

HOW TO USE THIS MANUAL

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standard set by 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 through 3 apply to the whole motorcycle, while sections 4 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 page 1 of that 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.

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1 GENERAL INFORMATION

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GENERAL SAFETY

▲ WARNING

If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.

▲ WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in your working area or where gasoline is stored.

▲ WARNING

Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA designed to minimize the hazard caused by airborne asbestos fibers.

▲ 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.*
- *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.*

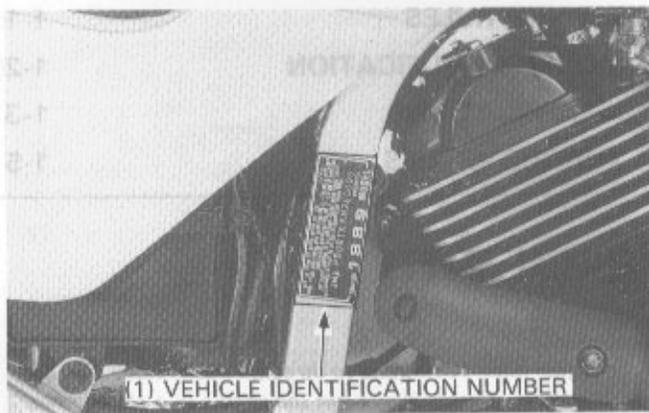
CAUTION

- *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.*

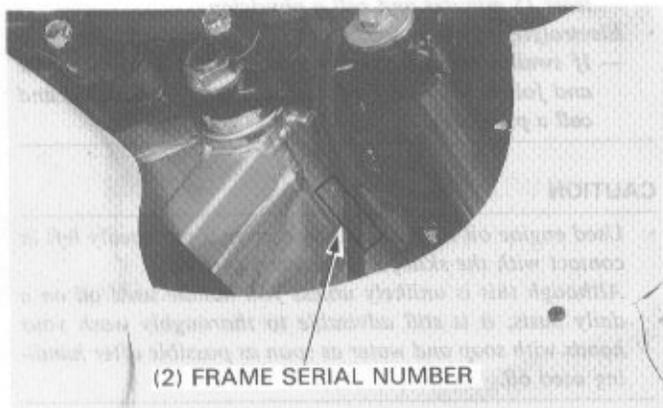
SERVICE RULES

1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalent. Parts that do not meet HONDA's design specifications may damage the motorcycle.
2. Use the special tools designed for this product.
3. Use only metric tools when servicing this motorcycle. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the motorcycle.
4. Install new gaskets, O-rings, cotter pins, lock plates, etc. when reassembling.
5. When tightening a series of bolts or nuts, begin with the larger-diameter or inner bolts first, and tighten to the specified torque diagonally, 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.

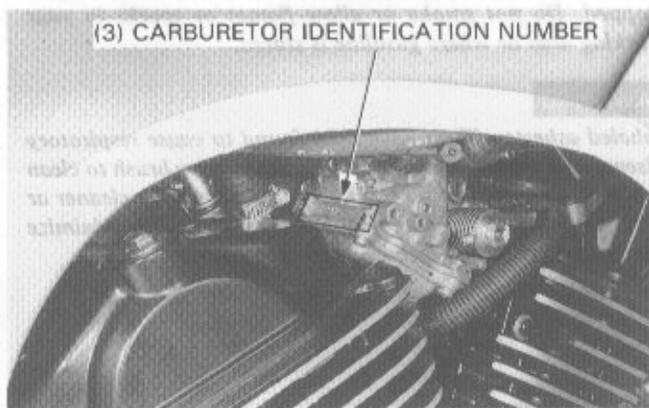
MODEL IDENTIFICATION



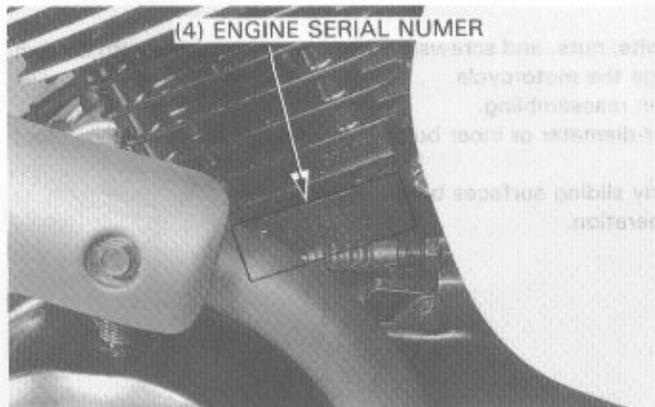
The vehicle identification number (VIN) is on the right side of the frame pipe.



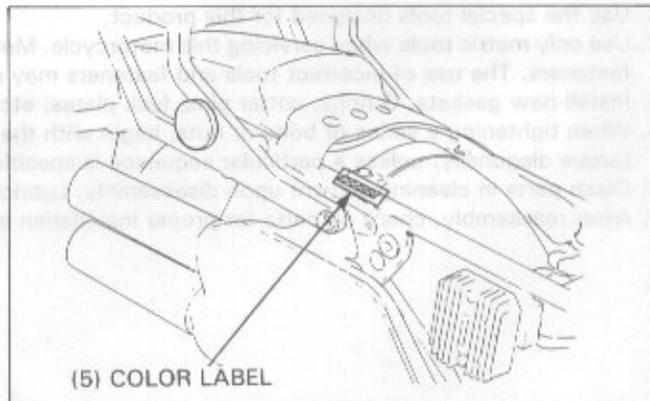
The frame serial number is stamped on the right side of the steering head.



The carburetor identification number is on the front carburetor body (right-side).



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



The color label is attached to the right frame tube under the seat. When ordering a color coded part, always specify its designated color code.

SPECIFICATIONS

ITEM		SPECIFICATIONS		
DIMENSIONS	Overall length	2,265 mm (89.2 in)		
	Overall width	865 mm (34.1 in)		
	Overall height	1,265 mm (49.8 in)		
	Wheelbase	1,505 mm (59.3 in)		
	Seat height	850 mm (33.5 in)		
	Ground clearance	225 mm (8.9 in)		
	Dry weight	181 kg (399.0 lb)		
	Curb weight	201 kg (443.1 lb)		
FRAME	Type	Semi double cradle		
	Front suspension, travel	Telescopic fork, 200 mm (7.9 in)		
	Rear suspension, travel	Swing arm/Shock absorber, 187 mm (7.4 in)		
	Front tire size	90/90-21 54S		
	Rear tire size	130/80-17 65S		
	Cold tire pressures	Up to 90 kg (200 lbs) load	Front	29 psi (2.00 kg/cm ² , 200 kPa)
			Rear	29 psi (2.00 kg/cm ² , 200 kPa)
		Up to vehicle capacity load	Front	29 psi (2.00 kg/cm ² , 200 kPa)
			Rear	29 psi (2.00 kg/cm ² , 200 kPa)
		Front brake	Hydraulic disc	
	Rear brake	Internal expanding shoes		
	Fuel capacity	18 liters (4.8 US gal, 4.0 Imp gal)		
	Fuel reserve capacity	2.9 liters (0.77 US gal, 0.64 Imp gal)		
	Caster angle	28°		
	Trail	108 mm (4.3 in)		
	Fork leg oil capacity	549 cm ³ (185.7 US oz, 19.3 Imp oz)		
ENGINE	Type	Water cooled 4-stroke		
	Cylinder arrangement	2 cylinders, 52°V		
	Bore and stroke	75.0 x 66.0 mm (2.95 x 2.60 in)		
	Displacement	583.2 cm ³ (35.59 cu in)		
	Compression ratio	9.2 : 1		
	Valve train	Silent, multi-link chain drive and OHC with rocker arms		
	Oil capacity	2.8 lit (2.96 US qt, 2.46 Imp qt) after disassembly 2.2 lit (2.32 US qt, 1.94 Imp qt) after draining		
	Lubrication system	Forced pressure and wet sump		
	Air filtration	Paper filter		
	Cylinder compression	1177 kPa (12.0 kg/cm ² , 171 psi)		
	Intake valve	Opens	10° (BTDC)	
		Closes	40° (ABDC)	
	Exhaust valve	Opens	40° (BBDC)	
Closes		10° (ATDC)		
Valve clearance (cold)	intake	0.15 mm (0.006 in)		
	exhaust	0.20 mm (0.008 in)		
	Engine dry weight	59.5 kg (131.17 lb)		

ITEM	QTY	THREAD DIA. (mm)	TORQUE N-m (kg-m, ft-lb)	REMARKS
Side cover	2	8	4.3 (0.43, 3)	
Lower cowling	2	6	10 (1.0, 7)	
Seat bolt	2	8	10 (1.0, 7)	
Air cleaner case	4	6	10 (1.0, 7)	
Exhaust pipe protectors	6	8	12 (1.2, 7)	
Choke lever	1	6	10 (1.0, 7)	

GENERAL INFORMATION

< >: California model

ITEM		SPECIFICATIONS		
CARBURETOR	Type	Piston valve, dual carburetor		
	I.D. number	VDFHA <VDFJA>		
	Main jet	FRONT: #120 REAR: #120		
	Pilot screw opening	2-1/2 turns out		
	Float level	7 mm (0.28 in)		
	Idle speed	1,300 ± 100 rpm		
DRIVE TRAIN	Clutch	Wet, multi-plate		
	Transmission	5-speed constant mesh		
	Primary reduction	1.888 (68/36)		
	Final reduction	3.133 (47/15)		
	Gear ratio I	2.571 (36/14)		
	Gear ratio II	1.777 (32/18)		
	Gear ratio III	1.380 (29/21)		
	Gear ratio IV	1.125 (27/24)		
	Gear ratio V	0.961 (25/26)		
	Gear shift pattern	Left foot operated return system, 1-N-2-3-4-5		
ELECTRICAL	Ignition	DC-CDI		
	Ignition timing	Initial	10° BTDC at idle	
		Full advance	30° BTDC at 4,500 rpm	
	Alternator	AC GENERATOR 0.31 kw/5,000 rpm		
	Battery capacity	12V 12AH		
	Spark plug		NGK	ND
		Standard	DPR8EA-9	X24EPR-U9
		For cold climate (below 5°C/41°F)	DPR7EA-9	X22EPR-U9
		For extended high speed driving	DPR9EA-9	X27EPR-U9
	Spark plug gap	0.8-0.9 mm (0.031-0.035 in)		
	Fuse	Main	30A	
		Sub	10A x 3 15A	
Starting system	Electrical stater			
Headlight	12V 60/55W			
Position light	12V 4W			
Turn signal light	12V 21W			
Stop & taillight	12V 21/5W			
Meter lights	12V 1.7W x 3			
Indicator light	Neutral	12V 3.4W		
	High beam	12V 1.7W		
	Turn signal	12V 3.4W		
	Oil warning	12V 3.4W		



The color label is attached to the right frame tube under the seat. When ordering a color coded part, always specify the integrated color code.

TORQUE VALUES

ENGINE	REMARKS	TORQUE N-m (kg-m, ft-lb)	THREAD DIA. (mm)	Q'TY	ITEM
ITEM			THREAD DIA. (mm)	Q'TY	REMARKS
Oil pressure switch		1	—	12 (1.2, 9)	Apply sealant
Spark plug		1	12	14 (1.4, 10)	
Engine oil drain bolt		1	14	35 (3.5, 25)	
Oil filter		1	20	10 (1.0, 7)	
Fuel cup		1	24	4 (0.4, 2.9)	
Valve adjusting screw lock nut		6	7	23 (2.3, 17)	Apply oil
Drum stopper plate mounting bolt		1	6	12 (1.2, 9)	Apply locking agent
Primary drive gear mounting bolt		1	12	90 (9.0, 65)	UBS bolt
Oil pump driven sprocket bolt		1	6	15 (1.5, 11)	
Clutch lock nut		1	18	130 (13.0, 94)	
Clutch lifter plate bolt		1	6	10 (1.0, 7)	
Oil pass pipe bolt (7 mm)		2	7	10 (1.0, 7)	
(8 mm)		1	8	23 (2.3, 17)	
Flywheel bolt		1	12	130 (13.0, 94)	Left-hand threads/ UBS bolt
Starter clutch torx bolt		3	8	30 (3.0, 22)	Apply locking agent
Cylindr head cover bolt		4	6	10 (1.0, 7)	Special bolt
Camshaft holder (8 mm bolt)		6	8	23 (2.3, 17)	
(8 mm nut)		2	8	23 (2.3, 17)	
(6 mm bolt)		4	6	10 (1.0, 7)	
Cylinder head (10 mm nut)		8	10	48 (4.8, 35)	
(8 mm bolt)		4	8	23 (2.3, 17)	
(8 mm nut)		2	8	23 (2.3, 17)	
(6 mm bolt)		2	6	10 (1.0, 7)	
Cam sprocket bolt		4	7	23 (2.3, 17)	
Cam chain tensioner mounting bolt		4	6	10 (1.0, 7)	
Connecting rod bearing cap nut		4	9	34 (3.4, 25)	
Bearing set plate		1	6	10 (1.0, 7)	Apply locking agent
Timing hole cap		1	14	10 (1.0, 7)	Apply MoS ₂ grease
Crankcase hole cap		1	30	15 (1.5, 11)	Apply MoS ₂ grease
Gearshift spindle return pin		1	8	23 (2.3, 17)	
Starter motor cable		2	6	10 (1.0, 7)	
Drive sprocket		2	6	10 (1.0, 7)	
Cylinder stud bolt (10 x 193.5 mm)		2	10	40 (4.0, 29)	
(10 x 197 mm)		6	10	40 (4.0, 29)	
(8 x 197 mm)		2	8	25 (2.5, 18)	
Crankcase cover bolt (6 x 35 mm)		12	6	12 (1.2, 9)	
(6 x 45 mm)		13	6	12 (1.2, 9)	
Stator socket bolt		4	6	12 (1.2, 9)	
Thermostatic switch		1	—	18 (1.8, 13)	

FRAME

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kg-m, ft-lb)	REMARKS
Side cover	2	6	4.3 (0.43, 3)	
Lower cowlng	2	6	10 (1.0, 7)	
Seat bolt	2	8	10 (1.0, 7)	
Air cleaner case	4	6	10 (1.0, 7)	
Exhaust pipe protectors	6	6	12 (1.2, 7)	
Choke lever	1	6	10 (1.0, 7)	

GENERAL INFORMATION

FRAME

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kg·m, ft·lb)	REMARKS
Rear axle nut	1	16	95 (9.5, 69)	
Spokes (front/rear)	—	B.C. 3.5	3.8 (0.38, 2.7)	
Swingarm/engine pivot nut	1	14	110 (11.0, 80)	Self-locking
Engine mounting nut (upper/lower)	2	10	55 (5.5, 40)	
Engine bracket nut	2	8	27 (2.7, 20)	
Exhaust pipe band bolt	1	8	22 (2.2, 16)	
Exhaust pipe joint nut	4	8	27 (2.7, 20)	Cap nut
Muffler mounting bolt (front)	1	8	40 (4.0, 29)	
(rear)	1	10	65 (6.5, 47)	With carrier
Rear carrier bolt (front/left)	1	8	45 (4.5, 33)	
(rear)	2	8	27 (2.7, 20)	
Turn signal stay bolt	2	8	27 (2.7, 20)	
Handlebar upper holder	4	8	26 (2.6, 19)	
Brake disc	6	8	40 (4.0, 29)	Apply oil
Front wheel hub cover	3	4	1.5 (0.15, 1.1)	
Front axle	1	16	65 (6.5, 47)	
Axle holder nut	4	6	12 (1.2, 9)	
Fork slider socket bolt	2	8	20 (2.0, 14)	
Fork leg pinch bolt (upper)	4	8	27 (2.7, 20)	
(lower)	4	8	35 (3.5, 25)	
Fork tube cap bolt	2	37	23 (2.3, 17)	
Gearshift pedal bolt	1	6	10 (1.0, 7)	
Steering bearing adjustment nut	1	26	3 (0.3, 2.2)	Tighten the nut with the steering stem pushed up.
Steering stem nut	1	24	100 (10.0, 72)	
Driven sprocket nut	6	10	44 (4.4, 32)	Apply oil
Shock absorber lower mount lock nut	1	14	68 (6.8, 49)	Apply locking agent
Shock absorber spring lock nut	1	50	90 (9.0, 65)	
Shock absorber mounting bolt (upper/lower)	2	10	45 (4.5, 33)	Self-locking
Shock arm-to-swing arm nut	1	12	105 (10.5, 76)	
Shock link-to-shock arm nut	1	10	65 (6.5, 47)	Self-locking
Shock link-to-frame nut	1	10	65 (6.5, 47)	Self-locking
Bleed valve	2	8	5.5 (0.55, 4)	
Caliper bolt	1	8	27 (2.7, 20)	
Brake hose joint	1	10	35 (3.5, 25)	
Brake joint nut	1	10	17 (1.7, 12)	
Caliper bracket bolt	2	8	27 (2.7, 20)	
Brake hose bolt	1	10	35 (3.5, 25)	
Caliper pivot bolt	1	8	23 (2.3, 17)	
Side stand pivot nut	1	10	40 (4.0, 29)	Self-locking
Fuel valve lock nut	1	18	40 (4.0, 29)	
Fuel tank mounting bolt	1	8	27 (2.7, 20)	
Rear step holder bracket	3	8	33 (3.3, 24)	
Right foot peg	1	12	85 (8.5, 61)	Apply locking agent
Left foot peg	1	10	65 (6.5, 47)	

Torque specifications listed above are for the most important tightening points. If a specification is not listed, follow the standards below.

STANDARD TORQUE VALUES

TYPE	TORQUE N·m (kg·m, ft·lb)	TYPE	TORQUE N·m (kg·m, ft·lb)
5 mm bolt and nut	5.3 (0.53, 4)	5 mm screw	4.3 (0.43, 3)
6 mm bolt and nut	10 (1.0, 7)	6 mm screw, 6 mm bolt with small head	9 (0.9, 7)
8 mm bolt and nut	22 (2.2, 16)	6 mm flange bolt and nut	12 (1.2, 9)
10 mm bolt and nut	35 (3.5, 25)	10 mm flange bolt, nut	40 (4.0, 29)
12 mm bolt and nut	55 (5.5, 40)		

TOOLS AND HARNESS ROUTING

COMMON

SPECIAL

DESCRIPTION	TOOL NUMBER	ALTERNATE TOOL	NUMBER	REFER TO SECTION
Oil filter wrench	07HAA-PJ70100			2
Oil pressure gauge	07506-3000000	Equivalent Commercially available in U.S.A.		2
Oil pressure gauge attachment	07510-4220100			2
Valve clearance adjusting wrench	07908-KE90000		07908-KE90100	3
Vacuum gauge	07404-0030000	Vacuum gauge set	M937B-021-XXXXX	3
Compression gauge	07305-0010000			3
Clutch center holder	07923-KE10000	Clutch center holder	07HGB-001000A	7
Valve guide reamer (IN)	07984-2000001	Valve guide reamer	07984-200000C (U.S.A. only)	9
Valve guide reamer (EX)	07984-ZE20001	Valve guide reamer	07984-ZE2000C (U.S.A. only)	9
Valve guide driver attachment (IN)	07943-MF50100			9
Valve guide driver attachment (EX)	07943-MF50200			9
Bearing remover set	07936-3710001	Not available in U.S.A.		11
—remover handle	07936-3710100			
—bearing remover set	07936-3710600			
—remover sliding weight	07741-0010201	Remover weight	07936-3710200	
*Bearing driver attachment	07HMF-MM90400			11
Fork seal driver	07947-KA50100			13
Fork seal driver attachment	07947-KF00100			13
Steering stem socket	07916-3710100			13
Ball race remover	07953-MA00000	Adjustable bearing remover	07736-A01000A	13
Steering stem driver	07946-4300100	Steering stem driver	07946-MB00000 with GN HT54	13
Needle bearing driver	07946-KA50000			14
Driver shaft	07946-MJ00100			14
Snap ring pliers	07914-3230001			2, 15

: The tools marked "" are new for this model.

* Wire harness should be routed in a manner that will not be pulled out, have excessive slack, be pinched or interfere with other parts.

TOOL NUMBER	DESCRIPTION
07381-0010100	Cutter holder
07381-0010201	EX 2.5 mm
07380-0010100	EX 2.5 mm (32)
07380-0010200	EX 2.5 mm (32)
07380-0010300	EX 2.5 mm (32)
07380-0010400	EX 2.5 mm (32)
07380-0010500	EX 2.5 mm (32)
07380-0010600	EX 2.5 mm (32)

After routing, check that the wire harness is not twisted, bent, or kinked.

Do not bend or twist control cables. Excessive bending and twisting of cables will not be tolerated.

O: CORRECT
X: INCORRECT

GENERAL INFORMATION

COMMON

DESCRIPTION	TOOL NUMBER	ALTERNATE TOOL	NUMBER	REFER TO SECTION
Wrench, 10 x 12 mm	07708-0030200	Equivalent Commercially available in U.S.A.		3
Spanner C, 5.8 x 6.1 mm	07701-0020300			3
Float level gauge	07401-0010000			4
Lock nut wrench, 17 x 27 mm	07716-0020300			7
Extention bar	07716-0020500	Equivalent commercially available in U.S.A.		7, 13, 14
Gear holder	07724-0010100			7
Rotor puller	07733-0020001	Not available in U.S.A.		8
Flywheel holder	07725-0040000			8
Valve guide driver, 5.5 mm (IN)	07742-0010100	Valve guide driver	07942-6570100	9
Valve guide driver, 6.6 mm (EX)	07742-0010200			9
Valve spring compressor	07757-0010000			9
Driver	07749-0010000			11, 13, 14
Attachment, 42 x 47 mm	07746-0010300			11, 13, 14
Attachment, 52 x 55 mm	07746-0010400		11	
Pilot, 20 mm	07746-0040500		11	
Pilot, 22 mm	07746-0041000		11	
Pilot, 25 mm	07746-0040600		11	
Bearing remover shaft	07746-0050100	Equivalent commercially available in U.S.A.		13, 14
Bearing remover head, 15 mm	07746-0050400			13
Attachment, 32 x 35 mm	07746-0010100		13, 14	
Pilot, 15 mm	07746-0040300		13	
Lock nut wrench, 30 x 32 mm	07716-0020400	Equivalent commercially available in U.S.A.		13
Bearing remover head, 17 mm	07746-0050500			14
Pin spanner	89201-KA4-811		14	
Pin spanner	89202-KA4-811		14	
Attachment, 37 x 40 mm	07746-0010200		14	
Pilot, 17 mm	07746-0040400		14	
Attachment, 24 x 26 mm	07746-0010700		14	
TESTER:				
Digital multi-tester (KOWA)	07411-0020000		or KS-AHM-32-003 (U.S.A. only)	16, 17, 18, 19
Circuit tester (SANWA) or	07308-0020000			16, 17, 18, 19
Circuit tester (KOWA)	TH-5H			16, 17, 18, 19
Honda battery tester	07GMJ-0010000			16
Christie battery charger	MC1012/2	U.S.A. only		16

VALVE SEAT CUTTER

DESCRIPTION	TOOL NUMBER	REFER TO SECTION
Cutter holder	IN 5.5 mm EX 6.6 mm	9
Float cutter	IN 28 mm (32°) EX 35 mm (32°)	
Interior cutter	IN 30 mm (60°) EX 37.5 mm (60°)	
Seat cutter	IN 27.5 mm (45°) EX 35 mm (45°)	
	07781-0010101	
	07781-0010201	
	07780-0012100	
	07780-0012300	
	07780-0014000	
	07780-0014100	
	07780-0010200	
	07780-0010400	

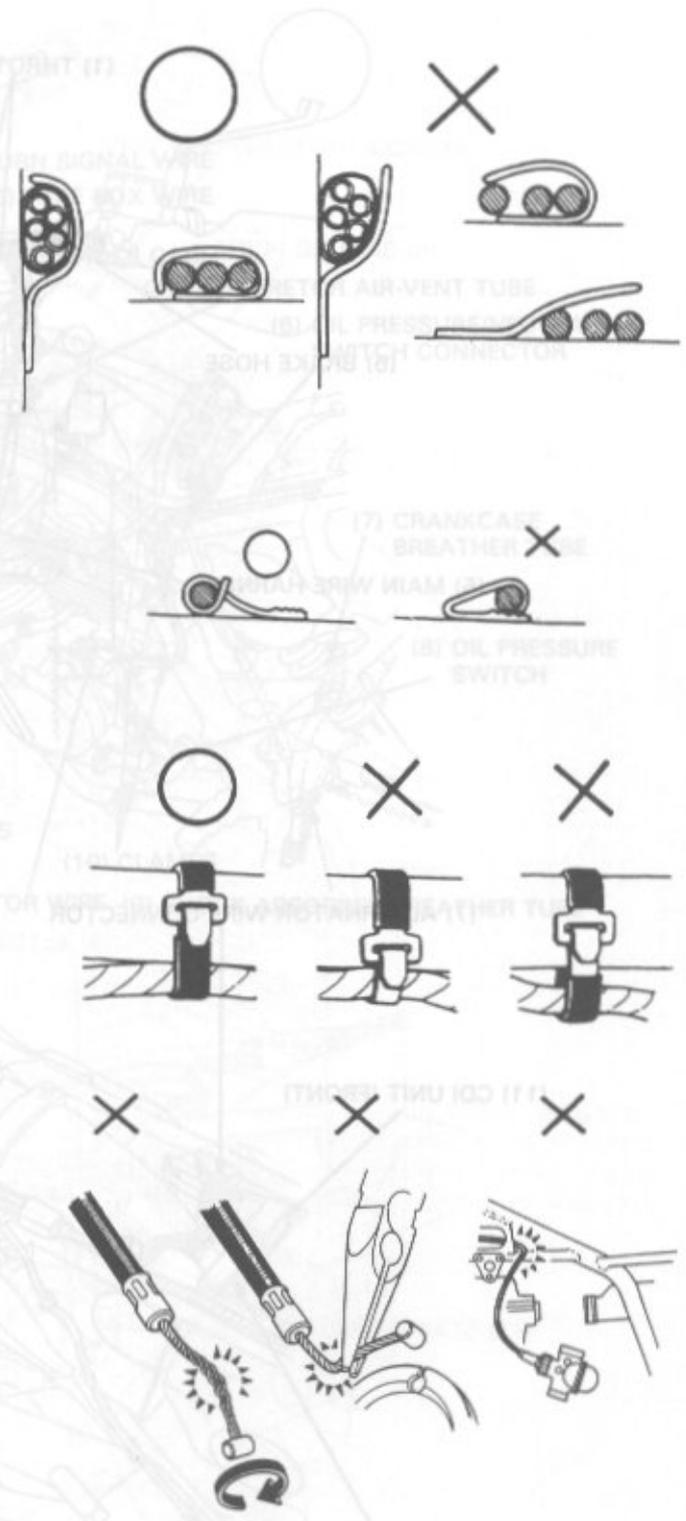
STANDARD TORQUE VALUES

TYPE	TORQUE N-m (kg-m, ft-lb)	TYPE	TORQUE N-m (kg-m, ft-lb)
5 mm bolt and nut	5.3 (0.53, 4)	5 mm screw	4.3 (0.43, 3)
5 mm bolt and nut	10 (1.0, 7)	6 mm screw, 6 mm	
8 mm bolt and nut	22 (2.2, 16)	bolt with small head	9 (0.9, 7)
10 mm bolt and nut	35 (3.5, 26)	6 mm flange bolt and nut	12 (1.2, 9)
12 mm bolt and nut	55 (5.5, 40)	10 mm flange bolt, nut	40 (4.0, 29)

CABLE AND HARNESS ROUTING

Note the following when routing cables and wire harnesses.

- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure.
- Do not squeeze wires against the weld or end of its clamp when a weld-on clamp is used.
- Secure wires and wire harnesses to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wires or wire harnesses.
- Route harnesses so they are not pulled taut or have no excessive slack.
- Protect wires and harnesses with electrical tape or tubes if they contact a sharp edge or corner. Clean the attaching surface thoroughly before applying tape.
- Do not use wires or harnesses with broken insulators. Repair by wrapping them with protective tape or replace them.
- Route wire harnesses to avoid sharp edges or corners.
- Also avoid the projected ends of bolts and screws.
- Keep wire harnesses away from the exhaust pipes and other hot parts.
- Be sure grommets are seated in their grooves properly.
- After clamping, check each harness to be certain that it is not interfering with any moving or sliding parts.
- Wire harnesses routed along the handlebar should not be pulled taut, have excessive slack, be pinched, or interfere with adjacent or surrounding parts in all steering positions.
- After routing, check that the wire harnesses are not twisted or kinked.
- Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.



O: CORRECT
X: INCORRECT

CALIFORNIA MODEL ONLY

(1) MAIN WIRE HARNESS

(2) TURN SIGNAL WIRE

(3) FUSE BOX WIRE

(4) CHOKE CABLE

(5) CARBURETOR AIR-VENT TUBE

(6) OIL PRESSURE/NEUTRAL SWITCH CONNECTOR

(7) CRANKCASE BREATHER TUBE

(8) OIL PRESSURE SWITCH

(14) BRAKE HOSE

(13) RADIATOR OVERFLOW TUBE

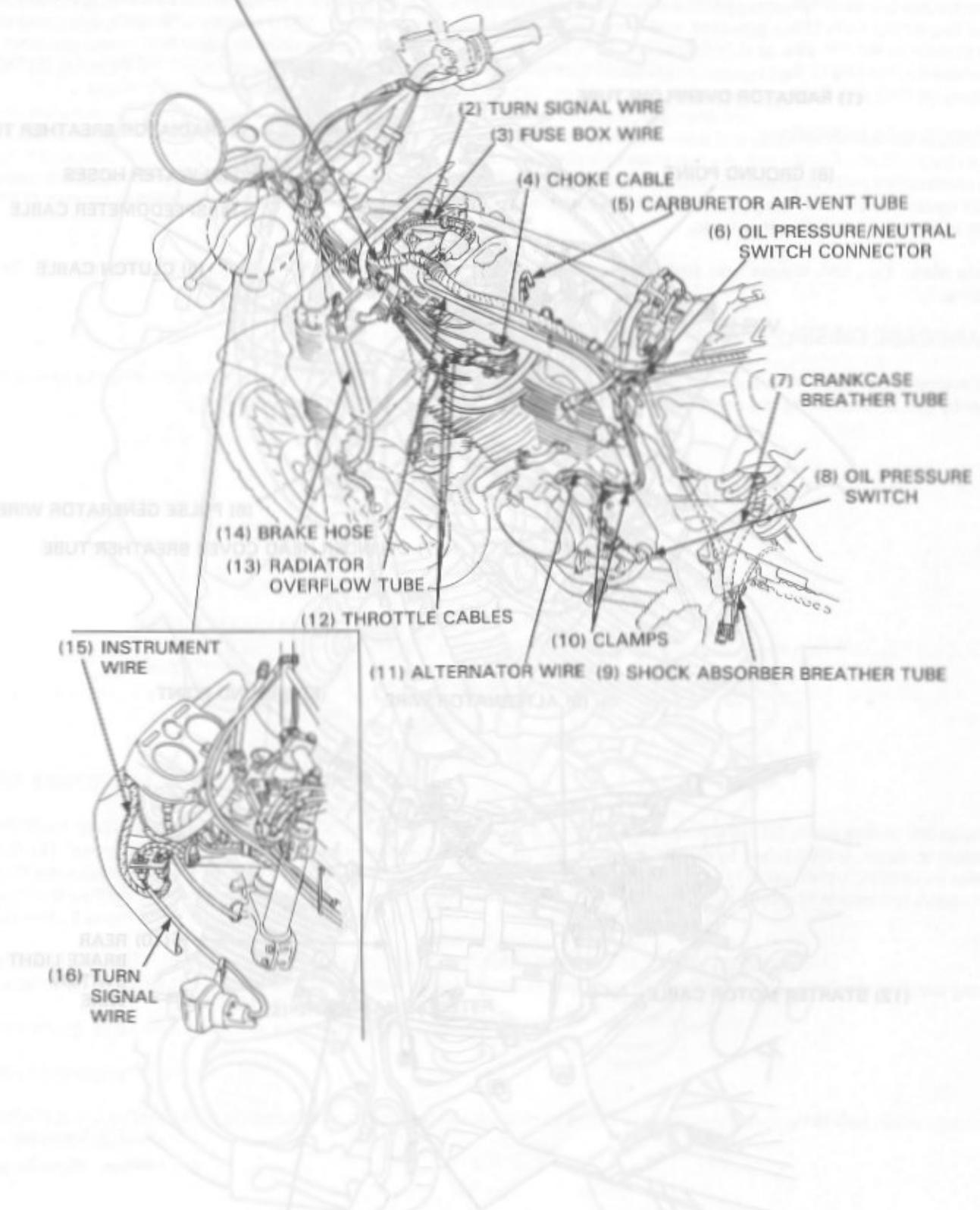
(12) THROTTLE CABLES

(10) CLAMPS

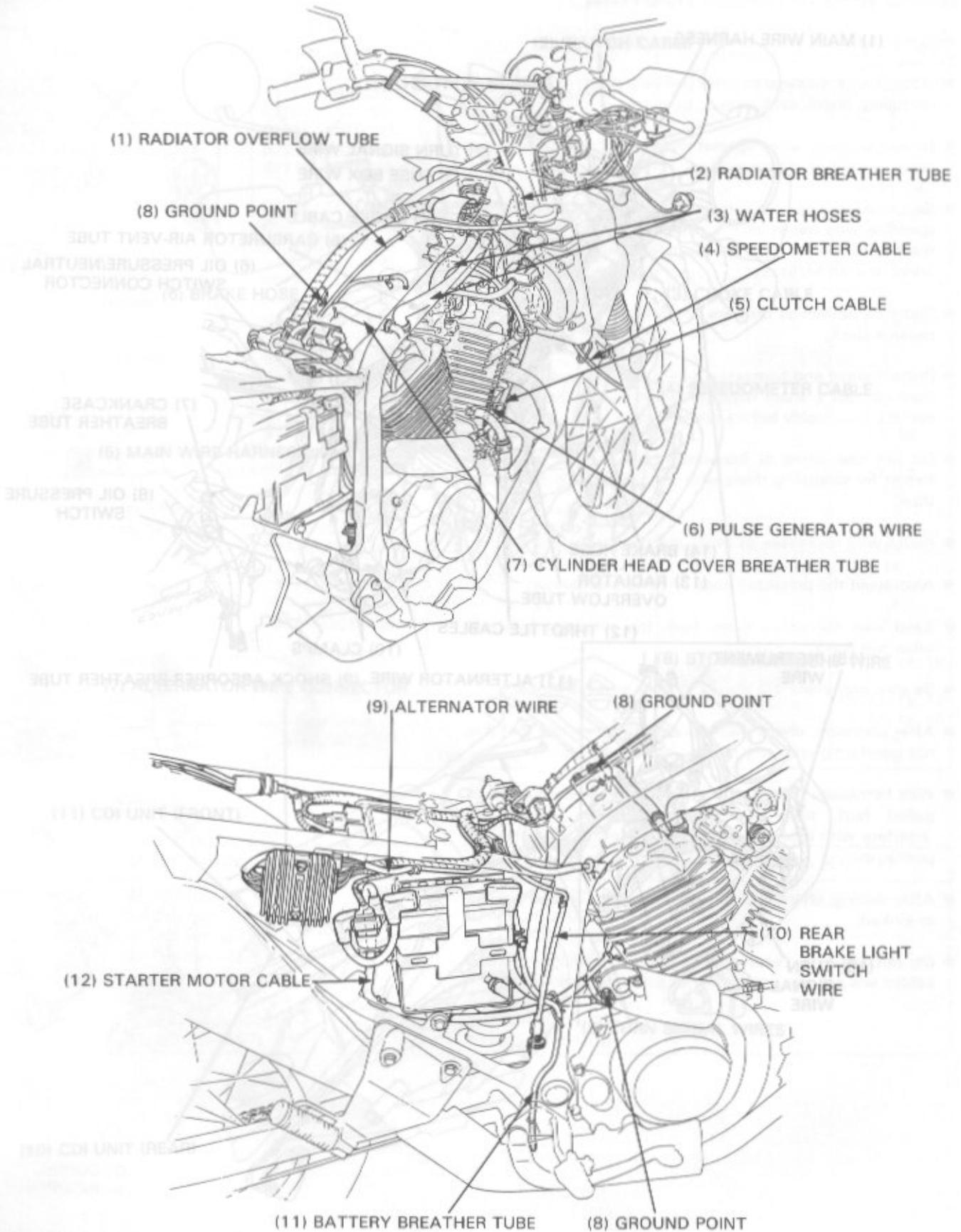
(11) ALTERNATOR WIRE (9) SHOCK ABSORBER BREATHER TUBE

(15) INSTRUMENT WIRE

(16) TURN SIGNAL WIRE



GENERAL INFORMATION



CALIFORNIA MODEL ONLY

The California Air Resources Board (CARB) requires that all motorcycles sold in California after January 1, 1983 comply with the California Air Resources Board's (CARB) emission standards for motorcycles. The CARB emission standards for motorcycles are more stringent than the Federal Motor Vehicle Administration's (FMV) standards. The CARB emission standards for motorcycles are more stringent than the Federal Motor Vehicle Administration's (FMV) standards. The CARB emission standards for motorcycles are more stringent than the Federal Motor Vehicle Administration's (FMV) standards.

This model is equipped with a carburetor that is designed to meet the CARB emission standards. The carburetor is designed to meet the CARB emission standards. The carburetor is designed to meet the CARB emission standards. The carburetor is designed to meet the CARB emission standards. The carburetor is designed to meet the CARB emission standards. The carburetor is designed to meet the CARB emission standards.

The combustion process produces carbon monoxide and hydrocarbons. Under certain conditions, they react to form photochemical smog. This reaction is called the photochemical reaction. The photochemical reaction is called the photochemical reaction.

Blow-by gas is returned to the crankcase. The crankcase is equipped with a closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system.

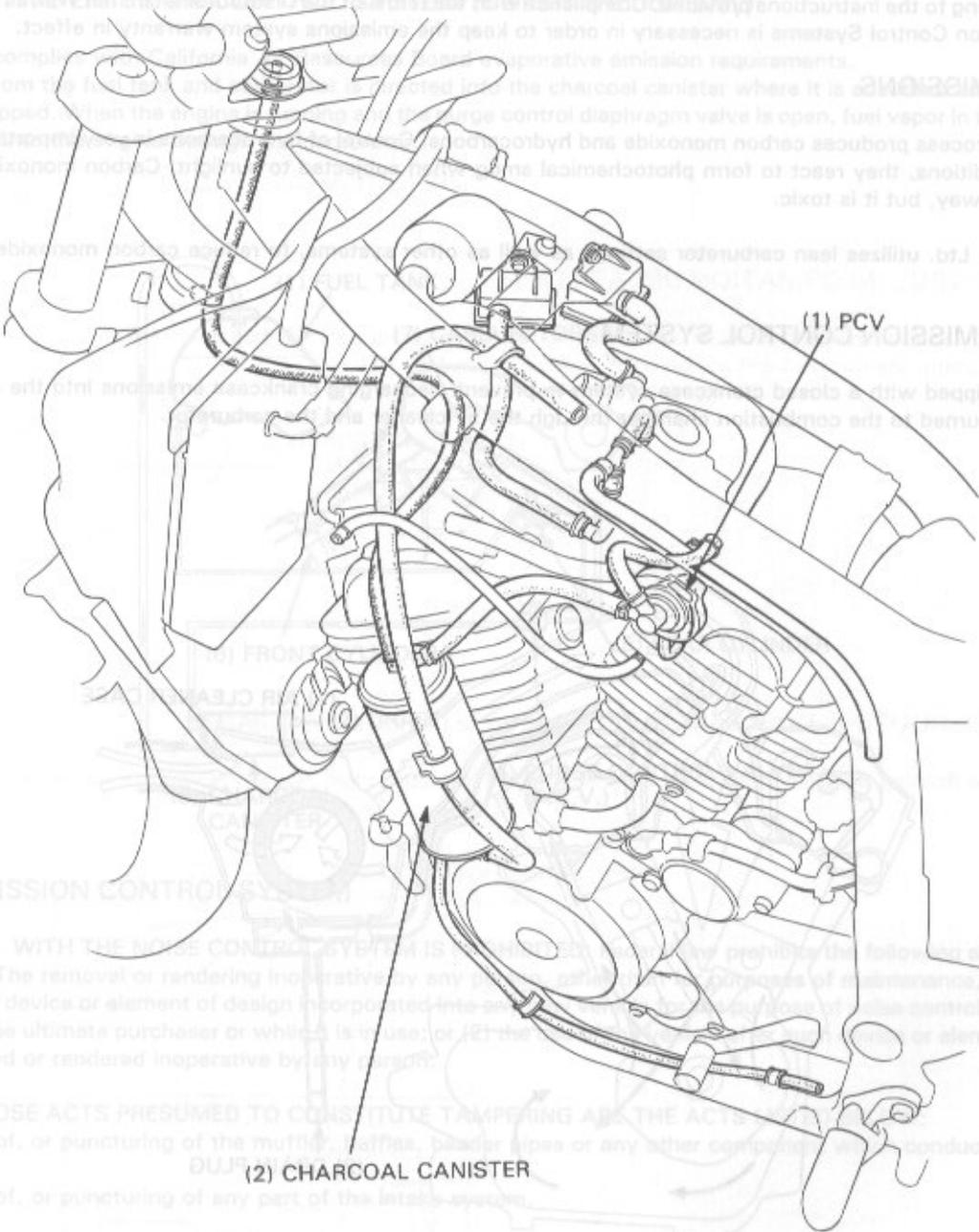
The engine is equipped with a closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system. The closed crankcase ventilation system is called the closed crankcase ventilation system.

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TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED. The removal or rendering inoperative by any means, of any device or element of design incorporated into a motorcycle for the purpose of reducing noise, or which is required by law to be so equipped, is prohibited. The removal or rendering inoperative by any means, of any device or element of design incorporated into a motorcycle for the purpose of reducing noise, or which is required by law to be so equipped, is prohibited.

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS: 1. Removal of, or puncturing of the muffler, baffles, baffle pipes or any other component which conducts exhaust gases. 2. Removal of, or puncturing of any part of the intake system.

3. Lack of proper maintenance. 4. Replacing any moving parts of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer. Blow-by gas →



GENERAL INFORMATION

EMISSION CONTROL SYSTEMS

The U.S. Environmental Protection Agency and California Air Resources Board (CARB) require manufacturers to certify that their motorcycles comply with applicable exhaust emissions standards during their useful life, when operated and maintained according to the instructions provided, and that motorcycles built after January 1, 1983 comply with applicable noise emission standards for one year or 6,000 km (3,730 miles) after the time of sale to the ultimate purchaser, when operated and maintained according to the instructions provided. Compliance with the terms of the Distributor's Limited Warranty for Honda Motorcycle Emission Control Systems is necessary in order to keep the emissions system warranty in effect.

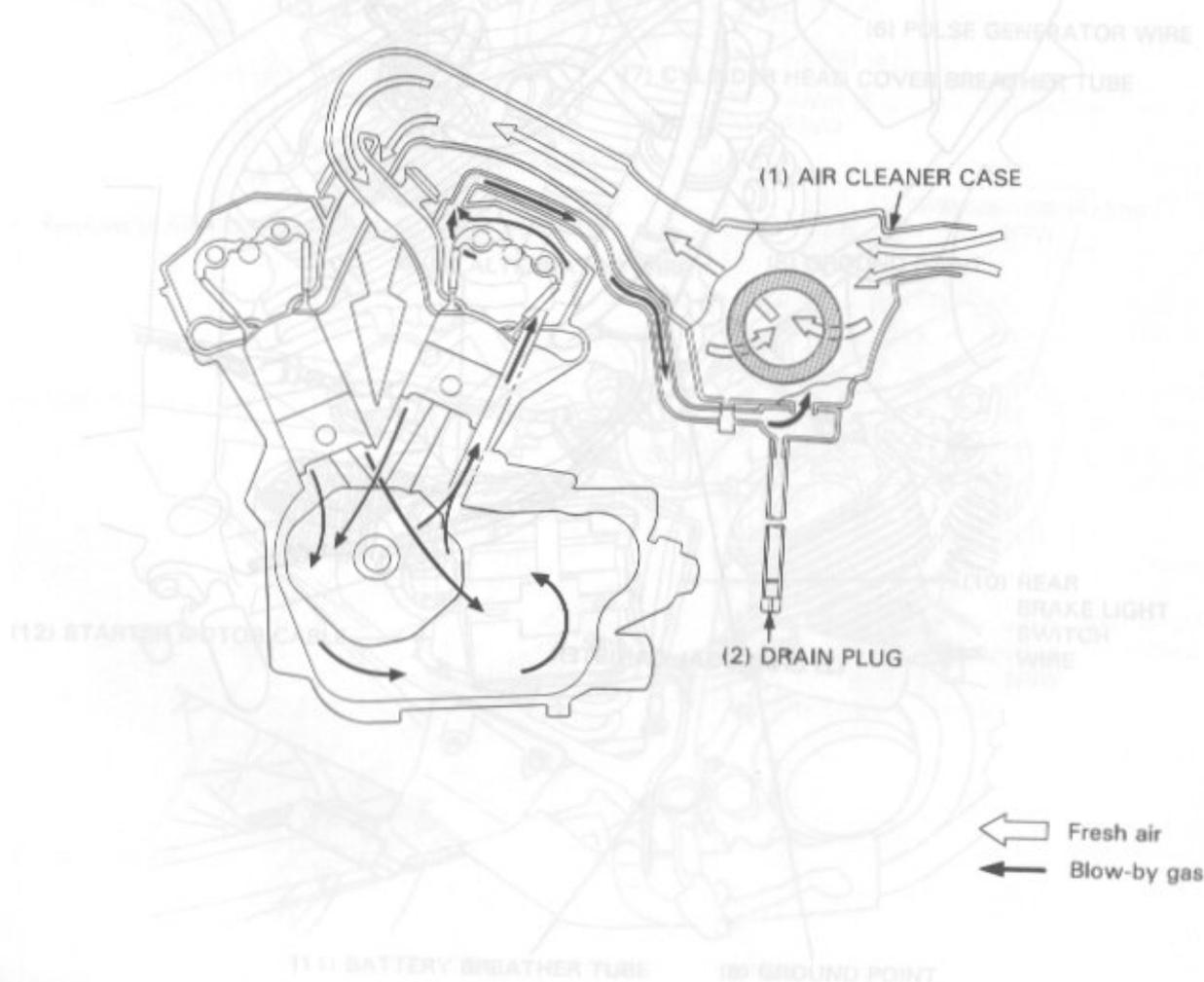
SOURCE OF EMISSIONS

The combustion process produces carbon monoxide and hydrocarbons. Control of hydrocarbons is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda Motor Co., Ltd. utilizes lean carburetor settings as well as other systems, to reduce carbon monoxide and hydrocarbons.

CRANKCASE EMISSION CONTROL SYSTEM

The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and the carburetor.



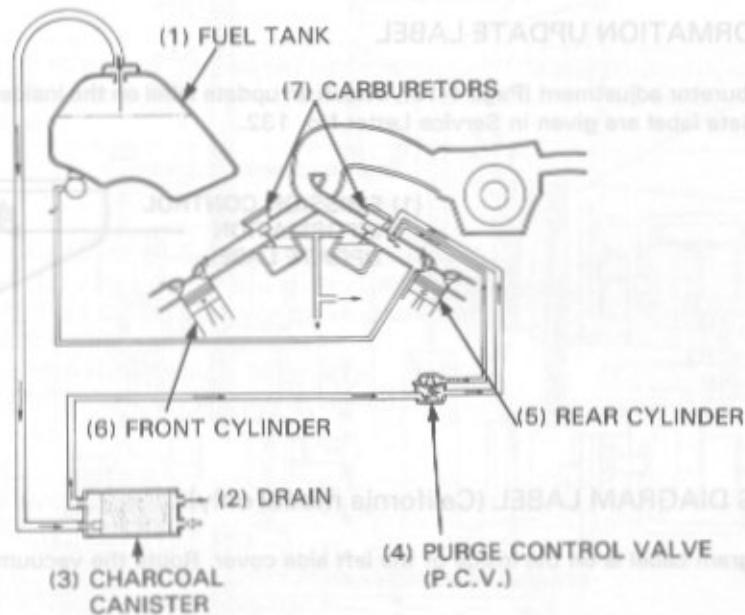
EXHAUST EMISSION CONTROL SYSTEM

The exhaust emission control system is composed of a lean carburetor setting, and no adjustments should be made except idle speed adjustment with the throttle stop screw. The exhaust emission control system is separate from the crankcase emission control system.

EVAPORATIVE EMISSION CONTROL SYSTEM (California model only)

This model complies with California Air Resources Board evaporative emission requirements.

Fuel vapor from the fuel tank and carburetor is directed into the charcoal canister where it is adsorbed and stored while the engine is stopped. When the engine is running and the purge control diaphragm valve is open, fuel vapor in the charcoal canister is drawn into the engine through the carburetor.



NOISE EMISSION CONTROL SYSTEM

TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: Federal law prohibits the following acts or the causing thereof: (1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

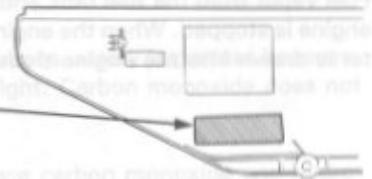
AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:

1. Removal of, or puncturing of the muffler, baffles, header pipes or any other component which conducts exhaust gases.
2. Removal of, or puncturing of any part of the intake system.
3. Lack of proper maintenance.
4. Replacing any moving parts of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.

EMISSION CONTROL INFORMATION LABELS (U.S.A. only)

An Emission Control Information Label is located on the inside of the left side cover as shown. It contains basic tune-up specifications.

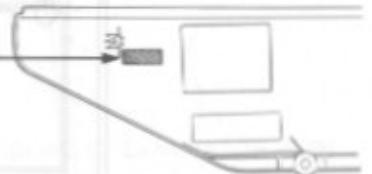
(1) EMISSION CONTROL INFORMATION LABEL



EMISSION CONTROL INFORMATION UPDATE LABEL

After making a high altitude carburetor adjustment (Page 4-19), attach an update label on the inside of the left side cover. Instructions for obtaining the update label are given in Service Letter No. 132.

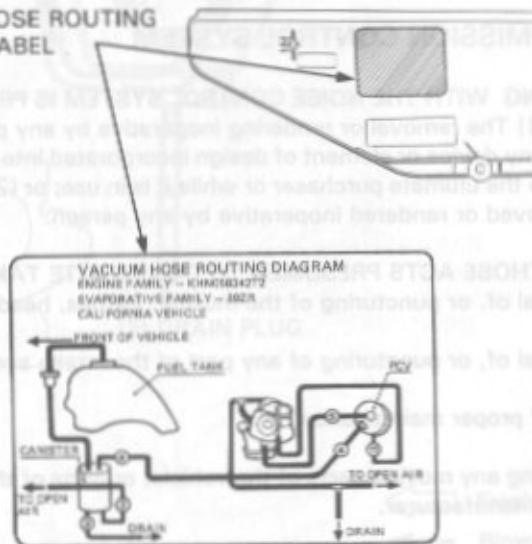
(1) EMISSION CONTROL INFORMATION UPDATE LABEL



VACUUM HOSE ROUTING DIAGRAM LABEL (California model only)

The Vacuum Hose Routing Diagram Label is on the inside of the left side cover. Route the vacuum hoses as shown on this label.

(1) VACUUM HOSE ROUTING DIAGRAM LABEL



EMISSION CONTROL INFORMATION LABELS (U.S.A. only)

An Emission Control Information Label is located on the inside of the left side cover as shown. It contains basic tune-up specifications.

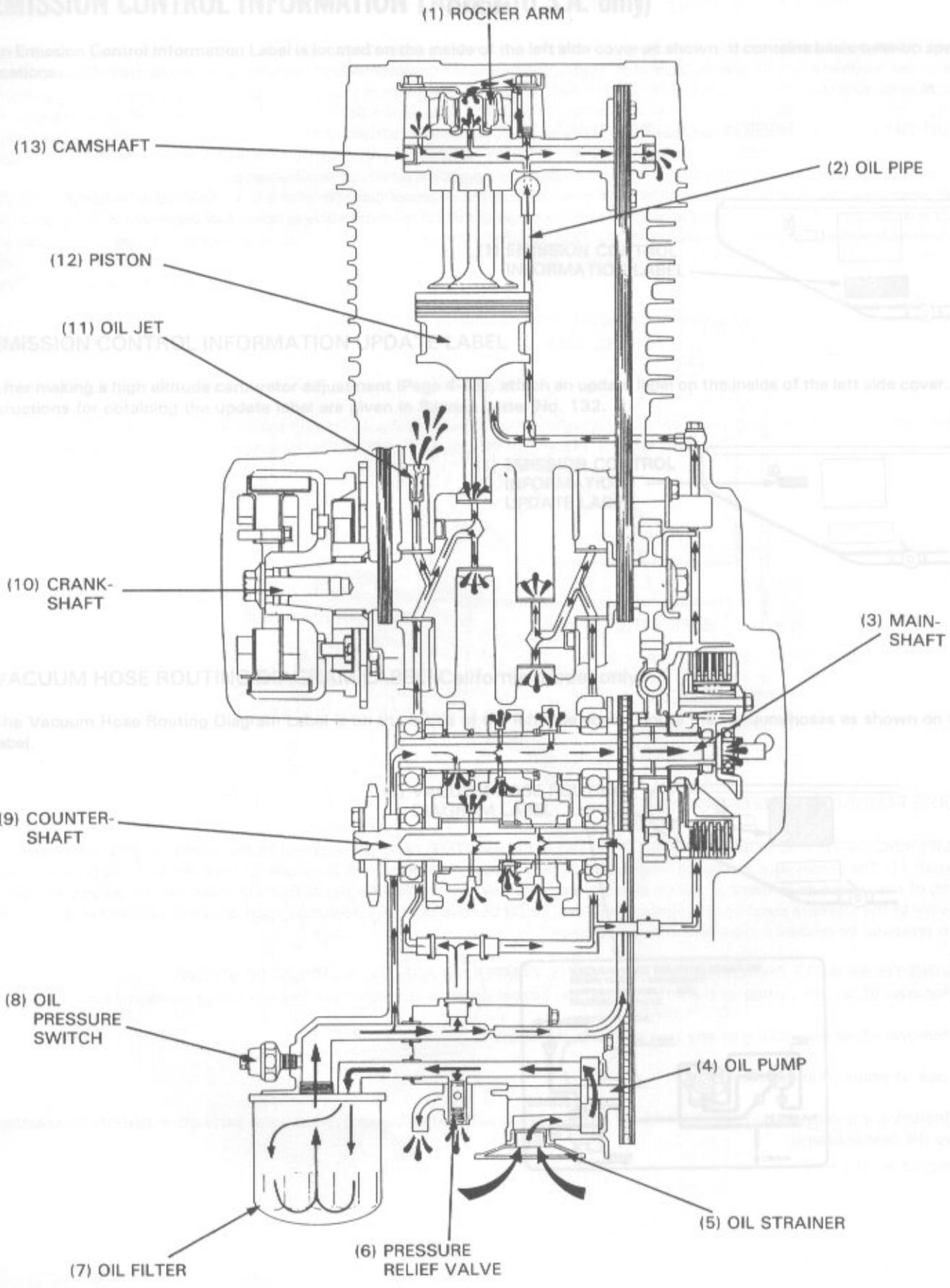
After making a high altitude compensator adjustment (Page 4) with an update on the inside of the left side cover. Instructions for obtaining the update are given in the manual, No. 132.

The Vacuum Hose Routing Diagram (Page 13) shows the correct routing of the vacuum hoses as shown on this label.

The Vacuum Hose Routing Diagram (Page 13) shows the correct routing of the vacuum hoses as shown on this label.

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2. LUBRICATION

SERVICE INFORMATION	2-1	ENGINE OIL FILTER REPLACEMENT	2-4
TROUBLESHOOTING	2-2	OIL PRESSURE CHECK	2-4
ENGINE OIL LEVEL CHECK	2-3	OIL PUMP	2-5
ENGINE OIL CHANGE	2-3	LUBRICATION POINTS	2-10

SERVICE INFORMATION

GENERAL

- It is necessary to remove the engine from the frame to service the oil pump.

CAUTION

- 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.*

SPECIFICATIONS

Oil capacity	2.8 lit (2.96 US qt, 2.46 imp qt) after disassembly. 2.4 lit (2.54 US qt, 2.11 imp qt) at oil filter and oil change. 2.2 lit (2.32 US qt, 1.94 imp qt) after draining.
Recommended oil	HONDA 4 stroke oil or equivalent API service classification: SE or SF VISCOSITY: SAE 20 W-50/10 W-40

NOTE

- Use SAE 10 W-40 oil when the outside temperature is below 0° C (32° F).

Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.

Oil pump

ITEM	STANDARD	SERVICE LIMIT
Rotor tip clearance	0.15 mm (0.006 in)	0.20 mm (0.008 in)
Pump body clearance	0.15-0.22 mm (0.006-0.009 in)	0.35 mm (0.014 in)
Pump end clearance	0.02-0.07 mm (0.001-0.003 in)	0.10 mm (0.004 in)
Oil pressure	490-588 kPa (5.0-6.0 kg/cm ² , 71-85 psi) at 5,000 rpm	—

TORQUE VALUES

Oil pressure switch	12 N·m (1.2 kg·m, 9 ft·lb)
Engine oil drain bolt	35 N·m (3.5 kg·m, 25 ft·lb)
Oil filter	10 N·m (1.0 kg·m, 7 ft·lb)

TOOLS

Special

- Oil filter wrench
- Oil pressure gauge
- Oil pressure gauge attachment
- Snap ring pliers

- 07HAA-PJ70100
- 07506-3000000
- 07510-4220100
- 07914-3230001

Equivalent commercially available in U.S.A.

TROUBLESHOOTING

Oil level too low

- Normal oil consumption
- External oil leaks
- Worn piston rings

Oil contamination

- Oil not changed often enough
- Faulty head gasket
- Worn piston rings

Low oil pressure

- Faulty oil pump
- Clogged oil strainer
- Low oil level
- Faulty pressure relief valve
- Oil leaks

High oil pressure

- Faulty pressure relief valve
- Clogged oil filter or oil orifice

No oil pressure

- Too low oil level
- Broken oil pump drive or driven sprockets
- Broken oil pump drive chain
- Faulty oil pump
- Oil leaks

ITEM	STANDARD	SERVICE LIMIT
Oil pressure	4.90-5.88 (0.7-0.85 kg/cm ²) (71-80 psi) at 8,000 rpm	—
Pump end clearance	0.02-0.03 mm (0.001-0.0012 in)	0.10 mm (0.004 in)
Pump body clearance	0.17-0.26 mm (0.0067-0.0102 in)	0.38 mm (0.0149 in)
Rotor tip clearance	0.017 mm (0.00067 in)	0.030 mm (0.00118 in)



ENGINE OIL LEVEL CHECK

Support the motorcycle upright on level ground.
Start the engine and let it idle for a few minutes.

Stop the engine, remove the oil filler cap/dipstick and wipe it clean.

Check the oil level with the oil filler cap/dipstick by inserting it without screwing it in.

NOTE

- Do not screw the cap in when making this check.

If the oil level is below the lower level mark on the dipstick, fill to the upper level mark with the recommended oil (see below).



ENGINE OIL CHANGE

NOTE

- Change the engine oil with the engine warm and the motorcycle on its side stand to assure complete and rapid draining.

Remove the oil filler cap/dipstick and drain bolt.
With the engine stop switch OFF, start the starter motor for a few seconds to drain any oil which may be left in the engine.

NOTE

- Do not operate the motor more than a few seconds.

After the oil has drained, check that the drain bolt sealing washer is in good condition, and install the bolt.

TORQUE: 35 N·m (3.5 kg·m, 25 ft·lb)

Fill the crankcase with the correct quantity of the recommended oil.

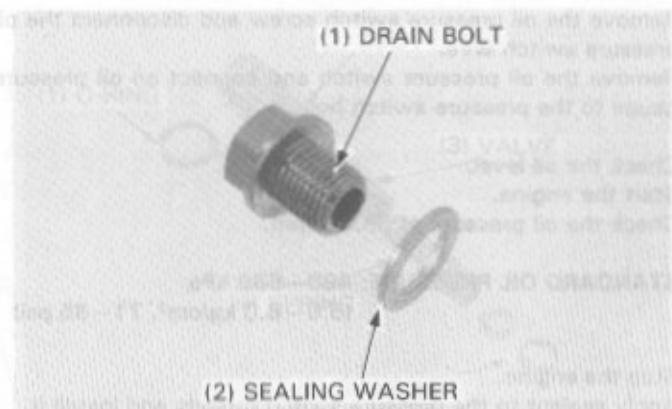
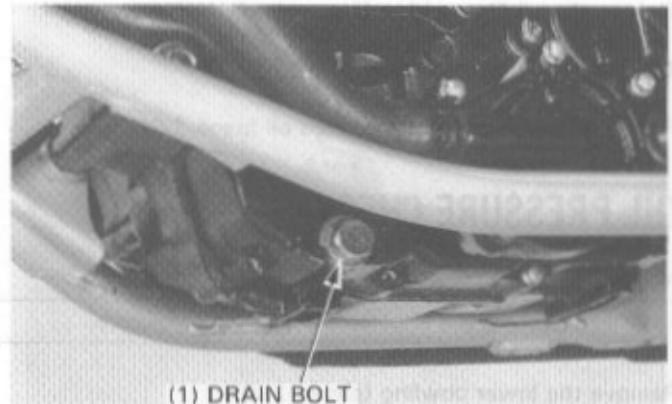
OIL CAPACITY:

- 2.8 lit (2.96 US qt, 2.46 Imp qt) after disassembly
- 2.4 lit (2.54 US qt, 2.11 Imp qt) at oil filter and oil change
- 2.2 lit (2.32 US qt, 1.94 Imp qt) after draining

RECOMMENDED OIL: Honda 4-stroke oil or equivalent
API service classification: SE or SF
VISCOSITY: SAE 20W-50/10W-40

Install the oil filler cap/dipstick.
Start the engine and let it idle for a few minutes.

Stop the engine and wait a few minutes, then check that the oil level is at the upper level mark with the motorcycle upright.
Check that there are no oil leaks.



LUBRICATION

ENGINE OIL FILTER REPLACEMENT

Drain the engine oil (page 2-3).

⚠ WARNING

- Do not replace the oil filter when the exhaust pipe is hot.

Remove the oil filter with a filter wrench.

TOOL:

Oil filter wrench **07HAA—PJ70100**

Apply oil to a new oil filter O-ring and install a new oil filter. Tighten the oil filter with a filter wrench.

TORQUE: 10 N·m (1.0 kg-m, 7 ft-lb)

Fill the engine with recommended oil (page 2-3).

OIL PRESSURE CHECK

NOTE

- After warm up the engine, check the oil pressure.

Remove the lower cowling (page 12-3).

Remove the drive sprocket cover (page 5-8).

Remove the oil pressure switch screw and disconnect the oil pressure switch wire.

Remove the oil pressure switch and connect an oil pressure gauge to the pressure switch hole.

Check the oil level.

Start the engine.

Check the oil pressure at 5,000 rpm.

STANDARD OIL PRESSURE: 490–588 kPa
(5.0–6.0 kg/cm², 71–85 psi)

Stop the engine.

Apply sealant to the pressure switch threads and install it.

TORQUE: 12 N·m (1.2 kg-m, 9 ft-lb)

Connect the oil pressure switch wire.

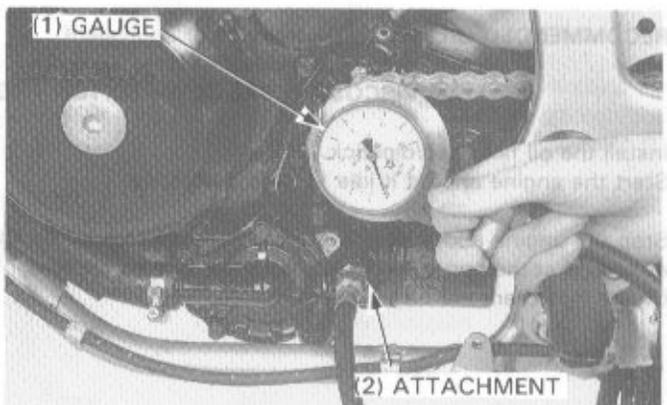
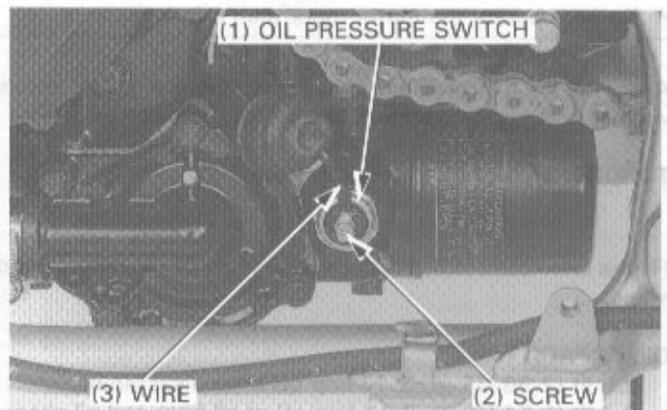
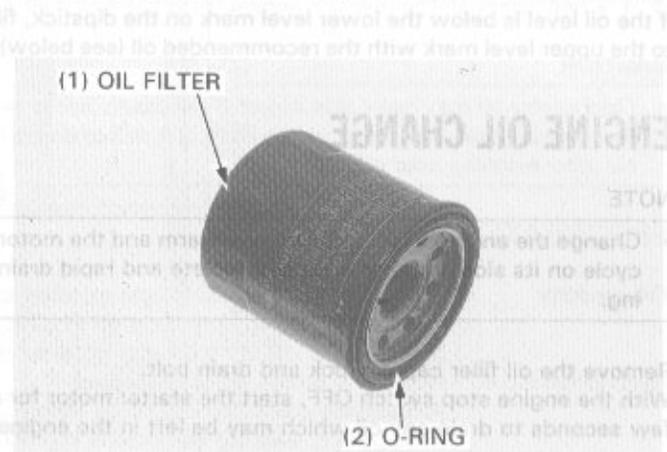
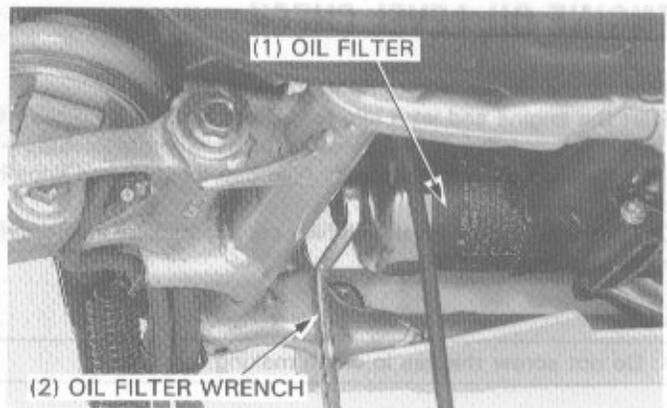
Start the engine and check the oil pressure warning light goes out after one or two seconds.

TOOL:

Oil pressure gauge **07506—3000000**
Attachment **07510—4220100**
or equivalent commercially available in U.S.A.

NOTE

- Route the oil pressure switch wire properly (page 1-11).

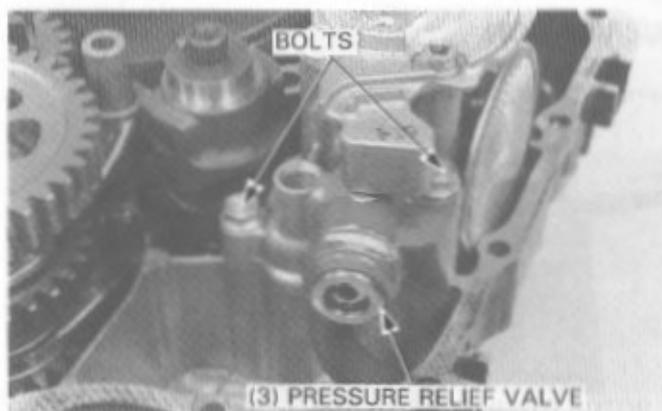


OIL PUMP

PRESSURE RELIEF VALVE REMOVAL

Separate the crankcase (Section 11).

Remove the attaching bolts and the pressure relief valve from the oil pump.



PRESSURE RELIEF VALVE DISASSEMBLY

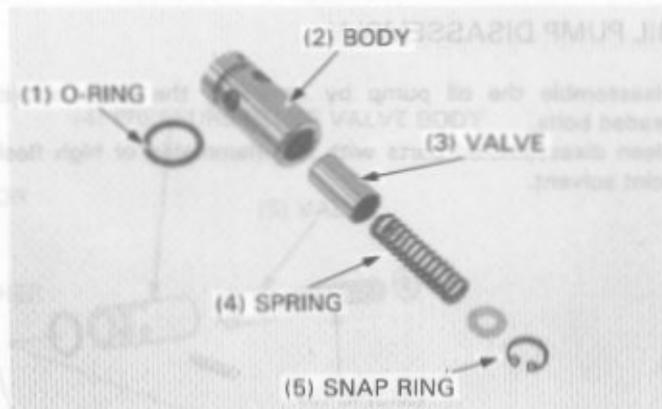
Remove the snap ring using the snap ring pliers (07914-3230001) and disassemble the relief valve.



PRESSURE RELIEF VALVE INSPECTION

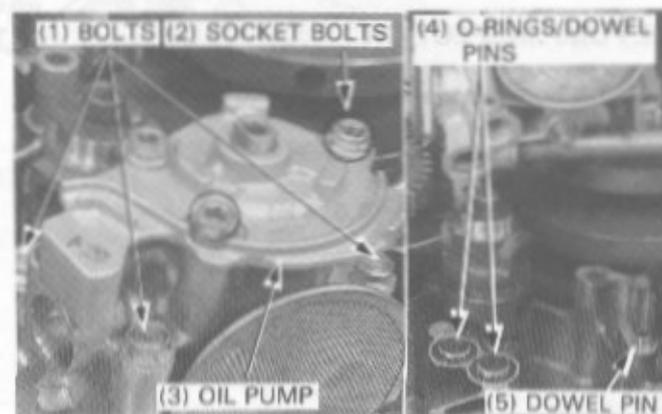
Check the spring, O-ring and valve for wear or damage. Check the body for clogging or damage.

Clean all of the remaining parts. Assemble the parts in the reverse order of disassembly.



OIL PUMP REMOVAL

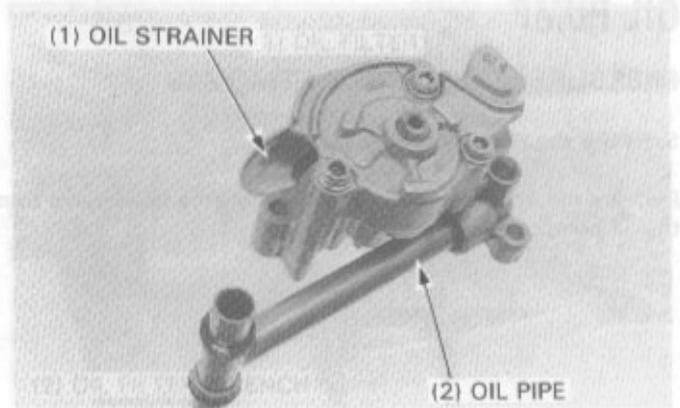
Temporarily loosen the three socket headed bolts when disassembling the oil pump. Remove the oil pump by removing the three bolts. Remove the dowel pins and O-rings.



LUBRICATION

LUBRICATION

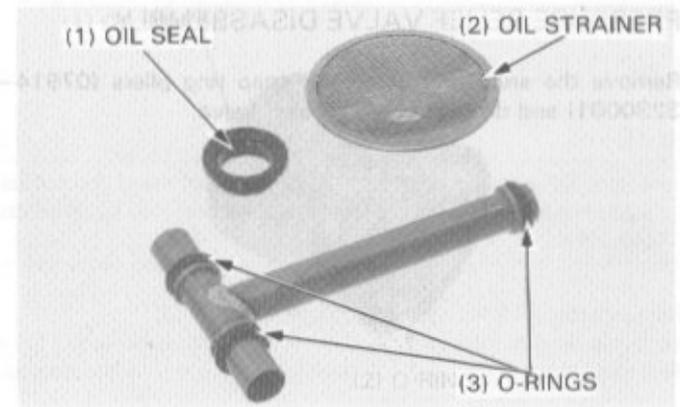
Remove the oil strainer and oil pipe from the oil pump.



Apply oil to a new oil filter O-ring and install a new oil filter.

Check the O-rings and oil seal for damage.

Clean the oil strainer and oil pipe with non-flammable or high flash point solvent.



OIL PRESSURE CHECK

NOTE

Always use the correct oil grade and oil quantity.

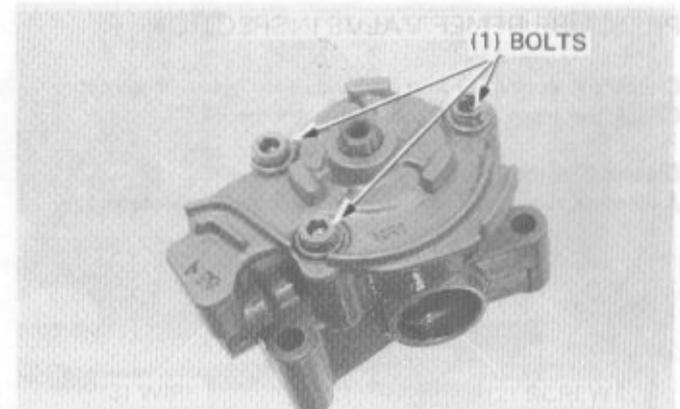
Remove the lower bearing (page 12-20).

Remove the drive sprocket cover (page 5-4).

OIL PUMP DISASSEMBLY

Disassemble the oil pump by removing the three socket headed bolts.

Clean disassembled parts with non-flammable or high flash point solvent.



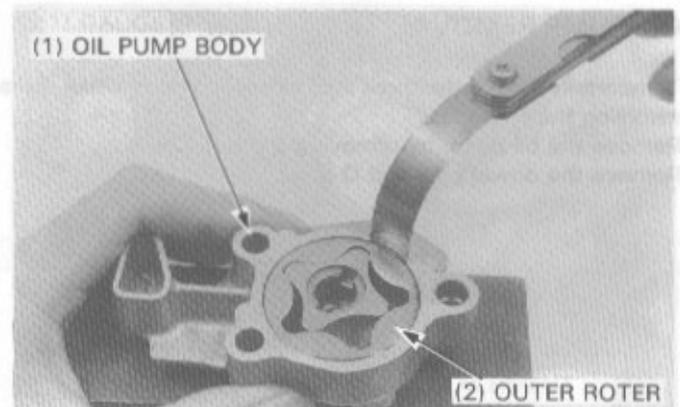
TORQUE: 12 Nm (1.2 kg-m, 9 ft-lb)

OIL PUMP INSPECTION

Install the outer rotor and inner rotor to the pump body.

Measure the pump body clearance.

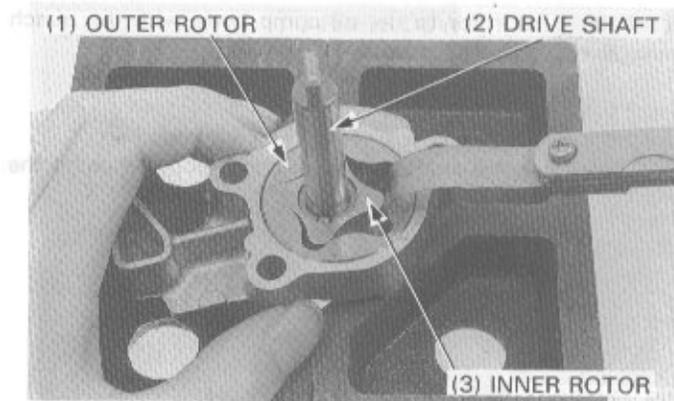
SERVICE LIMIT: 0.35 mm (0.014 in)



Temporarily install the pump shaft to the pump body.

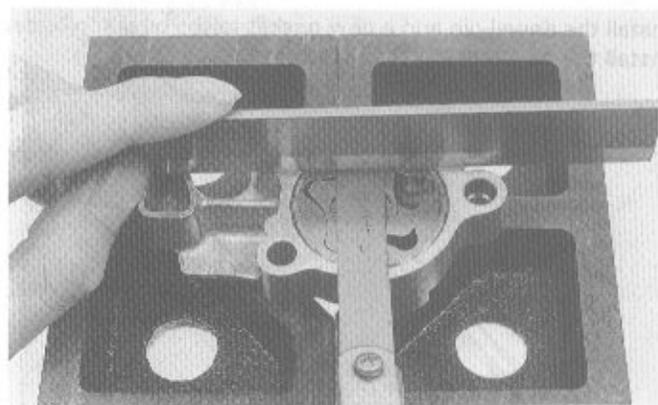
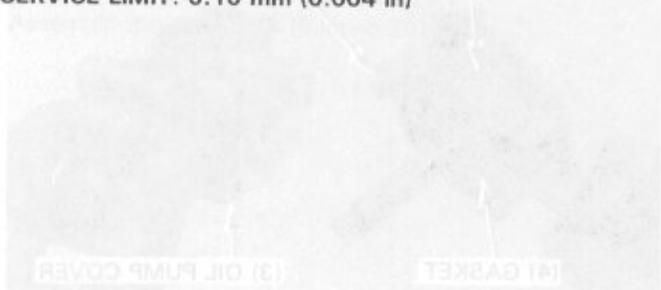
Measure the tip clearance.

SERVICE LIMIT: 0.20 mm (0.008 in)

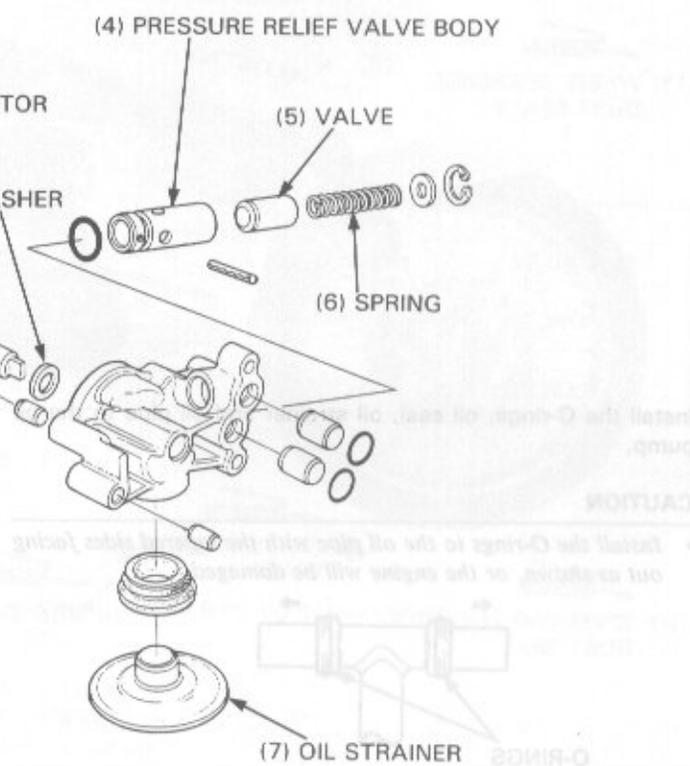
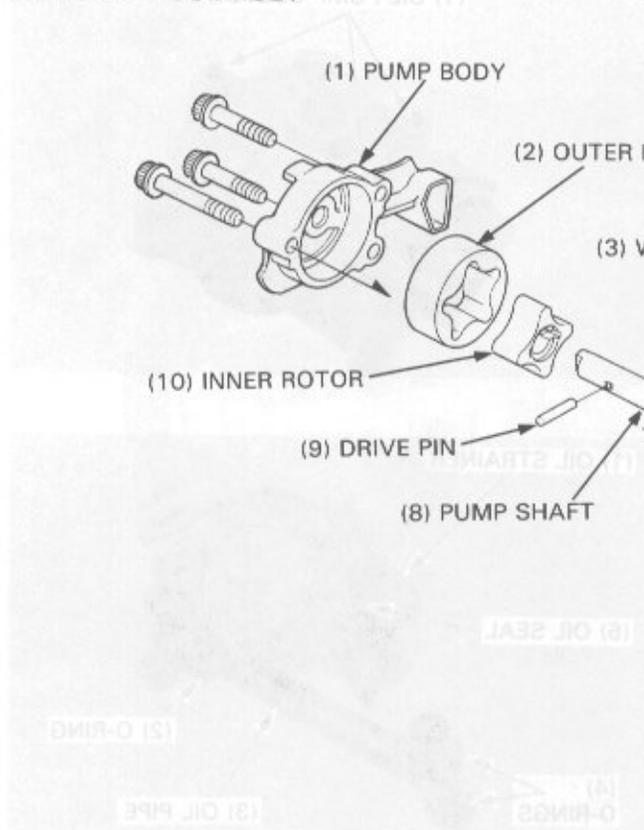


Remove the oil pump shaft from the oil pump.
Measure the pump end clearance.

SERVICE LIMIT: 0.10 mm (0.004 in)



OIL PUMP ASSEMBLY



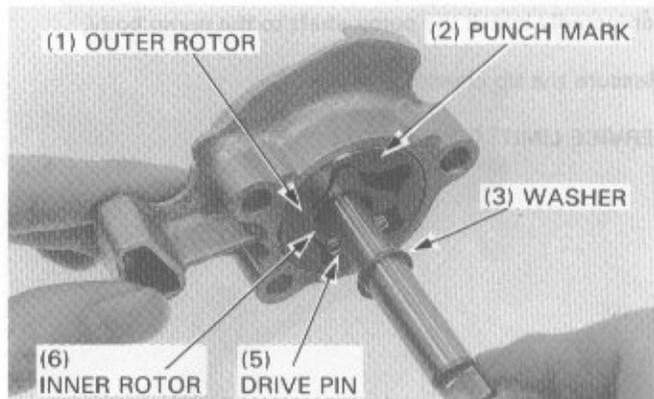
LUBRICATION

Install the outer rotor to the oil pump body with the punch mark facing the cover.

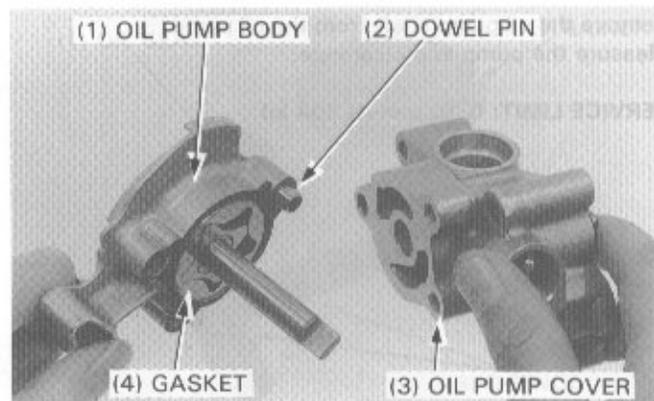
Install the inner rotor.

Install the drive pin and washer to the oil pump shaft.

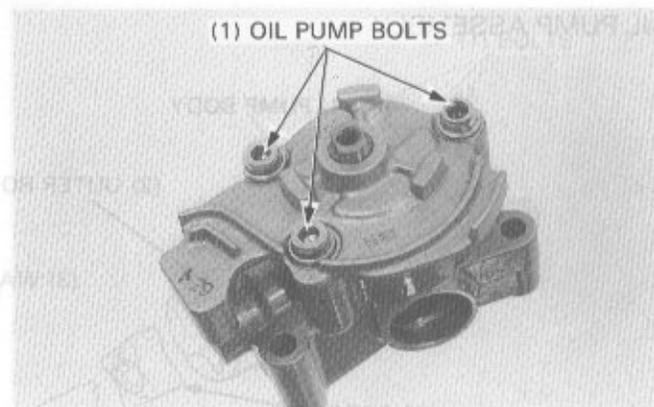
Install the oil pump shaft to the oil pump body, aligning the drive pin with the groove of the inner rotor.



Install the dowel pin and a new gasket to the oil pump body.
Install the oil pump cover to the pump body.



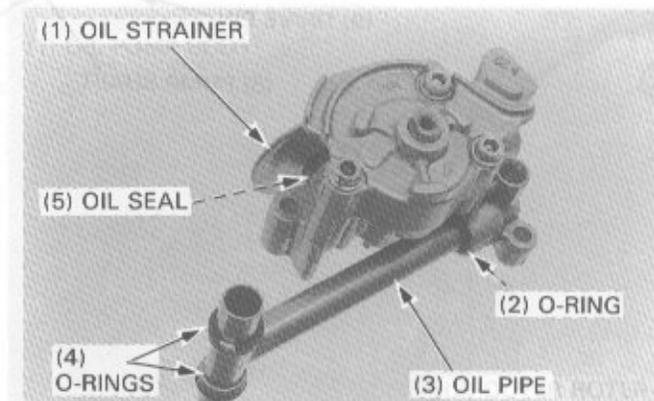
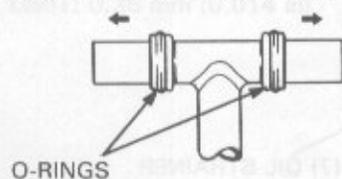
Tighten the oil pump bolts securely.



Install the O-rings, oil seal, oil strainer and oil pipe to the oil pump.

CAUTION

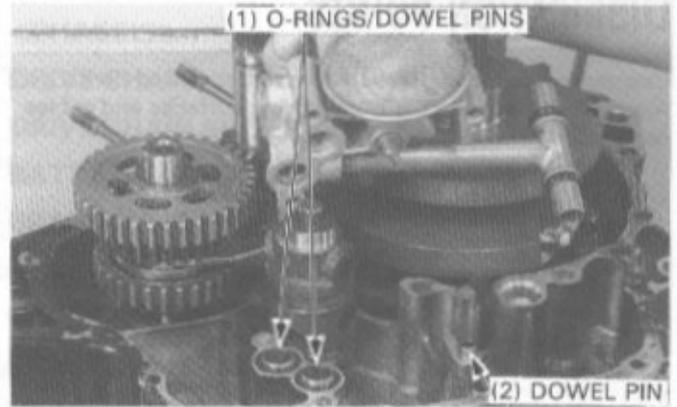
- Install the O-rings to the oil pipe with the tapered sides facing out as shown, or the engine will be damaged.



OIL PUMP INSTALLATION

Install the dowel pins and new O-rings.

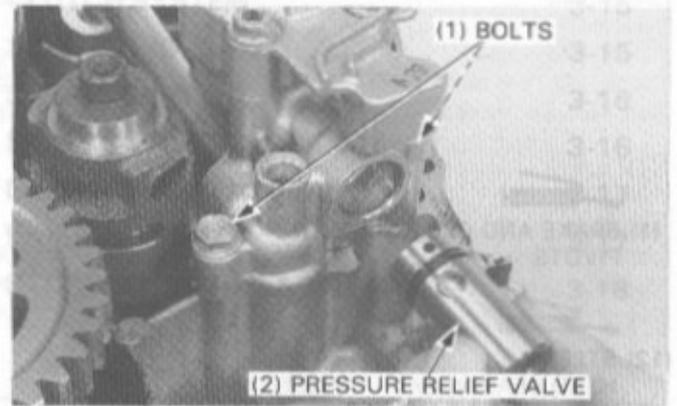
Install the oil pump as an assembly.



PRESSURE RELIEF VALVE INSTALLATION

Install the pressure relief valve to the oil pump.

Assemble the crankcase (Section 11).



LUBRICATION

LUBRICATION POINTS

Use general purpose grease when not specified here. Apply oil or grease to the other sliding surfaces and cables not shown here.

CONTROL CABLE LUBRICATION

Periodically disconnect the throttle and clutch cables at their upper ends. Clean the cable end mount in the throttle and clutch lever, then oil the cable ends and reinstall. If a cable begins to bind, it must be replaced.

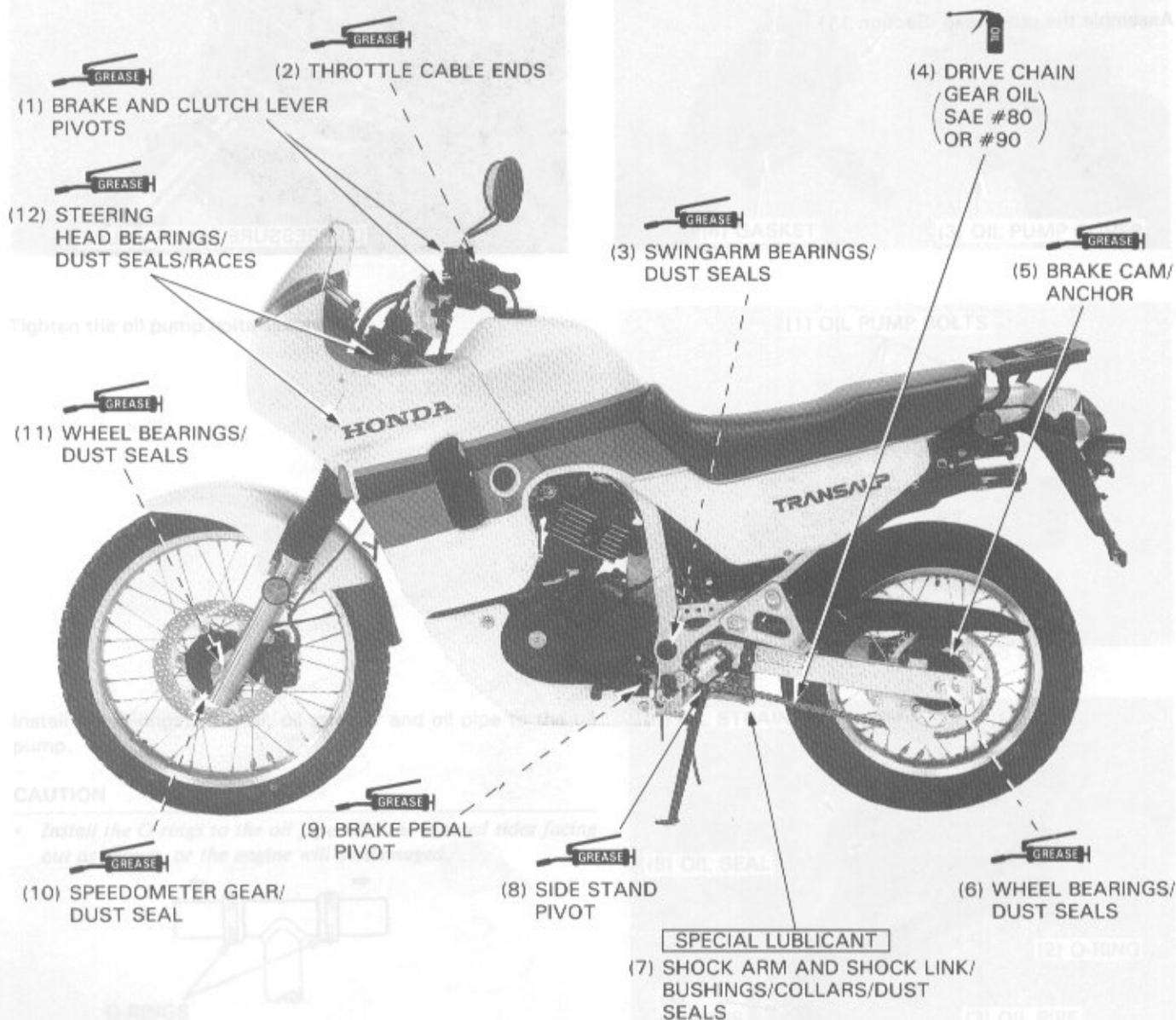
Apply a paste grease with 40% or more molybdenum disulfide to the **SPECIAL LUBRICANT** mark components.

NOTE

Some source of MoS₂ paste grease with 40% or more molybdenum are:

- Molykote® G-n Paste manufactured by Dow Corning, U.S.A.
- Honda Moly 45 (U.S.A. only)
- Rocol ASP manufactured by Rocol Limited, U.K.
- Rocol Paste manufactured by Sumico Lubricant, Japan.

Any other manufacturer's paste grease equivalent to the above may also be used.



3. MAINTENANCE

SERVICE INFORMATION	3-1	<CHASSIS>	
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SERVICE INFORMATION

GENERAL

- Engine oil See page 2-3
- Engine oil filter replacement See page 2-4

SPECIFICATIONS

<ENGINE>

Spark plugs

	NGK	ND
Standard	DPR8EA-9	X24EPR-U9
For cold climate (below 5°C/41°F)	DPR7EA-9	X22EPR-U9
For extended high speed driving	DPR9EA-9	X27EPR-U9

Spark plug gap

0.8–0.9 mm (0.031–0.035 in)

Valve clearance IN (COLD) EX

0.15 mm (0.006 in)
0.20 mm (0.008 in)

Idle speed

1,300 ± 100 rpm

Cylinder compression

1,177 ± 98 kPa (12.0 ± 1.0 kg/cm², 171 ± 14 psi)

Throttle grip free play

2–6 mm (1/16–1/4 in)

Carburetor synchronization

Both carburetor within 40 mm (1.6 in) Hg of each other

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Rear brake free play

20–30 mm (3/4–1-1/8 in)

Clutch lever free play

10–20 mm (3/8–3/4 in)

Drive chain slack

35–45 mm (1-3/8–1-3/4 in)

Chain slider wear service limit

3 mm (1/8 in)

Chain slipper wear service limit

5 mm (3/16 in)

Tires

		Front	Rear
Tire size		90/90-21 54S	130/80-17 65S
Cold tire pressures	Up to 90 kg (200 lbs) load	29 psi (2.00 kg/cm ² , 200 kPa)	29 psi (2.00 kg/cm ² , 200 kPa)
	Up to vehicle capacity load	29 psi (2.00 kg/cm ² , 200 kPa)	29 psi (2.00 kg/cm ² , 200 kPa)
Minimum thread depth		1.5 mm (0.06 in)	2.0 mm (0.08 in)

TORQUE VALUES

Rear axle nut	95 N·m (9.5 kg-m, 69 ft-lb)
Fuel cup	4 N·m (0.4 kg-m, 2.9 ft-lb)
Valve adjusting screw lock nut	23 N·m (2.3 kg-m, 17 ft-lb)
Spark plug	14 N·m (1.4 kg-m, 10 ft-lb)
Spokes (front/rear)	3.8 N·m (0.38 kg-m, 2.7 ft-lb)
Timing hole cap	10 N·m (1.0 kg-m, 7 ft-lb)
Crankcase hole cap	15 N·m (1.5 kg-m, 11 ft-lb)
Side stand pivot nut	40 N·m (4.0 kg-m, 29 ft-lb)

TOOLS

Special	
Valve clearance adjusting wrench	07908-KE90000 or valve adjust wrench 07908-KE90100
Vacuum gauge	07404-0030000 or M937B-021-XXXXX
Compression gauge	07305-0010000
Common	
Wrench, 10 x 12 mm	07708-0030200
Spanner C, 5.8 x 6.1 mm	07701-0020300

Equivalent commercially available in U.S.A.

