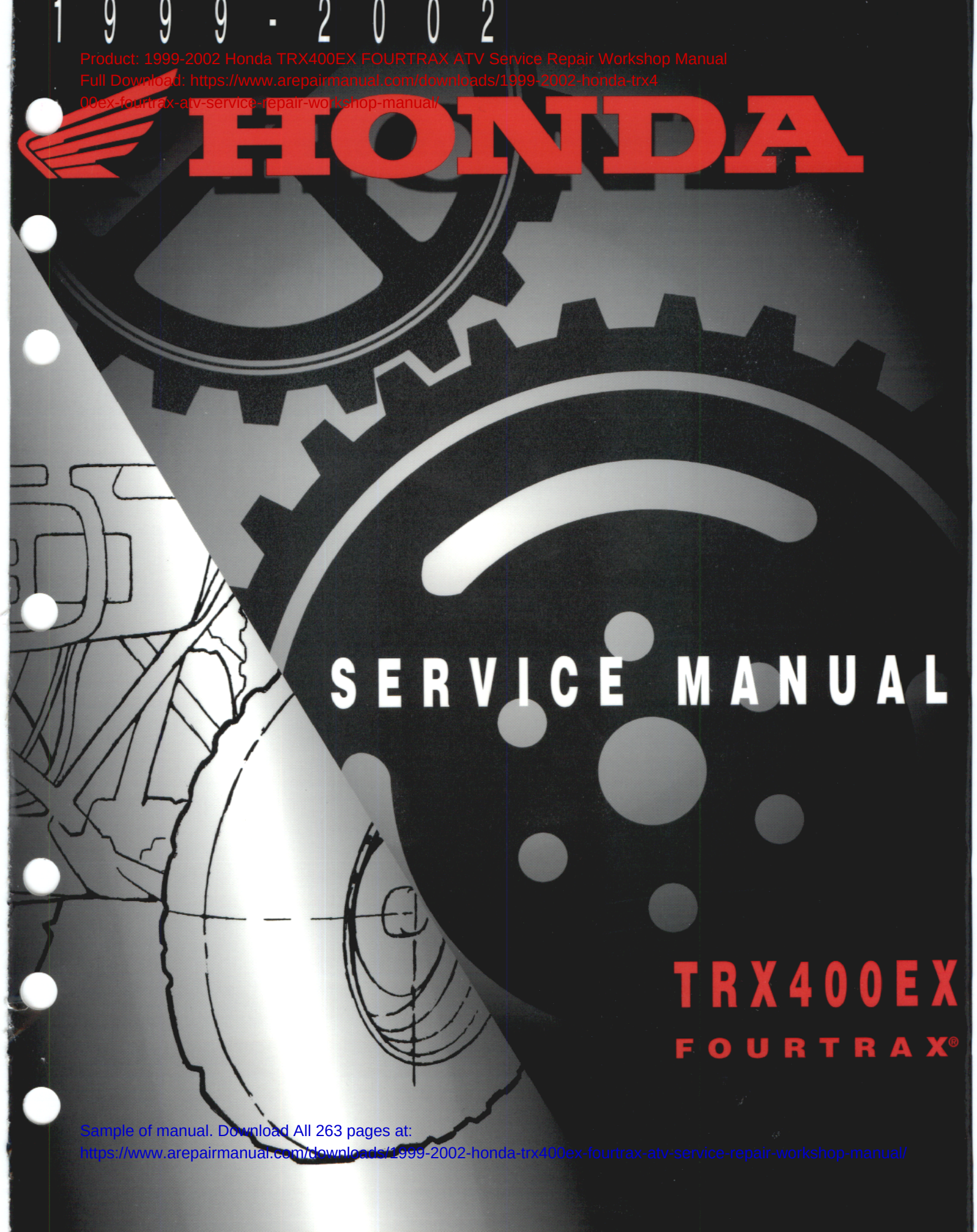
1999-2002

HONDA



SERVICE MANUAL

TRX400EX

FOURTRAX®

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 possible 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 method or tools selected.

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the TRX400EX.

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 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 describes procedures for removal/installation of components that may be required to perform service described in the following sections.
Sections 4 through 18 describe parts of the motorcycle, grouped according to location.

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

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

If you don't know the source of the trouble, go to section 20, Troubleshooting.

HONDA MOTOR CO.. LTD
SERVICE PUBLICATIONS OFFICE

CONTENTS

Date of Issue: September, 1998

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 may 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 brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard caused by air borne asbestos fibers.

⚠ WARNING

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

BRAKE FLUID

CAUTION:

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

BATTERY HYDROGEN GAS & ELECTROLYTE

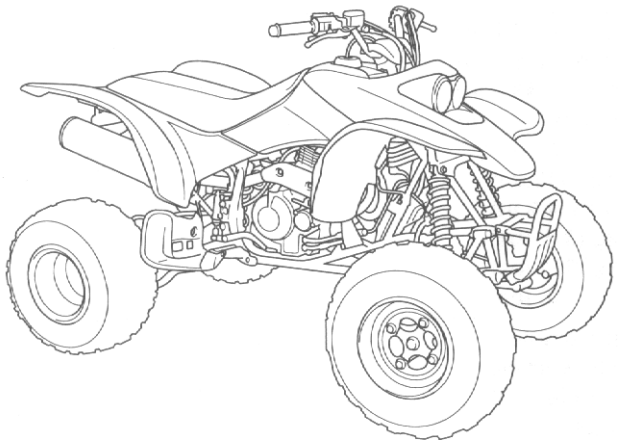
⚠ WARNING

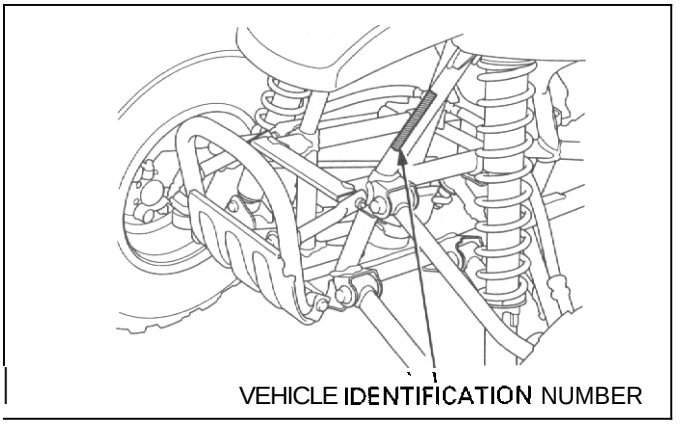
- *The battery gives of explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using the battery in an enclosed space.*
- *The battery contains sulfuric acid (electrolytel. Contact with skin or eyes may cause severe burns. Wearprotective clothing and a 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 wafer or milk and follow with milk of magnesia or vegetable oil and call a physician. KEEP OUT OF REACH OF CHILDREN.*

SERVICE RULES

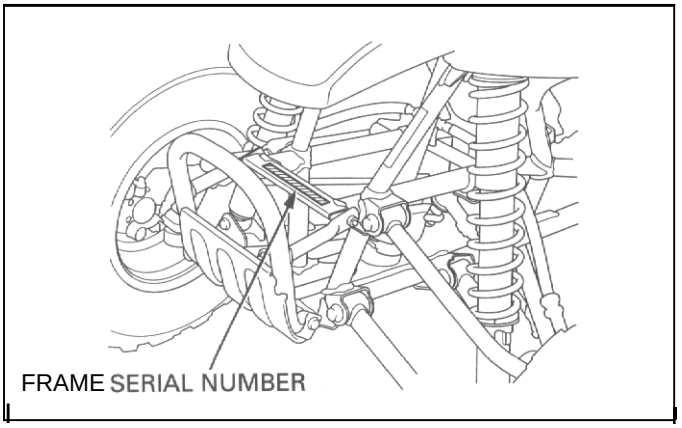
1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that don't meet HONDA's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing 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 **1-18** through 1-22, Cable &Harness routing.

MODEL IDENTIFICATION

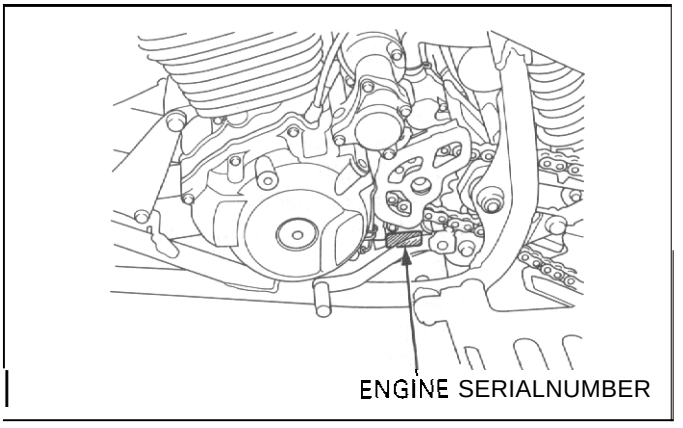




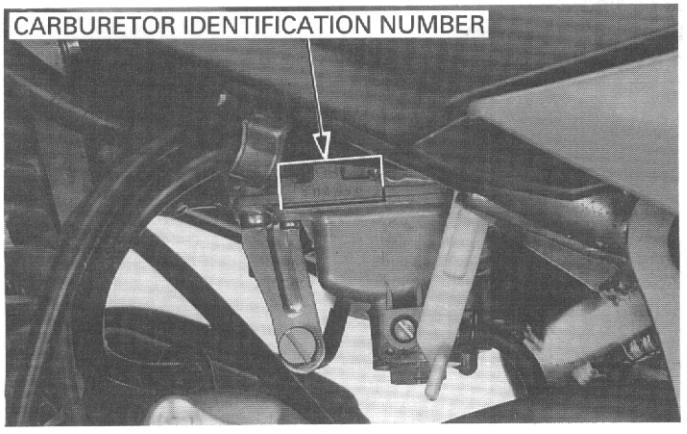
The Vehicle Identification Number (VIN) is located on the left side frame down tube.



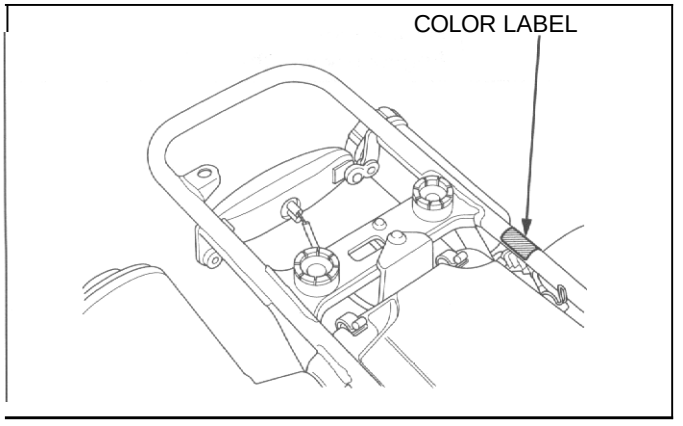
The frame serial number is stamped on the front side of the frame.



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



The carburetor identification number is stamped on the left side of the carburetor body.



The color label is attached on the frame crossmember under the seat. When ordering color-coded parts, always specify the designated color code.

SPECIFICATIONS

– GENERAL

	ITEM	SPECIFICATIONS
DIMENSIONS	Overall length	1,835 mm (72.2 in)
	Overall width	1,150 mm (45.3 in)
	Overall height	1,110 rnm (43.7 in)
	Wheelbase	1,230 mm (48.4 in)
	Seat height	810 mm (31.9 in)
	Footpeg height	353 mm (13.9 in)
	Ground clearance	110 mm (4.3 in)
	Dry weight	170 kg (375 lbs)
	Curb weight	178 kg (392 lbs)
	Maximum weight capacity	110 kg (243 lbs)
FRAME	Frame type	Double cradle
	Front suspension	Double wish-bone
	Front wheel travel	209 mm (8.2 in)
	Rear suspension	Swingarm
	Rear axle travel	230 mm (9.1 in)
	Front tire size	AT22 x 7-10 ★★
	Rear tire size	AT20 x 10-9★★
	Front tire brand	M/R 101 (Ohtsu)
	Rear tire brand	M/R 501 (Ohtsu)
	Front brake	Hydraulic disc x 2
	Rear brake	Hydraulic disc
	Caster angle	6.5"
	Camber angle	–0.8"
	Trail length	28 mm (1.1 in)
	Fuel tank capacity	10 liters (2.6 **US** gal, 2.2 Imp gal)
	Fuel tank reserve capacity	1.6 liters (0.42 **US** gal, 3.52 Imp gal)
ENGINE	Cylinder arrangement	Single cylinder, 15" inclined from vertical
	Bore and stroke	85.0 x 70.0 mm (3.35 x 2.76 in)
	Displacement	397 cm^3 (24.2 cu-in)
	Compression ratio	9.1 : 1
	Valve train	Silent multi-link chain driven SOHC with rocker arms
	Intake valve opens	5" BTDC (at 1 mm lift)
	closes	40" ABDC (at 1 mm lift)
	Exhaust valve opens	40" BBDC (at 1 mrn lift)
	closes	5" ATDC (at 1 mm lift)
	Lubrication system	Forced pressure (dry sump)
	Oil pump type	Trochoid
	Cooling system	Air cooled
	Air filtration	Oiled urethane foam
	Engine dry weight	41.5 kg (91 lbs)

GENERAL (Cont'd)

	ITEM	SPECIFICATIONS
CARBURETOR	Carburetor type	Piston valve
	Throttle bore	38 mm (1.5 in)
DRIVE TRAIN	Clutch system	Multi-plate, wet
	Clutch operation system	Cable operating
	Transmission	Constant mesh, 5-speeds
	Primary reduction	2.826 (23/65)
	Final reduction	2.533 (15/38)
	Gear ratio 1st	2.916 (12/35)
	2nd	1.937 (16/31)
	3rd	1.473 (19/28)
	4th	1.181 (22/26)
	5th	1.000 (26/26)
	Gearshift pattern	Left foot operated return system. 1 – N – 2 – 3 – 4 – 5
ELECTRICAL	Ignition system	ICM (Capacitive Discharge Ignition)
	Starting system	Electric starter motor
	Charging system	Single phase output alternator
	Regulator/rectifier	Single phase full wave rectification
	Lighting system	Battery

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	1.8 liters (1.9 US qt, 1.6 Imp qt)	———
	After draining/filter change	1.85 liters (1.95 US qt, 1.63 Imp qt)	———
	After disassembly	2.2 liters (2.3 US qt, 1.9 Imp qt)	———
Recommended engine oil		Honda GN4 or HP4 4-stroke oil or equivalent motor oil API service classification SF or SG Viscosity: SAE 10W-40 or 20W-50	———
Oil pump	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.22 (0.006 – 0.009)	0.25 (0.010)
	Side clearance	0.02 – 0.09 (0.001 – 0.004)	0.12 10.005)

ITEM	SPECIFICATIONS
Main jet	#148
Jet needle clip position	3rd groove from top
Pilot screw opening	See page 5-13
Float level	18.5 mm 10.73 in)
Idle speed	1,400 ± 100 rpm
Throttle lever free play	3 – 8 mm (1/8 – 5/16 in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			686 – 883 kPa (7.0 – 9.0 kgf/cm², 100 – 128 psi)	———
Valve clearance		IN	0.10 (0.004)	———
		EX	0.12 (0.005)	———
Camshaft	Cam lobe height	IN	30.673 – 30.773 (1.2076 – 1.2115)	30.57 (1.204)
		EX	30.468 – 30.568 (1.1995 – 1.2035)	30.37 (1.196)
	Runout		———	0.03 (0.001)
Rocker arm	Arm I.D.	IN/EX	11.500 – 11.518 (0.4528 – 0.4535)	11.53 (0.454)
	Shaft O.D.	IN/EX	11.466 – 11.484 (0.4514 – 0.4521)	11.41 (0.449)
	Arm-to-shaft clearance	IN/EX	0.016 – 0.052 (0.0006 – 0.0020)	0.10 (0.004)
Sub-rocker arm	Arm I.D.	IN/EX	7.000 – 7.015 (0.2756 – 0.2762)	7.05 (0.278)
	Shaft O.D.	IN/EX	6.972 – 6.987 (0.2745 – 0.2751)	6.92 (0.272)
	Arm-to-shaft clearance	IN/EX	0.013 – 0.043 (0.0005 – 0.0017)	0.10 (0.004)
Valve, valve guide	Valve stem O.D.	IN	5.475 – 5.490 (0.2156 – 0.2161)	5.46 (0.215)
		EX	5.455 – 5.470 (0.2148 – 0.2154)	5.44 (0.214)
	Valve guide I.D.	IN/EX	5.500 – 5.512 (0.2165 – 0.2170)	5.52 (0.217)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.12 10.005)
		EX	0.030 – 0.057 (0.0012 – 0.0022)	0.14 (0.006)
	Valve seat width	IN/EX	1.0–1.1 (0.039 – 0.043)	2.0 **(0.08)**
Valve spring	Free length	Inner	37.19 (1.464)	36.3 11.43)
		Outer	44.20 (1.740)	43.1 (1.70)
Cylinder head warpage			———	0.10 (0.004)

ITEM			STANDARD	SERVICE LIMIT
Cylinder	I.D.		85.000 – 85.010 (3.3465 – 3.3468)	85.10 (3.350)
	Out of round		—	0.05 (0.002)
	Taper		—	0.05 (0.002)
	Warpage		—	0.10 (0.004)
Piston,	Piston O.D. at 15 (0.6) from bottom		84.960 – 84.985 (3.3449 – 3.3459)	84.880 (3.3417)
	Piston pin O.D.		19.994 – 20.000 (0.7872 – 0.7874)	19.964 (0.7860)
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.096 (0.0038)
	Piston ring end gap	Top	0.20 – 0.35 (0.008 – 0.014)	0.50 (0.020)
		Second	0.35 – 0.50 (0.014 – 0.020)	0.65 (0.026)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	0.90 (0.035)
	Piston ring-to-ring groove clearance	Top	0.030 – 0.065 (0.0012 – 0.0026)	0.14 (0.006)
		Second	0.015 – 0.050 (0.0006 – 0.0020)	0.12 (0.005)
Cylinder-to-piston clearance			0.015 – 0.050 (0.0006 – 0.0020)	0.10 (0.004)
Connecting rod small end I.D.			20.020 – 20.041 (0.7882 – 0.7890)	20.067 (0.7900)
Connecting rod-to-Diston pin clearance			0.020 – 0.047 10.0008 – 0.0019)	0.103 (0.0041)

ITEM			STANDARD	SERVICE LIMIT
Clutch	Lever free play		10 – 20 (3/8 – 3/4)	—
	Spring free length		52.64 (2.072)	50.0 (1.97)
	Disc thickness		2.92 – 3.08 (0.115 – 0.121)	2.69 (0.106)
	Plate warpage		—	0.15 (0.006)
	Outer I.D.		28.000–28.021 (1.1024 – 1.1032)	28.04 (1.104)
	Outer guide	I.D.	22.010 – 22.035 (0.8665 – 0.8675)	22.05 (0.868)
		O.D.	27.959 – 27.980 (1.1007 – 1.1016)	27.90 (1.098)
Mainshaft O.D. at clutch outer guide			21.959 – 21.980 (0.8645 – 0.8654)	21.91 (0.863)

ITEM	STANDARD	SERVICE LIMIT
Starter driven gear boss O.D.	51.705 – 51.718 (2.0356 – 2.0361)	51.67 (2.034)

ITEM			STANDARD	SERVICE LIMIT
	I.D.		13.000 – 13.021 (0.5118 – 0.5126)	13.05 (0.514)
	Claw thickness		5.93 – 6.00 (0.233 – 0.236)	5.5 (0.22)
	Shaft O.D.		12.966 – 12.984 (0.5105 – 0.5112)	12.90 (0.508)
Transmission	Gear I.D.	M4	25.020 – 25.041 (0.9850 – 0.9859)	25.08 (0.987)
		M5	25.000 – 25.021 (0.9843 – 0.9851)	25.06 (0.987)
		C1	23.000 – 23.021 (0.9055 – 0.9063)	23.07 (0.908)
		C2, C3	28.020 – 28.041 (1.1031 – 1.1040)	28.08 (1.106)
	Gear bushing O.D.	M4	24.979 – 25.000 (0.9834 – 0.9843)	24.90 (0.980)
		M5	24.959 – 24.980 (0.9826 – 0.9835)	24.90 (0.980)
		C1	22.959 – 22.980 (0.9039 – 0.9047)	22.90 (0.902)
		C2, C3	27.979 – 28.000 (1.1015 – 1.1024)	27.94 (1.100)
	Gear-to-bushing clearance		0.020 – 0.062 (0.0008 – 0.0022)	0.10 (0.004)
	Gear bushing I.D.	M4	22.000 – 22.021 (0.8661 – 0.8670)	22.10 (0.870)
		C1	20.020 – 20.041 (0.7882 – 0.7890)	20.08 (0.791)
		C2, C3	25.000 – 25.021 (0.9843 – 0.9851)	25.06 (0.987)
	Mainshaft O.D.	at M4	21.959 – 21.980 (0.7866 – 0.7874)	21.92 (0.863)
	Countershaft O.D.	at C1	19.979 – 20.000 (1.1791 – 1.1801)	19.94 (0.785)
		at C2, C3	24.959 – 24.980 (0.9826 – 0.9835)	24.92 (0.981)
	Bushing-to-shaft clearance		0.020 – 0.062 (0.0008 – 0.0022)	0.10 (0.004)
Crankshaft	Runout		———	0.12 (0.005)
	Big end side clearance		0.05 – 0.45 (0.002 – 0.018)	0.6 (0.02)
	Big end radial clearance		0.006 – 0.018 (0.0002 – 0.0007)	0.05 (0.002)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		—	4.0 (0.16)
Cold tire pressure	Standard	27 kPa (0.275 kgf/cm², 4.0 psi)	—
	Minimum	23 kPa (0.235 kgf/cm², 3.4 psi)	—
	Maximum	31 kPa (0.315 kgf/cm², 4.6 psi)	—
Tie-rod distance between the ball joints		370.2 (14.57)	—
Toe		Toe-in: 17 ± 15 (0.7 ± 0.6)	—
Shock absorber spring adiuster standard position		4th from softest position	—

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		—	4.0 (0.16)
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	Minimum	23 kPa (0.235 kgf/cm², 3.4 psi)	—
	Maximum	31 kPa (0.315 kgf/cm², 4.6 psi)	—
Axle runout		—	3.0 (0.12)
Drive chain slack		30 – 40 (1-1/4 – 1-5/8)	—
Shock absorber spring installed length		231.5 (9.11)	—

HYDRAULIC DISC BRAKE

ITEM		STANDARD	SERVICE LIMIT
Recommended brake fluid		DOT 4 brake fluid	—
Brake disc thickness	Front	2.8 – 3.2 (0.11 – 0.13)	2.5 (0.10)
	Rear	3.8-4.2 (0.15-0.17)	3.5 (0.14)
Brake disc runout		—	0.30 (0.012)
Master cylinder I.D.		12.700 – 12.743 (0.5000 – 0.5017)	12.75 (0.502)
Master piston O.D.		12.657 – 12.684 (0.4983 – 0.4994)	12.65 (0.498)
Caliper cylinder I.D.		33.960 – 34.010 (1.3370 – 1.3390)	34.02 (1.340)
Caliper piston O.D.		33.895 – 33.928 (1.3344 – 1.3357)	33.87 (1.333)

ITEM			SPECIFICATIONS
Battery	Capacity		12 V – 8 A h
	Current leakage		0.1 mA max.
	Voltage (20°C/68°F)	Fully charged	13.0– 13.2 V
		Needs charaina	Below 12.3 V
	Charging current	Normal	0.9 A x 5 – 10 h
		Quick	4.0 A x 1.0 h
Alternator	Capacity		147 W/5,000 rpm
	Charaina coil resistance (20°C/68°F)		0.1 – 1.0 Ω

ITEM		SPECIFICATIONS
Spark plug	Standard	DPR8Z (NGK), X24GPR-U (DENSO)
	For extended high speed ridina	DPR9Z (NGK), X27GPR-U (DENSO)
Spark plug gap		0.6 – 0.7 mrn (0.024 – 0.028 in)
Ignition coil primary peak voltage		100 V minimum
Ignition pulse generator peak voltage		0.7 V minimum
Exciter coil peak voltage		100 V minimum
Ianition timina ("F" mark)		8° BTDC at idle

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.5 (0.49)	8.5 (0.33)

ITEM		SPECIFICATIONS
Bulbs	Headlight (High/low beam)	12 V – 30/30 W x 2
	Taillight	12 V – 5 W
	Neutral indicator	12 V – 3.4 W
Fuse (main fuse)		15 A

TORQUE VALUES

- STANDARD

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm bolt and nut	5 (0.5, 3.6)	5 mm screw	4 (0.4, 2.9)
6 mm bolt and nut	10 (1.0, 7)	6 mm screw	9 (0.9, 6.5)
8 mm bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head, small flange)	9 (0.9, 6.5)
10 mm bolt and nut	34 (3.5, 25)		
12 mm bolt and nut	54 (5.5, 40)	6 mm flange bolt (8 mm head, large flange)	12 (1.2, 9)
			
		6 mm flange bolt (10 mm head) and nut	12 (1.2, 9)
		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 locking agent to the threads.
2. Apply oil to the threads and seating surface.
3. Apply grease to the threads and seating surface.
4. ALOC bolt. replace with a new one.
5. Castle nut: tighten to the specified torque and further tighten until its grooves align with the cotter pin hole,
6. Stake.

- ENGINE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
MAINTENANCE:				
Spark plug	1	12	18 (1.8, 13)	
Valve adjusting hole cap	4	36	15 (1.5, 11)	
Valve adjusting lock nut	4	7	24 (2.4, 17)	
Crankshaft hole cap	1	30	8 (0.8, 5.8)	
Timing hole cap	1	14	10 (1.0, 7)	
Engine oil drain bolt (crankcase)	1	12	25 (2.5, 18)	
Engine oil drain bolt (oil tank)	1	10	20 (2.0, 14)	
Engine oil strainer screen (at oil tank)	1	27	54 (5.5, 40)	
Oil pipe joint flare nut	2	16	20 (2.0, 14)	
CYLINDER HEADIVALVE:				
Cylinder head cover bolt	1	8	23 (2.3, 17)	
Rocker arm shaft	2	14	27 (2.8, 20)	NOTE 1
Intake sub-rocker arm shaft	2	14	27 (2.8, 20)	VOTE 1
Exhaust sub-rocker arm shaft	2	12	27 (2.8, 20)	NOTE 1
Cam sprocket bolt	2	7	20 (2.0, 14)	NOTE 1
Cam tensioner plug	1	6	4 (0.4, 2.9)	
Cylinder head nut	4	10	44 (4.5, 33)	NOTE 2
CYLINDER/PISTON:				
Cylinder bolt	4	10	44 (4.5, 33)	NOTE 2
Cylinder stud bolt	4	10	20 (2.0, 33)	oage 8-6
CLUTCH/GEARSHIFT LINKAGE:				
Clutch center lock nut	1	18	108 (11.0, 80)	VOTE 2,6
Primary drive gear nut	1	18	88 (9.0, 65)	VOTE 2
Gearshift drum stopper arm pivot bolt	1	6	12 (1.2, 9)	
Gearshift spindle return spring pin	1	8	24 (2.4, 17)	
ALTERNATOR/STARTER CLUTCH:				
Flywheel bolt	1	12	127 (13.0. 94)	VOTE 2
Starter clutch bolt	6	8	30 (3.1, 22)	VOTE 1
Left crankcase cover stud bolt	1	6	10 (1.0, 7)	
Gearshift pedal Dinch bolt	1	6	20 (2.0, 14)	

ENGINE (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
CRANKCASE/TRANSMISSION/CRANKSHAFT:				
Mainshaft bearing setting plate bolt	2	6	12 (1.2, 9)	NOTE 1
LIGHTSISWITCHES				
Neutral switch	1	10	13 (1.3, 9)	

FRAME

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N.m (kgf·m, lbf·ft)	REMARKS
WAME/BODY PANELS/EXHAUST SYSTEM:				
Footpeg bracket bolt	4	10	42 (4.3, 31)	
Skid plate bolt	4	8	30 (3.1, 22)	NOTE 4
Muffler mounting bolt	2	8	32 (3.3, 24)	
Muffler band bolt	2	8	23 (2.3, 17)	
Exhaust pipe protector bolt	2	6	20 (2.0, 14)	
HAINTENANCE				
Axle bearing holder pinch bolt	4	8	21 (2.1, 15)	
Front master cylinder reservoir cap screw	2	4	2 (0.2, 1.4)	
Parking brake arm lock nut	1	8	18 (1.8, 13)	
Rear master cylinder push rod lock nut	1	8	18 (1.8, 13)	
Tie-rod lock nut	4	12	54 (5.5, 40)	
ENGINE REMOVALIINSTALLATION				
Upper engine hanger nut	1	10	74 (7.5, 54)	
Front engine hanger nut	1	10	54 (5.5, 40)	
bolt	4	8	26 (2.7, 20)	
Lower engine hanger nut	1	10	74 (7.5, 54)	
FRONT WHEEL/SUSPENSION/STEERING				
Handlebar lower holder nut	2	10	39 (4.0, 29)	
Throttle housing cover screw	3	4	4 (0.4, 2.9)	
Left handlebar switch housing screw	2	5	2 (0.2, 1.4)	
Front wheel nut	8	10	64 (6.5, 47)	
Front wheel hub nut	2	14	59 (6.0, 43)	NOTE 5
Front brake disc bolt	6	8	42 (4.3, 31)	NOTE 4
Shock absorber mounting nut	4	10	44 (4.5, 33)	
Upper and lower arm pivot nut	8	10	39 (4.0, 29)	
Upper and lower arm ball joint nut	4	12	29 (3.0, 22)	NOTE 5
Tie-rod ball joint lock nut	4	12	54 (5.5, 40)	
Tie-rod stud joint nut	4	10	44 (4.5, 33)	
Steering shaft end nut	1	14	69 (7.0, 51)	
Steering shaft holder bolt	2	8	32 (3.3, 24)	
REAR WHEELISUSPENSION:				
Rear wheel nut	8	10	64 (6.5, 47)	
Rear wheel hub nut	2	18	137 (14.0, 101)	NOTE 3,5
Rear brake disc bolt	4	8	42 (4.3, 31)	NOTE 4
Shock absorber mounting nut	2	10	59 (6.0, 43)	
Shock link-to-swingarm nut	1	10	44 (4.5, 33)	
Shock arm-to-frame nut	1	10	59 (6.0, 43)	
Shock arm-to-shock link nut	1	10	59 (6.0, 43)	
Final driven sprocket nut	4	10	59 (6.0, 43)	
Axle lock nut (outer)	1	48	88 (9.0, 65)	NOTE 1
(inner)	1	48	128 (13.0, 94)	NOTE 1
Swingarm pivot nut	1	14	108 (11.0, 80)	
Caliper stopper pin	1	12	59 (6.0, 43)	NOTE 1

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
HYDRAULIC BRAKE:				
Caliper bleed valve	3	8	6 (0.6, 4.3)	
Front brake caliper pad pin plug	4	10	3 (0.3, 2.2)	
Front brake caliper pad pin	4	10	18 (1.8, 13)	
Rear brake caliper pad pin	2	8	18 (1.8, 13)	
Brake hose oil bolt	4	10	34 (3.5, 25)	
Brake pipe joint nut	2	10	17 (1.7, 12)	
Front brake lever pivot bolt	1	6	6 (0.6, 4.3)	
nut	1	6	6 (0.6, 4.3)	
Rear master cylinder mounting bolt	2	6	13 (1.3, 9)	NOTE 4
Rear master cylinder reservoir hose joint screw	1	4	2 (0.2, 1.4)	NOTE 1
Front brake caliper slide pin	2	8	23 (2.3, 17)	
Front brake caliper bracket pin	2	8	18 (1.8, 13)	
Front brake caliper mounting bolt	2	8	30 (3.1, 22)	NOTE 4
Rear brake caliper slide pin	1	8	23 (2.3, 17)	
Rear brake caliper bracket pin	1	8	18 (1.8, 13)	NOTE 1
Rear brake caliper mounting bolt	2	8	30 (3.1, 22)	NOTE 4
Rear brake caliper parking brake base bolt	2	8	23 (2.3, 171	
LIGHTS/SWITCHES:				
Headlight mounting bolt	2	4	4 (0.4, 2.9)	
DTHERS:				
Sub-frame upper mounting bolt	2	8	42 (4.3, 31)	
Sub-frame lower mounting bolt	2	10	54 (5.5, 40)	

TOOLS

NOTES: 1. Equivalent commercially available in U.S.A.
2. Not available in U.S.A.
3. Alternative tool

DESCRIPTION	TOOL NUMBER	REMARKS	REF. SECTION
Carburetor float level gauge	07401 –0010000		3
Universal bearing puller	07631–0010000	NOTE 1	11
Gear holder	07724–0010100	NOTE 2	9
Clutch center holder	07724 – 0050002	NOTE 1	9
Flywheel holder	07725 – 0040000	NOTE 1	10
Rotor puller	07733 – 0020001	NOTE 3 07933 – 3950000 (U.S.A. only)	10
Remover weight	07741 – 0010201	NOTE 3: 07936 – 371020A or 07936–3710200	11
Valve guide driver, 5.5 mm	07742–0010100		7
Attachment. 32 x 35 mm	07746–0010100		11, 12
Attachment, 37 x 40 mm	07746–0010200		11, 12
Attachment, 42 x 47 mm	07746–0010300		11.12
Attachment, 52 x 55 mm	07746–0010400		11
Attachment, 62 x 68 mm	07746 – 0010500		13
Attachment, 72 x 75 mm	07746 – 0010600		11
Attachment, 24 x 26 mm	07746 – 0010700		13
Attachment, 35 mm I.D.	07746 – 0030400		13
Pilot, 12 mm	07746 – 0040200		11
Pilot, 15 mm	07746 – 0040300		11, 12
Pilot, 17 mm	07746 – 0040400		3, 11, 12, 13
Pilot, 20 mm	07746 – 0040500		12
Pilot, 25 mm	07746–0040600		11
Pilot, 30 mm	07746 – 0040700		11
Pilot, 40 mm	07746–0040900		13
Pilot, 22 mm	07746 – 0041000		11
Bearing remover shaft	07746–0050100		12
Bearing remover head, 15 mm	07746–0050400		12
Attachment, 28 x 30 mm	07746– 1870100		9
Driver	07749–0010000		9, 11, 12, 13
Valve spring compressor	07757 – 0010000		7
Valve seat cutter, 29 mm (EX 45°)	07780 – 0010300	NOTE 1	7
Valve seat cutter, 35 mm (IN 45°)	07780 – 0010400		7
Flat cutter, 30 mm (EX 32°)	07780 – 0012200		7
Flat cutter, 35 mm (IN 32°)	07780 – 0012300		7
Interior cutter, 30 mm (IN/EX 60°)	07780–0014000		7
Cutler holder, 5.5 mm	07781–0010101		5
Pilot screw wrench	07908 – 4220201		7
Compression gauge attachment	07908 – KK60000	NOTE 1	14
Snap ring pliers	07914 – SA50001		13
Lock nut wrench, 45 mm	07916– 1870101	NOTE 1	13
Lock nut wrench, 56 mm	07916 – HA20000	NOTE 3: 07916 – HA2010A (U.S.A. only)	11
Remover handle	07936–3710100		11
Bearing remover, 17 mm	07936–3710300		11
Bearing remover set, 15 mm	07936 – KC10000	NOTE 2	
— bearing remover, 15 mm	07936 – KC10500		
–remover shaft	07936– KC10100	NOTE 2	
–remover head	07936 – KC10200	NOTE 2	
— sliding weight	07741 –0010201	NOTE 3: 07936 – 371020A or 07936 – 3710200	
Needle bearing remover	07946 – KA50000		13

DESCRIPTION	TOOL NUMBER	REMARKS	REF. SECTION
Crankcase assembly tool	07965 – VM00000	NOTE 2	11
— assembly collar	07965 – VM00100		
— assembly shaft	07965 – VM00200	NOTE 3: 07931 – ME4010B and 07931 – HB3020A	
— threaded adaptor	07965 – VM00300	NOTE 3: 07931 – KF00200	
Assembly collar	07965 – VM00100		12.13
Valve guide reamer, 5.5 mm	07984 – 2000001	NOTE 3 07984 – 200000D (U.S.A. only)	7
Spherical bearing driver	07HMF – HC00100	NOTE 2 NOTE 3: 07GAD – PH70100	12
Ball joint remover	07MAC – SL00200		12

LUBRICATION & SEAL POINTS

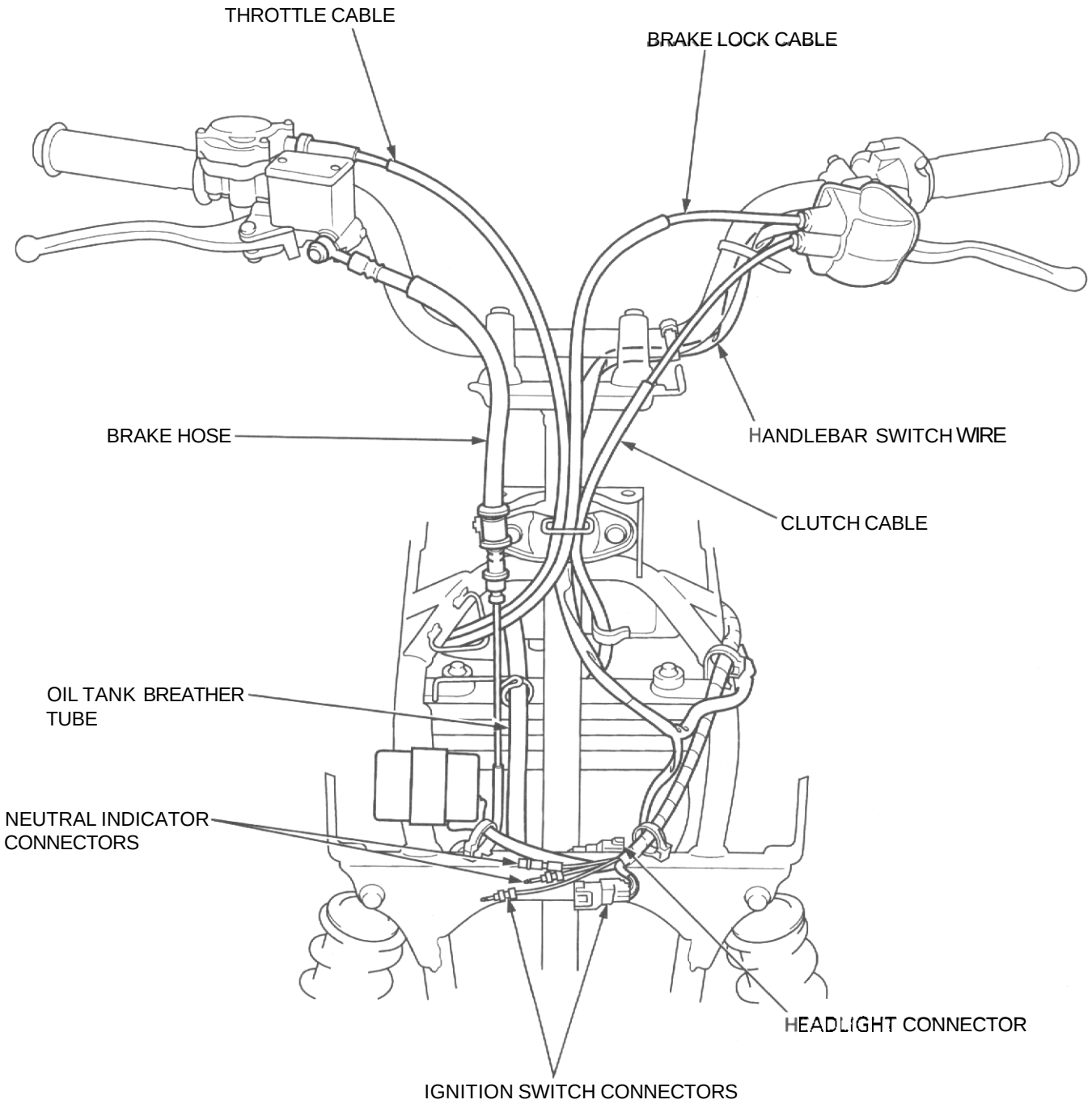
ENGINE

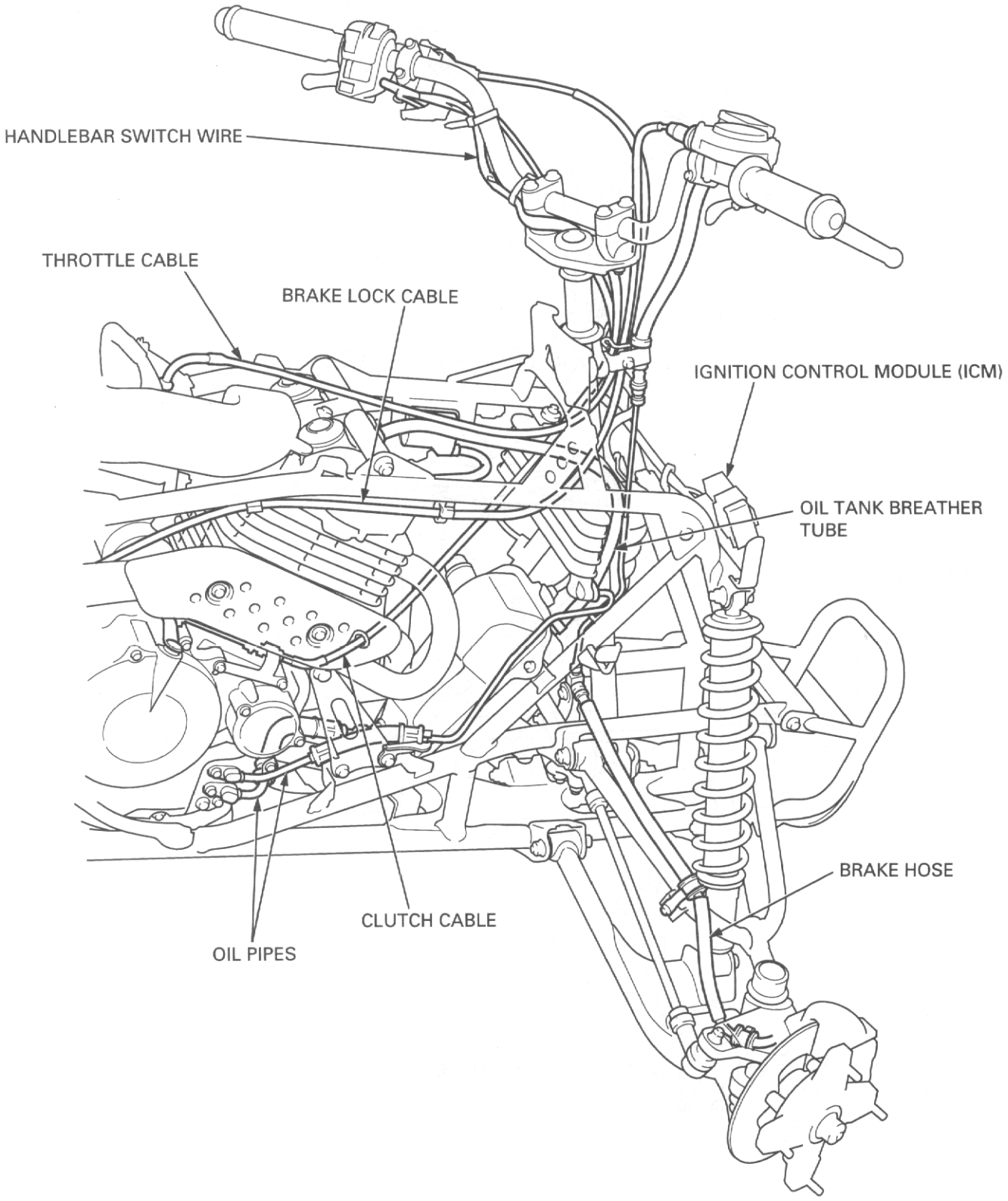
LOCATION	MATERIAL	REMARKS
Camshaft journals and cam lobes Rocker arm slipper surfaces Sub-rocker arm slipper surfaces Valve stem (valve guide sliding surface) Clutch outer guide inner and outer surfaces Piston pin outer surface Connecting rod small end inner surface Transmission gear rotating surfaces Transmission gear shift fork grooves Connecting rod big end bearing	Molybdenum oil solution (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease)	
Rocker arm shaft sliding surfaces Sub-rocker arm shaft sliding surfaces Cam chain Cylinder head nut threads and seating surfaces Piston outer surface and piston pin hole Piston rings Cylinder bore Cylinder bolt threads and seating surfaces (10 mm only) Clutch arm spindle Clutch lifter piece Clutch disc lining Clutch center lock nut threads and seating surface Primary drive gear nut threads and seating surface Flywheel bolt threads and seating surface Transmission gear teeth Shift fork shaft Shift fork guide pins and inner surfaces Shift drum grooves Each bearing rotating area Each O-ring whole surface Each oil seal outer surface	Engine oil	
Each oil seal lip	Multi-purpose grease	
Rocker arm shaft threads	Locking agent	Coating area (page 7-22)
Sub-rocker arm shaft threads		Coating area (page 7-22)
Gearshift cam plate bolt threads Left crankcase cover stud bolt threads Alternator wire clamp bolt threads (inside left crankcase cover)		Coating width: 6.5 mm (0.26 in) from tip
Ignition pulse generator bolt threads Mainshaft bearing setting plate bolt threads Cam chain tensioner slider bolt threads Cam sprocket bolt threads Starter clutch bolt threads		Coating width: 5 mm (0.2 in)
Alternator/ignition pulse generator wire grommet seating surface	Liquid sealant	

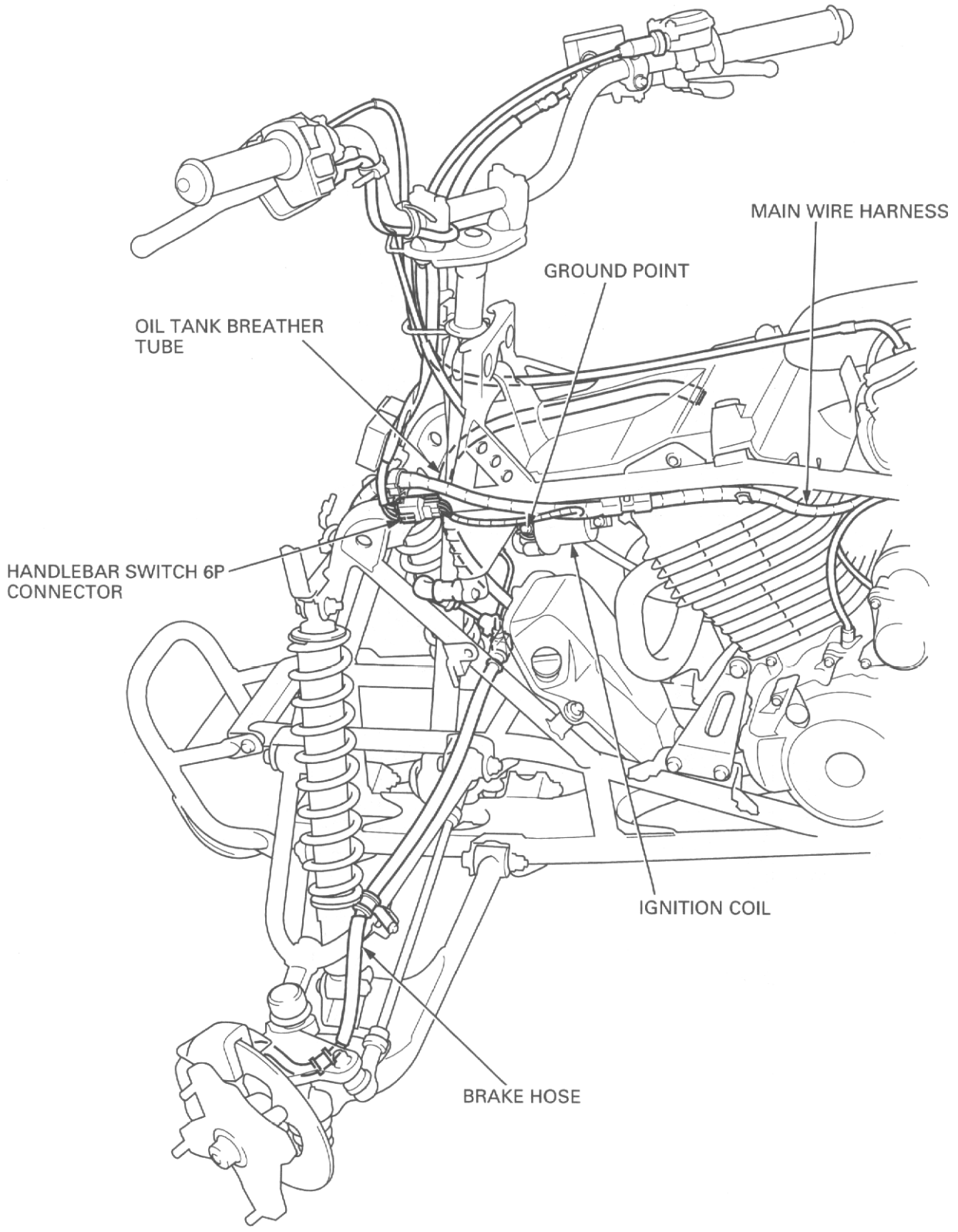
FRAME

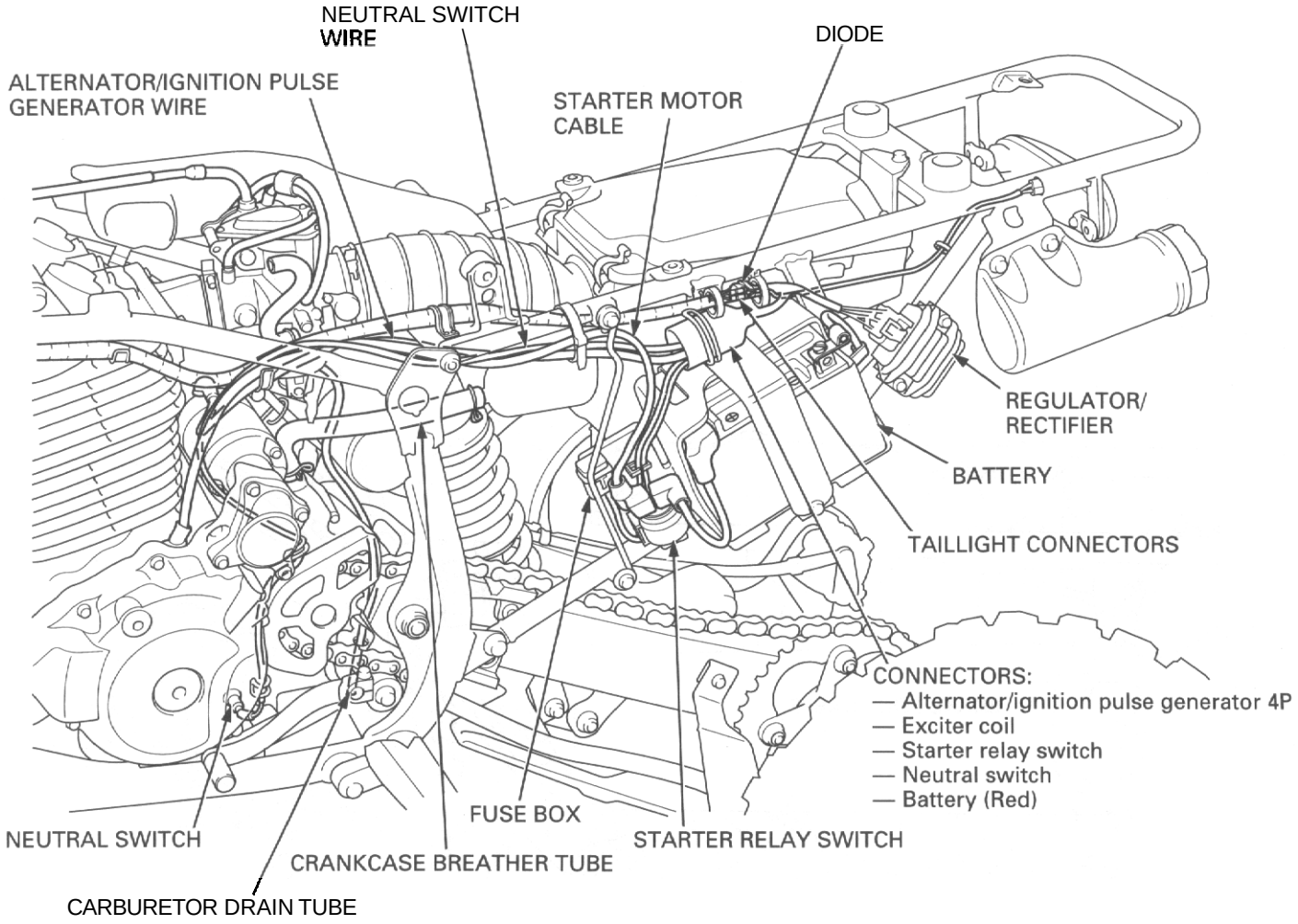
LOCATION	MATERIAL	REMARKS
Throttle cable end Throttle lever pivot and dust seal lip Brake lock cable end Brake lock arm pivot Front wheel hub dust seal lips Steering shaft bushing inner surface Steering shaft dust seal lips Upper and lower arm pivot bearings Upper and lower arm pivot dust seal lips Shock arm and link bearings Shock arm and link dust seal lips Swingarm pivot bearings Swingarm pivot dust seal lips Rear brake pedal pivot Rear brake pedal pivot dust seal lips Rear axle bearing holder outer surface Rear axle bearing holder dust seal lips Rear brake caliper stay inner surface Rear axle splines (brake disc and driven flange) Rear axle outer lock nut stopper ring Rear wheel hub nut threads and seating surfaces Rear shock absorber upper needle bearing Rear shock absorber dust seal lips	Multi-purpose grease	Apply 1 g per each dust seal Fill up 3 g per each bearing Apply 3 g per each bearing Apply 1 g per each dust seal
Front shock absorber lower bushings Front shock absorber dust seal lips	Molybdenum disulfide paste	
Air cleaner intake duct-to-housing mating surface	Engine oil	
Throttle cable outer inside Clutch cable outer inside Brake lock cable outer inside	Cable lubricant	
Handlebar grip rubber inside	Honda Bond A or Honda Hand Grip Cement (U.S.A. only) or equivalent	
Front brake lever-to-master piston contacting area Front brake lever pivot Rear brake master piston-to-push rod contacting area and boot groove Brake caliper pin bolt boots inside Rear brake caliper parking brake shaft sliding surface	Silicone grease	
Brake master piston and cups Brake caliper piston and piston seals Rear brake master cylinder hose joint O-ring Rear brake caliper piston shaft O-ring	DOT 4 brake fluid	
Clutch switch retainer screw Rear axle outer and inner lock nut threads Rear brake master cylinder hose joint screw threads	Locking agent	

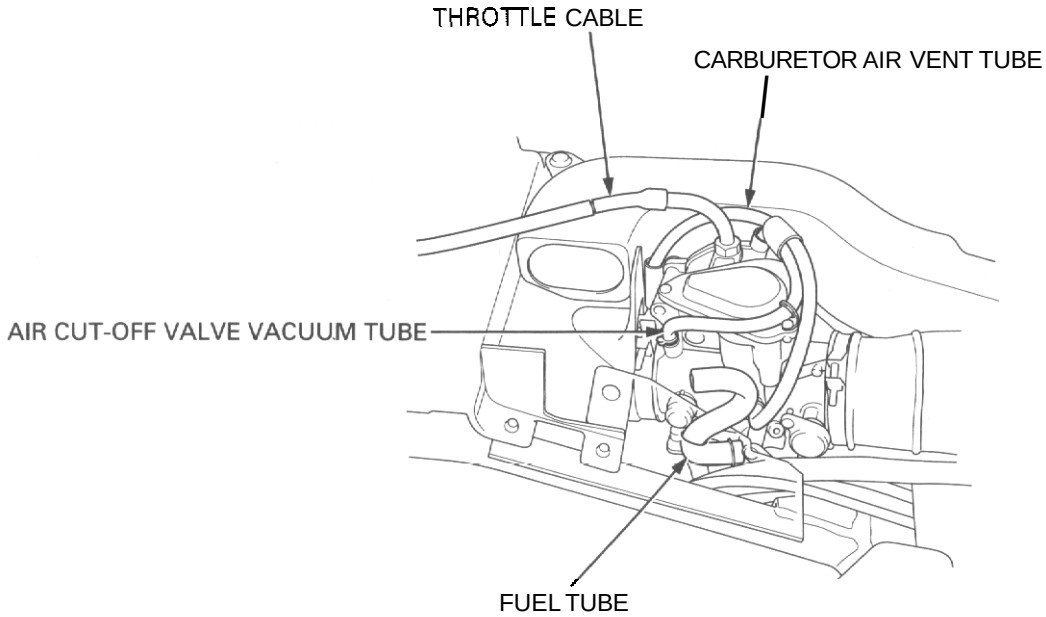
CABLE & HARNESS ROUTING

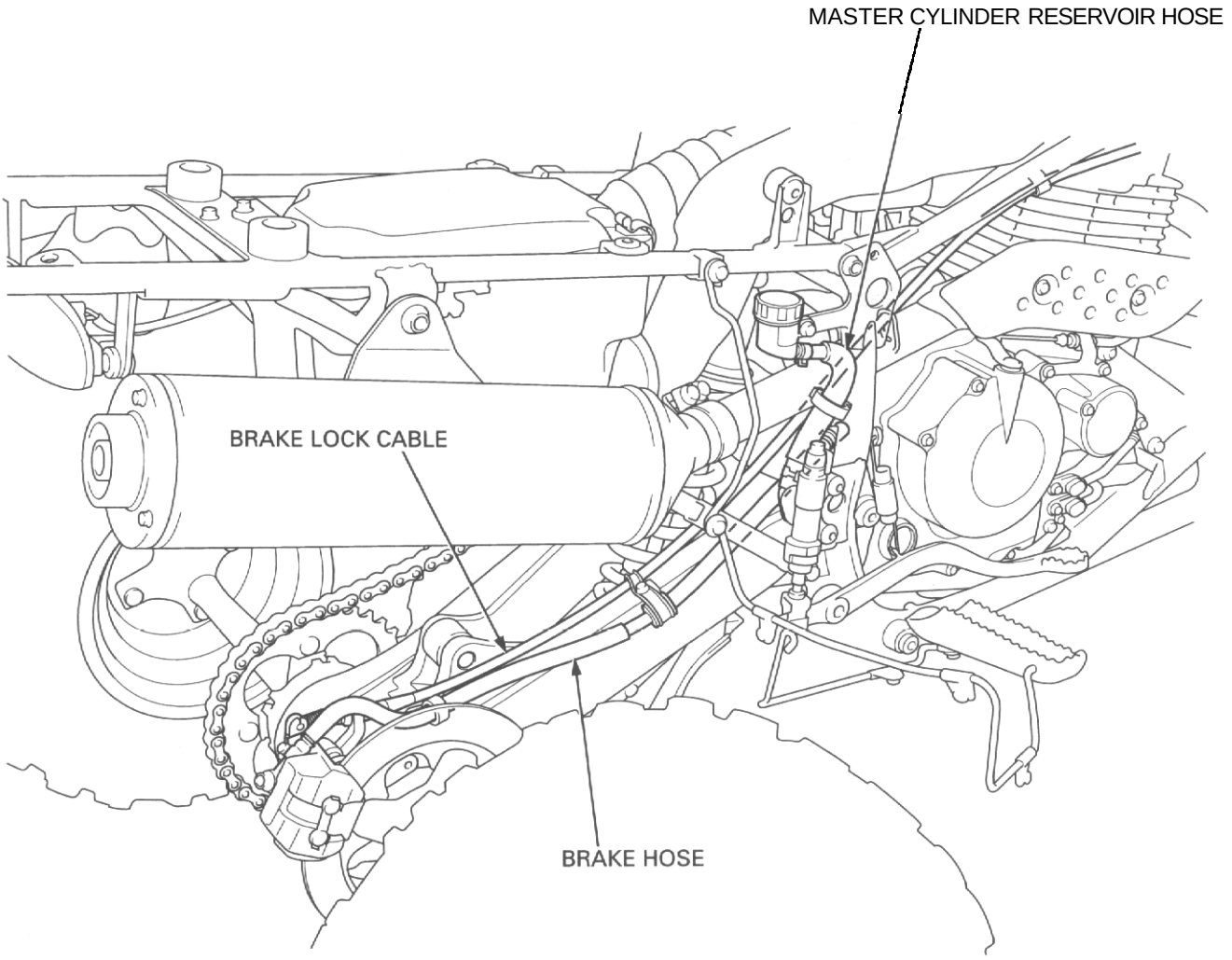



HANDLEBAR SWITCH WIRE
THROTTLE CABLE
BRAKE LOCK CABLE
IGNITION CONTROL MODULE (ICM)
OIL TANK BREATHER TUBE
BRAKE HOSE
CLUTCH CABLE
OIL PIPES


MAIN WIRE HARNESS
GROUND POINT
OIL TANK BREATHER TUBE
HANDLEBAR SWITCH 6P CONNECTOR
IGNITION COIL
BRAKE HOSE


NEUTRAL SWITCH WIRE
DIODE
ALTERNATOR/IGNITION PULSE GENERATOR WIRE
STARTER MOTOR CABLE
REGULATOR/ RECTIFIER
BATTERY
TAILLIGHT CONNECTORS
CONNECTORS:
— Alternator/ignition pulse generator 4P
— Exciter coil
— Starter relay switch
— Neutral switch
— Battery (Red)
FUSE BOX
NEUTRAL SWITCH
STARTER RELAY SWITCH
CRANKCASE BREATHER TUBE
CARBURETOR DRAIN TUBE


THROTTLE CABLE
CARBURETOR AIR VENT TUBE
AIR CUT-OFF VALVE VACUUM TUBE
FUEL TUBE


MASTER CYLINDER RESERVOIR HOSE
BRAKE LOCK CABLE
BRAKE HOSE

EMISSION CONTROL SYSTEMS

The California Air Resources Board (CARB) requires manufacturers to certify that their ATVs comply with applicable exhaust emissions standards during their useful life, when operated and maintained according to the instructions provided.

SOURCE OF EMISSIONS

The combustion process produces carbon monoxide and hydrocarbons. Controlling hydrocarbon emissions 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.

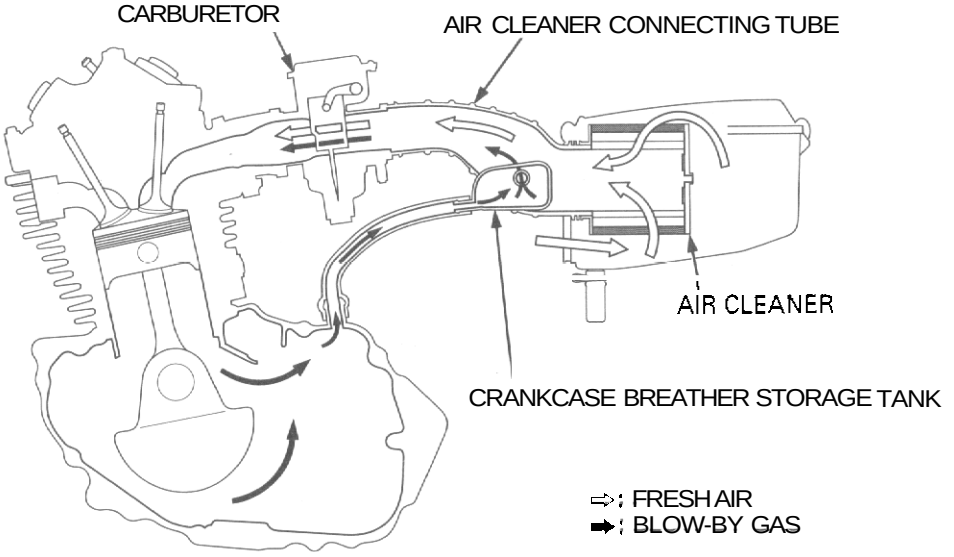
Honda Motor Co., Ltd. utilizes lean carburetor settings as well as other systems, to reduce carbon monoxide and hydrocarbons.

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.

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 carburetor.



NOISE EMISSION CONTROL SYSTEM

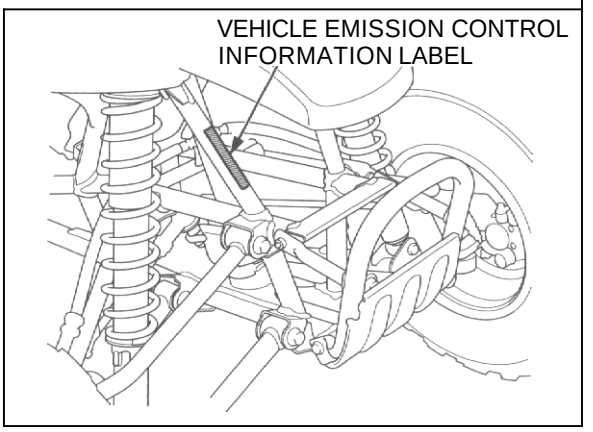
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED. U.S. federal law prohibits, or Canadian provincial laws prohibit the following acts or the causing thereof: (1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element 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; (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 LABEL

The Vehicle Emission Control Information Label is attached on the right side frame down tube.



2. FRAME/BODY PANELS/EXHAUST SYSTEM

SERVICE INFORMATION

GENERAL

⚠ WARNING

- ***Gasoline is extremely flammable and is explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN.***
- ***Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.***

- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.
- This section covers removal and installation of the body panels, fuel tank and exhaust system.
- Always replace the gaskets when removing the exhaust system.
- Always inspect the exhaust system for leaks after installation.
- Refer to section 18 for light and switch information.

TORQUE VALUES

Footpeg bracket bolt	42 N·m (4.3 kgfm, 31 lbf·ft)
Skid plate bolt (8 mm)	30 N·m (3.1 kgf·m, 22 lbf·ft)
Muffler mounting bolt	32 N·m (3.3 kgf·m, 24 lbf·ft)
Muffler band bolt	23 N·m (2.3 kgf·m, 17 lbf·ft)
Exhaust pipe protector bolt	20 N·m (2.0 kgf·m, 14 lbf·ft)

TROUBLESHOOTING

***Excessive* exhaust noise**
- Broken exhaust system
- Exhaust gas leaks

Poor performance
- Deformed exhaust system
- Exhaust gas leaks
- Clogged muffler

SEAT/REAR FENDER

CAUTION:

The rear fender may be deformed if it contacts the muffler while the exhaust system is hot.

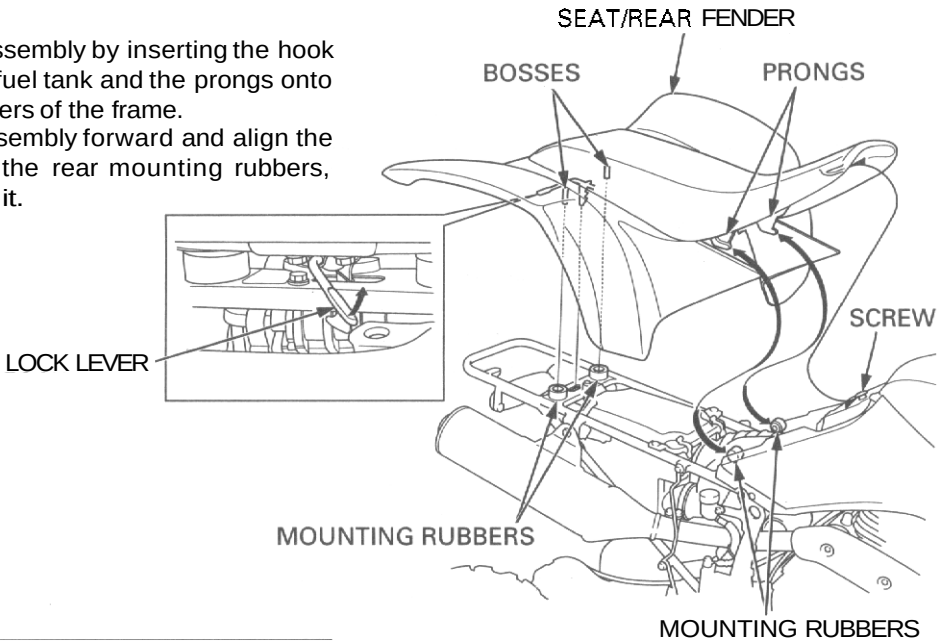
REMOVAL

Unlock the seat by turning the lock lever upward.
Raise the seat/fender assembly up and remove it.

INSTALLATION

Do not allow the assembly to contact the muffler when the exhaust system is hot.

Install the seat/fender assembly by inserting the hook between the screw and fuel tank and the prongs onto the front mounting rubbers of the frame.
Push the seat/fender assembly forward and align the mounting bosses with the rear mounting rubbers, then press down to lock it.



FRONT FENDER

⚠ WARNING

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

REMOVAL/INSTALLATION

Remove the seat/rear fender assembly.

Release the four trim clips by raising the center pin and remove them.

Remove the breather tube and fuel fill cap.
Release the four tabs from the slits in the fender while sliding the fuel tank upper cover rearward and remove it.
Install the fuel fill cap.