

2004



SERVICE MANUAL

CBR1000RR

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the CBR1000RR-4.

Follow the Maintenance Schedule (Section 4) recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency, California Air Resources Board and Transport Canada.

Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 and 4 apply to the whole motorcycle. Section 3 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.

Section 5 through 20 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on the first page of the section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedure.

If you are not familiar with this motorcycle, read Technical Features in Section 2.

If you don't know the source of the trouble, go to section 22 Troubleshooting.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle.

You must use your own good judgement.

You will find important safety information in a variety of forms including:

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol  and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

DANGER

You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

WARNING

You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

CAUTION

You CAN be HURT if you don't follow instructions.

- Instructions – how to service this vehicle correctly and safely.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

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SYMBOLS

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1 : 1).
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent).
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent). Example: Molykote® BR-2 plus manufactured by Dow Corning U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil, Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent). Example: Molykote® G-n Paste manufactured by Dow Corning U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease.
	Apply a locking agent. Use a middle strength locking agent unless otherwise specified.
	Apply sealant.
	Use DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified.
	Use Fork or Suspension Fluid.

1. GENERAL INFORMATION

1

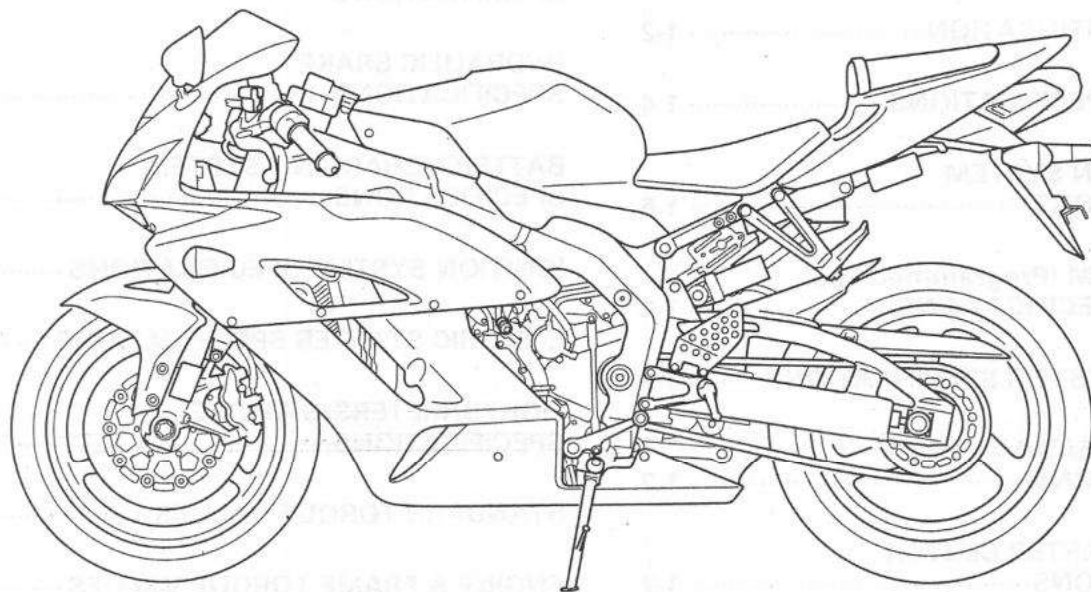
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GENERAL INFORMATION

SERVICE RULES

1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the motorcycle. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as shown in the Cable and Harness Routing (page 1-24).

MODEL IDENTIFICATION

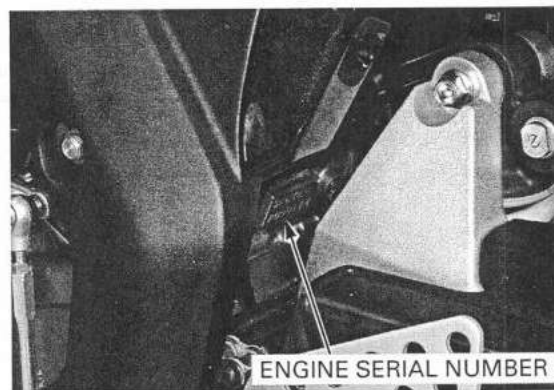


GENERAL INFORMATION

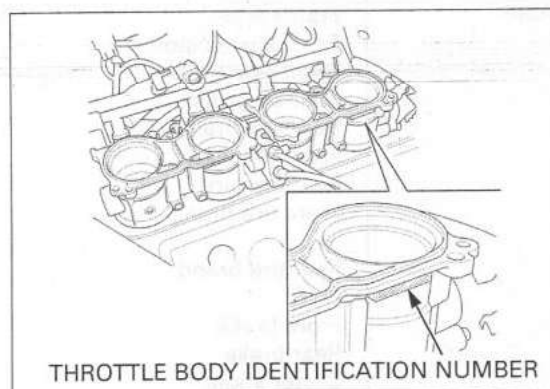
The frame serial number is stamped on the right side of the steering head.



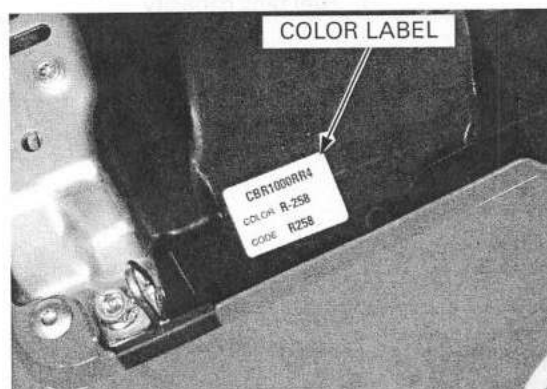
The engine serial number is stamped on the rear side of the lower crankcase.



The throttle body identification number is stamped on the intake side of the throttle body as shown.



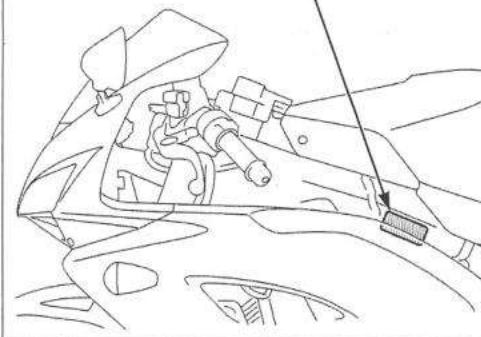
The color label is attached on the rear fender B as shown. When ordering color-coded parts, always specify the designated color code.



GENERAL INFORMATION

The Vehicle Identification Number (VIN) is located on the left side of the main frame on the Safety Certification Labels.

VEHICLE IDENTIFICATION NUMBER (VIN)



GENERAL SPECIFICATIONS

ITEM		SPECIFICATIONS	
DIMENSIONS	Overall length		2,035 mm (80.1 in)
	Overall width		720 mm (28.3 in)
	Overall height		1,120 mm (44.1 in)
	Wheelbase		1,405 mm (55.3 in)
	Seat height		820 mm (32.3 in)
	Ground clearance		130 mm (5.1 in)
	Dry weight	A, CM type:	180 kg (397 lbs)
		AC type:	181 kg (399 lbs)
	Curb weight	A, CM type:	210 kg (463 lbs)
		AC type:	211 kg (465 lbs)
FRAME	Maximum weight capacity	A, AC type:	166 kg (366 lbs)
		CM type:	170 kg (375 lbs)
	Frame type		Diamond
	Front suspension		Telescopic fork
	Front axle travel		110 mm (4.3 in)
	Rear suspension		Swingarm
	Rear axle travel		135 mm (5.3 in)
	Front tire size		120/70 ZR17 M/C (58W)
	Rear tire size		190/50 ZR17 M/C (73W)
	Front tire brand	Bridgestone:	BT014F RADIAL G
		Pirelli:	DIABLO CORSA H
	Rear tire brand	Bridgestone:	BT014R RADIAL G
		Pirelli:	DIABLO CORSA H
	Front brake		Hydraulic double disc
	Rear brake		Hydraulic single disc
	Caster angle		23° 45'
	Trail length		102 mm (4.0 in)
	Fuel tank capacity		18.0 liter (4.76 US gal, 3.96 Imp gal)

GENERAL INFORMATION

ITEM		SPECIFICATIONS
ENGINE	Cylinder arrangement	4 cylinders in-line, inclined 28° from vertical
	Bore and stroke	75.0 x 56.5 mm (2.95 x 2.22 in)
	Displacement	998.4 cm ³ (60.92 cu-in)
	Compression ratio	11.9: 1
	Valve train	Chain driven, DOHC
	Intake valve opens:	at 1 mm (0.04 in) lift
	Intake valve closes:	at 1 mm (0.04 in) lift
	Exhaust valve opens:	at 1 mm (0.04 in) lift
	Exhaust valve closes:	at 1 mm (0.04 in) lift
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trochoid
	Cooling system	Liquid cooled
	Air filtration	Paper element
FUEL DELIVERY SYSTEM	Engine dry weight	65.8 kg (145.1 lbs)
	Firing order	1 - 2 - 4 - 3
DRIVE TRAIN	Type	PGM-FI (Programmed Fuel Injection)
	Throttle bore	44.0 mm (1.73 in)
	Clutch system	Multi-plate, wet
	Clutch operation system	Hydraulic operating
	Transmission	Constant mesh, 6-speeds
	Primary reduction	1.604 (77/48T)
	Final reduction	2.562 (16/41T)
	Gear ratio	2.538 (33/13T)
		1.941 (33/17T)
		1.578 (30/19T)
		1.380 (29/21T)
		1.250 (25/20T)
		1.160 (29/25T)
ELECTRICAL	Gearshift pattern	1 - N - 2 - 3 - 4 - 5 - 6
	Ignition system	Computer-controlled digital transistorized with electric advance
	Starting system	Electric starter motor
	Charging system	Triple phase output alternator
	Regulator/rectifier	SCR shorted/triple phase, full wave rectification
	Lighting system	Battery

GENERAL INFORMATION

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	3.0 liter (3.2 US qt, 2.6 Imp qt)	—
	After oil filter change	3.1 liter (3.3 US qt, 2.7 Imp qt)	—
	After disassembly	3.8 liter (4.0 US qt, 3.3 Imp qt)	—
Recommended engine oil		Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil (U.S.A. and Canada), or Honda 4-stroke oil (Canada only), or an equivalent motor oil API service classification: SG or Higher except oils labeled as energy conserving on the circular API service label JASO T 903 standard: MA Viscosity: SAE 10W-40	—
Oil pressure at EOP (engine oil pressure) switch		490 kPa (5.0 kgf/cm ² , 71 psi) at 6,000 rpm/(80°C/176°F)	—
Oil pump	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.21 (0.006 – 0.008)	0.35 (0.014)
	Side clearance	0.04 – 0.09 (0.002 – 0.004)	0.17 (0.007)

FUEL SYSTEM (Programmed Fuel Injection) SPECIFICATIONS

ITEM		SPECIFICATIONS
Throttle body identification number	A, CM type	GQA0C
	AC type	GQA0B
Starter valve vacuum difference		20mm Hg
Base throttle valve for synchronization		No. 1
Idle speed		1,200 ± 100 rpm
Throttle grip free play		2 – 4 mm (1/16 – 3/16 in)
Intake air temperature sensor resistance (at 20°C/68°F)		1 – 4 kΩ
Engine coolant temperature sensor resistance (at 20°C/68°F)		2.3 – 2.6 kΩ
Fuel injection resistance (at 20°C /68°F)	Primary injector	10.5 – 14.5 Ω
	Secondary injector	10.5 – 14.5 Ω
PAIR control solenoid valve resistance (at 20°C/68°F)		20 – 24 Ω
CMP (Camshaft position) sensor peak voltage (at 20°C/68°F)		0.7 V minimum
CKP (Crankshaft position) sensor peak voltage (at 20°C/68°F)		0.7 V minimum
Manifold absolute pressure at idle		150 – 250 mm Hg
Fuel pressure at idle		343 kPa (3.5 kgf/cm ² , 50 psi)
Fuel pump flow (at 12V)		189 cm ³ (6.4 US oz, 6.7 Imp oz) minimum/10 seconds

COOLING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	3.15 liter (3.33 US qt, 2.77 Imp qt)
	Reserve tank	0.4 liter (0.42 US qt, 0.35 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 16 – 20 psi)
Thermostat	Begin to open	80 – 84 °C (176 – 183 °F)
	Fully open	90 °C (194 °F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		High quality ethylene glycol antifreeze containing corrosion protection inhibitors
Standard coolant concentration		1:1 mixture with distilled water