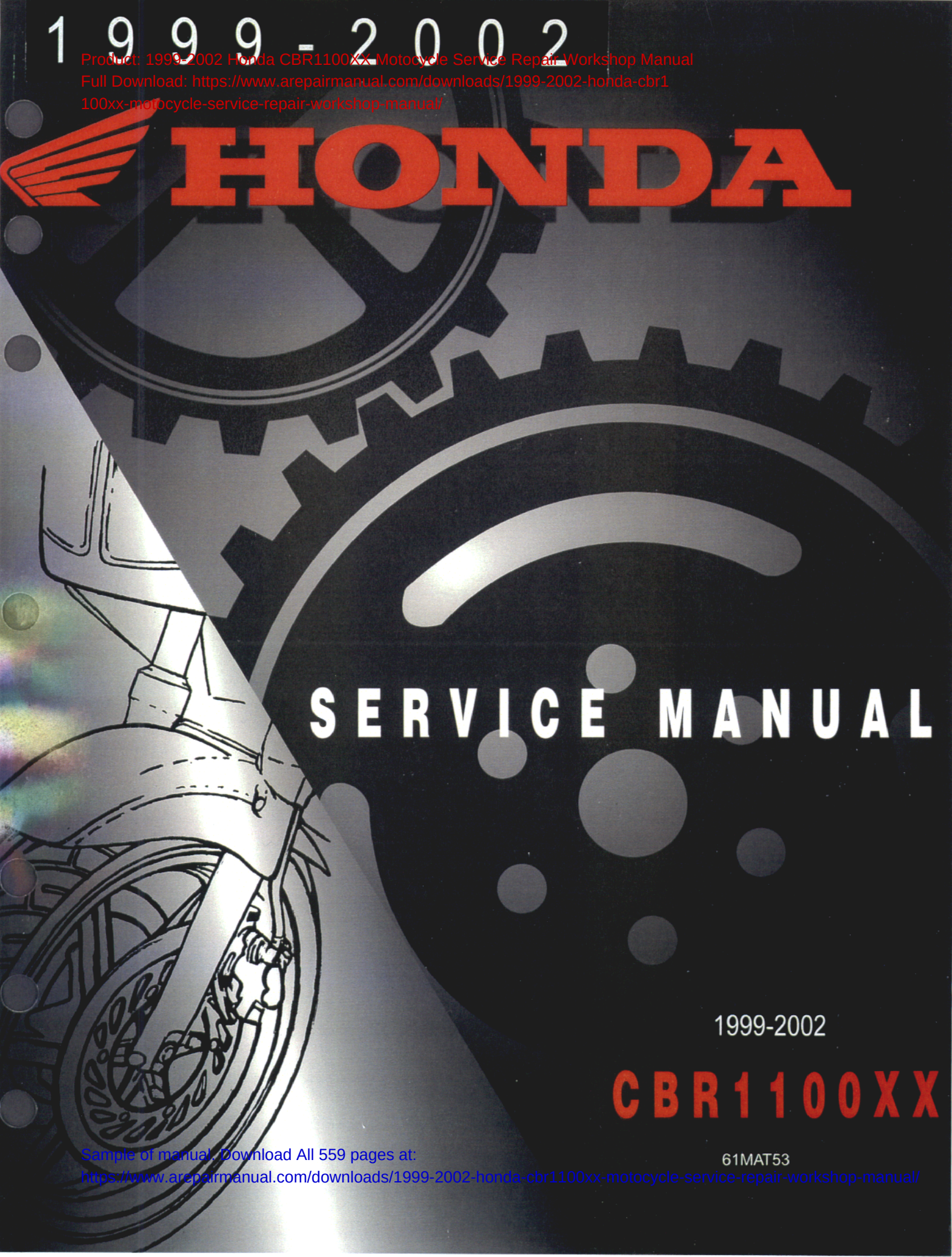
1999-2002

HONDA



SERVICE MANUAL

1999-2002

CBR1100XX

61MAT53

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 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 DUST

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

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 scald you.*
- *Keep hands and clothing away from the cooling fan, as it starts automatically.*

CAUTION:

Using coolant with silicate inhibitors may cause premature water of water pump seals or brockage of radiator passages. Using tap water may cause engine damage.

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 1-37, Cable and Harness Routing.

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the CBR1100XX.

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 Protection 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. Sections 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.

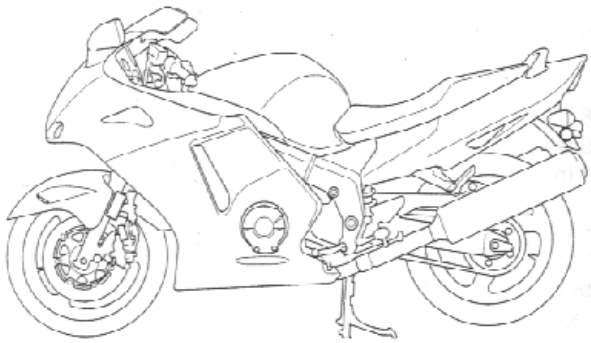
Most sections have an assembly or system illustration, service information and troubleshooting for the section.
The subsequent pages give detailed procedures.

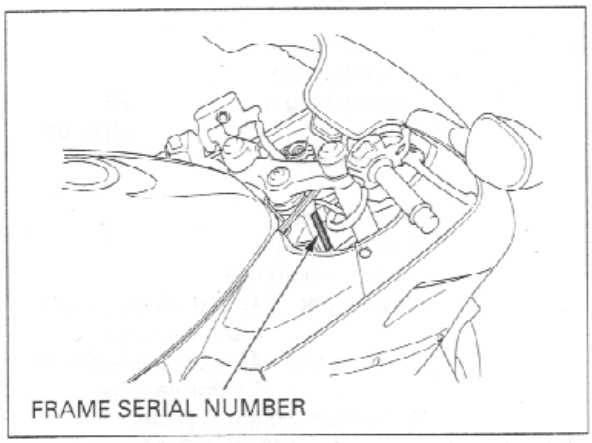
If you are not familiar with this motorcycle, read Technical Feature in section 21.
If you don't know the source of the trouble, go to section 22 Troubleshooting.

CONTENTS

Date of Issue: December, 1998

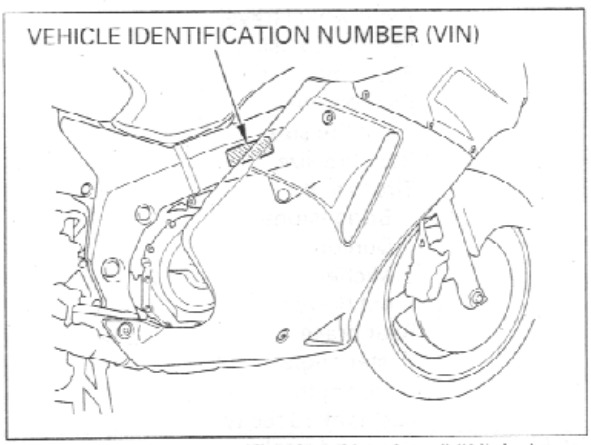
MODEL IDENTIFICATION



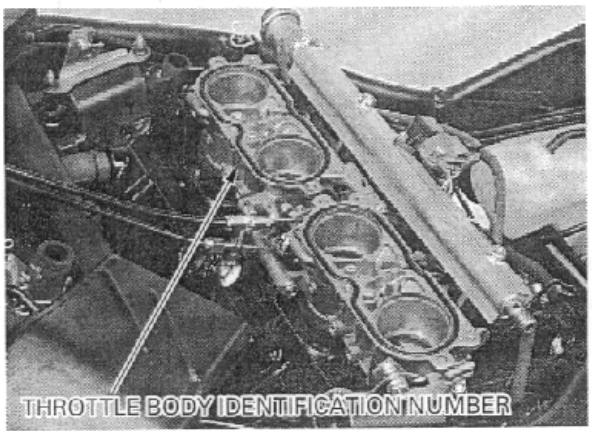


(1) The frame serial number is stamped on the right side of the steering head.

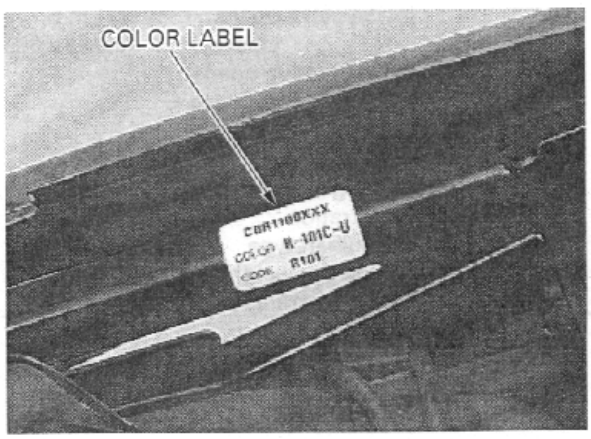
(2) The engine serial number is stamped on the right side of the upper crankcase.



(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 throttle body identification number is stamped on the intake side of the throttle 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	'99:	1,170 mm (46.1 in)
		After '99:	1,200 mm (47.2 in)
	Wheelbase	'99:	1,485 mm (58.5 in)
		After '99:	1,490 mm (58.7 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 state/Canada type	223 kg (492 lbs)
		California type	224 kg (494 lbs)
	Curb weight	49 state/Canada type	253 kg (558 lbs)
		California type	254 kg (560 lbs)
	Maximum weight capacity		
		49 state/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 (58W) /Radial
	Rear tire size		180/55 ZR17 (73W) /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 piston calipers
	Rear brake		Hydraulic single disc brake with 3 piston calipers
	Caster angle		25°
	Trail length		99 mm (3.9 in)
	Fuel tank capacity		24.0 ℓ (6.34 US gal , 5.28 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	17° BTDC
	closes		40° ABDC
	Exhaust valve opens		40° BBDC
	closes		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° inclined from vertical

GENERAL (Cont'd)

ITEM			SPECIFICATIONS
CARBURETION	Type		PGM-FI (Programmed Fuel Injection)
	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

Unit: mm (in)

LUBRICATION SYSTEM

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/(80 °C/176 °F)	———
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 (Programmed Fuel Injection)

ITEM		SPECIFICATIONS
Throttle body identification number	49 state/Canada type	GQ 40 D
	California type	GQ 40 B
Starter valve vacuum difference		20 mm Hg
Base throttle valve for synchronization		No. 3
Idle speed		1,100 ± 50 rpm
Throttle grip free play		2 – 6 mm (1/16 – 1/4 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 injector resistance (at 20 °C/68 °F)		13.0 – 14.4 kΩ
PAIR solenoid valve resistance (at 20 °C/68 °F)		20 – 24 Ω
Cam pulse generator peak voltage (at 20 °C/68 °F)		0.7 V minimum
Ignition pulse generator peak voltage (at 20 °C/68 °F)		0.7 V minimum
Manifold absolute pressure at idle		200 – 250 mm Hg
Fuel pressure at idle	'99:	294 kPa (3.0 kgf/cm², 43 psi)
	After '99:	343 kPa (3.5 kgf/cm², 50 psi)
Fuel pump flow (at 12 V)		Minimum 220 cm³ (7.4 US oz , 7.7 Imp oz) for 10 seconds

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	Begins to open	80 – 84 °C (176 – 183 °F)
	Fully open	95 °C (203 °F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		High quality ethylene glycol antifreeze containing corrosion protection inhibitors
Standard coolant concentration		50% mixture with soft water

Unit: mm (in)

CYLINDER HEAD/VALVES

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	38.42 – 38.50 (1.513 – 1.516)	38.12 (1.501)
		EX	38.38 – 38.46 (1.511 – 1.514)	38.08 (1.499)
	Runout		———	0.05 (0.002)
	Oil clearance		0.020 – 0.074 (0.0008 – 0.0029)	0.10 (0.004)

CLUTCH/GEARSHIFT LINKAGE

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Recommended clutch fluid			DOT 4 brake fluid	———
Clutch master cylinder		Cylinder I.D.	12.700 – 12.743 (0.5000 – 0.5017)	12.76 (0.502)
		Piston O.D.	12.657 – 12.684 (0.4983 – 0.4994)	12.65 (0.498)
Clutch spring free length			57.4 (2.26)	56.2 (2.21)
Clutch disc thickness		A1	3.72 – 3.88 (0.146 – 0.153)	3.5 (0.14)
		A2	3.72 – 3.88 (0.146 – 0.153)	3.5 (0.14)
Clutch plate warpage			———	0.30 (0.012)
Clutch outer guide		I.D.	28.000 – 28.021 (1.1024 – 1.1032)	28.031 (1.1036)
		O.D.	34.975 – 34.991 (1.3770 – 1.3776)	34.965 (1.3766)
Mainshaft O.D. at clutch outer guide			27.980 – 27.993 (1.1016 – 1.1021)	27.970 (1.1012)
Shift fork, fork shaft	Fork	I.D.	12.000 – 12.021 (0.4724 – 0.4733)	12.03 (0.474)
		Claw thickness	5.93 – 6.00 (0.233 – 0.236)	5.9 (0.23)
	Fork shaft O.D.		11.957 – 11.968 (0.4707 – 0.4712)	11.95 (0.470)

ALTERNATOR/STARTER CLUTCH

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter driven gear boss O.D.	51.699 – 51.718 (2.0354 – 2.0361)	51.684 (2.0348)

CRANKCASE/PISTON/CYLINDER

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder	I.D.		79.000 – 79.015 (3.1102 – 3.1108)	79.10 (3.114)
	Out of round		———	0.10 (0.004)
	Taper		———	0.10 (0.004)
	Warpage		———	0.05 (0.002)
Piston, piston rings	Piston mark direction		"IN" mark facing toward the intake side	———
	Piston O.D.		78.970 – 78.990 (3.1090 – 3.1098)	78.90 (3.106)
	Piston O.D. measurement point		15 mm (0.6 in) from bottom of skirt	———
	Piston pin bore I.D.		19.002 – 19.008 (0.7481 – 0.7483)	19.03 (0.749)
	Piston pin O.D.		18.994 – 19.000 (0.7478 – 0.7480)	18.984 (0.7474)
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	———
	Piston ring-to-ring groove clearance	Top	0.030 – 0.065 (0.0012 – 0.0026)	0.08 (0.003)
		Second	0.015 – 0.045 (0.0006 – 0.0018)	0.06 (0.002)
	Piston ring end gap	Top	0.20 – 0.35 (0.008 – 0.014)	0.5 (0.02)
		Second	0.40 – 0.55 (0.016 – 0.022)	0.7 (0.03)
		Oil (side rail)	0.2 – 0.8 (0.01 – 0.03)	1.0 (0.04)
Cylinder to-piston clearance			0.010 – 0.045 (0.0004 – 0.0018)	———
Connecting rod small end I.D.			19.030 – 19.051 (0.7492 – 0.7500)	19.061 (0.7504)
Connecting rod-to-piston pin clearance			0.030 – 0.057 (0.0012 – 0.0022)	———
Crankpin oil clearance			0.030 – 0.052 (0.0012 – 0.0020)	0.062 (0.0024)

CRANKSHAFT/TRANSMISSION/BALANCER

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Crankshaft	Side clearance		0.05–0.20 (0.002–0.008)	0.30 (0.012)
	Runout		—	0.30 (0.012)
	Main journal oil clearance		0.017–0.035 (0.0007–0.0014)	0.045 (0.0018)
Transmission	Gear I.D.	M5, 6	31.000–31.025 (1.2205–1.2215)	31.04 (1.222)
		C1	26.000–26.021 (1.0236–1.0244)	26.04 (1.025)
		C2, 3, 4	33.000–33.025 (1.2992–1.3002)	33.04 (1.301)
	Bushing O.D.	M5, 6	30.950–30.975 (1.2185–1.2195)	30.93 (1.218)
		C2	32.955–32.980 (1.2974–1.2984)	32.93 (1.296)
		C3, 4	32.950–32.975 (1.2972–1.2982)	32.93 (1.296)
	Bushing I.D.	M5	27.985–28.006 (1.1018–1.1026)	28.02 (1.103)
		C2	29.985–30.006 (1.1805–1.1813)	30.02 (1.182)
	Gear-to-bushing clearance	M5, 6	0.020–0.062 (0.0008–0.0024)	0.10 (0.004)
		C2	0.020–0.070 (0.0008–0.0028)	0.11 (0.004)
		C3, 4	0.025–0.075 (0.0010–0.0030)	0.11 (0.004)
	Mainshaft O.D.	M5	27.967–27.980 (1.1011–1.1016)	27.957 (1.1007)
		Clutch outer guide	27.980–27.993 (1.1016–1.1021)	27.970 (1.1012)
	Countershaft O.D.	C2	29.967–29.980 (1.1798–1.1803)	27.957 (1.1007)
	Bushing-to-shaft clearance	M5	0.005–0.039 (0.0002–0.0015)	0.08 (0.003)
		C2	0.005–0.039 (0.0002–0.0015)	0.08 (0.003)

Unit: mm (in)

FRONT WHEEL/SUSPENSION/STEERING

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		—	1.5 (0.06)
Cold tire pressure	Up to 90 kg (200 lb) load	290 kPa (2.90 kgf/cm², 42 psi)	—
	Up to maximum weight capacity	290 kPa (2.90 kgf/cm², 42 psi)	—
Axle runout		—	0.20 (0.008)
Wheel rim runout	Radial	—	2.0 (0.08)
	Axial	—	2.0 (0.08)
Fork	Spring free length	232.9 (9.17)	228.2 (8.98)
	Spring direction	With the tapered end facing down	—
	Pipe runout	—	0.20 (0.008)
	Recommended fork fluid	Pro Honda Suspension Fluid SS-8	—
	Fluid level	142 (5.6)	—
	Fluid capacity	483 ± 2.5 cm³ (16.3 ± 0.08 US oz, 17.1 ⊥ 0.09 Imp oz)	—
Steering head bearing pre-load		10 – 15N (1.0 – 1.5 kgf)	—

Unit: mm (in)

REAR WHEEL/SUSPENSION

ITEM			STANDARD	SERVICE LIMIT
Minimum tire tread depth			—	2.0 (0.08)
Cold tire pressure	Up to 90 kg (200 lb) load		290 kPa (2.90 kgf/cm², 42 psi)	—
	Up to maximum weight capacity		290 kPa (2.90 kgf/cm², 42 psi)	—
Axle runout			—	0.20 (0.008)
Wheel rim runout	Radial		—	2.0 (0.08)
	Axial		—	2.0 (0.08)
Drive chain	Size/link	DID	DID50ZVS-110LE	—
		RK	RK50LFOZ1-110LE	—
	Slack		25 – 35 (1.0 – 1.4)	50 (2.0)
Shock absorber	Spring installed length		209.1 (8.23)	—

Unit: mm (in)

HYDRAULIC BRAKE

ITEM				STANDARD	SERVICE LIMIT
Front	Specified brake fluid			DOT 4	
	Brake disc thickness			5.0 (0.20)	4.0 (0.16)
	Brake disc runout			———	0.30 (0.012)
	Master cylinder I.D.			12.700 – 12.743 (0.5000 – 0.5017)	12.76 (0.502)
	Master piston O.D.			12.657 – 12.684 (0.4983 – 0.4994)	12.65 (0.498)
	Secondary master cylinder I.D.			14.000 – 14.043 (0.5512 – 0.5529)	14.055 (0.5533)
	Secondary master piston O.D.			13.957 – 13.984 (0.5495 – 0.5506)	13.945 (0.5490)
	Caliper cylinder I.D.	Right	Upper	27.000 – 27.050 (1.0630 – 1.0650)	27.060 (1.0654)
			Middle	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
			Lower	25.400 – 25.450 (1.0000 – 1.0020)	25.460 (1.0024)
		Left	Upper	25.400 – 25.450 (1.0000 – 1.0020)	25.460 (1.0024)
			Middle	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
			Lower	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
	Caliper piston O.D.	Right	Upper	26.916 – 26.968 (1.0597 – 1.0617)	26.910 (1.0594)
			Middle	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)
			Lower	25.318 – 25.368 (0.9968 – 0.9987)	25.310 (0.9965)
		Left	Upper	25.318 – 25.368 (0.9968 – 0.9987)	25.310 (0.9965)
			Middle	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)
			Lower	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)
Rear	Specified brake fluid			DOT 4	———
	Brake pedal height			65 (2.6)	———
	Brake disc thickness			5.0 (0.20)	4.0 (0.16)
	Brake disc runout			———	0.30 (0.012)
	Master cylinder I.D.			17.460 – 17.503 (0.6874 – 0.6891)	17.515 (0.6896)
	Master piston O.D.			17.417 – 17.444 (0.6857 – 0.6868)	17.405 (0.6852)
	Caliper cylinder I.D.		Front	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
			Center	25.400 – 25.450 (1.0000 – 1.0020)	25.460 (1.0024)
			Rear	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
	Caliper piston O.D.		Front	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)
			Center	25.318 – 25.368 (0.9968 – 0.9987)	25.310 (0.9965)
			Rear	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)

BATTERY/CHARGING SYSTEM

ITEM			SPECIFICATIONS
Battery	Capacity		12V – 10AH
	Current leakage		0.2 mA max.
	Voltage (20 °C/68 °F)	Fully charged	13.0 – 13.2 V
		Needs charging	Below 12.3 V
	Charging current	Normal	0.9 A/5 – 10 h
		Quick	4.0 A/0.5 h
Alternator	Capacity		0.46 kW/5,000 rpm
	Charging coil resistance (20 °C/68 °F)		0.1 – 1.0 Ω

IGNITION SYSTEM

ITEM		SPECIFICATIONS
Spark plug	'99:	CR9EHVX−9 (NGK)
	After '99:	IMR9A−9H (NGK)
Spark plug gap		0.80−0.90 mm (0.031−0.035 in)
Ignition coil peak voltage		100 V minimum
Ignition pulse generator peak voltage		0.7 V minimum
Ignition timing ("F" mark)	'99:	12° BTDC at idle
	After '99:	8° BTDC at idle

ELECTRIC STARTER

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.0−13.0 (0.47−0.51)	4.5 (0.18)

LIGHTS/METERS/SWITCHES

ITEM			SPECIFICATIONS
Bulbs	Headlight	High beam	12V 55W
		Low beam	12 V−55 W
	Brake/tail light	'99:	12V−21/5 W × 2
		After '99:	12V−32/3CP × 2
	Front turn signal/running light		12V−32/3CP × 2
	Rear turn signal light		12V−32CP × 2
	License light		12V−4CP
	Instrument light	'99:	12 V−1.7 W × 4
		After '99:	12 V−1.4 W × 2
	Turn signal indicator	'99:	12V−3W × 2
		After '99:	LED
	High beam indicator	'99:	12V−3W
		After '99:	LED
	Neutral indicator	'99:	12V−3W
		After '99:	LED
	Oil pressure indicator	'99:	12V−3W
		After '99:	LED
	PGM-FI warning indicator	'99:	12V−3W
		After '99:	LED
Fuse	Main fuse		30A
	PGM-FI fuse		30A
	Sub fuse		20A × 2, 10A × 5
Tachometer peak voltage			10.5 V minimum
Thermo sensor resistance		80 °C	47.5−56.8 kΩ
		120 °C	14.9−17.3 kΩ
Fuel level sensor resistance		Full	4−10 Ω
		Empty	81−91 Ω
Fan motor switch	Start to close (ON)		98−102 °C (208−216 °F)
	Stop to open		93−97 °C (199−207 °F)

TORQUE VALUES

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm hex bolt and nut	5 (0.5 , 3.6)	5 mm screw	4 (0.4 , 2.9)
6 mm hex bolt and nut	10 (1.0 , 7)	6 mm screw	9 (0.9 , 6.5)
8 mm hex bolt and nut	22 (2.2 , 16)	6 mm flange bolt (8 mm head)	9 (0.9 , 6.5)
10 mm hex bolt and nut	34 (3.5 , 25)	6 mm flange bolt (10 mm head) and nut	12 (1.2 , 9)
12 mm hex bolt and nut	54 (5.5 , 40)	8 mm flange bolt and nut	26 (2.7 , 20)
		10 mm flange bolt and nut	39 (4.0 , 29)

- Torque specifications listed below are for important fasteners.
- Others should be tightened to standard torque values listed above.

NOTES: 1. Apply sealant to the threads.
2. Apply a locking agent to the threads.
3. Apply grease to the threads.
4. Stake.
5. Apply oil to the threads and flange surface.
6. Apply clean engine oil to the O ring.
7. U-nut.
8. ALOC bolt: replace with a new one.
9. CT bolt.

ENGINE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
MAINTENANCE:				
Spark plug	4	10	12 (1.2 , 9)	
Timing hole cap	1	45	18 (1.8 , 13)	NOTE 3
LUBRICATION SYSTEM:				
Oil drain bolt	1	14	29 (3.0 , 22)	
Oil filter boss	1	20	18 (1.8 , 13)	NOTE 2
Oil pump assembly flange bolt	1	6	13 (1.3 , 9)	NOTE 9
Oil pump driven sprocket bolt	1	6	15 (1.5 , 11)	NOTE 2
Oil strainer nut	1	6	12 (1.2 , 9)	NOTE 7
Oil return pipe bracket bolt	1	6	12 (1.2 , 9)	NOTE 9
Oil filter cartridge	1	20	10 (1.0 , 7)	NOTE 6
Oil pressure switch	1	PT 1/8	12 (1.2 , 9)	NOTE 1
Oil pressure switch wire terminal screw	1	4	2 (0.2 , 1.4)	
Oil pipe mounting bolt	2	6	12 (1.2 , 9)	NOTE 2
FUEL SYSTEM (Programmed Fuel Injection):				
ECT (Engine Coolant Temperature)/thermo sensor	1	12	10 (1.0 , 7)	NOTE 1
Knock sensor	1	12	31 (3.2 , 23)	
Throttle body insulator band screw	8	5	See page 1-15	
Throttle cable bracket mounting bolt	2	5	3 (0.35 , 2.5)	
Fuel pipe mounting nut	2	6	10 (1.0 , 7)	NOTE 7 Yellow paint
Fuel pipe setting bolt	2	8	22 (2.2 , 16)	Yellow paint
Pressure regulator lock nut	1	18	27 (2.8 , 20)	Yellow paint
Starter valve synchronization plate screw	4	3	1 (0.09 , 0.7)	
Starter valve lock nut	4	10	2 (0.18 , 1.3)	
Wax unit mounting screw	2	6	5 (0.5 , 3.6)	White paint
Wax unit link bracket screw	1	3	1 (0.09 , 0.7)	
Vacuum joint plug socket bolt for synchronization	4	5	3 (0.3 , 2.2)	
COOLING SYSTEM:				
Water pump cover bolt	3	6	13 (1.3 , 9)	NOTE 9

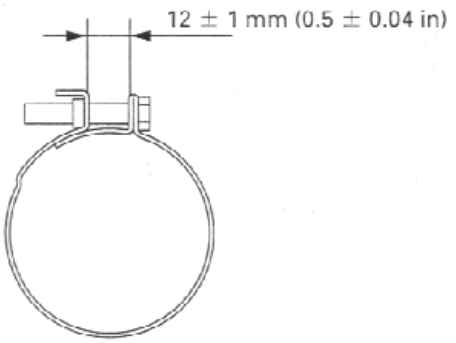
ENGINE (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
ENGINE MOUNTING:				
Drive sprocket cover bolt	2	6	12 (1.2 , 9)	
Drive sprocket cover damper mounting bolt	2	6	12 (1.2 , 9)	NOTE 2, 9
Wire clamp flange bolt	1	6	12 (1.2 , 9)	NOTE 2, 9
Drive sprocket special bolt	1	10	54 (5.5 , 40)	
CYLINDER HEAD/VALVES:				
Cylinder head cover bolt	6	6	10 (1.0 , 7)	
Breather plate flange bolt	3	6	12 (1.2 , 9)	NOTE 2, 9
Camshaft holder flange bolt	10	6	12 (1.2 , 9)	NOTE 5
Cylinder head sealing bolt	1	18	32 (3.3 , 24)	NOTE 2
Cylinder head SH bolt	2	6	10 (1.0 , 7)	
Cylinder head mounting bolt/washer	10	10	69 (7.0 , 51)	NOTE 5
Cam sprocket bolt	4	7	20 (2.0 , 14)	NOTE 2
Cam chain tensioner cap nut	1	6	12 (1.2 , 9)	
Cam chain tensioner lifter mounting bolt	2	6	10 (1.0 , 7)	
Cam chain guide A mounting bolt	1	6	12 (1.2 , 9)	
Cylinder head stud bolt (exhaust pipe stud bolt)	8	8	See page 1-15	
PAIR reed valve cover flange bolt	4	6	10 (1.0 , 7)	
Cam pulse generator cover SH bolt	3	6	12 (1.2 , 9)	
CLUTCH/GEARSHIFT LINKAGE:				
Clutch center lock nut	1	25	127 (13.0 , 94)	NOTE 4, 5
Clutch spring bolt/washer	5	6	12 (1.2 , 9)	
Clutch slave cylinder bleeder screw	1	8	9 (0.9 , 6.5)	
Clutch slave cylinder mounting bolt	3	6	10 (1.0 , 7)	
Right crankcase cover SH bolt	11	6	12 (1.2 , 9)	
Right crankcase cover center bolt	1	6	12 (1.2 , 9)	
Shift drum center socket bolt	1	8	23 (2.3 , 17)	NOTE 2
Shift drum stopper pivot bolt	1	6	12 (1.2 , 9)	
Gearshift return spring pin	1	8	23 (2.3 , 17)	
ALTERNATOR/STARTER CLUTCH:				
Alternator cover SH bolt	10	6	12 (1.2 , 9)	
Alternator wire clamp socket bolt	1	6	9 (0.9 , 6.5)	
Flywheel flange bolt	1	10	103 (10.5 , 76)	NOTE 5
Stator mounting socket bolt	4	6	12 (1.2 , 9)	
Stator one-way clutch socket bolt	6	6	16 (1.6 , 12)	NOTE 2
CRANKCASE/PISTON/CYLINDER:				
Crankcase bolt, 10 mm	1	10	39 (4.0 , 29)	
9 mm (main journal bolt)	10	9	37 (3.8 , 27)	NOTE 5
8 mm	10	8	25 (2.5 , 18)	
7 mm	7	7	18 (1.8 , 13)	
6 mm	6	6	12 (1.2 , 9)	
Connecting rod nut	8	8	41 (4.2 , 30)	NOTE 5
Lower crankcase flange bolt	1	10	29 (3.0 , 22)	
Lower crankcase sealing bolt, 20 mm	1	20	29 (3.0 , 22)	NOTE 2
8 mm	1	8	22 (2.2 , 16)	NOTE 2
CRANKSHAFT/TRANSMISSION/BALANCER:				
Mainshaft bearing set plate flange bolt	2	6	12 (1.2 , 9)	NOTE 2
Shift drum set plate flange bolt	2	6	12 (1.2 , 9)	NOTE 2
Balancer timing hole cap	1	30	7 (0.7 , 5.1)	NOTE 3
Balancer shaft holder flange bolt (front/rear)	2	8	27 (2.8 , 20)	
Balancer shaft pinch bolt	3	6	12 (1.2 , 9)	
Balancer idle shaft holder flange bolt	1	8	27 (2.8 , 20)	
Balancer idle shaft bolt	1	6	12 (1.2 , 9)	NOTE 2

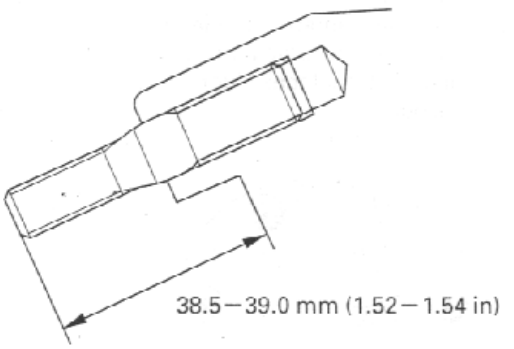
ENGINE (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
IGNITION SYSTEM:				
Ignition pulse generator cover SH bolt	8	6	12 (1.2 , 9)	NOTE 1 See page 1-20
Ignition pulse generator rotor special bolt	1	10	59 (6.0 , 43)	NOTE 5
LIGHT/METERS/SWITCHES:				
Neutral switch	1	10	12 (1.2 , 9)	

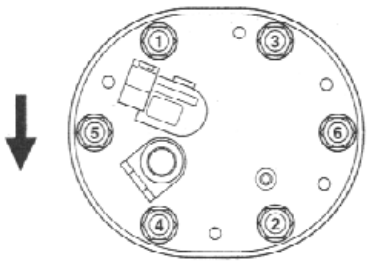
Throttle body insulator clamp:



Exhaust pipe stud bolt:



FRAME

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
FRAME BODY PANELS/EXHAUST SYSTEM:				
Side stand pivot bolt	1	10	10 (1.0 , 7)	
Side stand pivot lock nut	1	10	29 (3.0 , 22)	
Main stand mounting bolt	1	10	54 (5.5 , 40)	NOTE 8
Main footpeg holder socket bolt	4	8	26 (2.7 , 20)	
Passenger footpeg holder bolt	4	8	26 (2.7 , 20)	
Bank sensor	2	8	22 (2.2 , 16)	
Exhaust pipe joint nut	8	7	20 (2.0 , 14)	
Muffler band bolt	4	8	17 (1.7 , 12)	
Muffler bracket bolt	2	8	26 (2.7 , 20)	
Seat rail mounting bolt	4	10	44 (4.5 , 33)	
FUEL SYSTEM (Programmed Fuel Injection):				
Fuel tube sealing nut (throttle body side)	1	12	22 (2.2 , 16)	
Fuel tube banjo bolt (fuel tank side)	1	12	22 (2.2 , 16)	
Service check bolt	1	6	15 (1.5 , 11)	
Fuel pump mounting nut	6	6	12 (1.2 , 9)	
				
Fuel filler cap bolt	3	4	2 (0.2 , 1.4)	
ENGINE MOUNTING:				
Side stand bracket bolt	2	10	54 (5.5 , 40)	
Engine hanger nut (rear/upper)	1	12	64 (6.5 , 47)	
Engine hanger nut (rear/lower)	1	12	64 (6.5 , 47)	
Engine hanger bolt	3	10	40 (4.1 , 30)	
Engine hanger adjusting bolt	2	22	11 (1.1 , 8)	
Engine hanger adjusting bolt lock nut	2	22	54 (5.5 , 40)	
CLUTCH/GEARSHIFT LINKAGE:				
Clutch master cylinder holder bolt	2	6	12 (1.2 , 9)	
Clutch master cylinder cap screw	2	4	1 (0.15 , 1.1)	
Clutch lever pivot bolt	1	6	1 (0.1 , 0.7)	
Clutch lever pivot nut	1	6	6 (0.6 , 4.3)	
Clutch lever adjuster	1	5	4 (0.4 , 2.9)	
Clutch switch screw	1	4	1 (0.12 , 0.9)	
Gearshift pedal bolt	1	6	10 (1.0 , 7)	
FRONT WHEEL/SUSPENSION/STEERING:				
Handlebar pinch bolt	2	8	26 (2.7 , 20)	
Handlebar weight mounting screw	2	6	10 (1.0 , 7)	NOTE 8
Steering stem nut	1	24	103 (10.5 , 76)	See page 13-34
Top thread A	1	26	25 (2.5 , 18)	
Top thread B	1	26	—	
Fork top bridge pinch bolt	2	8	23 (2.3 , 17)	
Fork bottom bridge pinch bolt	2	10	49 (5.0 , 36)	
Front axle bolt	1	14	59 (6.0 , 43)	
Front axle holder bolt	4	8	22 (2.2 , 16)	
Front brake disc mounting bolt	12	6	20 (2.0 , 14)	NOTE 8
Fork cap	2	37	23 (2.3 , 17)	
Fork socket bolt	2	8	20 (2.0 , 14)	NOTE 2
Fork damper lock nut	2	10	20 (2.0 , 14)	

FRAME (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
REAR WHEEL/SUSPENSION:				
Rear axle nut	1	18	93 (9.5 , 69)	NOTE 7
Rear brake disc mounting bolt	4	8	42 (4.3 , 31)	NOTE 8
Driven sprocket nut	5	12	108 (11.0 , 80)	NOTE 7
Rear shock absorber mounting nut	2	10	42 (4.3 , 31)	NOTE 7
Shock link nut (frame side)	1	10	59 (6.0 , 43)	NOTE 7
Shock link nut (shock arm plate side)	1	10	42 (4.3 , 31)	NOTE 7
Shock arm plate nut (swingarm side)	1	10	42 (4.3 , 31)	NOTE 7
Swingarm pivot adjusting bolt	1	30	15 (1.5 , 11)	See page 14-19
Swingarm pivot lock nut	1	30	64 (6.5 , 47)	
Swingarm pivot nut	1	18	93 (9.5 , 69)	NOTE 7
Drive chain slider bolt	2	6	9 (0.9 , 6.5)	NOTE 8
HYDRAULIC BRAKE:				
Front brake master cylinder holder bolt	2	6	12 (1.2 , 9)	
Front brake master cylinder cap screw	2	4	1 (0.15 , 1.1)	
Brake lever pivot bolt	1	6	1 (0.1 , 0.7)	
Brake lever pivot nut	1	6	6 (0.6 , 4.3)	
Brake lever adjuster	1	5	4 (0.4 , 2.9)	
Front brake switch screw	1	4	1 (0.12 , 0.9)	
Right front brake caliper mounting bolt	2	8	31 (3.2 , 23)	NOTE 8
Left front brake caliper pivot bolt	1	8	31 (3.2 , 23)	NOTE 8
Left front brake caliper bolt (second master joint)	1	8	25 (2.6 , 19)	NOTE 8
Caliper body B bolt	9	8	32 (3.3 , 24)	NOTE 8
Front brake caliper slide pin (main)	3	12	23 (2.3 , 17)	NOTE 2
Front brake caliper slide pin (sub)	3	8	13 (1.3 , 9)	NOTE 2
Pad pin	3	10	18 (1.8 , 13)	
Brake caliper bleeder	6	8	6 (0.6 , 4.3)	
Second master cylinder mounting bolt	2	8	31 (3.2 , 23)	NOTE 8
Second master cylinder push rod nut	1	8	18 (1.8 , 13)	
Second master cylinder connector	2	6	10 (1.0 , 7)	
Rear master cylinder mounting bolt	2	6	12 (1.2 , 9)	
Rear master cylinder reservoir mounting bolt	1	6	12 (1.2 , 9)	
Rear master cylinder push rod nut	1	8	18 (1.8 , 13)	
Rear master cylinder hose joint screw	1	4	1 (0.15 , 1.1)	NOTE 2
Brake hose oil bolt	12	10	34 (3.5 , 25)	
Brake pipe joint	8	10	17 (1.7 , 12)	NOTE 5
Brake pipe 2/3 way joint	2	6	12 (1.2 , 9)	
Brake hose clamp bolt	2	6	12 (1.2 , 9)	
Delay valve mounting bolt	2	6	12 (1.2 , 9)	
PCV (Proportional Control Valve) mounting bolt	2	6	12 (1.2 , 9)	
Right front brake hose clamp bolt	1	6	12 (1.2 , 9)	
IGNITION SYSTEM:				
Ignition coil mounting nut	4	6	16 (1.6 , 12)	
Ignition coil mounting nut	2	6	10 (1.0 , 7)	
LIGHTS/METERS/SWITCHES:				
Ignition switch mounting bolt	2	8	25 (2.5 , 18)	
Side stand switch mounting bolt	1	6	10 (1.0 , 7)	

TOOLS

NOTES: 1. Equivalent commercially available in U.S.A.
2. Not available in U.S.A.
3. Alternative tool.
4. Newly provided tool.
5. Newly designed tool.

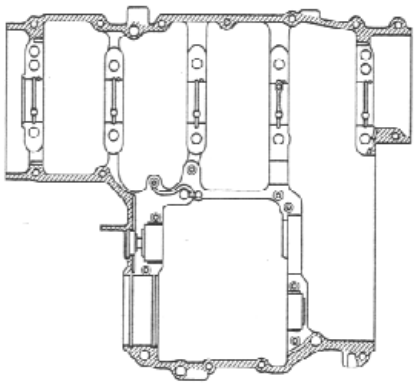
DESCRIPTION	TOOL NUMBER	REMARKS	REF. SEC.
Oil pressure gauge set	07506-3000000	NOTE 1	4
Oil pressure gauge attachment	07510-4220100	NOTE 1	4
Clutch center holder	07724-0050002		9
Flywheel holder	07725-0040000	NOTE 1	10
Flywheel puller	07733-0020001	NOTE 3: 07933-3950000	10
Remover weight	07741-0010201		14
Attachment, 37 × 40 mm	07746-0010200		9, 14
Attachment, 42 × 47 mm	07746-0010300		9, 13
Attachment, 52 × 55 mm	07746-0010400		14
Attachment, 62 × 68 mm	07746-0010500		14
Attachment, 24 × 26 mm	07746-0010700		14
Driver, 40 mm I.D.	07746-0030100		12
Attachment, 30 mm I.D.	07746-0030300		12
Pilot, 17 mm	07746-0040400		14
Pilot, 20 mm	07746-0040500		13, 14
Pilot, 25 mm	07746-0040600		14
Pilot, 35 mm	07746-0040800		9
Pilot, 28 mm	07746-0041100		14
Bearing remover shaft	07746-0050100		13, 14
Bearing remover head, 20 mm	07746-0050600		13, 14
Driver	07749-0010000		9, 13, 14
Valve spring compressor	07757-0010000		8
Valve seat cutter		NOTE 1	8
Seat cutter, 29 mm (45° EX)	07780-0010300		
Seat cutter, 33 mm (45° IN)	07780-0010800		
Flat cutter, 30 mm (32° EX)	07780-0012200		
Flat cutter, 33 mm (32° IN)	07780-0012900		
Interior cutter, 30 mm (60° EX)	07780-0014000		
Interior cutter, 34 mm (60° IN)	07780-0014700	NOTE 5	
Cutter holder, 5 mm	07781-0010400		
Pivot adjusting wrench	07908-4690003		14
Snap ring pliers	07914-SA50001	NOTE 2: 07914-3230001	9, 15
Steering stem socket	07916-3710101		13
Bearing remover handle	07936-3710100		14
Bearing remover set	07936-3710600		14
Valve guide driver, 5 mm	07942-MA60000		8
Needle bearing remover	07946-KA50000		13
Ball race remover set	07946-KM90001	NOTE 3:	13
—Driver attachment, A	07946-KM90100	Can be used with the following	
—Driver attachment, B	07946-KM90200	combination:	
—Driver shaft assembly	07946-KM90300	07VMF-MAT0100	
—Bearing remover, A	07946-KM90401	07VMF-MAT0200	
Bearing remover, B	07946-KM90500	07VMF-KZ30200	
—Assembly base	07946-KM90600	07VMF-MAT0300	
		07VMF-MAT0400	
		07947-KA50100	
		07965-MA60000	
		07946-ME90200	
Steering stem driver	07946-MB00000		13
Driver shaft	07946-MJ00100		14

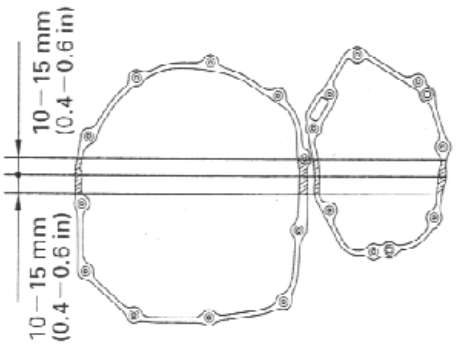
DESCRIPTION	TOOL NUMBER	REMARKS	REF. SEC.
Oil seal driver	07947-KA40200	NOTE 3: 07NMD-KZ3010A (U.S.A. only)	13
Slider weight	07947-KA50100	NOTE 3: 07NMD-KZ3010A (U.S.A. only)	13
Valve spring compressor attachment	07959-KM30101		8
Driver shaft	07964-MB00200		12
Valve guide reamer	07984-MA60001	07984-MA6000C (U.S.A. only)	8
Pin driver	07GMD-KT80100	NOTE 2	14
Oil filter wrench	07HAA-PJ70100		3
Peak voltage adaptor	07HGJ-0020100	NOTE 2: Peak voltage tester (U.S.A. only)	5, 17, 19
Needle bearing remover, 28 mm	07HMC-MR70100	NOTE 2	14
Tappet hole protector	07HMG-MR70002	NOTE 2	8
Drive chain tool set	07HMH-MR10103	07HMH-MR1010B (U.S.A. only)	3
Needle bearing remover	07LMC-KV30100		14
Compression gauge attachment	07RMJ-MY50100		8
Lock nut wrench	07VMA-MAT0100	07VMA-MAT010A (U.S.A. only)	7
Test pin box	07WGZ-0010100	NOTE 3	5
ECU test harness	07WMZ-MBG0100	NOTE 3	5

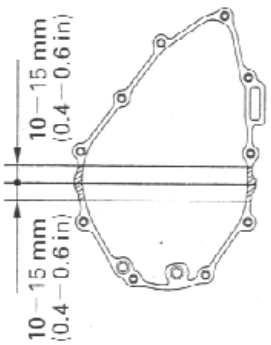
LUBRICATION & SEAL POINTS

ENGINE

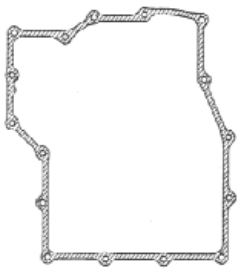
LOCATION	MATERIAL	REMARKS
Crankcase mating surface	Liquid sealant (Three Bond 1207B or equivalent)	





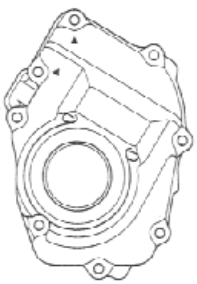


Oil pan mating surface

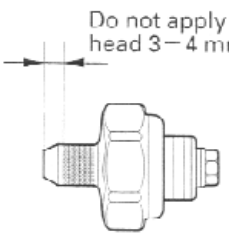


Ignition pulse generator cover bolt threads (marked "△")

Coating width: 6.5 ± 1 mm

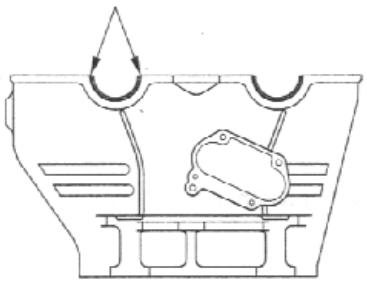
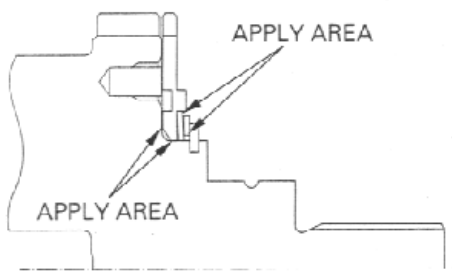


Oil pressure switch threads



Thermo unit threads

ENGINE (Cont'd)

LOCATION	MATERIAL	REMARKS
Cylinder head semi-circular cut-out 	Sealant	
Camshaft lobes/journals Valve lifter outer sliding surface Valve stem (valve guide sliding surface) Piston pin sliding surface Main journal bearing surface Connecting rod bearing surface Crankshaft journals M3/4, C5, C6 shifter gear (shift fork grooves) Clutch outer/primary driven gear sliding surface Clutch outer guide sliding surface Starter reduction gear outer surface Primary drive gear and sub gear sliding surface 	Molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease	
Piston ring sliding area Main journal 9 mm bolt threads and seating surface (after removing anti-rust oil additive) Cylinder head special bolt (after removing anti-rust oil additive) Oil strainer packing Oil filter cartridge threads and O-ring Flywheel bolt threads and seating surface Starter one-way clutch sliding surface Connecting rod nut threads Clutch joint piece sliding surface Clutch lifter rod surface Clutch center lock nut threads Clutch disc surface Each gear teeth and rotating surface Each bearing Each O-ring Other rotating area and sliding surface	Engine oil	

ENGINE (Cont'd)

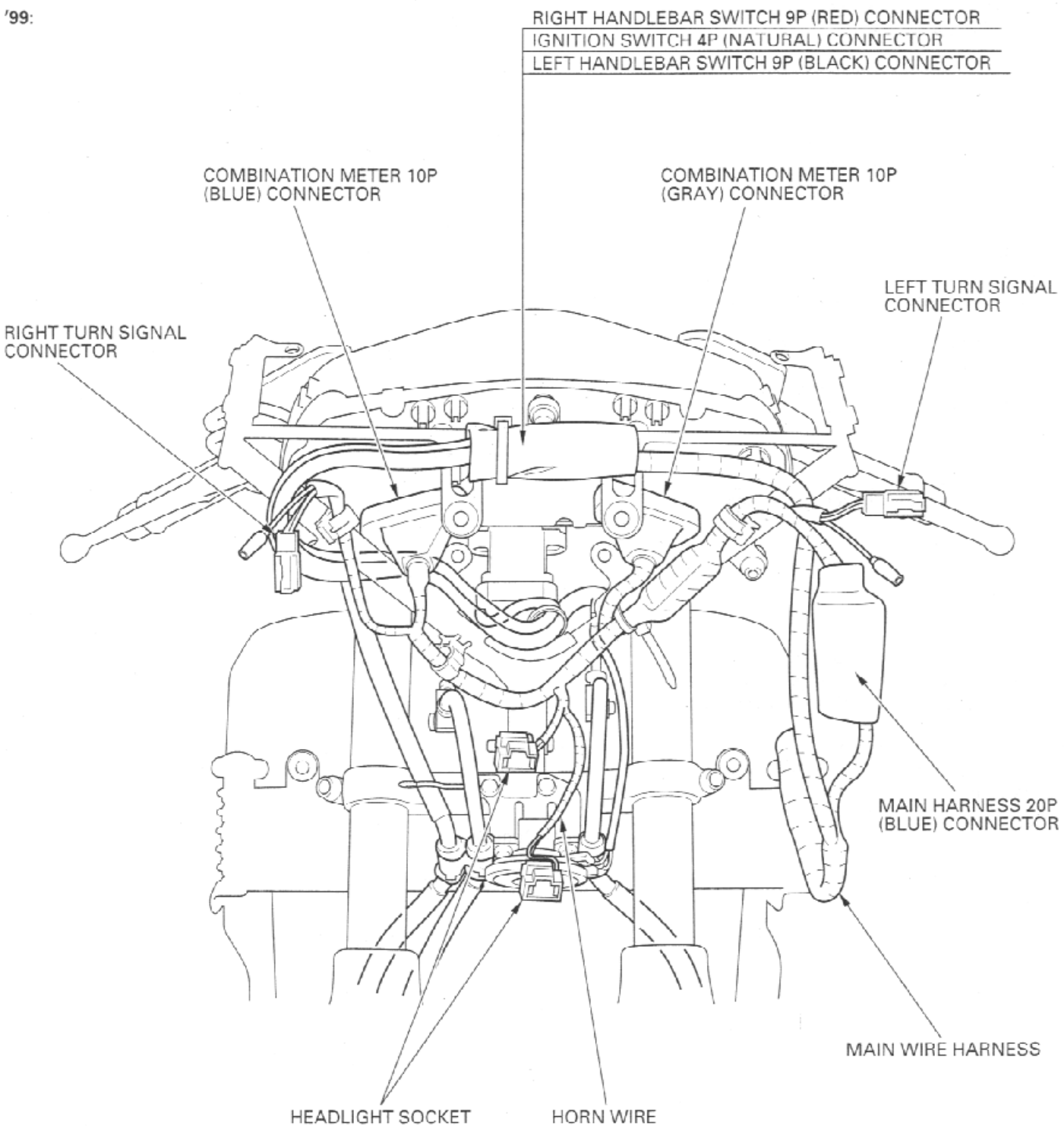
LOCATION	MATERIAL	REMARKS
Crankshaft hole cap threads Balancer damper rubber fitting area Balancer timing hole cap threads Oil seal lips	Multi-purpose grease	
Cylinder head sealing bolt threads Cylinder head cover breather joint threads Balancer idle shaft set plate bolt threads Drive sprocket cover damper rubber bolt threads Lower crankcase sealing bolt threads Starter one-way clutch outer bolt threads Oil pump driven sprocket bolt threads Oil pass pipe bolt threads Oil filter boss threads Drive sprocket cover wire clamp bolt threads Shift drum set plate bolt threads Shift drum center bolt threads Mainshaft bearing set plate bolt threads Cam sprocket bolt threads Cylinder head cover breather plate bolt threads	Locking agent	Coating width: 6.5 ± 1 mm

FRAME

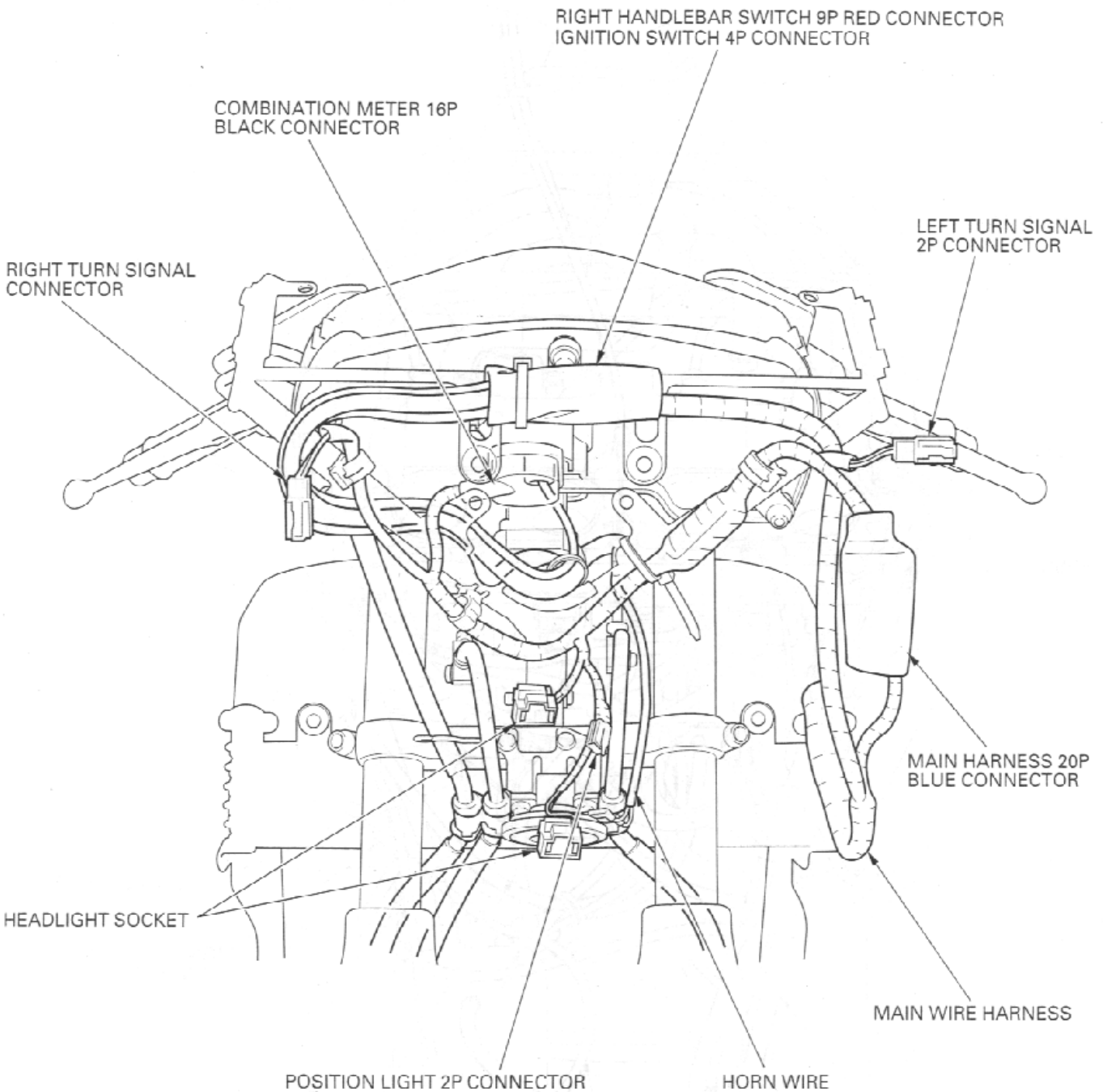
LOCATION	MATERIAL	REMARKS
Steering head bearing sliding surface Steering head dust seal lips Swingarm pivot bearing Swingarm pivot dust seal lips Front wheel dust seal lips Rear wheel dust seal lips Rear wheel side collar inner surface Shock absorber needle bearing Shock absorber dust seal lips Shock link needle bearing Shock link dust seal lips Footpeg sliding area Passenger footpeg sliding area Left front brake caliper pivot bearing sliding surface Left front brake caliper pivot oil seal sliding surface Left fork needle bearing sliding surface Left fork dust seal sliding surface Rear brake pedal pivot sliding area Throttle pipe sliding area Seat catch hook	Multi-purpose grease	
Side stand pivot surface Main stand pivot surface	Molybdenum disulfide grease	
Shock absorber spring adjuster cam surface	Molybdenum paste	
Steering stem top thread Throttle cable casing inner Brake pipe joint threads	Engine oil	
Brake master cylinder cups Brake caliper piston seals	DOT 4 brake fluid	
Brake caliper dust seals Front brake lever pivot and piston tips Second master cylinder boot inside and push rod tips Rear master cylinder boot inside and push rod tips Brake caliper slide pin surface	Silicone grease	
Brake caliper slide pin threads Rear master cylinder hose joint screw threads Fork socket bolt threads Driven sprocket stud bolt threads	Locking agent	
Handle grip rubber inside	Honda Bond A or Honda Hand Grip Cement (U.S.A. only)	
Fork cap O-ring Fork oil seal lips	Pro Honda Suspension Fluid SS-8	

CABLE & HARNESS ROUTING

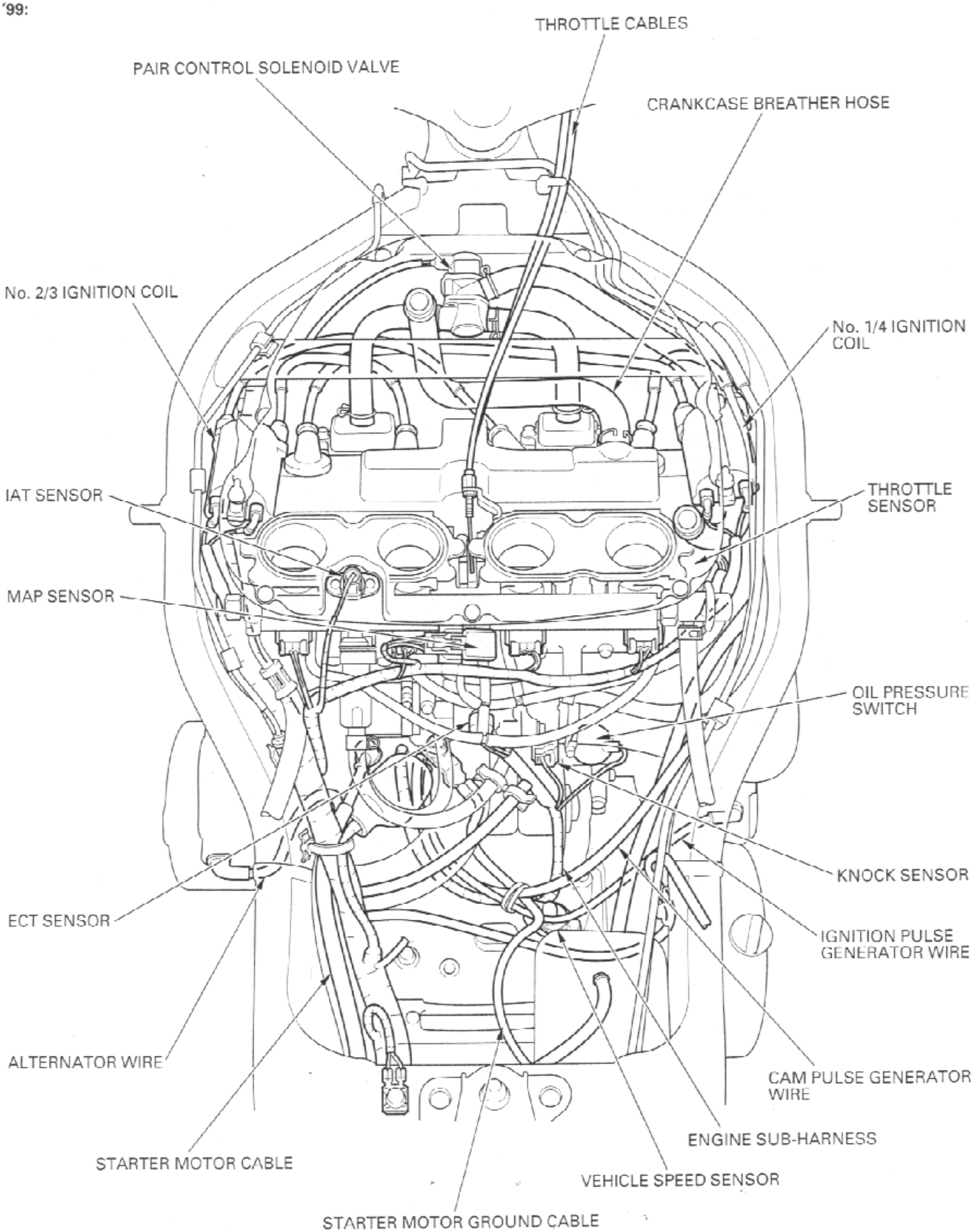
'99:



AFTER '99:


RIGHT HANDLEBAR SWITCH 9P RED CONNECTOR
IGNITION SWITCH 4P CONNECTOR
COMBINATION METER 16P
BLACK CONNECTOR
LEFT TURN SIGNAL
2P CONNECTOR
RIGHT TURN SIGNAL
CONNECTOR
MAIN HARNESS 20P
BLUE CONNECTOR
HEADLIGHT SOCKET
MAIN WIRE HARNESS
POSITION LIGHT 2P CONNECTOR
HORN WIRE

'99:


THROTTLE CABLES
PAIR CONTROL SOLENOID VALVE
CRANKCASE BREATHER HOSE
No. 2/3 IGNITION COIL
No. 1/4 IGNITION COIL
IAT SENSOR
THROTTLE SENSOR
MAP SENSOR
OIL PRESSURE SWITCH
KNOCK SENSOR
ECT SENSOR
IGNITION PULSE GENERATOR WIRE
ALTERNATOR WIRE
CAM PULSE GENERATOR WIRE
ENGINE SUB-HARNESS
STARTER MOTOR CABLE
VEHICLE SPEED SENSOR
STARTER MOTOR GROUND CABLE