



Powersports Press Department / Motorcycle, ATV, MUV and PWC  
**PRESS INFORMATION**

## Honda Combined ABS

On June 9, 2008, Honda announced the world's first electronically controlled braking system for supersport motorcycles: Combined ABS. Combined ABS is offered as an optional configuration on Honda's CBR600RR and CBR1000RR for the 2009 model year, and provides a whole new dimension of braking performance suited specifically to supersport riding conditions as well as day-to-day street use.

Combined ABS is a new advanced braking system designed specifically for supersport motorcycles. It is the most advanced braking system offered to the motorcycling public, one that employs an Anti-lock Braking System (ABS) through all-new technology.



*The components that comprise Combined ABS are compact and lightweight, and they are situated close to the bike's center of mass for enhanced handling.*

Honda's Combined ABS represents the first use in a supersport street bike of a braking system that incorporates an Electronic Control Module (ECM) to manage the system and provide accurate braking force distribution to both wheels. This ensures precise and predictable brake operation without concern for wheel lockup in straight-line conditions.

Combined ABS minimizes changes in chassis attitude under maximum braking conditions; even under the highest levels of deceleration, the bike retains a neutral position to virtually eliminate rear wheel lift. Application of rear brake does not result in immediate front brake activation unless rear-wheel lock-up is sensed, allowing an experienced rider to use the rear brake like a traditional non-linked unit during spirited riding such as track days for outstanding speed, suspension and steering control.

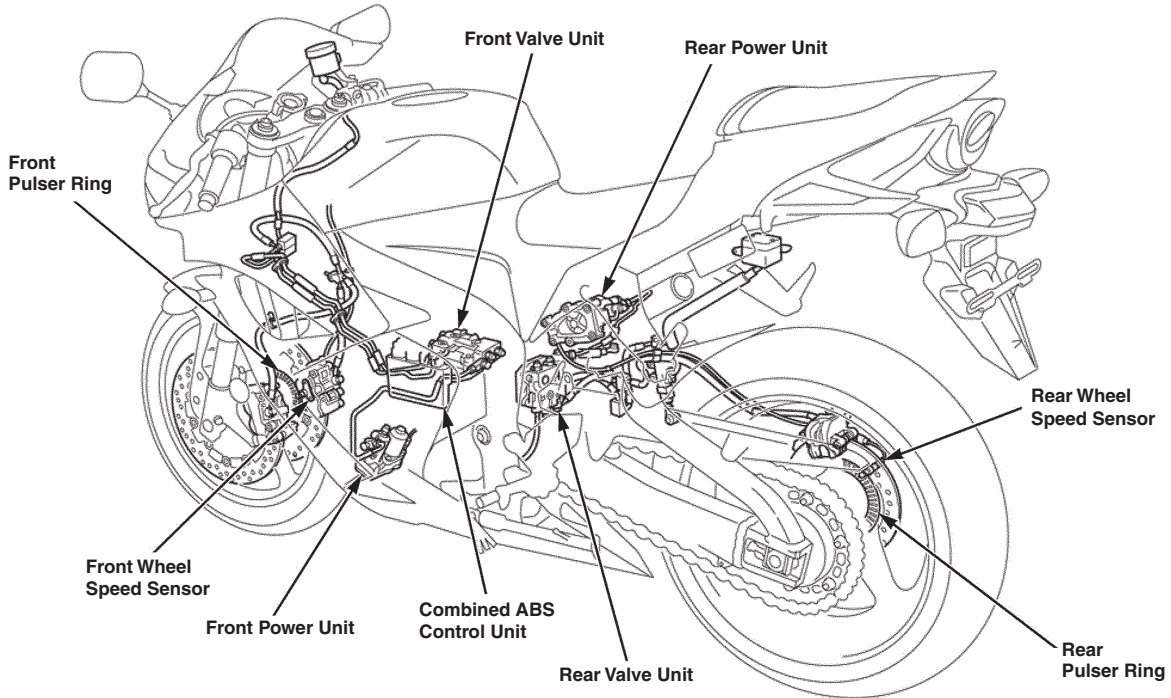
### **Combined ABS offers four main features:**

1. Immediate measurement of rider braking input allows for distribution of braking force that minimizes chassis reaction, maintaining better braking control when slowing and stopping.
2. Electronic control of braking application provides distribution of braking force to both wheels.
3. Electronically controlled ABS ensures appropriate triggering of the ABS action when needed, together with smooth ABS intervention.
4. Small, relatively lightweight component size means that Combined ABS is well integrated in the motorcycle design, enhancing mass centralization for excellent overall handling.

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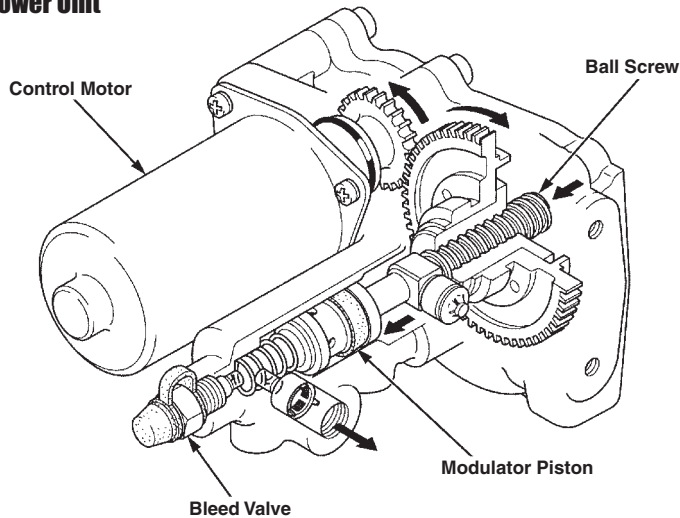
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Conventional CBS/ABS designs utilize a pressure control valve, a delay valve, three-piston calipers, parallel brake lines and a front fork mounted secondary master cylinder. This new electronically controlled Combined ABS in contrast eliminates the pressure control and delay valves and secondary master cylinder, and uses a standard caliper design resulting in less unsprung weight.

For each wheel, Combined ABS incorporates a hydroelectronic valve unit containing a stroke simulator, which is a rider feedback system producing a traditional feeling of resistance at the brake lever and pedal. The system also incorporates two Electric Power Units (EPU).

**Power Unit**



Within the front and rear valve units, two electronic sensors detect rider input pressure on the brake lever/pedal and feed the data to the ECM. The ECM interprets the signals and sends activation commands to the front and rear EPUs. Within each EPU, a motorized gear-driven ball screw applies pressure against a piston to produce hydraulic braking pressure that is transferred to the respective brake caliper.

In ABS mode, the ECM reacts to changes in wheel speed to rapidly decrease/increase braking pressure at the

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threshold of wheel lockup. Operation is seamless—virtually undetectable because the ECM is capable of hundreds of calculations and commands every second, and it continuously adjusts the magnitude and distribution of hydraulic pressure to each wheel. This system is far advanced compared to designs that rely on mechanical pressure control valves for ABS intervention. With this system, the lever and pedal pressure remain consistent without the pulsing associated with some ABS systems.

To simulate brake feel in this innovative system—in both ABS and normal operating modes—each stroke simulator contains two rubber cushions of differing density that return increasing amounts

of resistance

as brake lever/pedal stroke increases. This yields familiar brake feedback to the rider, sensations that are virtually indistinguishable compared to those generated by traditional hydraulic brake systems found on similar supersport bikes.

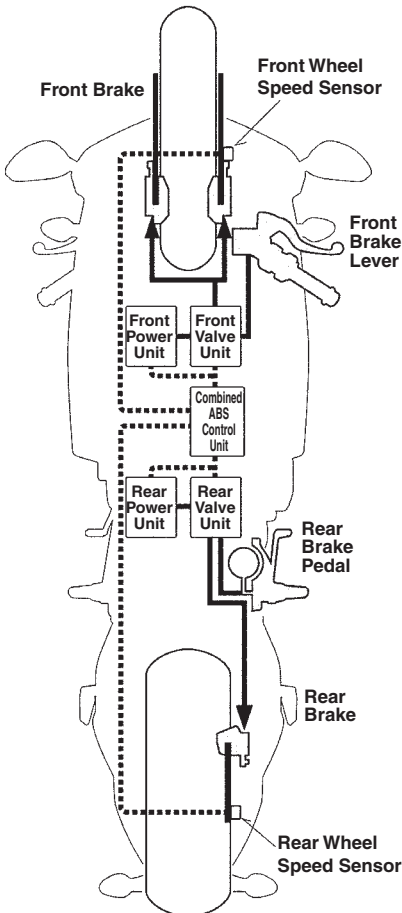
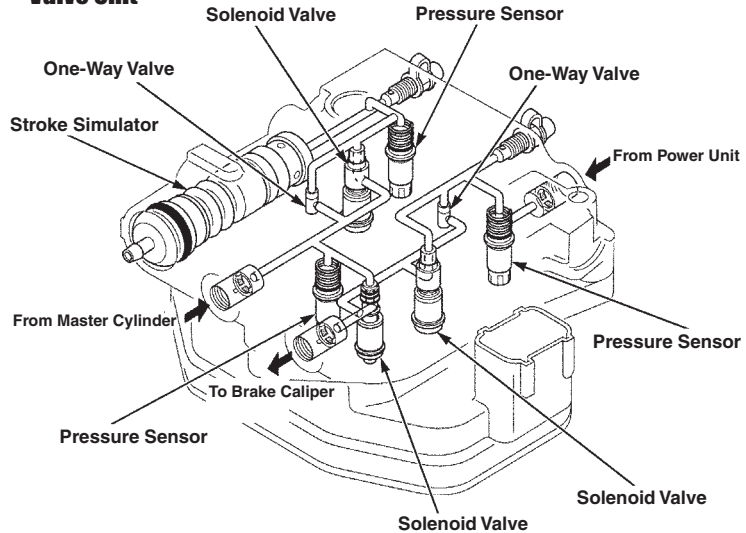
The components designed for Combined ABS are smaller and lighter than those used in conventional hydraulic ABS designs, which allowed Honda engineers to locate the components low and near the center of the motorcycle. Moving ABS hardware off of the front fork and swingarm reduces unsprung weight and enhances overall mass centralization, which preserves the excellent handling of the CBR600RR and CBR1000RR.

On the CBR1000RR, changes to the charging system to accommodate the increased draw of the electrical components include a higher-capacity alternator with enhanced oil cooling, and a 10-amp-hour (up from 7 AH) battery. The rear under-fender is enlarged to accommodate the larger battery and this under-fender along with a new, larger left-side engine cover help hide the rear EPU.

As configured on the CBR600RR, Honda engineers reduce weight on the front fork by removing 400 grams from the front brake caliper using a new mono-block design similar to the CBR1000RR caliper. Due to space limitations imposed by the underseat exhaust system, the rear EPU is located near the rear shock. This necessitated redesigning the rear shock with a remote reservoir to allow for mounting of the EPU. A wider exhaust pipe cover in the footpeg area masks this EPU.

The 2009 CBR1000RR with Combined ABS has an MSRP of \$12,999 and will be available in January of 2009. The 2009 CBR600RR with Combined ABS has an MSRP of \$10,799.

**Valve Unit**



# 2009 Honda CBR600RR/ CBR600RR ABS

A winner on the racetrack and in magazine comparison tests, the light, compact and powerful Honda CBR600RR raises performance standards to new heights in the middleweight class, and is now available with electronic Combined ABS.

## FEATURES & BENEFITS

### New for 2009

- Increased mid-range power from crossover balance tubes on exhaust and an exhaust pressure valve in the muffler similar to the valve used in the CBR1000RR.
- Intake ports use the latest shot-peening technology that improves power and torque characteristics.
- New bodywork for a sleek, race-ready look.
- New lightweight turn signals.
- Radial-mounted monoblock four-piston front calipers.
- CBR600RR C-ABS is equipped with a patented, electronically controlled system for supersport motorcycles: Combined ABS. Combined ABS merges the benefits of a brand-new Anti-lock Braking System (ABS) and the ability to apply braking forces to both wheels into one electronically controlled system that blends the advantages of both.
- Exciting new colors: Red/Black, Black/Bright Green Metallic, Metallic Black, Phoenix, Pearl White/Pearl Blue/Red (2009 special color!)

### Unique Features

- Exclusive, MotoGP-derived Unit Pro-Link® Rear Suspension.
- Dual Stage Fuel Injection System (PGM-DSFI) features two injectors per cylinder.
- MotoGP-derived Honda Electronic Steering Damper (HESD).
- High-revving engine redlines at 15,000 rpm.
- MotoGP-style center-up exhaust system.
- 41mm Honda Multi-Action System (HMAS) inverted front fork.
- Centrally located fuel tank increases mass centralization for a more compact frame design.
- Line-beam headlights feature three-piece multi-reflector design.

### Engine/Drivetrain

- Liquid-cooled DOHC 16-valve 599cc four-stroke inline four-cylinder engine features oversquare bore and stroke of 67mm x 42.5mm.
- Idle-Air Control Valve (IACV) minimizes torque reaction and smoothes response to small throttle changes through gradual reductions of air and fuel intake.
- Oil jets located beneath the pistons for extra friction reduction and cooling.
- Iridium-tip spark plugs improve fuel combustion and performance.
- Non-resonance knock sensor maintains optimum spark advance while constantly monitoring combustion performance during mid- to high-rpm operation.
- Nose-mounted, two-stage ram-air system provides high volume of cool air to the airbox for linear power delivery and incredible engine performance.
- Lightweight magnesium head cover.
- Cylinder head features angled valve insets to improve airflow.

- Cylinder head features two springs per intake valve and one spring per exhaust valve for optimum high-rpm valve operation and durability.
- Direct shim-under-bucket valve actuation ensures high-rpm performance and durability with 16,000-mile maintenance intervals.
- Molybdenum shot-peening on pistons reduces friction.
- Lightweight, forged-aluminum pistons incorporate special shot-peening for added strength.
- Nutless connecting rods contribute to reduced weight and quicker acceleration.
- Light neodymium magnet ACG.
- Lightweight stainless-steel 4-into-1 exhaust features inline-exhaust valve to control exhaust pressure for increased performance.
- Double-pivot tensioner for cam-chain durability.
- Smooth-shifting close-ratio six-speed transmission with ratios closely matched to the engine's powerband.

### Chassis/Suspension

- Hollow Fine Die-Cast (DC) frame uses four large castings for ultra light weight.
- Light aluminum steering stem.
- 41mm inverted HMAS cartridge front fork features spring preload, rebound and compression damping adjustability for precise suspension tuning.
- Exclusive, MotoGP-derived Unit Pro-Link Rear Suspension.
- Radial-mounted monoblock four-piston front calipers feature chromium-plated aluminum pistons and squeeze lightweight 310mm floating discs in front and a 220mm rear disc with a single-piston caliper for exceptional stopping power.
- Vertical-piston master-cylinder system produces superior leverage ratio at the front brake lever for higher braking efficiency, excellent feel and controllability. This layout permits the use of a longer brake lever, which means more braking force with less effort from the rider.
- CBR600RR ABS features Honda Combined ABS. This all-new ECM-controlled (Electronic Control Module), hydraulically actuated system provides accurate braking force distribution to both wheels. ABS is controlled by a hydro-electronic unit and stroke simulator to ensure precise operation. Benefits include consistent lever pressure without the pulsing often associated with ABS. Application of rear brake does not result in immediate front brake activation unless lock-up is sensed, allowing an experienced rider to use rear brake in a normal manner during spirited riding. Combined ABS components are smaller and lighter than conventional hydraulic ABS designs, and have been located nearer to the center of the machine, enhancing mass centralization and reducing unsprung weight.

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## Additional Features

- Industry-leading ergonomic design features maximum rider comfort for minimum fatigue in all riding conditions.
- Centrally mounted 4.8-gallon fuel tank is positioned low in the frame, increasing mass centralization and allowing a more compact design.
- Plastic tank shell cover protects tank and airbox.
- Line-beam headlights feature three-piece multi-reflector design utilizing two H7 bulbs for optimum light distribution and a unique compact design.
- Instrumentation is very compact and features LCD panel with tachometer, odometer, twin tripmeters, speedometer, fuel gauge and clock.
- Attractive, hollow-spoke aluminum-alloy wheels feature race-spec 3.5 x 17.0-inch front and 5.5 x 17.0-inch rear dimensions.
- One-piece fan assembly for maximum cooling efficiency.
- Maintenance-free battery.
- Compact rear-cowl storage compartment for U-type locking devices under the passenger seat (*lock not included*).

- Pivoting, aerodynamic mirrors.
- Integrated ignition-switch/fork lock for added security.
- Convenient push-to-cancel turn-signal switch.
- Transferable one-year, unlimited-mileage limited warranty; extended coverage available with a Honda Protection Plan.
- When you buy a new Honda Powersports Product, you may be eligible to receive a complimentary one-year membership in the Honda Riders Club of America® which includes an exclusive Members-only magazine, rider training benefits, access to the Members-only Clubhouse Web site and much more. Some limitations apply. For more information on the HRCA® log on to [hrca.honda.com](http://hrca.honda.com).

## Honda Genuine Accessories

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

## 2009 SPECIFICATIONS

**MODEL:** CBR600RR / CBR600RR ABS

**ENGINE TYPE:** 599cc liquid-cooled inline four-cylinder

**BORE AND STROKE:** 67mm x 42.5mm

**COMPRESSION RATIO:** 12.2:1

**VALVE TRAIN:** DOHC; four valves per cylinder

**INDUCTION:** Dual Stage Fuel Injection (DSFI) with 40mm throttle bodies, Denso 12-hole injectors

**IGNITION:** Computer-controlled digital transistorized with 3-D mapping

**TRANSMISSION:** Close-ratio six-speed

**FINAL DRIVE:** #525 O-ring chain

### SUSPENSION

**Front:** 41mm 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; 5.1 inches travel

### BRAKES

**Front:** Dual radial-mounted four-piston calipers with 310mm discs

**Rear:** Single 220mm disc; **Honda Combined ABS**

### TIRES

**Front:** 120/70ZR-17 radial

**Rear:** 180/55ZR-17 radial

**WHEELBASE:** 53.9 inches

**RAKE (CASTER ANGLE):** 23.5°

**TRAIL:** 97.7mm (3.9 inches)

**SEAT HEIGHT:** 32.3 inches

**FUEL CAPACITY:** 4.8 gallons, including 0.9-gallon reserve

**COLORS:** Red/Black, Black/Bright Green Metallic, Metallic Black, Phoenix, Pearl White/Pearl Blue/Red (2009 special color†)

**CURB WEIGHT\*:** 410 pounds / **432 pounds**

† Limited color run, less than 500

\*Includes all standard equipment, required fluids and full tank of fuel—ready to ride. Meets current EPA standards.

California version meets current CARB standards and may differ slightly due to emissions equipment.

# 2009 Honda CBR1000RR/CBR1000RR ABS

The CBR1000RR is the lightest, most compact and best performing motorcycle in its class, making it the standard against which all other literbikes are measured. And for 2009, it's available with Honda's high-tech electronically controlled Combined ABS for the ultimate in sportbike braking performance.

## FEATURES & BENEFITS

### New for 2009

- New lightweight turn signals.
- CBR1000RR ABS is equipped with a patented, electronically controlled system for supersport motorcycles: Combined ABS. Combined ABS merges the benefits of a brand-new Anti-lock Braking System (ABS) and the ability to apply braking forces to both wheels into one electronically controlled system that blends the advantages of both.
- CBR1000RR ABS features higher output ACG with oil jet hole for improved cooling and higher capacity battery.
- Exciting new colors:  
CBR1000RR - Repsol Edition, Pearl White/Light Silver Metallic, Black  
CBR1000RR ABS - Red/Black

### Unique Features

- Programmed Dual Stage Fuel Injection System (PGM-DSFI) features two injectors per cylinder.
- Idle-Air Control Valve (IACV) and Ignition Interrupt Control for idle stability and smoother on/off throttle response.
- Low-mount exhaust system design.
- Patented slipper clutch features cam mechanism to reduce clutch-lever pull.
- MotoGP-derived Honda Electronic Steering Damper (HESD).
- 43mm Honda Multi-Action System (HMAS) inverted front fork.
- Exclusive, MotoGP-derived Unit Pro-Link® Rear Suspension.
- Radial-mount front brake calipers combined with radial-actuated master cylinder.
- Centrally located fuel tank increases mass centralization for a more compact frame design.

### Engine/Drivetrain

- Compact, liquid-cooled DOHC 16-valve 999cc four-stroke inline four-cylinder engine features bore and stroke dimensions of 76mm x 55.1mm.
- Removable cylinder block with Nikasil-coated cylinders.
- 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 and feature double-spring design for optimum performance at high rpm.
- Intake ports use latest 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, thin-domed, high-strength pistons feature molybdenum coating for reduced friction.
- Lightweight nutless connecting rods.
- Iridium-tip spark plugs improve fuel combustion and performance.
- Dual Stage Fuel Injection (DSFI).
- 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.
- Idle Air Control Valve (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.
- Ignition Interrupt 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-tunnel 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.
- Compact, low-mount exhaust system design reduces rear bodywork size and incorporates exhaust valve and catalyst, contributing to significantly improved mass centralization and reducing roll and yaw inertia.
- 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.
- Patented 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.
- Durable #530 O-ring-sealed drive chain.

### Chassis/Suspension

- Lightweight four-piece Fine Die-Cast, twin-spar aluminum frame utilizes latest MotoGP technology.
- Aluminum subframe is lightweight and easily removed for ease of maintenance.

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- MotoGP-derived, next-generation Honda Electronic Steering Damper (HESD).
- 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.
- Exclusive, MotoGP-derived Unit Pro-Link Rear Suspension.
- Radial-mounted monoblock four-piston front calipers feature chromium-plated aluminum pistons and squeeze lightweight 320mm floating discs in front and a 220mm rear disc with a single-piston caliper for exceptional stopping power.
- CBR1000RR ABS features Honda's electronic Combined ABS. This all-new ECM-controlled (Electronic Control Module), hydraulically actuated system provides accurate braking force distribution to both wheels. ABS is controlled by a hydroelectronic unit and stroke simulator to ensure precise operation. Benefits include consistent lever pressure without the pulsing often associated with ABS systems. Application of rear brake does not result in immediate front brake activation unless lock-up is sensed, allowing an experienced rider to use rear brake in a normal manner during spirited riding. Combined ABS components are smaller and lighter than conventional hydraulic ABS designs, and have been located nearer to the center of the machine, enhancing mass centralization and reducing unsprung weight.
- 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.
- Handlebars are repositioned forward for excellent ergonomics.
- High-capacity 400-watt AC generator (non-Combined ABS model).
- High-tech instrument display features tachometer and LCD readouts for speedometer, coolant temperature, odometer, two tripmeters, clock, mpg, average fuel consumption and reserve fuel used. 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.
- Front turn signals integrated into folding aerodynamic mirrors.
- Plastic tank shell cover protects tank and airbox.
- Convenient ignition switch/fork lock for added security.
- Convenient push-to-cancel turn-signal switch.
- Maintenance-free high-capacity battery.
- Transferable one-year, unlimited-mileage limited warranty; extended coverage available with a Honda Protection Plan.
- When you buy a new Honda Powersports Product, you may be eligible to receive a complimentary one year membership in the Honda Riders Club of America® which includes an exclusive Members-only magazine, rider training benefits, access to the Members-only Clubhouse Web site and much more. Some limitations apply. For more information on the HRCA® log on to [hrca.honda.com](http://hrca.honda.com).

#### Additional Features

- Iconic Honda Wing tank badge.
- Lightweight aluminum sidestand.

#### Honda Genuine Accessories

- Color-Matched Passenger Seat Cowl.
- CBR® Racing Cycle Cover (for indoor use).
- Carbon-Fiber Accents.
- Outdoor Cycle Cover.
- "E-Cushion" Seat for greater comfort.

#### 2009 SPECIFICATIONS

**MODEL:** CBR1000RR / CBR1000RR ABS

**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 3-D 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; 4.3 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

**Honda electronic Combined ABS**

#### 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:

CBR1000RR - Repsol Edition (Blue/White/Orange/Red), Pearl White/Light Silver Metallic, Black

**CBR1000RR ABS - Red/Black**

**CURB WEIGHT\*:** 439 pounds / **461.7 pounds**

*\*Includes all standard equipment, required fluids and full tank of fuel—ready to ride.*

*Meets current EPA standards.*

*California version meets current CARB standards and may differ slightly due to emissions equipment.*