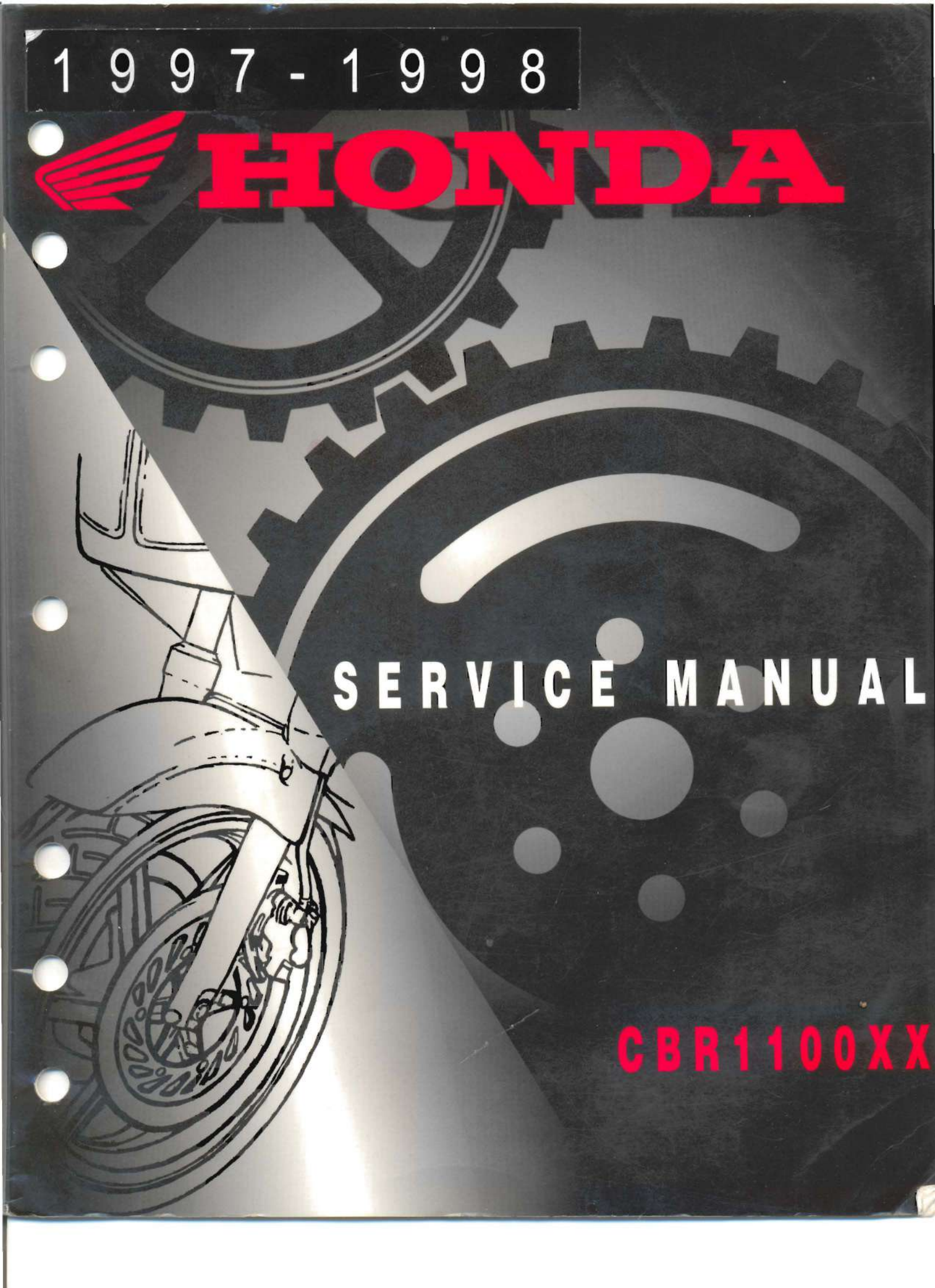
1997-1998

HONDA



SERVICE MANUAL

CBR1100XX

IMPORTANT SAFETY NOTICE

⚠WARNING ***Indicates a strong possibility of severe personal injury or death if instructions are not followed.***

CAUTION: ***Indicates a possibility of equipment damage if instructions are not followed.***

NOTE: Gives helpful information.

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. It is important to note that this manual contains some warnings and cautions against some specific service methods which could cause **PERSONAL INJURY** to service personnel or could damage a vehicle or render it unsafe. Please understand that those warnings could not cover all conceivable ways in which service, whether or not recommended by Honda, might be done or of the possibly hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda, *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized by the service methods or tools selected.

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

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 sotred.

⚠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 is run. 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 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.

COOLANT

Under some conditions, the ethylene glycol in engine coolant is combustible and its flame is not visible. If the ethylene glycol does ignite, you will not see any flame, but you can be burned.

⚠WARNING

- ***Avoid spilling engine coolant on the exhaust system or engine parts. They may be hot enough to cause the coolant to ignite and burn without a visible flame.***
- ***Coolant (ethylene glycol) can cause some skin irritation and is poisonous if swallowed, KEEP OUT OF REACH OF CHILDREN.***
- ***Do not remove the radiator cap when the engine is hot. The coolant is under pressure and could scaled you.***
- ***Keep hands and clothing away from the cooling fan, as it starts automatically.***

BATTERY HYDROGEN GAS & ELECTROLYTE

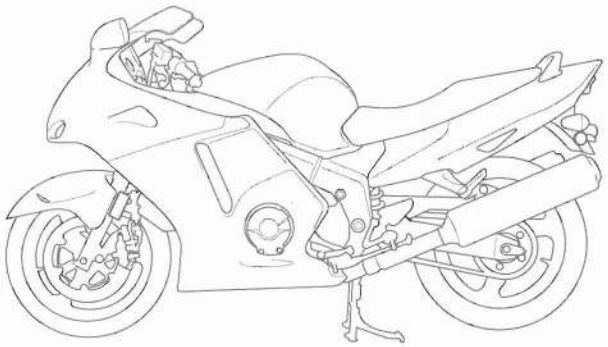
⚠WARNING

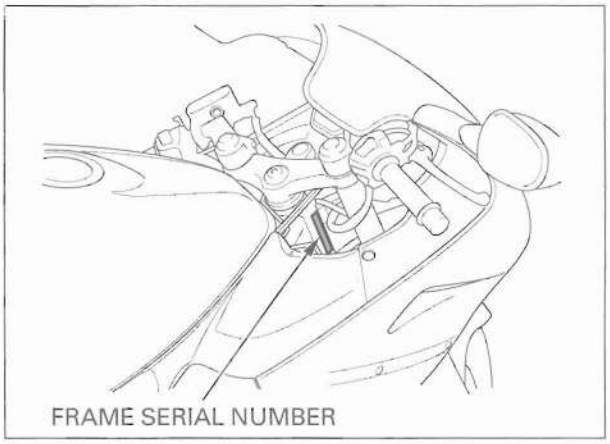
- ***The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.***
- ***The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.***
  - ***If electrolyte 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 1-24 through 1-35, Cable and Harness Routing.

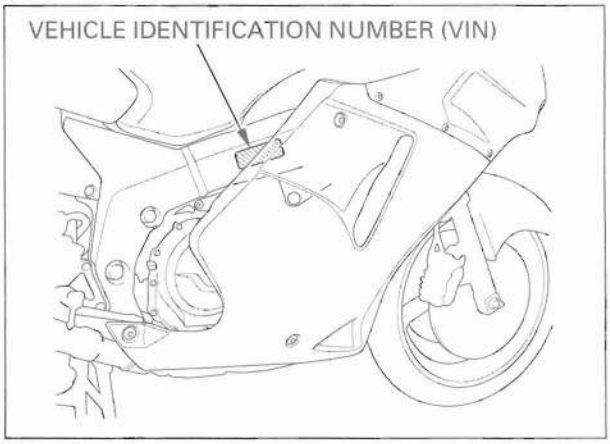
MODEL IDENTIFICATION



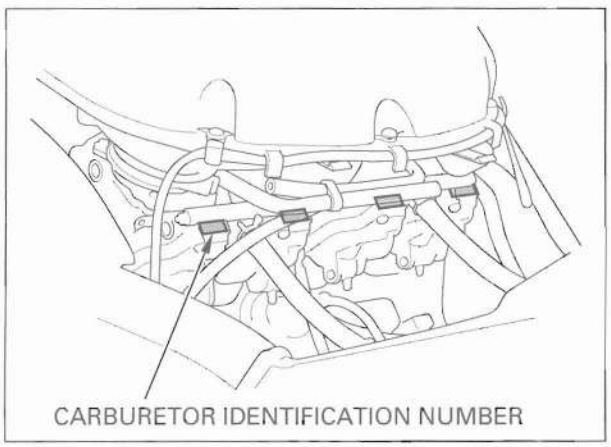


(1) The frame serial number is stamped on the right side of the steering head.

(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	2,160 mm (85.0 in)
	Overall width	720 mm (28.3 in)
	Overall height	1,170 mm (46.1 in)
	Wheelbase	1,485 mm (58.5 in)
	Seat height	810 mm (31.9 in)
	Footpeg height	372 mm (14.6 in)
	Ground clearance	130 mm (5.1 in)
	Dry weight	
	49 states/Canada type	223 kg (492 lbs)
	California type	225 kg (496 lbs)
	Curb weight	
	49 states/Canada type	250 kg (551 lbs)
	California type	252 kg (556 lbs)
	Maximum weight capacity	
	49 states/California type	174 kg (384 lbs)
	Canada type	178 kg (393 lbs)
FRAME	Frame type	Diamond
	Front suspension	Telescopic fork
	Front wheel travel	109 mm (4.3 in)
	Rear suspension	Swingarm
	Rear wheel travel	120 mm (4.7 in)
	Rear damper	Nitrogen gas filled damper
	Front tire size	120/70 ZR17 (Radial)
	Rear tire size	180/55 ZR17 (Radial)
	Tire brand	
	Bridgestone	Front: BT57F RADIAL G/ Rear: BT57R RADIAL G
	Dunlop	Front: D205FJ/ Rear: D205G
	Michelin	Front: MACADAM 90X S/ Rear: MACADAM 90X S
	Front brake	Hydraulic double disc brake with 3 pots caliper
	Rear brake	Hydraulic single disc brake with 3 pots caliper
	Caster angle	25°
	Trail length	99 mm (3.9 in)
	Fuel tank capacity	22.0 ℓ (5.81 US gal , 4.84 Imp gal)
	Fuel tank reserve capacity	3.0 ℓ (0.79 US gal , 0.66 Imp gal)
ENGINE	Bore and stroke	79.0 × 58.0 mm (3.11 × 2.28 in)
	Displacement	1,137 cm³ (69.4 cu-in)
	Compression ratio	11.0 : 1
	Valve train	Chain drive and DOHC
	Intake valve opens (at 1 mm (0.04 in) lift)	20° BTDC
	Intake valve closes (at 1 mm (0.04 in) lift)	40° ABDC
	Exhaust valve opens (at 1 mm (0.04 in) lift)	40° BBDC
	Exhaust valve closes (at 1 mm (0.04 in) lift)	10° ATDC
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trochoid/double rotor
	Cooling system	Liquid cooled
	Air filtration	Paper filter
	Crankshaft type	Unit type
	Engine dry weight	83.0 kg (183.0 lbs)
	Cylinder arrangement	Four cylinder, inline 30° inclinded from vertical

GENERAL (Cont'd)

ITEM			SPECIFICATIONS
CARBURETOR	Carburetor type		CV (Constant Velocity) type, with flat valve
	Throttle bore		42 mm (1.7 in)
DRIVE TRAIN	Clutch system		Multi-plate, wet
	Clutch operation system		Hydraulic operated type
	Transmission		Constant mesh, 6-speed
	Primary reduction		1.571 (88/56)
	Final reduction		2.647 (45/17)
	Gear ratio	1st	2.769 (36/13)
		2nd	2.000 (32/16)
		3rd	1.579 (30/19)
		4th	1.333 (28/21)
		5th	1.167 (28/24)
		6th	1.042 (25/24)
	Gearshift pattern		Left foot operated return system, 1-N-2-3-4-5-6
ELECTRICAL	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

LUBRICATION SYSTEM

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Engine oil capacity		At draining	3.8 ℓ (4.0 US qt , 3.3 Imp qt)	———
		At disassembly	4.6 ℓ (4.9 US qt , 4.0 Imp qt)	———
		At oil filter change	3.9 ℓ (4.1 US qt , 3.4 Imp qt)	———
Recommended engine oil			HONDA GN4 4-stroke oil or equivalent motor oil API service classification SF or SG Viscosity: SAE 10W-40	———
Oil pressure at oil pressure switch			490 kPa (5.0 kgf/cm², 71 psi) at 5,400 rpm / (176 °F/80 °C)	———
Oil pump rotor	Feed pump	Tip clearance	0.15 (0.006) max.	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)	0.12 (0.005)
	Cooler pump	Tip clearance	0.15 (0.006) max.	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)	0.12 (0.005)

FUEL SYSTEM

ITEM		SPECIFICATIONS
Carburetor identification number	49 states/Canada type	VPS2A
	California type	VPS1A
Main jet		No. 1, 4: # 140/No. 2, 3: # 142
Slow jet		# 42
Jet needle number	49 states/Canada type	J5FZ
	California type	J5FU
Pilot screw initial opening	49 states/Canada type	2-3/4 turns out
	California type	2-1/2 turns out
Float level		13.7 mm (0.54 in)
Idle speed		1,100 ± 100 rpm
Throttle grip free play		2 – 6 mm (1/12 – 1/4 in)

COOLING SYSTEM

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	3.2 ℓ (0.85 US gal , 0.70 Imp gal)
	Reserve tank	1.1 ℓ (0.29 US gal , 0.24 Imp gal)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm², 16 – 20 psi)
Thermostat	Begin to open	176 – 183 °F (80 – 84 °C)
	Fully open	203 °F (95 °C)
	Valve lift	8 mm (0.3 in) minimum

CYLINDER HEAD/VALVES

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			1,275 kPa (13.0 kgf/cm², 185 psi) at 350 rpm	———
Cylinder head warpage			———	0.10 (0.004)
Valve, valve guide	Valve clearance	IN	0.16 ± 0.03 (0.006 ± 0.001)	———
		EX	0.22 ± 0.03 (0.009 ± 0.001)	———
	Valve stem O.D.	IN	4.975 – 4.990 (0.1959 – 0.1965)	4.965 (0.1955)
		EX	4.960 – 4.975 (0.1953 – 0.1959)	4.950 (0.1949)
	Valve guide I.D.	IN	5.000 – 5.012 (0.1969 – 0.1973)	5.040 (0.1984)
		EX	5.000 – 5.012 (0.1969 – 0.1973)	5.040 (0.1984)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	———
		EX	0.025 – 0.052 (0.0010 – 0.0020)	———
	Valve guide projection above cylinder head	IN	16.3 – 16.5 (0.64 – 0.65)	———
		EX	16.3 – 16.5 (0.64 – 0.65)	———
	Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)
Valve spring free length	Inner	IN/EX	37.4 (1.47)	35.4 (1.39)
	Outer	IN/EX	40.6 (1.60)	38.6 (1.52)
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	IN	38.54 – 38.78 (1.517 – 1.527)	38.24 (1.506)
		EX	38.30 – 38.54 (1.508 – 1.517)	38.00 (1.496)
	Runout		———	0.05 (0.002)
	Oil clearance		0.020 – 0.074 (0.0008 – 0.0029)	0.10 (0.004)