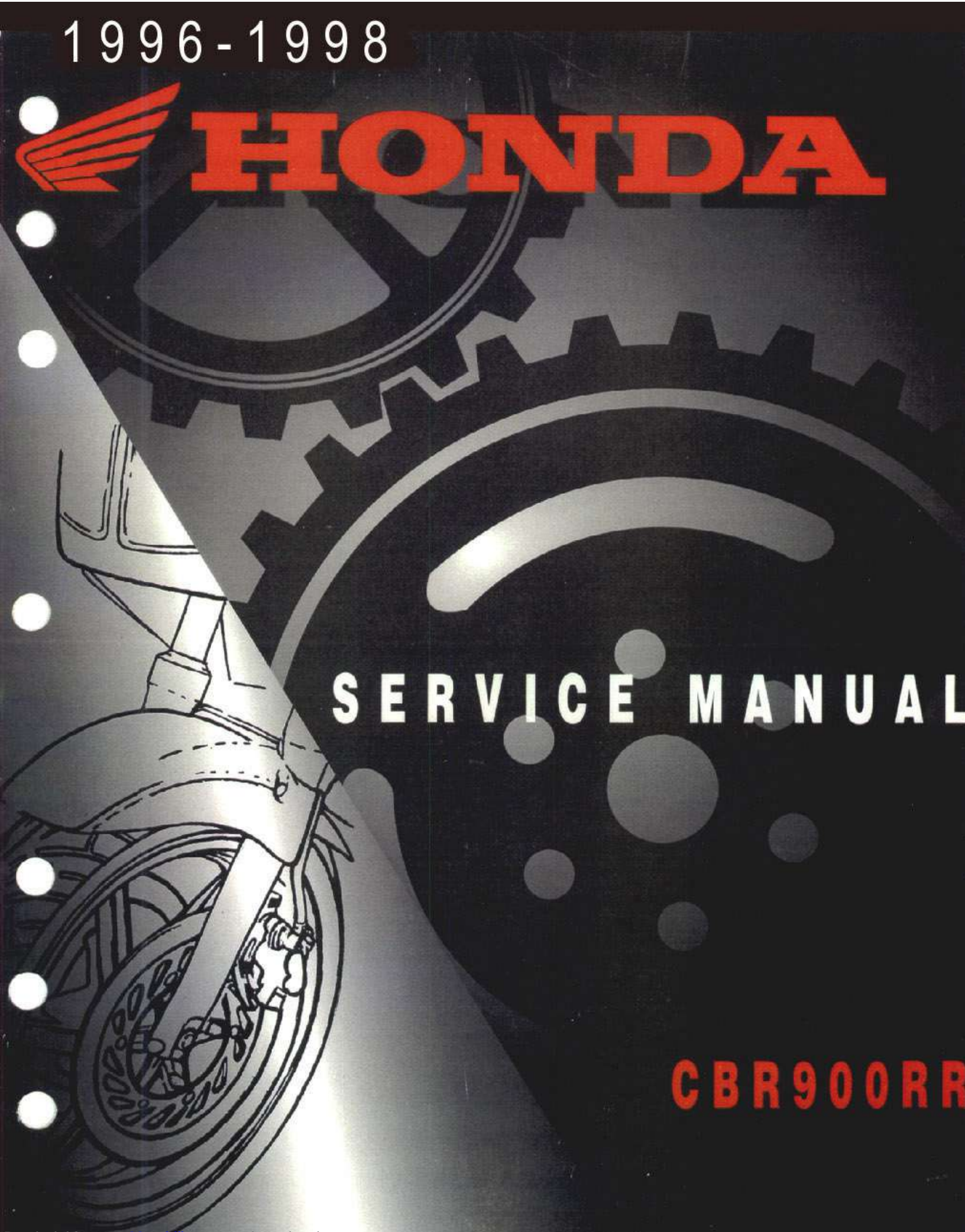
1996-1998

HONDA



SERVICE MANUAL

CBR900RR

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the CBR900RR.

Follow the Maintenance Schedule (Section 3) 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 Profection Agency and California Air Resources Board.

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

Sections 1 and 3 apply to the whole motorcycle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.
Section 4 through 19 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 procedures.

If you don't know the source of the trouble, go to section 21, Troubleshooting.

CONTENTS

Date of Issue: December, 1995

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 grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent). Example: Molykote® BR-2 plus, 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

GENERAL SAFETY

CARBON MONOXIDE

If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area.

⚠ WARNING

- *The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.*

Run the engine in an open area or with an exhaust evacuation system in an enclosed area.

GASOLINE

Work in a well ventilated area. Keep cigarettes, flames or sparks away from the work area or where gasoline is stored.

⚠ WARNING

- *Gasoline is extremely flammable and is explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN.*

HOT COMPONENTS

⚠ WARNING

- *Engine and exhaust system parts become very hot and remain hot for some time after the engine has been running. Wear insulated gloves or wait until the engine and exhaust system have cooled before handling these parts.*

USED ENGINE OIL

⚠ WARNING

- *Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil. KEEP OUT OF REACH OF CHILDREN.*

BRAKE DUST

Never use an air hose or dry brush to clean the brake assemblies. Use OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard caused by airborne asbestos fibers.

⚠ WARNING

- *Inhaled asbestos fibers have been found to cause respiratory disease and cancer.*

BRAKE FLUID

CAUTION

- *Spilling fluid on painted, plastic or rubber parts will damage them. Place a clean shop towel over these parts whenever the system is serviced. KEEP OUT OF REACH OF CHILDREN.*

BATTERY HYDROGEN GAS & ELECTROLYTE

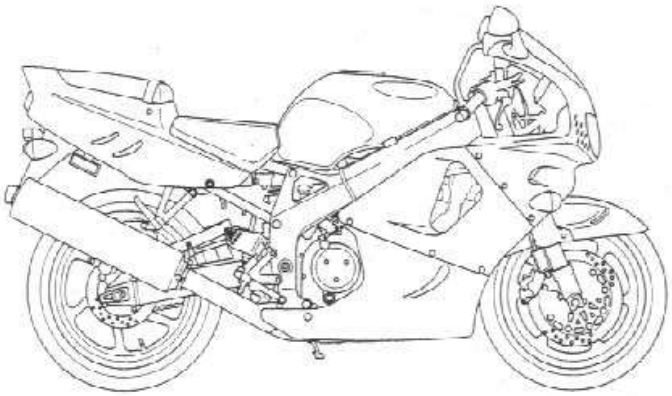
⚠ WARNING

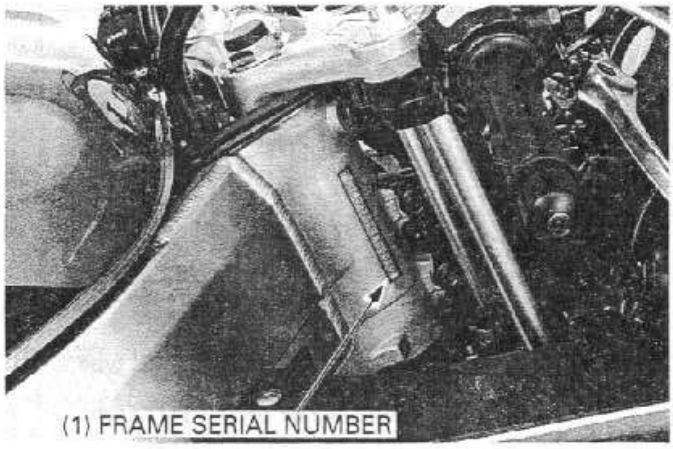
- *The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.*
- *The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.*
  - *— If electrolyte gets on your skin, flush with water.*
  - *— If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician immediately.*
- *Electrolyte is poisonous.*
  - *— If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician. KEEP OUT OF REACH OF CHILDREN.*

SERVICE RULES

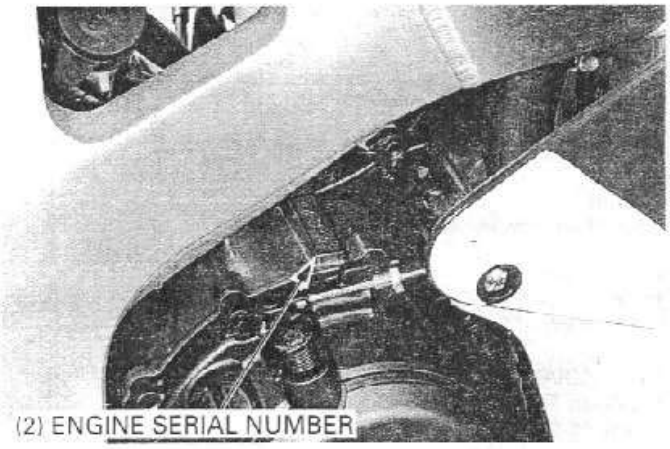
1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that don't meet HONDA's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing 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 show on pages 1-21 through 1-31, Cable and Harness Routing.

MODEL IDENTIFICATION

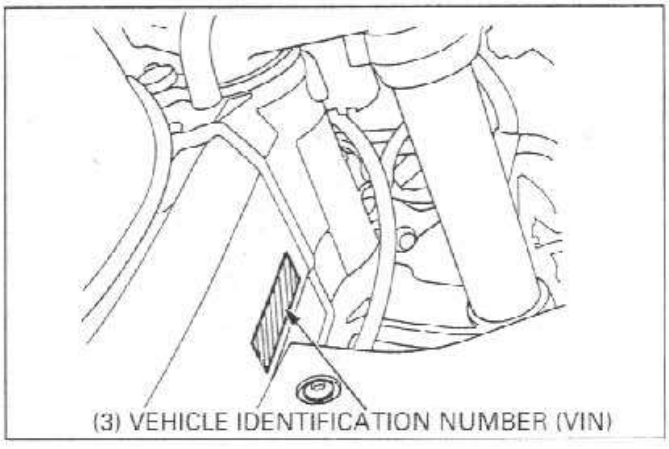




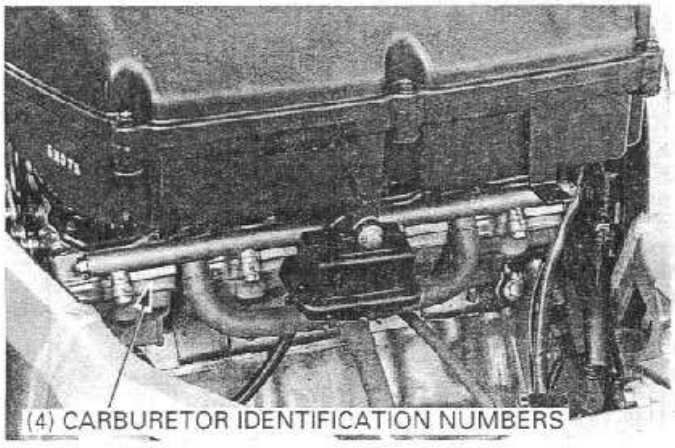
(1) The frame serial number is stamped on the right side of the steering head.



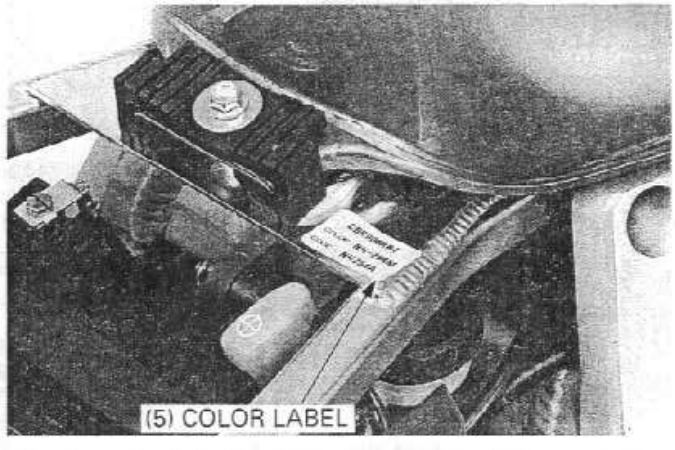
(2) The engine serial number is stamped on the right side of the upper crankcase.



(3) The Vehicle Identification Number (VIN) is located on right side of the frame near the steering head on the Safety Certification Label.



(4) The carburetor identification numbers are stamped on the intake side of the carburetor body as shown.



(5) The color label is attached as shown. When ordering color-coded parts, always specify the designated color code.

SPECIFICATIONS

GENERAL

ITEM		SPECIFICATIONS
DIMENSIONS	Overall length	2,055 mm (80.9 in)
	Overall width '96 – '97:	675 mm (26.6 in)
	After '97:	685 mm (26.9 in)
	Overall height '96 – '97:	1,130 mm (44.5 in)
	After '97:	1,135 mm (44.7 in)
	Wheelbase	1,400 mm (55.1 in)
	Seat height	810 mm (31.9 in)
	Footpeg height '96 – '97:	380 mm (15.0 in)
	After '97:	383 mm (15.1 in)
	Ground clearance	140 mm (5.5 in)
	Dry weight	
	'96 – '97: 49 states/Canada type	183 kg (403 lbs)
	California type	186 kg (410 lbs)
	After '97: 49 states/Canada type	180 kg (397 lbs)
	California type	183 kg (403 lbs)
	Curb weight	
	'96 – '97: 49 states/Canada type	205 kg (454 lbs)
	California type	208 kg (459 lbs)
	After '97: 49 states/Canada type	203 kg (448 lbs)
	California type	206 kg (454 lbs)
	Maximum weight capacity	
	'96 – '97: 49 states/Canada type	160 kg (353 lbs)
	California type	160 kg (353 lbs)
	After '97: 49 states/California type	160 kg (353 lbs)
	Canada type	164 kg (352 lbs)
FRAME	Frame type	Diamond
	Front suspension	Telescopic fork
	Front wheel travel	110 mm (4.3 in)
	Rear suspension	Swingarm
	Rear wheel travel	125 mm (4.9 in)
	Rear damper	Nitrogen gas-filled damper, with reserve tank
	Front tire size '96 – '97:	130/70 ZR 16
	After '97:	130/70 ZR 16 (61 W)
	Rear tire size '96 – '97:	180/55 ZR 17
	After '97:	180/55 ZR 17 (73 W)
	Tire brand	
	Bridgestone	Front: BT56F RADIAL/Rear: BT56R RADIAL G
	Michelin	Front: TX15/Rear: TX25
	Front brake	Hydraulic double disc brake
	Rear brake	Hydraulic single disc brake
	Caster angle	24°
	Trail length '96 – '97:	90 mm (3.5 in)
	After '97:	95 mm (3.7 in)
	Fuel tank capacity	18.0 liter (4.76 US gal, 3.96 Imp gal)
	Fuel tank reserve capacity	3.5 liter (0.92 US gal, 0.77 Imp gal)
ENGINE	Bore and stroke	71.0 x 58.0 mm (2.80 x 2.28 in)
	Displacement	919 cm³ (56.1 cu-in)
	Compression ratio	11.0 : 1
	Valve train	Chain drive and DOHC
	Intake valve opens	15° BTDC | at 1 mm (0.04 in) lift | 0° BTDC | at 1 mm (0.04 in) lift
	closes	35° ABDC | After '97 | 37° ABDC | After '97
	Exhaust valve opens	39° BBDC | 49 states/Canada type | 40° BBDC | California type
	closes	11° ATDC | and '96 – '97 all types | 0° ATDC
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trochoid
	Cooling system	Liquid-cooled
	Air filtration	Paper filter
	Crankshaft type	Unit type
	Engine dry weight	
	'96 – '97: 49 states/Canada type	66.9 kg (147.5 lbs)
	California type	68.2 kg (150.4 lbs)
	After '97: 49 states/Canada type	66.3 kg (146.2 lbs)
	California type	67.6 kg (149.1 lbs)
	Cylinder arrangement	Four cylinder, inline

GENERAL (Cont'd)

ITEM		SPECIFICATIONS		
CARBURETOR	Carburetor type	CV (Constant Velocity) type, with flat valve		
	Throttle bore	38 mm (1.5 in)		
DRIVE TRAIN	Clutch system	Multi-plate, wet		
	Clutch operation system	Mechanical type		
	Transmission	Constant mesh, 6-speed		
	Primary reduction	1.520 (76/50)		
	Final reduction	2.687 (43/16)		
	Gear ratio 1st	2.727 (30/11)	'96 – '97:	2.769 (36/13) After '97:
	2nd	1.933 (29/15)	'96 – '97:	2.000 (26/13) After '97:
	3rd	1.600 (24/15)	'96 – '97:	1.600 (24/15) After '97:
	4th	1.400 (28/20)	'96 – '97:	1.368 (26/19) After '97:
	5th	1.263 (24/19)	'96 – '97:	1.227 (27/22) After '97:
	6th	1.167 (21/18)	'96 – '97:	1.130 (26/23) After '97:
	Gearshift pattern	Left foot operated return system, 1 – N – 2 – 3 – 4 – 5 – 6		
ELECTRICAL	Ignition system	Full transistor digital ignition		
	Starting system	Electric starter motor		
	Charging system	Triple phase output alternator		
	Regulator/rectifier	SCR shorted/triple phase, full wave rectification		
	Lighting system	Battery		

COOLING SYSTEM

ITEM			SPECIFICATIONS
Coolant capacity	Radiator and engine	'96 – '97:	2.77 liter (2.93 US qt, 2.44 Imp qt)
		After '97:	2.64 liter (2.79 US qt, 2.32 Imp qt)
	Reserve tank	'96 – '97:	0.45 liter (0.476 US qt, 0.396 Imp qt)
		After '97:	0.35 liter (0.370 US qt, 0.310 Imp qt)
Radiator cap relief pressure		'96 – '97:	108 – 137 kPa (1.1 – 1.4 kgf/cm², 16 – 20 psi)
		After '97:	107.9 kPa (1.1 kgf/cm², 16 psi)
Thermostat	Begin to open		80 – 84°C (176 – 183°F)
	Fully open		95°C (203°F)
	Valve lift		8 mm (0.3 in) minimum

CYLINDER HEAD/VALVES

Unit: mm (in)

ITEM				STANDARD	SERVICE LIMIT
Cylinder compression	'96 – '97:			1,177 kPa (12.0 kgf/cm², 171 psi) at 500 – 600 rpm	———
	After '97:			1.2 kPa (13.0 kgf/cm², 185 psi) at 350 rpm	———
Cylinder head warpage				———	0.10 (0.004)
Valve, valve guide	Valve clearance		IN	0.13 – 0.19 (0.005 – 0.007)	———
		'96 – '97:	EX	0.19 – 0.25 (0.007 – 0.010)	———
		After '97	EX	0.22 – 0.28 (0.009 – 0.011)	———
	Valve stem O.D.		IN	4.475 – 4.490 (0.1762 – 0.1768)	4.465 (0.1758)
			EX	4.465 – 4.480 (0.1758 – 0.1764)	4.455 (0.1754)
	Valve guide I.D.		IN	4.500 – 4.512 (0.1772 – 0.1776)	4.540 (0.1787)
			EX	4.500 – 4.512 (0.1772 – 0.1776)	4.540 (0.1787)
	Stem-to-guide clearance		IN	0.010 – 0.037 (0.0004 – 0.0015)	———
			EX	0.020 – 0.047 (0.0008 – 0.0019)	———
	Valve guide projection above cylinder head		IN	14.60 – 14.80 (0.575 – 0.583)	———
			EX	14.80 – 15.00 (0.583 – 0.591)	———
	Valve seat width		IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)
Valve spring free length	Inner		IN/EX	35.77 (1.408)	34.07 (1.341)
	Outer		IN/EX	39.69 (1.563)	37.79 (1.488)
Valve lifter	Valve lifter O.D.		IN/EX	25.978 – 25.993 (1.0228 – 1.0233)	25.97 (1.022)
	Valve lifter bore I.D.		IN/EX	26.010 – 26.026 (1.0240 – 1.0246)	26.04 (1.025)
Camshaft	Cam lobe height	Except California type	IN	36.040 – 36.280 (1.4189 – 1.4283)	36.01 (1.418)
			EX	35.800 – 36.040 (1.4094 – 1.4189)	35.77 (1.408)
		California type	IN	34.940 – 35.180 (1.3756 – 1.3850)	34.91 (1.374)
			EX	35.100 – 35.340 (1.3819 – 1.3913)	35.07 (1.381)
	Runout			———	0.05 (0.002)
	Oil clearance			0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)