

2006 CBR 1000RR Fireblade



Hollow-section Gravity Die Cast aluminium frame features fine-tuned steering geometry for sharper steering response and more smoothly responsive handling. Excellent balance of light weight and optimised rigidity ensures exceptional handling on both street and track.



High-performance radial-mount 4-piston brake callipers grip larger-diameter yet lighter 320mm floating rotors for stronger, more responsive braking control and reduced unsprung weight. Smaller and lighter rear brake calliper also contributes to reduced unsprung weight.



Innovative Honda Electronic Steering Damper (HESD) automatically monitors vehicle speed to maintain optimum damping characteristics for more assured high-speed cornering control and easy low-speed manoeuvrability.



Larger rear drive sprocket (up from 40t to 42t) combines with stronger engine performance to achieve sharper thrusts of acceleration and stronger roll-on performance.



Lighter-weight 4-into-2-into-1 titanium and stainless steel Centre-Up exhaust system enhances mass centralisation for sharper and swifter cornering control. Features servo-operated exhaust valve for optimised performance at all engine speeds.



Front and side cowl designs modified for a sleeker and more aerodynamic look. Lower side exhaust ducts more effectively cool the radiator to reduce rider's exposure to engine heat.

Slim, low-profile dual Line Beam multi-reflector headlights provide brilliant night-time illumination and an aggressive look.



Shorter hybrid aluminium swingarm complements front fork's reduced caster angle to shorten wheelbase by 10mm for sharper handling. MotoGP-developed Unit Pro-Link suspension system mounted in swingarm isolates frame and handling from the effects of rear suspension stresses.



Lighter-weight 998cm³ Dual Sequential Fuel Injected inline-4 engine maintains overall power characteristics for an increased power-to-weight ratio and sharper acceleration. Reprogrammed fuel injection system realises smoother, more linear response.



Magnesium ACG cover complements magnesium head cover and oil pan to reduce engine weight.

2006

CBR1000RR
FIREBLADE
PRESS INFORMATION

Introduction

The 2004 introduction of the new CBR1000RR Fireblade opened an exciting new chapter in Honda Super Sports development that began back in 1992 with the release of the legendary CBR900RR, a litre-class powerhouse shoehorned into a compact middleweight's aluminium twin-spar frame that started the 'Light Is Right' revolution in the Super Sports class. A winner both on the street and on the track, the CBR900RR FireBlade set a blazing standard for big bike performance for an entire generation to come.

The CBR1000RR Fireblade followed in these historic footsteps with a step up to a full litre in displacement and entirely new engine and chassis designs based on those pioneered, tested and convincingly proven on Honda's winning MotoGP champion, the RC211V. Such high-performance features as its gravity die-cast aluminium frame, more compact, high-output engine with Dual Sequential Fuel Injection system, Unit Pro-Link rear suspension, radial-mount front brakes and a unique electronic steering damper were transferred directly from the world championship racer directly to the new Fireblade with the goal of creating not only one of the finest Super Sports street bikes to ever carve a corner, but also the base model for a new World Superbike contender in full compliance with new FIM regulations that raised the qualifying displacement of four-cylinder engine-powered machines to 1,000cc.

With such an impressive list of newly developed advances in racing technology all coming together in one competitive riding machine, the new Fireblade soon strongly reasserted its leadership of the high-performance Super Sports class, and paved the way to a strong showing in a new era of World Superbike racing.

From its very first year in production, the new Fireblade exceeded all expectations, running with the leaders in all its races in the hands of World Supersport champion and Superbike sensation, Chris Vermulean for the privateer Ten Kate Honda team, and taking the Super Sports riding world by storm with its peerless combination of breathtaking power and smooth, effortless control.

Development Concept

Building on the CBR1000RR Fireblade's already well-established successes, its development team set out on a course of careful refinement, rather than drastic redesign, since the raw fundamentals of top performance and potential for further advancement were already boldly evident in both the design and performance of the CBR. The team thus focused on a development theme conceptualising the 'Crystallisation of Racing DNA' in formulating the next generation of the strongest and most responsive handling RR yet.

Foremost among the new machine's design goals was achieving stronger performance—with no change in engine displacement—and lighter weight in the quest for both quicker acceleration and quicker handling. This stronger and lighter package of performance could then deliver a greater range of riding excitement and a more fantastic experience of Total Control when pushing the outer limits of one's own riding abilities. Translated to the track, a more impressive power-to-weight ratio would give the refined 'Blade a sharper competitive edge for future conquests at all levels of competition, right up to the World Superbike championship.

Also, in the interests of current concerns for the environment and the need for fully complying with the most stringent of engine exhaust regulations, the new 'Blade would also have to be designed to meet upcoming EURO3 standards for exhaust gas output while still delivering stronger performance, a difficult proposition at best, but a worthy goal for Honda's flagship Super Sports racing machine.

Styling

From its initial conception, the CBR1000RR Fireblade has featured strong visual and technological ties to Honda's famed RC211V MotoGP race machine. Designed first and foremost to be a street-legal realisation of Honda's highly competitive World Superbike racing technologies, the Fireblade not only looks the part of a world-class racer, it also delivers a class-leading blend of performance and handling that holds its own on both the street and the track.

For its new second generation, the Fireblade's bodywork was given a new look that more impressively expresses its sense of speed and winning performance. Front and side cowls were redesigned with a sleeker, more curvaceous and more aggressive look that still maintains strong bloodline ties to its MotoGP racing predecessor.

Detailed changes include a more pronounced indent in the front cowl and a slight redesign of the shape of the RR's distinctive 'Slimline' headlights that combine to project a more aggressive forward visage.

The fairing's new side cowls also feature more compact and rounded lines to lighten and accentuate its aerodynamic look as well as its high-speed handling, giving the 'Blade a stronger look of high performance. Moreover, the lower exhaust ducts in the side cowls more effectively draw air through the radiator to greatly reduce the rider's exposure to engine heat for enhanced riding comfort.

The Fireblade's sleek and slim seat cowl gives its rider optimal manoeuvring ease and sports riding comfort in the same aerodynamic lines, which sweep back to terminate into a sharply tapered edge. Under the tail's lower surface is cleanly integrated a brilliant, slimline LED taillight hovering over the 'centre-up' exhaust system's prominent exit port, with its newly formed decorative moulded resin flange.

Colouring Concept

The new CBR1000RR Fireblade will be released in three dynamic colour variations, leading with a sinister new black version that accentuates the 'Blade's technological superiority. Next up is an aggressive red that embodies Honda's proud racing history along with the CBR's winning ways. A dark metallic silver rounds out the selection with a look of quality and prestige that never loses touch with the CBR's MotoGP racing roots.

The 'Blade's chassis also receives some new colour touches, with its impressive hybrid aluminium swingarm receiving the same black treatment as its frame, for a darker and meaner look.

Colours

- Graphite Black (with Matte Axis Grey Metallic)
- Winning Red (with Graphite Black)
- Iron Nail Silver (with Force Silver Metallic and Graphite Black)

Engine

The Fireblade's powerful 998cm³ liquid-cooled, fuel-injected DOHC inline four cylinder engine is a touchstone of Honda's highest performance racing technologies. Primed with technological features derived directly from the history-making RC211V, this lightweight and compact powerplant delivers instantaneous thrusts of highly competitive performance from anywhere in its wide powerband.

Lighter Weight for Stronger Power

Considerable attention was focused on reducing the engine's weight while maintaining its strong maximum power output in order to realise an all-important increase in its power-to-weight ratio and overall performance. Enhancements to overall power output were achieved not with any single improvement, but rather with a collection of detailed modifications that add up to a stronger feel of performance.

To start, the cylinder head's intake ports were refined in shape and its exhaust ports increased in size for an accelerated flow of larger volumes of air/fuel mixture into the slightly smaller combustion chambers combined with faster and more forceful exhaust. The combustion chambers' reduced volume also provides a slight increase in the compression ratio, from 11.9 : 1 to 12.2 : 1, with the cumulative effect of increased combustion efficiency and subsequently optimised power output.

New dual concentric valve springs installed on the engine's intake valves also contribute to the engine's increased performance by maintaining more precise valve operation at the high engine speeds associated with racing, while complementing the operation of the single-spring exhaust valves for top performance. In a configuration used and extensively tested on HRC's race machines, this dual-spring valve closure makes possible both an extension of redline from 11,650rpm to 12,200rpm, and more assured reliability and durability when pushing the outer limits of performance. Moreover, the shape of the intake valves was changed to gain improvements in intake efficiency.

Further ensuring greater durability during extended high-speed operation is a new crankshaft made of a stronger steel alloy which provides enhanced stiffness and durability to meet the demands of racing stresses without adding extra weight.

Even the camshafts weren't overlooked in the interests of engine weight reduction, with thinner shaft wall thicknesses trimming over 450g of weight from the drivetrain.

The end result of all these changes is an increase in the Fireblade's already exceptional power-to-weight ratio for a noticeable improvement in power feel throughout the Fireblade's wide, high-output powerband, thus delivering sharper acceleration and a stronger rush of performance.

Smoother Throttle Response

The Fireblade's fuel injection system ECU was also reprogrammed to realise more linear response. The ECU's new, more simplified internal design also resulted in a 100g reduction in its weight, making yet another small but significant contribution to the Fireblade's overall weight loss.

New Magnesium ACG Cover

Making a further contribution to reduced engine and overall machine weight is a new magnesium ACG cover, which joins the engine's current magnesium head cover and oil pan to trim engine weight by approximately 100g compared to the aluminium cover it replaces.

Inside the new magnesium cover, the ACG's reduced frictional inertia contributes to sharper throttle response.

Larger Rear Drive Sprocket

To take even fuller advantage of its engine's powerful output, the Fireblade was also fitted with a larger rear sprocket (up from 40t to 42t). A seemingly minor change, this new addition complements the engine's higher revs and strong torque to deliver much sharper bursts of acceleration, both off the line and out of corners, and stronger roll-on performance for reeling in the competition down the back straights of a racing circuit.

Usually, gains made in a larger rear sprocket's sharper acceleration must be paid back in reduced top speeds, but this new engine's taller redline and strong high-end power output maintain the 'Blade's high top speed ceiling for exceptionally sharp, responsive performance.

The rear wheel and sprocket are also fitted with a new set of rear wheel dampers that better absorb the shocks of quick clutch operation and sudden jolts of drive lash during hard acceleration and deceleration, especially in the extremes of racing.

Full EURO3 Exhaust Emissions Compliance

For 2006, the CBR1000RR Fireblade features Honda's advanced oxygen-sensing HECS3 pollution control system to minimise both the production and exhaust of such harmful chemical by-products as carbon monoxide (CO), hydrocarbons (HC) and nitrous oxides (NO_x). The system also features a 300-hole active catalyser element for a greatly expanded catalytic surface area that further ensures low emissions to easily comply with the latest EURO-3 emissions regulations.

New Narrower and Lighter Weight Radiator

Ensuring that the CBR1000RR Fireblade maintains a cool head in the performance and temperature extremes of high performance, especially as associated with racing, is a large-volume aluminium radiator that seems to take up the entire area behind the front wheel. Attention paid to the shape of the radiator achieved weight savings of approximately 500g, which combine with its new hoses to reduce weight by nearly 700g.

Chassis

The CBR1000RR Fireblade burst onto the streets and Superbike racing scene in 2004 with an all-new gravity die-cast aluminium frame and advanced Unit Pro-Link rear suspension system taken directly from Honda's famed RC211V MotoGP racer. Gripping its powerful engine in a stressed-member diamond configuration that contributes to 'Blade's exceptional handling stability, this frame features light weight and a relatively simple, organic design. Its Unit Pro-Link rear suspension helps achieve lighter weight frame construction and smooth handling characteristic without transmitting rear wheel stresses to the frame.

Fine-Tuned Steering Geometry

For its new second generation, the Fireblade's chassis and frame required very little in the way of major modifications or improvements, but instead received a host of small but still important changes that add up to a significant upgrade in overall handling ease and smoother response to rider input.

First, although the 'Blade's front suspension, with its highly responsive inverted, fully adjustable cartridge-type front fork, remain essentially unchanged, the steering head's caster angle was reduced by a mere quarter of a degree, from 23 degrees, 45 minutes to 23 degrees, 30 minutes, for a reduction in trail from 102mm to 100mm that helps sharpen steering response and overall handling.

Next, to complement the rear sprocket's new final ratio, the swingarm was reduced in length by 5mm, which combines with the reduced caster angle to shorten the chassis' wheelbase by 10mm, from 1,410mm to 1,400mm.

Front and rear suspension settings remain virtually unchanged, with full pre-load, compression and rebound adjustability the order of the day for a competitive World Superbike challenger. One small change was made, however, to the 'Blade's innovative Unit-Pro-Link rear damper in the form of a lighter new aluminium spring pre-load adjuster ring to replace the steel piece used on the current model's damper.

New, Larger Front Brake Rotors

The Fireblade's superbly responsive radial-mount front disc brakes have been increased in diameter from 310mm to 320mm, for a significant increase in braking power and a greatly enhanced feel of brake control. In order to keep unsprung weight down, the thickness of the rotors was also reduced from 5mm to 4.5mm, resulting in a total reduction of 300g in weight.

Also lightening the chassis' unsprung weight is a smaller and lighter new rear brake calliper.

Lighter Exhaust System

In the further interests of minimising weight, even the 4-into-2-into-1 titanium and stainless steel exhaust system was revised in construction, trimming over 600g from its pipes, 480g from the servo-controlled exhaust valve, and an additional 380g from the 'Centre'-Up' silencer located under the seat, which not only reduces overall vehicle weight, but also contributes to the Fireblade's enhanced mass centralisation and swifter cornering control.

At the tail end of the exhaust system, the current model's three-piece decorative cover has been changed to a single moulded resin piece for a simpler and more attractive design, as well as lighter weight.

Equipment

The new 2006 Fireblade continues as the only motorcycle on the road equipped with its highly advanced Honda Electronic Steering Damper (HESD), the revolutionary electro-hydraulic unit mounted directly atop its steering head that helps maintain its smoothly predictable high-speed handling. Unlike other designs of steering dampers, HESD automatically adjusts itself for both vehicle speed and rate of acceleration, firming up gradually as speed increases to dampen and minimise sudden changes in attitude, such as might occur when encountering a large bump in a high-speed corner.

What really sets it apart, though, is its operation at low speeds. Here, its damping valve is fully opened to permit such free and unencumbered movement that it feels as if there is no damper attached at all. Offering an exceptional level of technological sophistication and seamless operation, the Honda Electronic Steering Damper effectively demonstrates Honda's commitment to pursuing advancements in riding ease and comfort, even in such a competitive Super Sports machine as the CBR1000RR Fireblade.

Optional Equipment

The new 2006 CBR1000RR Fireblade is also being released with an assortment of optional parts that have been specially designed and produced by Honda Access Corporation to improve upon aspects of its performance, comfort and security. These include:

- A motion-and vibration-sensitive AVERTO security system that emits a piercing wail if tampering is detected.
- A locking moulded plastic rear cowl that installs in place of the pillion pad for a more singularly sporty and purposefully competitive look on par with the CBR's highly competitive level of performance.
- A tilting tubular steel rear maintenance stand that lifts the motorcycle by the end of its swingarm.
- Indoor-type motorcycle cover that protects the Fireblade from grime and scuffs and other minor damage, as well as keeping it out of sight of potential thieves and tamperers.
- An adhesive 3-piece tank pad that protects the fuel tank's painted finish against damage from belt buckles and other hard objects.
- A set of two screen-printed ABS scuff pads for protection of the edges of the painted seat cowl.
- A windscreen offering enhanced wind protection for most riders.
- A tamper-resistant barrel key U-lock designed to be easily carried in the compact U-lock carrier space located under the pillion pad.

Specifications

CBR1000RR Fireblade (ED-type)

Engine

Type	Liquid-cooled 4-stroke 16-valve DOHC inline-4
Displacement	998cm ³
Bore x Stroke	75 x 56.5mm
Compression Ratio	12.2 : 1
Max. Power Output	126.4kW/11,250min ⁻¹ (95/1/EC)
Max. Torque	114.5Nm/10,000min ⁻¹ (95/1/EC)
Idling Speed	1,200min ⁻¹
Oil Capacity	3.8 litres

Fuel System

Carburation	PGM-DSFI electronic fuel injection
Throttle Bore	44mm
Aircleaner	Dry, cylindrical-type paper filter x 2
Fuel Tank Capacity	18 litres (including 4-litre LCD-indicated reserve)

Electrical System

Ignition System	Computer-controlled digital transistorised with electronic advance
Ignition Timing	8.2° BTDC (idle) ~ 45° BTDC (7,500min ⁻¹)
Sparkplug Type	IMR9C-9HES (NGK); VUH27EC (ND)
Starter	Electric
Battery Capacity	12V/10AH
ACG Output	344W
Headlights	12V, 55W x 1 (low) / 55W x 2 (high)

Drivetrain

Clutch	Wet, multiplate with coil springs
Clutch Operation	Hydraulic
Transmission Type	6-speed
Primary Reduction	1.604 (77/48)
Gear Ratios	1 2.538 (33/13)
	2 1.941 (33/17)
	3 1.578 (30/19)
	4 1.380 (29/21)
	5 1.250 (25/20)
	6 1.160 (29/25)
Final Reduction	2.625 (42/16)
Final Drive	#530 O-ring sealed chain

Frame

Type Diamond; aluminium composite twin-spar

Chassis

Dimensions (LxWxH) 2,030 x 720 x 1,118mm

Wheelbase 1,400mm

Caster Angle 23° 30'

Trail 100mm

Turning Radius 3.34m

Seat Height 831mm

Ground Clearance 130mm

Dry Weight 176kg

Kerb Weight 203kg (F: 105kg; R: 98kg)

Max. Carrying Capacity 180kg

Loaded Weight 353kg

Suspension

Type Front 43mm inverted HMAS cartridge-type telescopic fork with stepless preload, compression and rebound adjustment, 120mm axle travel

Rear Unit Pro-Link with gas-charged HMAS damper featuring 13-step preload and stepless compression and rebound damping adjustment, 135mm axle travel

Wheels

Type Front Hollow-section triple-spoke cast aluminium

Rear Hollow-section triple-spoke cast aluminium

Rim Size Front 17M/C x MT3.50

Rear 17M/C x MT6.00

Tyre Size Front 120/70 ZR17M/C (58W)

Rear 190/50 ZR17M/C (73W)

Tyre Pressure Front 250kPa

Rear 290kPa

Brakes

Type Front 320 x 4.5mm dual hydraulic disc with 4-piston callipers and sintered metal pads

Rear 220 x 5mm hydraulic disc with single-piston calliper and sintered metal pads

All specifications are provisional and subject to change without notice.