR900RR



1996 CBR900RR



1998 CBR900RR

1993 CBR900RR

Unleashed upon an unsuspecting industry in the spring of 1992, the most potent pure-performance Honda ever redefines sportbike performance overnight. Weighing in at an inconceivable 408 pounds, the original CBR®900RR puts liter-class horsepower in a package that is 80 pounds lighter than its lightest rivals and just 2 pounds heavier than Honda's own CBR600F2. From the twin-spar aluminum chassis to the 147-pound, 893cc, 16-valve, four-cylinder engine inside, every facet of the first CBR900RR is lighter than comparable sportbikes. The result: Suddenly, there are no comparable sportbikes.

1995 CBR900RR

The 1995 CBR900RR amasses a series of strategic changes to affirm its place atop the sportbike food chain. A re-contoured upper fairing improves rider protection and aerodynamics. Lightened by 20 percent, reflector-type headlights add visual attitude. The 45mm cartridge fork and new remote-reservoir shock are re-valved for more compliance, and the fork gains full adjustability as well. An external shift linkage and new gearbox internals improve transmission performance. The 893cc engine gains a magnesium head cover, drilled footpeg guards and a host of other components redesigned in the unrelenting pursuit of less weight.

1996 CBR900RR

Sharpening the edge of its original paradigm, the CBR gains a more powerful, 919cc engine and loses nearly 5 pounds, despite such additions as a totally new, triple-box-section aluminum frame and open-rib die-cast swingarm pivot plates. A new map-type digital ignition, complete with throttle position sensor, ignites the fire over lightweight, low-friction slipper pistons for instant throttle response. A more aerodynamic front fender adds downforce to the front end at speed and cancels negative pressure in the cockpit to reduce rider fatigue. The ultimate riding tool becomes sharper and more friendly as well.

1998 CBR900RR

The price of dominance is relentless innovation. The CBR900RR gains RC45-type aluminum-composite cylinder sleeves and LUB-Coat pistons to cut weight and friction. A re-mapped 3-D ignition optimizes engine response. Stainless steel exhaust headers feed an aluminum muffler that shaves 18 ounces. Six new gearbox ratios mesh perfectly with the new 123-bhp engine to deliver astonishing thrust. An all-new tapered-box-section chassis enhances handling with a consummate balance of rigidity and compliance. Fork span is increased by 10mm to increase torsional rigidity. Dual 310mm brake rotors increase swept area by 14 percent. It all adds up to a 1998 CBR900RR that, at 397 pounds, is nearly 7 pounds lighter than the '97. Dominance never sleeps.



continued



2000 CBR929RR



2002 CBR954RR



2004 CBR1000RR

CBR900RR/CBR1000RR MODEL HISTORY

2000 CBR929RR

The overarching concept of maximum power and minimum weight remains, but all similarities to the past end there. With 160 horses per liter propelling a 379-pound package, the CBR929RR transcends conventional sportbike wisdom as only 52 years of Honda engineering can. Integrated, computer-controlled variable intake and exhaust management systems let the compact, fuel-injected, 929cc engine embarrass larger competitors with the quantity and quality of its power. The pivotless aluminum frame is just as sophisticated, delivering a ride that explodes conventional chassis orthodoxy as thoroughly as the original CBR900RR did eight years earlier. Now as then, the ultimate CBR makes ordinary sportbikes feel pretty much the same: ordinary.

2002 CBR954RR

As stark evidence to the extraordinary competition driving the forward evolution of sportbikes, a mere two years passes before the new CBR929RR is reborn as the CBR954RR. Already acclaimed by many to be the best-in-class in 929 guise, the big CBR now boasts even more power with less weight to retain its premier standing for power-to-weight ratio—the ultimate virtue in the motorcycling world because it enhances so many other areas of performance. Whether you measure performance on the racetrack or in day-to-day streetability, the CBR954RR continues to offer riders an amazing

advantage—an enviable balance of power, handling and rideability in a totally integrated package that has become a Honda hallmark.

2004 CBR1000RR

In 2004, the CBR1000RR makes a startling break with the past by reaching into the present and future, tapping wholesale into the cutting-edge technology drawn from Honda's world-dominating RC211V MotoGP racing program. The CBR1000RR is closely aligned with the RV211V's design philosophy and features a lengthy swingarm and Unit Pro-Link rear suspension, a compact engine in a forward-mounted location, a lightweight aluminum frame and a renewed emphasis on mass centralization—including a low-slung fuel tank. Add Programmed Dual Stage Fuel Injection and the innovative Honda Electronic Steering Damper (HESD), and it becomes easy to trace the DNA of the awesome RC211V throughout the very cellular structure of the new CBR1000RR.





08_CBR1000RR_cover



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08_CBR1000RR_BlkJSil

2008 CBR1000RR IMAGE GUIDE



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08_CBR1000RR_RedBlkJSil



08_CBR1000RR_YelBlkJ



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08_CBR1000RR_Det_03



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08_CBR1000RR_Det_05



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08_CBR1000RR_Det_09



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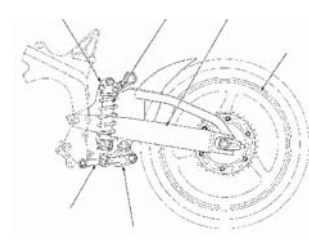
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08_CBR1000RR_Tech_03



08_CBR1000RR_Tech_04



08_CBR1000RR_Tech_05



08_CBR1000RR_Tech_06



08_CBR1000RR_Tech_07



08_CBR1000RR_Tech_08



1993 CBR900RR



1995 CBR900RR



1996 CBR900RR



1998 CBR900RR



2000 CBR929RR



2002 CBR954RR



2004 CBR1000RR

Honda HISTORY AND INNOVATION



Mr. Honda as a
young man 972



Mr. Honda
973



Mr. Honda's Curtiss Car
974



Honda's Pico Building
975



1963 You Meet the Nicest
People Ad 976



1949 Dream D
977



1949 Dream D Engine
978



1949 Model C
979



1949 Model C Engine
980



1958 C100 Super Cub
981



1958 Benly C 90
982



Benly CB92 Super Sport
983



1960 RC143 125
984



1962 CB77 Super Hawk
985



1962 RC112
986



1966 RC166 250
987



1966 RC116
988



1966 RC149
989



1966 RC181
990



1969 CB750
991



1970 ATC
992



1973 CR250M Elsinore
993



1978 CX500
995



1981 CR250R Elsinore
996



1985 NSR250
997



1985 NSR500
998



1997 NSR500
999



1992 NR750 Piston
1000

ENVIRONMENT AND SAFETY



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Printed in U.S.A.