



**HONDA** *Come ride with us.*

# CBR900RR

## FireBlade



CBR900RR - 981 - E

***Introduction***

Introduced in 1992, the CBR900RR Fireblade has come to dominate the litre-class Super Sports category with a heady combination of hard-charging engine performance and smooth, responsive handling, all in the remarkably compact weight and proportions of a 600cc-class machine. Originally introduced as a 'no-holds-barred' high-performance Super Sports machine meant to appeal to a relatively small segment of the motorcycle riding public, the Fireblade soon gained an astounding level of world-wide popularity, becoming a highly-regarded best seller that played a central part in reviving the 900cc Super Sports category.

Guided in its development by the central design theme of 'Total Control', the Fireblade has undergone several stages of evolutionary development over the last six years that have assured its place as

Honda's undisputed high-performance Super Sports flagship and one of the all-time best sellers in its displacement class. It has also established quite an enviable record in competition, winning two AMA Open Class Endurance Races

in 1996, twice winning the F-USA championship, and even taking the chequered flag at the legendary Isle of Man in 1996 and 1997.



***Introduction***

For 1998, the Fireblade's development team invested extensive efforts to further refine its overall balance of performance while achieving even lighter weight—in fact, the lightest weight in the 750 – 1,000cc class. However, although the ultimate in light weight was certainly a prime development goal, any improvements here had to be referenced to the overall concept of Total Control while maintaining the Fireblade's superb quality of execution.

With its increased power, optimized aerodynamics, refined handling characteristics and remarkably lighter 180kg dry weight, the new 1998 CBR900RR Fireblade delivers a seamless balance of performance, manoeuvrability and Total Control that extends its appeal beyond the highly focused aspirations of sports riding experts to encompass an ever-wider range of riders with its expanded range of comfort and easier, more confidence-inspiring control.



***Styling Concept***

Since the Fireblade's overall proportions already currently exhibit a nearly ideal balance of aggressive Super Sports styling and aerodynamic efficiency, efforts this year were made to gain refinements in wind protection that help improve comfort and minimize riding fatigue while maintaining the distinctive good looks that define Honda's top-selling Super Sports flagship.

With this in mind, the Fireblade's upper cowl and screen were redesigned to enhance air management and reduce wind resistance with a wider front profile and an organic leading edge that looks almost shark-like in its line.

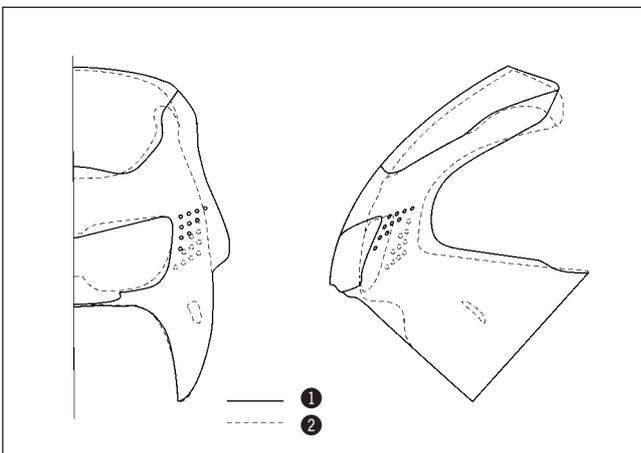
To complement the new lines, the Fireblade's dual multi-reflector headlight was modified to give the shape of its 'cat's eyes' a more sinister stare. Although the fuel tank and middle and lower fairing cowls are untouched, the seat and tail cowl was

subtly redesigned with a slightly wider profile that better complements the Fireblade's total form. A new tapered swingarm provides solid, sculpted evidence of its technological sophistication.

**Upper Fairing Comparison**

- ① *New CBR900RR*
- ② *Current Model*

**Upper Fairing Comparison**



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***Colouring Concept***

With its vertically overlaid 'Double R' pattern playing the most prominent role in its new graphics, the Fireblade's three exciting colour variations give powerful emphasis to its standing as Honda's premier 'Pure Sports' riding machine.

These new colour variations include:

1. An aggressive new fluorescent orange with stripes of grey that projects an exciting image of the Fireblade's always-dynamic performance while setting a new direction in Super Sports styling.

2. A brilliant tricolour image that combines a lively red with the contrasting colours of deep purple and white to place strong emphasis on the Fireblade's quick and sporty nature.

3. A dark and quiet three-colour monotone image that imparts a sinewy look of power and sophistication.

**Colours**

- Candy Blaze Orange (with Heavy Grey Metallic)
- Sparkling Red (with Uranus Violet & Ross White)
- Black (with Titanium Metallic & Moonstone Silver Metallic)



*Engine*

**Wider Torque and Sharper Response**

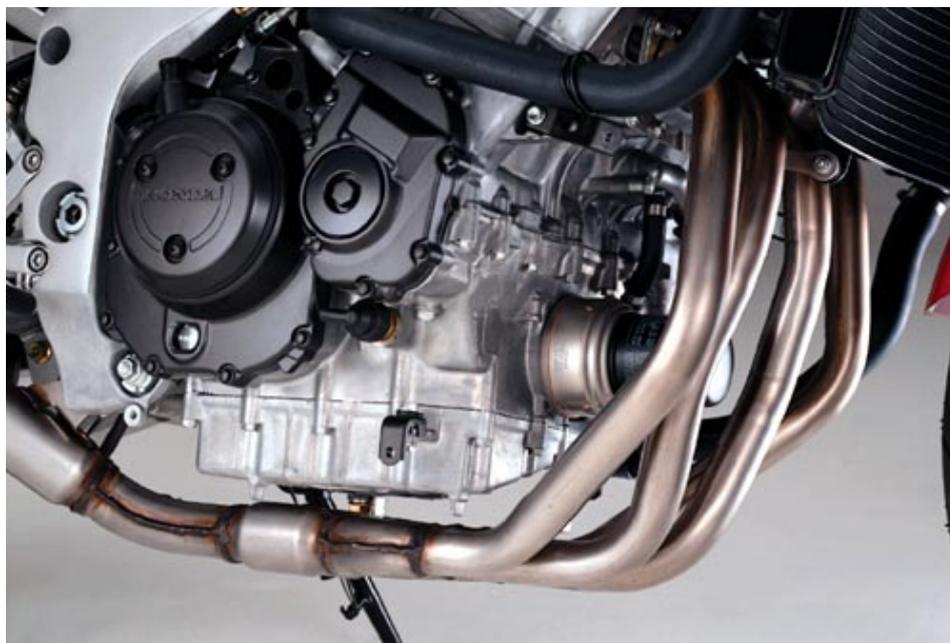
Since its 1992 introduction, the CBR900RR Fireblade's engine has won unanimous praise for delivering an unrivalled combination of compact size, light weight, and outstanding performance. Having received gradual upgrades in the interests of extracting more easily accessible levels of ever-higher performance through reductions in weight and power-robbing internal friction, this remarkable powerplant undergoes yet another evolution in its balance of performance under the development theme of 'Sharper Response'.

**Responsive,  
High-Powered 918.5cm<sup>3</sup> Engine**

In the ongoing quest to minimize engine weight while maintaining optimal strength and reliability in all critical areas, computer-assisted engineering (CAE) was extensively used to extract small yet significant improvements in the engine's efficiency and performance wherever possible. Although no major modifications were made to the engine's fundamental design—and such major components as the crankshaft, connecting rods and camshafts were left untouched—modifications to fully 80% of its internals combine to realize yet another boost in the CBR's power (from 128 to 130PS

(DIN)) and a significant increase in torque (from 9.3 to 9.4kg-m (DIN)). This was achieved without increasing displacement or adding any complicated induction systems. Instead, the shapes of the combustion chambers and the intake and exhaust ports were all carefully refined to reduce air flow resistance for sharper response.

Although the Fireblade's intake system, aircleaner and 38mm CV-type carburetors are all essentially the same as on the current model, the carburetors' vacuum piston size was changed in order to realize sharper speed transitions and stronger acceleration from virtually any speed.



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**Engine**

**New Metal Composite Cylinder Sleeves**

In the interests of reducing friction and heat buildup for longer-lasting top performance and assured reliability, the Fireblade now features new metal composite cylinder sleeves like those first introduced in the '94 RVF/RC45. Formed of sintered aluminium powder impregnated with ceramic and graphite, these new sleeves are 640 grams lighter in weight than the conventional steel sleeves they replace, and offer superior heat dissipation properties

to keep this vital part of the engine running cool. Mounting three rings each, the pistons feature a lightweight, low-friction 'slipper' design for top performance, and are coated with a new 'LUB-Coat' solid lubricant that helps minimize friction between the piston and cylinder wall.

with a new timing map that takes advantage of the engine's reduced internal friction and the modifications to the combustion chambers and ports to realize precise response, optimal performance and acceleration, and smoother transitions throughout the rev range.

**Reprogrammed Map-Type Digital Ignition**

The Fireblade's high-accuracy three-dimensional map-type digital ignition system was reprogrammed

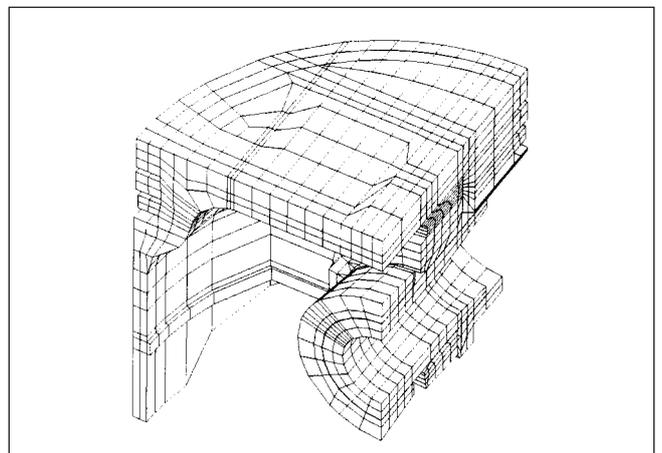
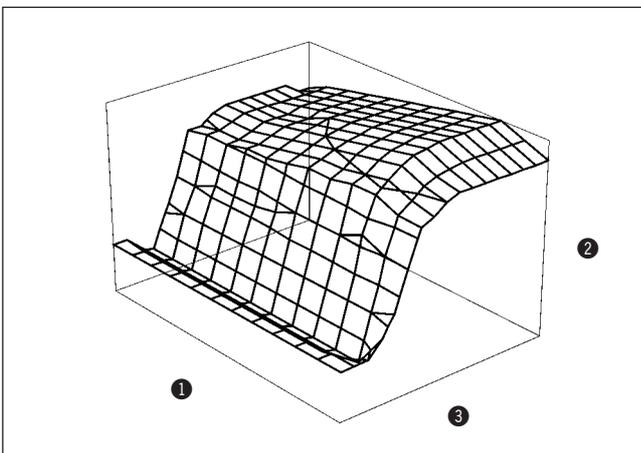
**Ignition Timing Map**

- ① *Throttle Position*
- ② *Ignition Timing*
- ③ *Engine Speed*



**Ignition Timing Map**

**Lightweight Slipper Piston**



CBR900RR - 987 - E

**Engine**

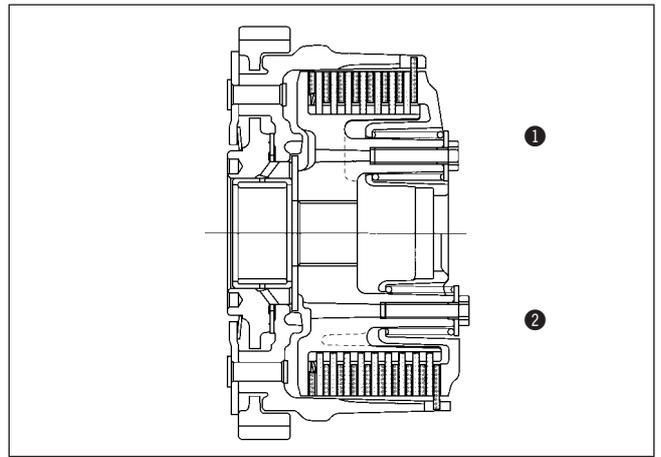
**New, More Compact Clutch**

To reduce mass for sharper acceleration, the Fireblade features a new, more compact clutch. Its newly refined friction disc material allows the use of fewer plates (down from 10 to 8) while maintaining the same strong performance and reliability. Refinements to the powertrain and transmission ratios ensure an opti-

mal band of top performance is maintained throughout the engine's peak rev range. Likewise a 3.3% increase in the top gear ratio combines with the engine's stronger performance to realize higher top speeds, more comfortable cruising at lower engine speeds and reductions in fuel consumption.



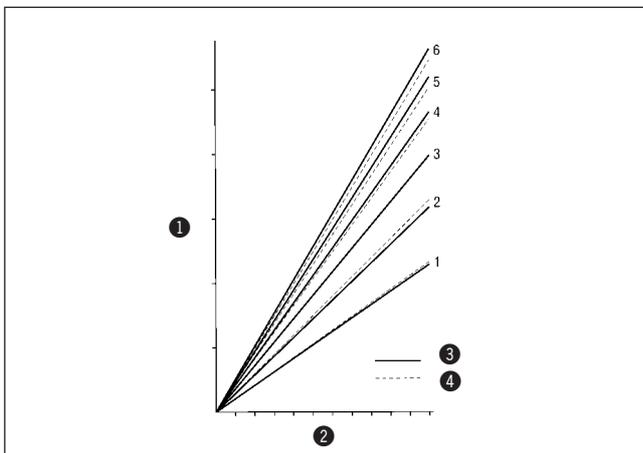
**Clutch Comparison**



**Clutch Comparison**

- ① *New CBR900RR*
- ② *Current Model*

**Gear Ratio Comparison**



**Gear Ratio Comparison**

- ① *Vehicle Speed*
- ② *Engine Speed (rpm)*
- ③ *New CBR900RR*
- ④ *Current Model*

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**Engine****Enhanced Cooling Efficiency**

To further ensure that the Fireblade maintains its optimal cooling efficiency, the volume of its radiator was increased by adding another row to the core, realizing a 7% increase in overall cooling capacity. Small but significant improvements to the engine's coolant circulation also ensure strong, stable performance under a widely varying range of ambient temperature conditions.

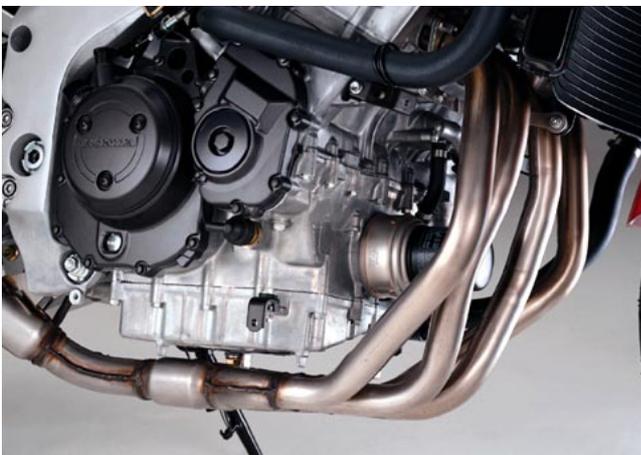
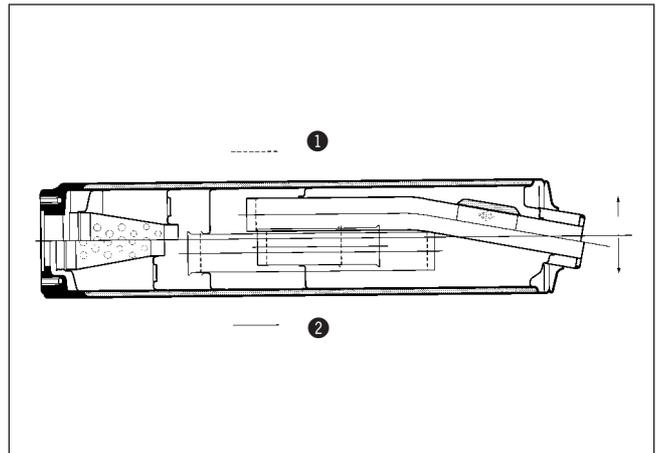
**New All-Stainless Steel Exhaust System**

The Fireblade's exhaust system is now made entirely of rugged stainless steel tubing stretching from the engine's exhaust ports all the way to the flange of its lightweight impact-extruded aluminium canister-style silencer. The silencer itself receives a 5% volume increase that reduces exhaust resistance for sharper power output. Although longer,

the silencer is also lighter than the unit it replaces. (Swiss and Austrian models feature black-painted steel pipes joining into a single stainless steel tube that feeds into the silencer.)

**Exhaust Silencer Comparison**

- ① *Current Model*
- ② *New CBR900RR*

**Exhaust Silencer Comparison**

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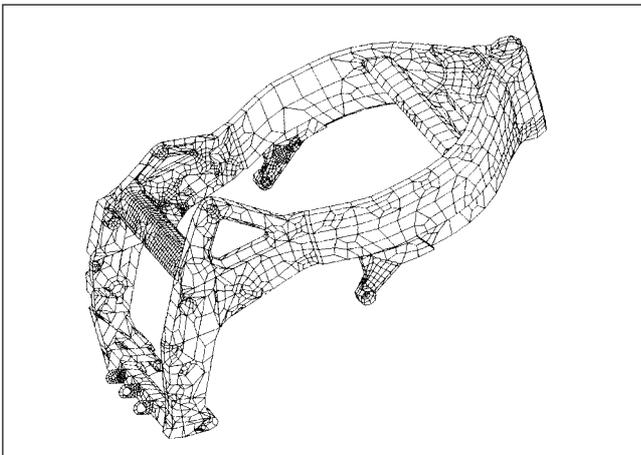
**Chassis**

**Total Control for Sharper Handling**

Consistently hailed for its light weight, compact proportions and responsive handling, the Fireblade takes another step in its pursuit of Total Control with optimized handling and easier manoeuvrability at all speeds achieved under its aggressive new development theme of 'Sharper Handling'. In the quest of achieving lighter weight and sharper performance, the Fireblade's chassis and frame also received minute yet extensive

modifications. These included detailed changes in the thickness of the frame's main components to increase strength in key areas and further optimize its balance of rigidity while reducing weight wherever possible. Combined with modifications to the engine, weight gains that resulted from the strengthening of certain components were counter-balanced by weight losses elsewhere, resulting in a total overall weight savings of 3 kilograms.

**Refined Aluminium Twin-Spar Frame**



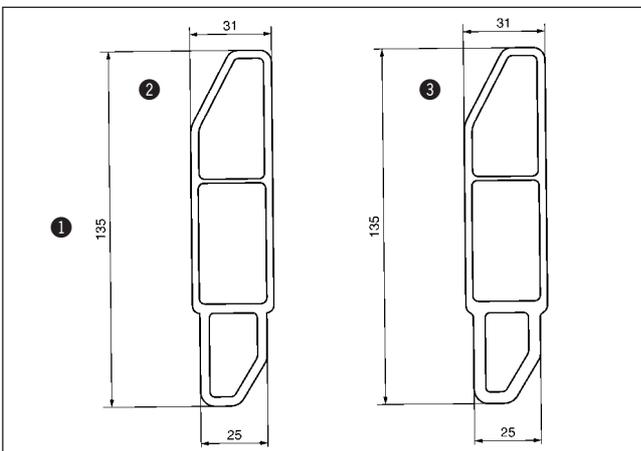
**Frame Spar Cross-Section Comparison**

- ① (Unit: mm)
- ② Current Model
- ③ New CBR900RR

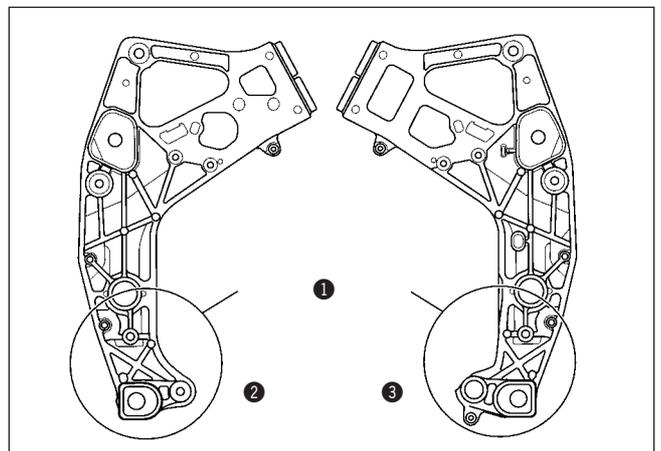
**Improved Inner Pivot Plate Design**

- ① Modified Rib Casting
- ② Left Side
- ③ Right Side

**Frame Spar Cross-Section Comparison**



**Improved Inner Pivot Plate Design**

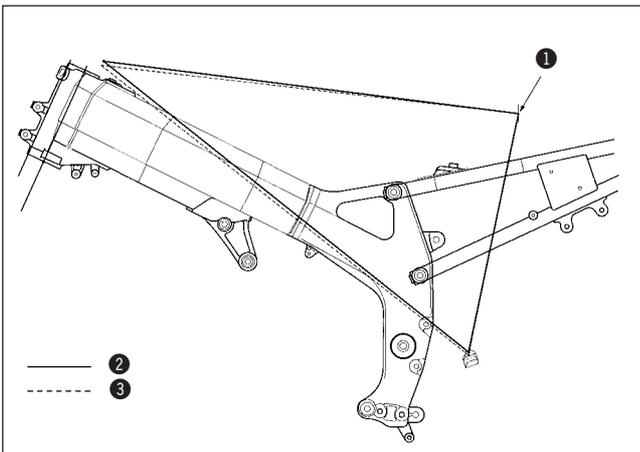


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**Chassis****Modified Geometry**

In the interests of achieving more responsive handling, the frame's steering head pipe was moved forward 5.5mm (as measured from the swingarm pivot) and compensated for by a 5mm reduction in front fork offset (from 35 to 30mm). Resulting in a 5mm increase in

trail that doesn't affect the frame's caster or wheelbase figures, this modification provides sharper, more responsive handling and a significant improvement in road feel and turning linearity, as well as less fatigue for the rider in urban traffic conditions.

**Riding Position Comparison****Riding Position Comparison**

- ① Hip Point
- ② New CBR900RR
- ③ Current Model



**Chassis**

**New, More Rigid Front Fork**

With its innovative hybrid construction front fork, the Fireblade has always been a technological masterpiece of high-performance design. For 1998, the Fireblade's front fork remains essentially the same, and still features Honda-original internal piston construction which employs a unique damping force control system for significant

improvements in damping characteristics and tracking response. Fork springs and damping settings were slightly modified for an enhanced feeling of control while maintaining the same sharp handling that has made the Fireblade famous.

Other changes for this year include a 10mm-wider fork span that reali-

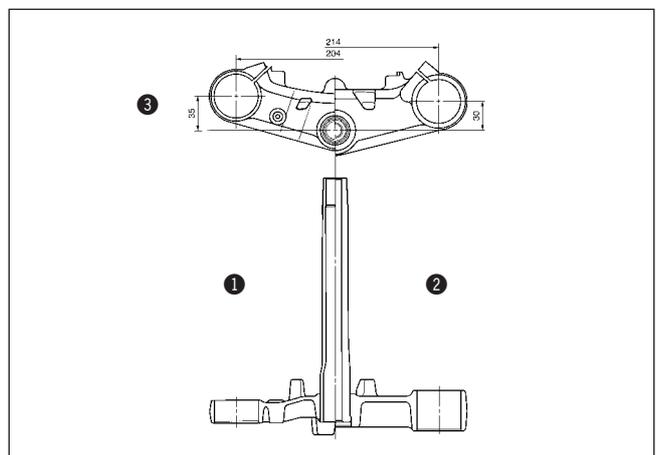
zes a 10% increase in the fork's torsional rigidity. Although the triple-clamps and their related parts are larger in size, they are also lighter in weight owing to the replacement of the current model's steel lower triple-clamp and stem pipe in favour of lightweight aluminium.



**Triple-Clamp Comparison**

- ① Current Model
- ② New CBR900RR
- ③ (Unit: mm)

**Triple-Clamp Comparison**



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**Chassis**

**New Tapered Box-Section Swingarm**

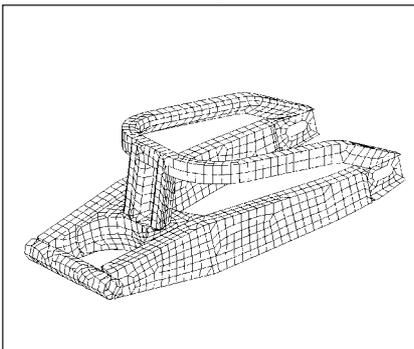
The new Fireblade's rear suspension features an all-new tapered box-section aluminium swingarm with internal thickness tuned for an optimal balance of rigidity. The new swingarm is widest where it is connected to the strong, cast

aluminium cross-brace and gradually tapers back to axle holders and forward to swingarm pivot. The new swingarm's fine-tuned balance of rigidity makes an important contribution to the Fireblade's lighter handling. Like the current model, the swingarm is supported

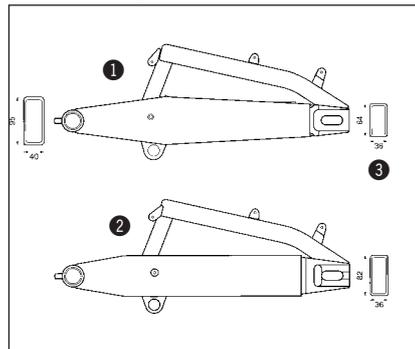
by an H.M.A.S. remote reservoir rear damper that offers a wide range of adjustability and combines with the proven Pro-Link system to ensure a long, progressive range of axle travel and a more smoothly controlled ride.



**New Tapered Aluminium Swingarm**



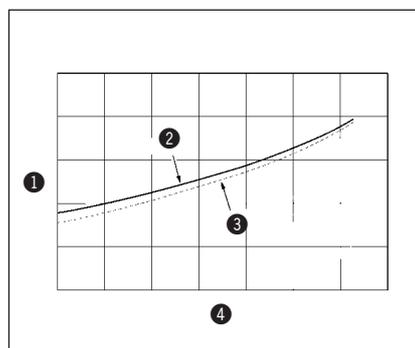
**Swingarm Comparison**



**Swingarm Comparison**

- ① New CBR900RR
- ② Current Model
- ③ (Unit: mm)

**Pro-Link Ratio Comparison**



**Pro-Link Ratio Comparison**

- ① Ratio
- ② New CBR900RR
- ③ Current Model
- ④ Axle Stroke

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***Chassis*****New Front Brake Calipers**

The Fireblade's new opposed 4-piston front brake calipers combine with larger-diameter 310mm floating rotors (up from the current model's 296mm rotors) to offer easier control and greater resistance to fade. The rear brake is the same single-piston caliper unit used on the current model.



**Electrical Accessories**

**New Dual Multi-Reflector Headlight**

The Fireblade's new dual multi-reflector headlight features essentially the same design as the current model, however with a more slanted front lens that conforms with shape of new cowl.

**New Fully Electronic Meter Panel**

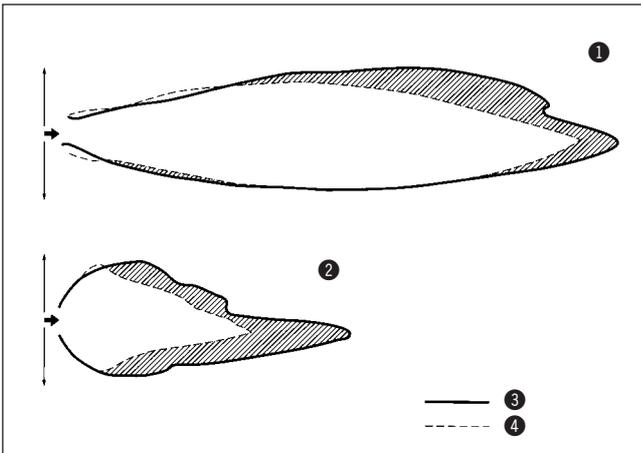
Only 28mm thick, the Fireblade's new one-piece integrated fully electronic meter panel is lighter and more compact for easier positioning within the cockpit area and a cleaner look. It features a flexible thin-film printed circuit 'board' for simplified

construction and easy connection by way of a single modular plug. The panel includes a large, centralized tachometer with speedometer positioned on the left, new digital LCD temperature gauge and odometer/trip meter and standard set of indicator lights.

**Headlight Illumination Area Comparison**

- ① High Beam (Top View)
- ② Low Beam (Top View)
- ③ New CBR900RR
- ④ Current Model

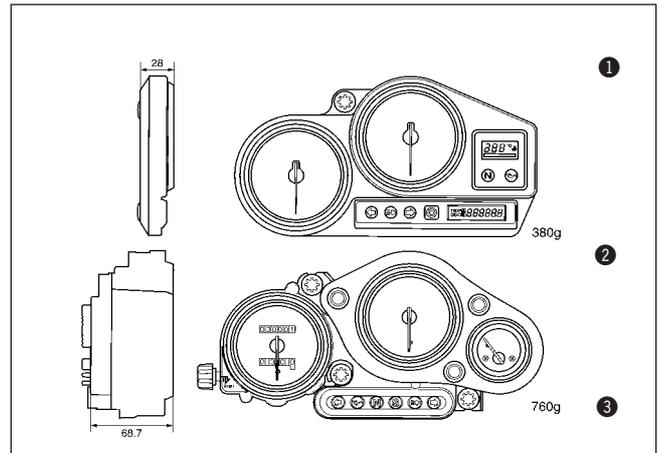
**Headlight Illumination Area Comparison**



**Meter Panel Comparison**

- ① New CBR900RR
- ② Current Model
- ③ (Unit: mm)

**Meter Panel Comparison**



CBR900RR - 9815 - E

**Equipment**

Even though not directly associated with performance or handling, all individual component parts were reassessed and, in some cases, completely redesigned in the Fireblade's continuous pursuit of lighter weight and higher quality.

**New Front Upper Cowl Stays**

For a cleaner looking cockpit, the new Fireblade also features new aluminium upper cowl stays with a brushed aluminium finish.

**U-Lock Receptacle Under Seat**

Introduced on the '94 model in the interests of providing greater

security against potential theft, the new Fireblade still features a specially designed compartment under the seat to carry one of several varieties of 'U'-type security lock or cable lock. (Lock not included.) Also, the spring-loaded flip-up pillion pad now features a stronger bracket for greater rigidity.

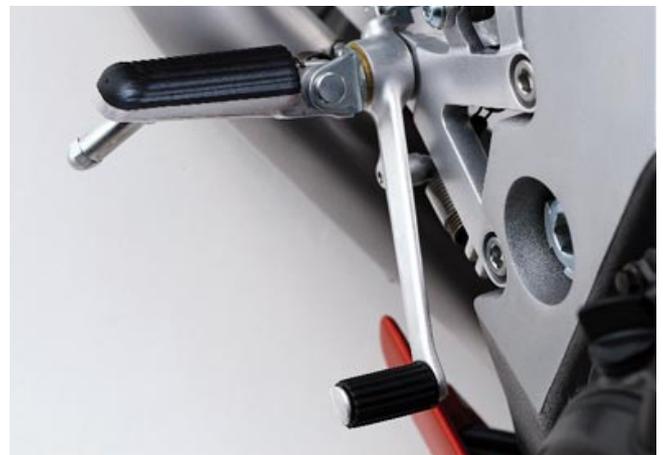
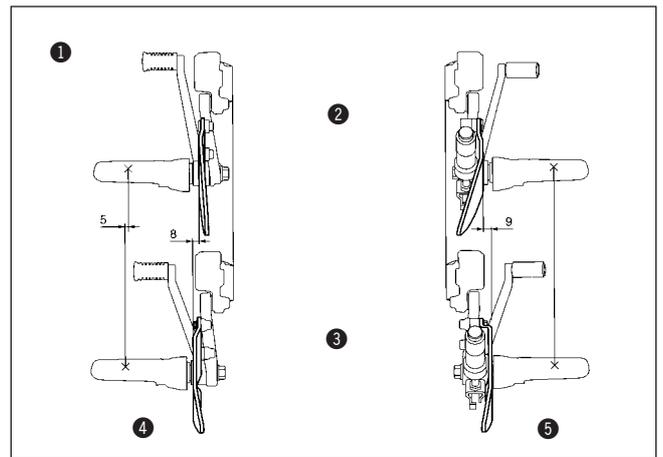
**New Foot Bracket Positioning**

The Fireblade's foot pedal brackets are now countersunk-mounted to the frame's pivot plates for a smoother form and less in the way of small, annoying obstructions in the foot area.

**Step Layout Comparison**

- ① (Unit: mm)
- ② New CBR900RR
- ③ Current Model
- ④ Left Side
- ⑤ Right Side

**Step Layout Comparison**



CBR900RR - 9816 - E

**Specifications**
**Specifications**
**CBR900RR Fireblade (ED-type)**

Engine		Liquid-cooled 4-stroke 16-valve DOHC inline-4
Bore × Stroke		71 × 58mm
Displacement		918.5cm <sup>3</sup>
Compression Ratio		11.1 : 1
Carburettors		38mm slanted flat-slide CV-type × 4
Max. Power Output		128PS/10,500rpm (95/1 EC) (94kW/10,500min <sup>-1</sup> ) 130PS/10,500rpm (DIN) (95.5kW/10,500min <sup>-1</sup> )
Max. Torque		9.3kg-m/8,500rpm (95/1 EC) (91Nm/8,500min <sup>-1</sup> ) 9.4kg-m/8,500rpm (DIN) (92Nm/8,500min <sup>-1</sup> )
Ignition		Computer-controlled digital transistorized with electronic advance
Starter		Electric
Transmission		6-speed
Final Drive		'O'-ring sealed chain
Dimensions	(L×W×H)	2,040 × 685 × 1,135mm
Wheelbase		1,405mm
Seat Height		810mm
Ground Clearance		140mm
Fuel Capacity		18 litres
Wheels	Front/Rear	'U'-section 6-spoke cast aluminium
Tyres	Front	130/70-ZR16 (Radial)
	Rear	180/55-ZR17 (Radial)
Suspension	Front	45mm H.M.A.S. cartridge-type fork with stepless preload, compression and rebound adjustment, 120mm axle travel
	Rear	Pro-Link with gas-charged H.M.A.S. damper featuring 7-step preload and stepless compression and rebound damping adjustment, 125mm axle travel
Brakes	Front	310mm dual disc with 4-piston calipers and sintered metal pads
	Rear	220mm single-piston caliper disc with sintered metal pads
Dry Weight		180kg