# Introduction

This service manual describes the service procedures for the MAGNA VF750C/CD.

This Model Specific Manual includes every service procedure that is of a specific nature to this particular model. Basic service procedures that are common to other Honda Motorcycle/Motor Scooter/ATVs are covered in the Common Service Manual. This Model Specific Service Manual should be used together with the Common Service Manual in order to provide complete service information on all aspects of this motorcycle.

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 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 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 describe the service procedure through system illustration. Refer to the next page for details on how to use this manual.

If you are not familiar with this motorcycle, read Technical Feature in section 20.

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



HONDA MOTOR CO., LTD.
Service Publications Office

# Contents



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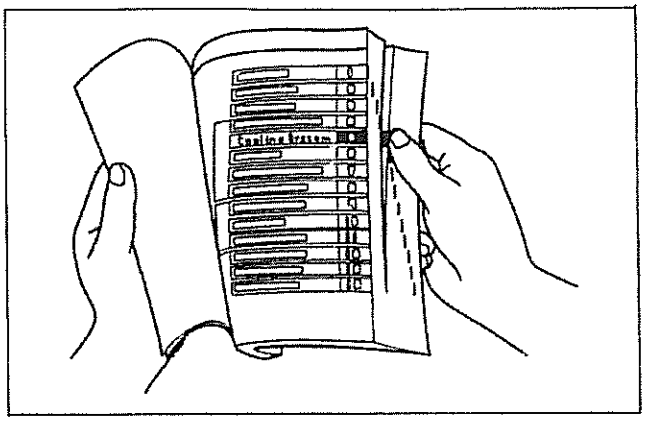
# How To Use This Manual

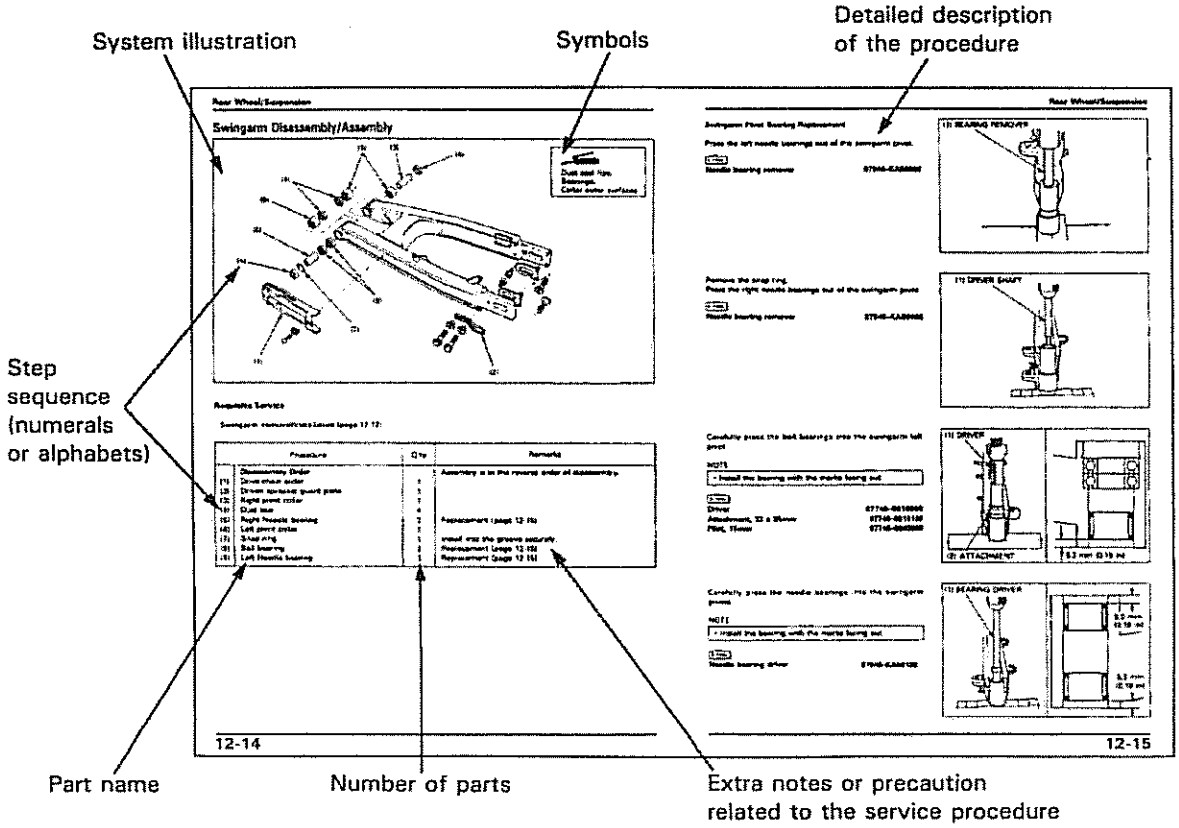


## Finding The Information You Need

- This manual is devided into sections which cover each of the major comonents of the motorcycle.
  To quickly find the section you are interested in, the first page of each sections is marked with a black tab that lines up with one of the thumb index tabs before this page.
  The first page of each section lists the table of contents within the section.
  Read the service information and trobleshooting related to the section before you begin working.
- An index of the entire book is provided in the last chapter to directly locate the information you need.

## Note On the Explanation Method Of This Manual

- The removal and installation of parts are for the most part illustrated by large and clear illustrations that should provide the reader with visual aid in understanding the major point for servicing.
- The system illustrations are augmented by call outs whose numbers or letters indicate the order in which the parts should be removed or installed.
- The sequence of steps represented numerically are differentiated from the ones represented alphabetically to notify the reader that they must perform these steps seperately.
- The illustrations may contain symbols to indicate necessary service procedures and precautions that need to be taken. Refer to the next page for the meaning of each symbol.
- Also in the illustration is a chart that lists information such as the order in which the parts is removal/installed, the name of the part, and some extra notes that may needed.
- Step by step instructions are provided to supplement the illustrations when datailed explanation of the procedure is necessary or illustrations alone would not suffice.
- Service procedures required before or after the procedure described on that particular page, or inspection/adjustment procedures required following the installation of parts, are described under the title Requisite Service.
- Standard workshop procedures and knowledge covered in the Common Service Manual are abbreviated in this manual.



# 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 special tool. |
|  | Use optional tool. These tools are obtained as you order parts. |
|  10 (1.0,7) | Torque specification. 10 N·m (1.0 kg-m, 7 ft-lb) |
|  | Use recommended engine oil, unless otherwise specified. |
|  | Use molybdenum oil solution (mixture of the engine oil and molybdenum grease with the ratio 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).<br>Example: Molykote® BR-2 plus manufactured by Dow Corning, U.S.A.<br>Multi-purpose M-2 manufactured by Mitsubishi Oil Japan |
|  | Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent).<br>Example: Molykote® G-n Paste manufactured by Dow Corning, U.S.A.<br>Honda Moly 60 (U.S.A. only)<br>Rocol ASP manufactured by Rocol Limited, U.K.<br>Rocol Paste manufactured by Sumico Lubricant, Japan |
|  | Use silicone grease. |
|  | Apply a locking agent. Use the agent of the middle strength, unless otherwise specified. |
|  | Apply sealant. |
|  | Use brake fluid DOT 4. 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 cotains poisonous carbon monoxide gas that may cause loss of consciouness 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/Transmission Oil**

**⚠ WARNING**

- **Used engine oil (or transmission oil in two-stroke) may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Althrough 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 airborne asbestos fibers.

**⚠ WARNING**

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

**Brake Fluid**

**CAUTION**

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

### 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.**

If it contacts your skin, wash the affected areas immediately with soap and water. If it contacts your eyes, flush them thoroughly with fresh water and get immediate medical attention. If it is swallowed, the victim must be forced to vomit, then rinse mouth and throat with fresh water before obtaining medical attention. Because of these dangers, always store coolant in a safe place, away from the reach of children.

### Nitrogen Pressure

For shock absorbers with a gas-filled reservoir:

**⚠ WARNING**

- **Use only nitrogen to pressurize the shock absorber. The use of an unstable gas can cause a fire or explosion resulting in serious injury.**
- **The shock absorber contains nitrogen under high pressure. Allowing fire or heat near the shock absorber could lead to an explosion that could result in serious injury.**
- **Failure to release the pressure from a shock absorber before disposing of it may lead to a possible explosion and serious injury if it is heated or pierced.**

To prevent the possibility of an explosion, release the nitrogen by pressing the valve core. Then remove the valve stem from the shock absorber reservoir. Dispose of the oil in a manner acceptable to the Environmental Protection Agency (EPA).

Before disposal of the shock absorber, release the nitrogen by pressing the valve core. Then remove the valve stem from the shock absorber.

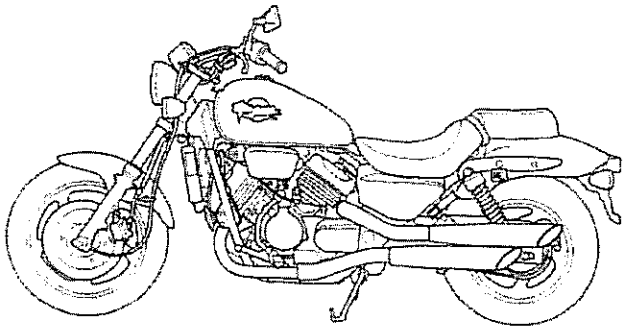
### Battery Hydrogen Gas & Electrolyte

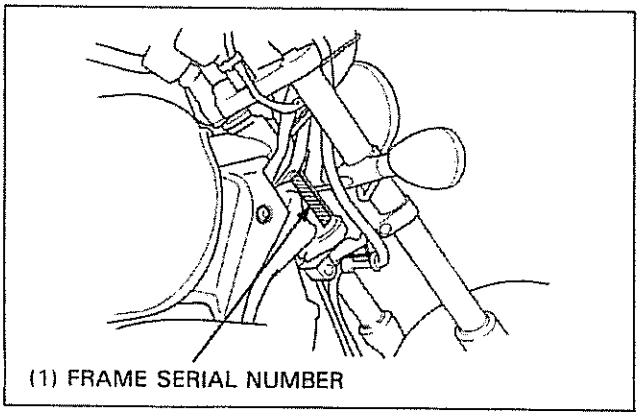
**⚠ WARNING**

- **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.**

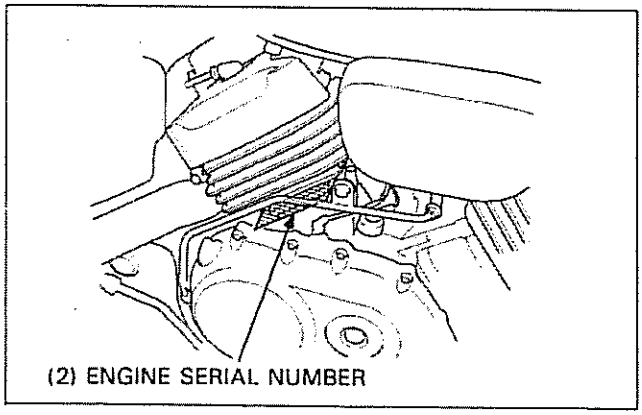
# Model Identification

'94 MAGNA VF750C shown

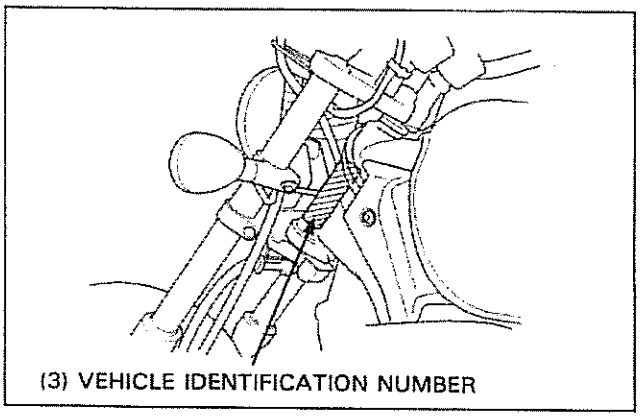




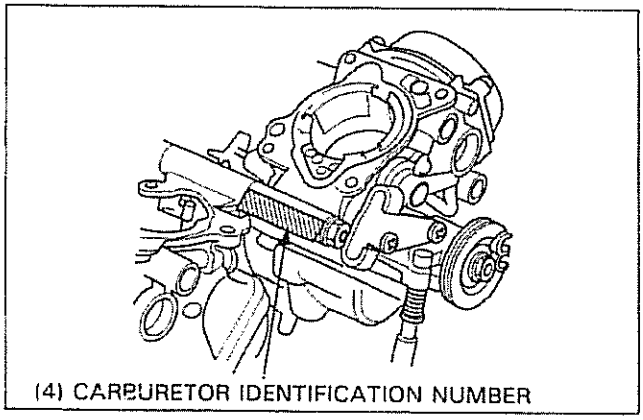

(1) The frame serial number is stamped on the right side of the steering head.



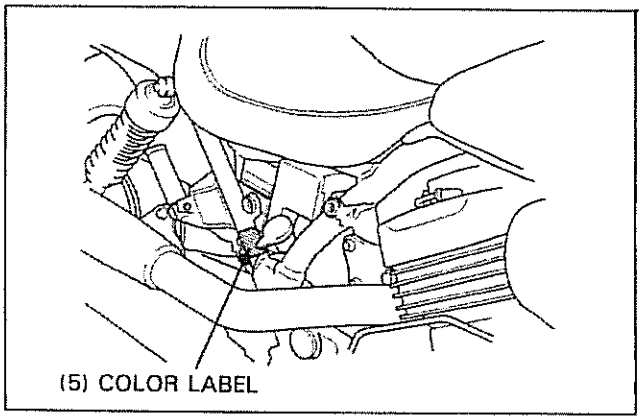

(2) The engine serial number is stamped on the right side of the upper crankcsase.




(3) The vehicle Identification Number (VIN) is located on the Safety Certification Label on the left side of the steering head.



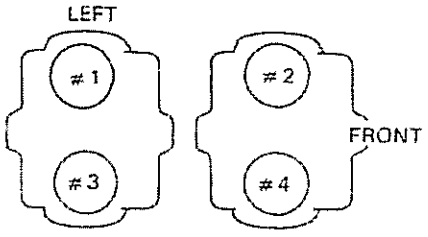

(4) The carburetor indentification number is stamped on the carburetor body intake side.




(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 | '94-'00 | 2,332 mm (91.8 in) |
| | | After '00 | 2,338 mm (92.0 in) |
| | Overall width | | 854 mm (33.6 in) |
| | Overall height | (VF750C) | 1,136 mm (44.7 in) |
| | | (VF750CD) | 1,190 mm (46.9 in) |
| | Wheelbase | | 1,652 mm (65 in) |
| | Seat height | | 710 mm (28 in) |
| | Footpeg height | | 290 mm (11.4 in) |
| | Group clearance | | 155 mm (6.1 in) |
| | Dry weight | | |
| | (VF750C: 49 states, Canadian type) | | 229 kg (505 lbs) |
| | (VF750C: California type) | | 231 kg (509 lbs) |
| | (VF750CD: 49 states, Canadian type) | | 230 kg (507 lbs) |
| | (VF750CD: California type) | | 232 kg (511 lbs) |
| | Curb weight | | |
| | (VF750C: 49 states, Canadian type) | | 247 kg (545 lbs) |
| | (VF750C: California type) | | 249 kg (549 lbs) |
| | (VF750CD: 49 states, Canadian type) | | 248 kg (547 lbs) |
| | (VF750CD: California type) | | 250 kg (551 lbs) |
| | Maximum weight capacity | | 180 kg (397 lbs) |
| **Frame** | Frame type | | Double cradle |
| | Front suspension | | Telescopic fork |
| | Front wheel travel | | 150 mm (5.91 in) |
| | Rear suspension | | Swingarm |
| | Rear wheel travel | | 100 mm (3.94 in) |
| | Rear damper | | Double effect type |
| | Front tire size | | 120/80 – 17 61V |
| | Rear tire size | | 150/80 – 15M/C 70V |
| | Tire brand (Front/Rear) | | K555F/K555 (Dunlop) |
| | Front brake | | Hydraulic brake |
| | Rear brake | | Internal expanding shoe |
| | Caster angle | | 32° |
| | Trail length | | 137 mm (5.39 in) |
| | Fuel tank capacity | | 13.9 liter (3.7 US gal, 3.1 Imp gal) |
| | Fuel tank reserve capacity | | 3.3 liter (0.87 US gal, 0.37 Imp gal) |
| **Engine** | Bore and stroke | | 70.0 x 48.6 mm (2.76 x 1.91 in) |
| | Displacement | | 748.1 cc (45.65 cu-in) |
| | Compression ratio | | 10.8 : 1 |
| | Valve train | | Silent multi-link chain drive and DOHC |
| | Intake valve opens (at 1 mm lift) | | 10° BTDC |
| | Intake valve closes (at 1 mm lift) | | 25° ABDC |
| | Exhaust valve opens (at 1 mm lift) | | 35° BBDC |
| | Exhaust valve closes (at 1 mm lift) | | –5° ATDC |
| | Lubrication system | | Forced pressure and wet sump |
| | Oil pump type | | Trochoid |
| | Cooling system | | Liquid cooled |
| | Air filtration | | Paper filter |
| | Crankshaft type | | Unit-type, 4 main journal |
| | Engine dry weight | | 80.3 kg (177 lbs) |
| | Firing order | | 1 – 90° –4 – 270° –3 – 90° –2 – 270° –1 |
| | Cylinder arrangement | | 4 cylinder 90° V |
| | Cylinder number | |   |



Revised: September, 2000, 1994-2001 Magna VF750 C/CD

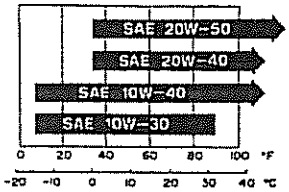
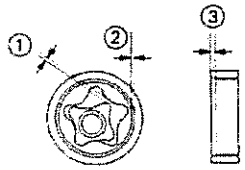
MSV 9017 (0009)

General (Cont'd)

| Item | | Specifications |
|---|---|---|
| **Carburetor** | Carburetor type | CV (Constant Velocity) type, with flat valve |
| | Venturi diameter | 33 mm (1.30 in) |
| **Drive Train** | Clutch system | Multi-plate, wet |
| | Clutch operation system | Cable operating |
| | Transmission | 5 speeds |
| | Primary reduction | 1.939 (64/33) |
| | Secondary reduction | —— |
| | Third reduction | —— |
| | Final reduction | 2.500 (40/16) |
| | Gear ratio 1st | 2.846 (37/13) |
| | Gear ratio 2nd | 1.882 (32/17) |
| | Gear ratio 3rd | 1.450 (29/20) |
| | Gear ratio 4th | 1.227 (27/22) |
| | Gear ratio 5th | 1.035 (29/28) |
| | Gear ratio 6th | —— |
| | Gear ratio reverse | —— |
| | Gearshift pattern | Left foot operated return system 1—N—2—3—4—5 |
| **Electrical** | Ignition system | Full transistor ignition |
| | Starting system | Starter motor |
| | Charging system | Triple phase output alternator |
| | Regulator/rectifier type | SCR shorted/triple phase, full-wave rectification |
| | Lighting system | Battery |
| | AC regulator type | —— |

Unit: mm (in)

## Lubrication

| Item | Standard | Service Limit |
|---|---|---|
| Engine oil capacity at draining | 3.0 lit (3.2 US qt, 2.6 Imp qt) | — |
| at disassembly | 3.8 lit (4.0 US qt, 3,3 Imp qt) | — |
| at oil filter change | 3.1 lit (3.3 US qt, 2.7 Imp qt) | — |
| Recommended engine oil | Use Honda GN4 4-stroke Oil or equivalent<br>API Service Classification: SF or SG<br>Viscosity: SAE 10W—40 | |
| OIL VISCOSITIES   | Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range. | |
| Oil pressure at oil pressure switch | 490—588 kPa (5—6 kg/cm², 71.1—85.3 psi) at 6,000 rpm (80°C/176°F) | |
| Oil pump rotor tip clearance ① | 0.10 (0.004) | 0.15 (0.006) |
| body clearance ② | 0.15—0.22 (0.006—0.009) | 0.35 (0.014) |
| end clearance ③ | 0.02—0.09 (0.001—0.004) | 0.10 (0.005) |
|   | | |

## Fuel System

| | | |
|---|---|---|
| Carburetor identification number (49 states type) | VP31A | — |
| (California type) | VP30A | — |
| (Canadian type) | VP32D | — |
| Main jet | #102 | — |
| Slow jet | #40 | — |
| Pilot screw initial opening | see page 5-16 | — |
| Pilot screw high altitude adjustment | see page 5-17 | — |
| Float level | 13.7 (0.54) | — |
| Carburetor vacuum difference | Within 20 mmHg (0.8 inHg) | — |
| Base carburetor (For carburetor synchronization) | No. 1 carburetor | — |
| Idle speed (49 states type) | 1,000 ± 100 rpm | — |
| (California type) | 1,100 ± 100 rpm | — |
| (Canadian type) | 1,000 ± 100 rpm | — |
| Throttle grip free play | 2—6 (1/8—1/4) | — |
| Pulse secondary air (PAIR) injection system (California type) | PAIR check valves are buit in to the PAIR control valve | — |
| Pulse secondary air injection control valve vacuum pressure | — | — |

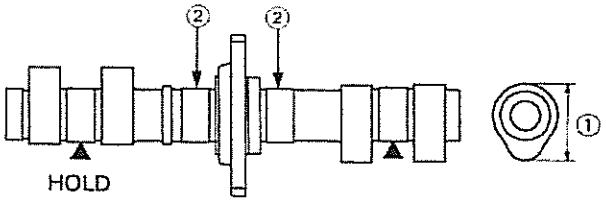
## Cooling System

| | | |
|---|---|---|
| Cooling capacity (Radiator and engine) | 2.4 ℓ (0.6 US gal, 0.5 Imp gal) | — |
| (Reserve tank) | 0.4 ℓ (0.1 US gal, 0.09 Imp gal) | — |
| Radiator cap relief pressure | 107.9 kPa (1.1 kg/cm², 15.64 psi) | — |
| Thermostat begins to open | 80—84°C (176—183°F) | — |
| Thermostat fully open | 95°C (203°F) | — |
| Thermostat valve lift | 8.0 (0.315) min. | — |

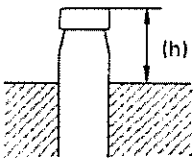
Unit: mm (in)

**Cylinder Head**

| Item | | Standard | Service Limit |
|---|---|---|---|
| Cylinder compression | | 1,275 kPa (184.9 psi, 13.0 kg/cm²)/ 500 rpm | — |
| Cylinder compression synchronization difference | | — | — |
| Valve clearance | IN | 0.16 ± 0.02 (0.006 ± 0.001) | — |
| | EX | 0.25 ± 0.02 (0.010 ± 0.001) | — |
| Cylinder head warpage | | — | 0.10 (0.004) |
| Cam lobe height ① | IN | 35.980–36.140 (1.4165–1.4228) | 35.95 (1.4153) |
| | IN (California type) | — | — |
| | EX | 35.670–35.830 (1.4043–1.4106) | 35.64 (1.4031) |
| | EX (California type) | — | — |
| Camshaft runout ② | | — | 0.05 (0.002) |
| Camshaft oil clearance | | 0.030–0.072 (0.0012–0.0028) | 0.10 (0.004) |




| | | | |
|---|---|---|---|
| Camshaft journal O.D. | | 24.949–24.970 (0.9822–0.9831) | 24.94 (0.982) |
| Camshaft holder I.D. | | 25.000–25.021 (0.9843–0.9851) | 25.05 (0.986) |
| Valve stem O.D. | IN | 4.475–4.490 (0.1762–0.1767) | 4.46 (0.175) |
| | EX | 4.465–4.480 (0.4758–0.1764) | 4.45 (0.175) |
| Valve guide I.D. | IN | 4.500–4.512 (0.1772–0.1776) | 4.56 (0.179) |
| | EX | 4.500–4.512 (0.1772–0.1776) | 4.56 (0.179) |
| Stem-to-guide clearance | IN | 0.010–0.037 (0.0004–0.0015) | — |
| | EX | 0.020–0.047 (0.0008–0.0019) | — |
| Valve guide projection above cylinder head | IN | 15.30–15.50 (0.602–0.610) | — |
| | EX | 15.30–15.50 (0.602–0.610) | — |




Before guide installation:
1. Chill the valve guides in the freezer section of the refrigerator for about an hour.
2. Heat the cylinder head to 212–300°F (100–150°C)

| | | |
|---|---|---|
| Valve seat width | 1.0 (0.04) | 1.5 (0.06) |
| Valve spring free length | 37.86 (1.49) | 36.1 (1.42) |
| Valve lifter O.D. | 25.978–25.993 (1.0225–1.0233) | 25.96 (1.022) |
| Valve lifter bore I.D. | 26.010–26.026 (1.0240–1.0246) | 26.04 (1.025) |

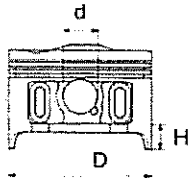
Unit: mm (in)

**Clutch System**

| Item | Standard | Service Limit |
|---|---|---|
| Clutch lever free play | 10–20 (0.4–0.8) | —— |
| Clutch outer guide I.D. | 24.995–25.012 (0.9841–0.9847) | 25.08 (0.987) |
| Clutch spring free length | 44.4 (1.75) | 41.2 (1.62) |
| Clutch disc thickness A | 2.92–3.08 (0.115–0.121) | 2.5 (0.10) |
| B (Judder spring side) | 2.92–3.08 (0.115–0.121) | 2.5 (0.10) |
| Clutch palte warpage | —— | —— |

**Cylinder/Piston**

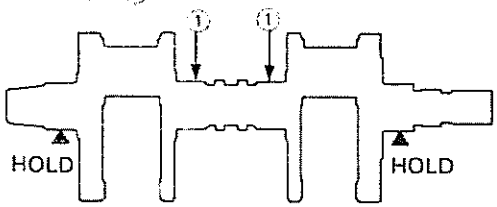
| | | |
|---|---|---|
| Cylinder I.D. | 70.000–70.015 (2.755–2.756) | 70.10 (2.759) |
| Cylinder out of round | —— | 0.10 (0.004) |
| Cylinder taper | —— | 0.10 (0.004) |
| Cylinder warpage | —— | 0.10 (0.004) |
| Piston mark direction | With "IN" mark facing to the intake side | —— |
| Piston O.D. (D) | 69.970–69.990 (2.755–2.756) | 69.85 (2.750) |
| Piston O.D. measurement point (H) | 10 (0.4) | —— |
| Piston pin hole O.D. (d) | 17.002–17.008 (0.6694–0.6695) | 17.02 (0.670) |




| | | |
|---|---|---|
| Cylinder-to-piston clearance | 0.010–0.035 (0.0004–0.0014) | —— |
| Piston pin O.D. | 16.994–17.000 (0.6691–0.6693) | 16.98 (0.669) |
| Piston-to-piston pin clearance | 0.002–0.014 (0.0001–0.0005) | —— |
| Connecting rod-to-piston clearance | 0.016–0.040 (0.0006–0.0016) | —— |
| Top ring-to-ring groove clearance | 0.015–0.050 (0.0006–0.0019) | 0.10 (0.04) |
| Second ring-to-ring groove clearance | 0.015–0.045 (0.0006–0.0018) | 0.10 (0.004) |
| Top ring end gap | 0.20–0.35 (0.008–0.014) | 0.5 (0.02) |
| Second ring end gap | 0.35–0.50 (0.014–0.020) | 0.7 (0.03) |
| Oil ring (side rail) end gap | 0.20–0.80 (0.008–0.031) | 1.00 (0.039) |
| Top ring mark | Install with the marked side up | —— |
| Second ring mark | Install with the marked side up | —— |

**Crankshaft**

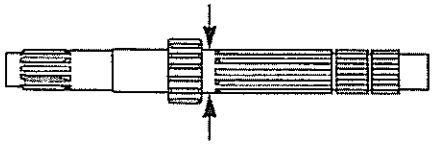
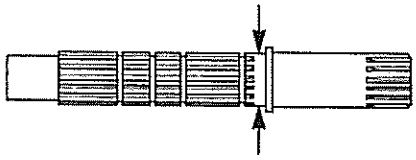
| | | |
|---|---|---|
| Connecting rod small end I.D. | 17.016–17.043 (0.6699–0.6706) | 17.04 (0.671) |
| Connecting rod big end side clerance | 0.10–0.30 (0.004–0.012) | 0.40 (0.016) |
| radial clearance | —— | —— |
| Crankshaft runout ① | —— | 0.05 (0.002) |




| | | |
|---|---|---|
| Crankpin oil clearance | 0.030–0.052 (0.0012–0.0020) | 0.08 (0.003) |
| Connecting rod bearing selection | See page 11-9 | —— |
| Main journal oil clearance | 0.019–0.037 (0.0007–0.0015) | 0.05 (0.019) |
| Main journal bearing selection | See page 11-8 | —— |

Unit: mm (in)

**Transmission**

| Item | Standard | Service Limit |
|---|---|---|
| Transmission gear I.D. M5 | 28.000–28.021 (1.1024–1.1032) | 28.04 (1.104) |
| C2 | 31.000–31.016 (1.2205–1.2211) | 31.04 (1.222) |
| C3 | 31.000–31.016 (1.2205–1.2211) | 31.04 (1.222) |
| C4 | 31.000–31.016 (1.2205–1.2211) | 31.04 (1.222) |
| Transmission gear bushing O.D. M5 | 27.959–27.980 (1.1007–1.1016) | 27.94 (1.010) |
| C2 | 30.970–30.995 (1.2193–1.2203) | 30.95 (1.219) |
| C3 | 30.950–30.975 (1.2185–1.2195) | 30.93 (1.218) |
| C4 | 30.950–30.975 (1.2185–1.2195) | 30.93 (1.218) |
| Transmission gear bushing I.D. M5 | 24.985–25.006 (0.9834–0.9845) | 27.94 (1.010) |
| C2 | 28.000–28.021 (1.1024–1.1032) | 28.04 (1.104) |
| C3 | 27.995–28.016 (1.1022–1.1029) | 28.04 (1.104) |
| Gear-to-bushing clearance at M5 gear | 0.020–0.062 (0.0008–0.0024) | —— |
| at C2 gear | 0.005–0.046 (0.0002–0.018) | —— |
| at C3 gear | 0.025–0.066 (0.0001–0.0026) | —— |
| at C4 gear | 0.025–0.066 (0.0001–0.0026) | —— |
| Mainshaft O.D. at M5 gear bushing | 24.959–24.980 (0.9826–0.9835) | 24.95 (0.982) |
|  | | |
| Countershaft O.D. at C2 gear bushing | 27.967–27.980 (1.1011–1.1016) | 27.96 (1.101) |
|  | | |
| Gear-to-shaft clearance | —— | —— |
| Gear bushing-to-shaft clearance at M5 gear | 0.005–0.047 (0.0002–0.0019) | —— |
| at C2 gear | 0.020–0.054 (0.0008–0.0021) | —— |
| at C3 gear | 0.015–0.049 (0.0006–0.0019) | —— |
| at C4 gear | 0.015–0.049 (0.0006–0.0019) | —— |
| Shift fork claw thickness L | 6.43–6.50 (0.253–0.256) | 6.40 (0.252) |
| C | 6.43–6.50 (0.253–0.256) | 6.40 (0.252) |
| R | 6.43–6.50 (0.253–0.256) | 6.40 (0.252) |
| Shift fork I.D. L | 14.016–14.034 (0.5518–0.5525) | 14.043 (0.5529) |
| C | 14.016–14.034 (0.5518–0.5525) | 14.043 (0.5529) |
| R | 14.016–14.034 (0.5518–0.5525) | 14.043 (0.5529) |
| Shift fork shaft O.D. | 13.973–13.984 (0.5501–0.5506) | 13.965 (0.5498) |

Unit: mm (in)

**Wheel/Tires**

| Item | | Standard | Service Limit |
|---|---|---|---|
| Minimum tire tread depth | (FR) | —— | 1.5 (0.06) |
| | (RR) | —— | 2.0 (0.08) |
| Cold tire pressure | Up to 90 kg (200 lb) load (FR) | 250 kPa (2.50 kg/cm², 36 psi) | —— |
| | Up to 90 kg (200 lb) load (RR) | 250 kPa (2.50 kg/cm², 36 psi) | —— |
| | Up to maximum weight capacity (FR) | 250 kPa (2.50 kg/cm², 36 psi) | —— |
| | Up to maximum weight capacity (RR) | 290 kPa (2.90 kg/cm², 42 psi) | —— |
| Front and rear axle runout | | —— | 0.2 (0.01) |
| Front and rear wheel rim runout | (Radial) | —— | 2.0 (0.08) |
| | (Axial) | —— | 2.0 (0.08) |
| Wheel balance weight | (Front) | —— | 60 g (2.1 oz) |
| | (Rear) | —— | 60 g (2.1 oz) |
| Drive chain slack | | 20—30 (3/4—1-3/16) | —— |
| Drive chain size/link | (DID) | DID 50V4/118 | —— |
| | (RK) | RK 50 MF0Z1/118 | —— |

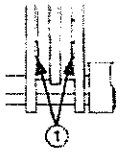
**Front Suspension**

| | | |
|---|---|---|
| Fork spring free length | 410.7 (16.17) | 402.5 (15.85) |
| Fork spring direction | Tapered coil facing down | —— |
| Fork tube runout | —— | 0.2 (0.01) |
| Recommended fork oil | Fork fluid | —— |
| Fork oil level | 122 (4.80) | —— |
| Fork oil capacity | 521cc (17.62 US oz, 18.29 Imp oz) | —— |
| Steering bearing preload | 0.1—0.15 kg-m | —— |

**Rear Suspension**

| | | |
|---|---|---|
| Shock absorber spring free length | 241.8 (9.52) | 237.0 (9.33) |
| Shock absorber spring adjuster standard position | 2nd groove | —— |
| Shock absorber spring direction | Small coil end facing down | —— |

**Brakes**

| | | | |
|---|---|---|---|
| Front | brake fluid | DOT 4 | —— |
| | brake pad wear indicator ① | —— | To the groove |
| |  | | |
| | brake disc thickness | 6.0 (0.24) | 5.0 (0.20) |
| | brake disc runout | —— | 0.25 (0.01) |
| | master cylinder I.D. | 11.0—11.043 (0.4331—0.4348) | 11.055 (0.4352) |
| | master piston O.D. | 10.957—10.984 (0.4314—0.4324) | 10.945 (0.4309) |
| | caliper cylinder I.D. | 25.400—25.450 (1.000—1.0020) | 25.461 (1.002) |
| | caliper piston O.D. | 25.335—25.368 (0.9974—0.9987) | 25.33 (0.997) |
| Rear | brake pedal free play | 20—30 (0.8—1.2) | —— |
| | brake drum I.D. | 180—180.3 (7.086—7.098) | 181 (7.12) |
| | brake lining thickness | 5.0 (0.2) | 2.0 (0.08) |

Unit: mm (in)

**Battery/Charging System**

| Item | Standard | Service Limit |
|---|---|---|
| Alternator/charging coil resistance (at 20°C/68°F) | 0.1—1.0 Ω | — |
| Regulator/rectifier regulated voltage/amperage | 14—15.5 V/below 0.5 A/3,000 rpm | — |
| Battery capacity | 12 V—10 Ah | — |
| Battery charging rate (Normal) | 1.2 A (5—10h) | — |
| (Quick) | 5 A (1h) | — |
| Battery voltage (fully charged 20°C/68°F) | Over 13.1 V | — |
| (needs charging 20°C/68°F) | Below 12.5 V | — |

**Ignition System**

| | | |
|---|---|---|
| Spark plug | | |
| (Standard NGK) | CR8EH9 | — |
| (Standard NIPPONDENSO) | U24FER9 | — |
| (For cold climate/below 5°C/41°F NGK) | — | — |
| (For cold climate/below 5°C/41°F NIPPONDENSO) | — | — |
| (For extended high speed riding NGK) | CR9EH9 | — |
| (For extended high speed riding NIPPONDENSO) | U27FER9 | — |
| Spark plug gap | 0.8—0.9 (0.03—0.04) | — |
| Ignition timing "F" mark | 12° BTDC at idle | — |
| Advance start | 2,000 rpm | — |
| stop | — | — |
| Full advance | — | — |
| Ignition coil resistance (Primary: at 20°C/68°F) | 2—4 Ω | — |
| (Secondary with plug cap) | 23—27 kΩ | — |
| (Secondary without plug wire) | 13—17 kΩ | — |
| Pulse generator resistance (At 20°C/68°F) | 450—550 Ω | — |

**Starter System**

| | | |
|---|---|---|
| Starter motor brush length | 12.0—13.0 (0.47—0.51) | 6.5 (0.26) |
| Starter clutch driven gear O.D. | 47.175—47.200 (1.8573—1.8583) | 47.16 (1.857) |

**Lights/Meters/Switches**

| | | | |
|---|---|---|---|
| Main fuse | | 30 A | — |
| Fuse | | 10 A x 3, 15 A x 1 | — |
| Headlight (high/low beam) | | 12 V 60/55 W | — |
| Tail/brake light | | 12 V 32/3 cp | — |
| Position light bulb | | 12 V 3 cp x 2 | — |
| Front turn signal lights | | 12 V 32/3 cp x 2 | — |
| Rear turn signal lights | | 12 V 32 cp x 2 | — |
| Instrument lights | | 12 V 1.7 W x 1, 12 V 1.4 W x 2 | — |
| Oil pressure warning indicator | | 12 V 3 W | — |
| Side stand indicator | | 12 V 3 W | — |
| Coolant temperature indicator | | 12 V 3 W | — |
| High beam indicator | | 12 V 3 W | — |
| Turn signal indicator | | 12 V 3 W | — |
| Neutral indicator | | 12 V 3 W | — |
| Coolant temperature sensor resistance | 85°C (185°F) | 39—49 Ω | — |
| | 120°C (248°F) | 14—18 Ω | — |
| Fan motor switch | Starts to close (ON) | 97—103°C (207—217°F) | — |
| | Stops to open (OFF) | 92—98°C (198—208°F) | — |

# Torque Values

Standard

| Fasteners Type | Torque N·m (kg-m, ft-lb) | Fasteners Type | Torque N·m (kg-m, ft-lb) |
|---|---|---|---|
| 5 mm hex bolt and nut | 5 (0.5, 3.5) | 5 mm screw | 4 (0.4, 3) |
| 6 mm hex bolt and nut | 10 (1.0, 7) | 6 mm screw | 9 (0.9, 7) |
| 8 mm hex bolt and nut | 22 (2.2, 16) | 6 mm flange bolt (8 mm head) | 9 (0.9, 7) |
| 10 mm hex bolt and nut | 35 (3.5, 25) | 6 mm flange bolt (10 mm head) and nut | 12 (1.2, 9) |
| 12 mm hex bolt and nut | 55 (5.5, 40) | 8 mm flange bolt and nut | 27 (2.7, 20) |
| | | 10 mm flange bolt and nut | 40 (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 molybdenum disulfide oil to the threads and flange surface.
4. Left hand threads.
5. Stake.
6. Apply oil to the threads and flange surface.
7. Apply clean engine oil to the O-ring.
8. Torque wrench scale reading using a special tool.
9. Apply grease to the threads and flange surface.
10. UBS bolt.
11. U-nut.
12. ALOC bolt; Replace with a new one.

Engine

| Item | Q'ty | Thread dia. (mm) | Torque N·m (kg-m, ft-lb) | Remarks |
|---|---|---|---|---|
| **Maintenance:** | | | | |
| Timing hole cap | 1 | 45 | 18 (1.8, 13) | Note 9 |
| **Lubrication:** | | | | |
| Oil pressure switch | 1 | PT 1/8 | 12 (1.2, 9) | Note 1 |
| Oil filter | 1 | 20 | 10 (1.0, 7) | Note 6 |
| Oil filter stud bolt | 1 | 20 | 18 (1.8, 13) | Note 2 |
| Oil drain bolt | 1 | 12 | 34 (3.4, 25) | |
| Oil pump bolt | 3 | 6 | 13 (1.3, 9) | |
| Oil pump driven sprocket bolt | 1 | 6 | 18 (1.8, 13) | Note 2 |
| Oil pipe nut (After '94) | 1 | 6 | 12 (1.2, 9) | Note 11 |
| **Fuel Systems:** | | | | |
| Connecting tube band screw | 4 | 5 | 1 (0.1, 0.7) | |
| **Cooling Systems:** | | | | |
| Water pump cover | 2 | 6 | 13 (1.3, 9) | |
| Water pump mounting bolt | 2 | 6 | 13 (1.3, 9) | |
| **Cylinder Head:** | | | | |
| Spark plug | 4 | 10 | 12 (1.2, 9) | |
| Head cover protector | 8 | 6 | 10 (1.0, 7) | |
| Cylinder head cover bolt | 8 | 6 | 10 (1.0, 7) | |
| Breather case bolt | 6 | 6 | 10 (1.0, 7) | |
| Cylinder head protector bolt | 12 | 6 | 12 (1.2, 9) | |
| Cylinder head sealing bolt | 4 | 18 | 44 (4.4, 32) | Note 2 |
| Cylinder head bolt (9 mm) | 16 | 9 | 44 (4.4, 32) | Note 6 |
| Cylinder head bolt (6 mm) | 4 | 6 | 12 (1.2, 9) | |
| Camshaft holder bolt | 32 | 6 | 12 (1.2, 9) | Note 6 |
| Cam chain tensioner mounting bolt | 4 | 6 | 12 (1.2, 9) | |
| Boost joint bolt | — | 5 | 4 (0.4, 2.9) | |

Engine

| Item | Q'ty | Thread dia. (mm) | Torque N·m (kg-m, ft-lb) | Remarks |
|---|---|---|---|---|
| **Clutch/Gearshift Linkage** | | | | |
| Right crankcase cover bolt | 13 | 6 | 12 (1.2, 9) | |
| Clutch cable holder bolt | 1 | 10 | 23 (2.3, 17) | |
| Clutch spring bolt | 5 | 6 | 12 (1.2, 9) | |
| Clutch center lock nut ('94) | 1 | 22 | 90 (9.0, 65) | Note 5, 6 |
| (After '94) | 1 | 22 | 110 (11.0, 80) | Note 5, 6 |
| Gearshift link joint bolt | 1 | 6 | 9 (0.9, 6.5) | |
| Change pedal pivot bolt | 1 | 8 | 27 (2.7, 20) | |
| Drive sprocket cover bolt | 3 | 6 | 10 (1.0, 7) | |
| Drive sprocket cover rubber bolt | 2 | 6 | 12 (1.2, 9) | |
| Drive sprocket bolt | 1 | 10 | 51 (5.1, 37) | |
| Shift drum center bolt | 1 | 8 | 23 (2.3, 17) | Note 2 |
| Shift return spring pin | 1 | 8 | 23 (2.3, 17) | |
| **Crankcase/Crankshaft:** | | | | |
| Upper crankcase bolt (10 mm) | 2 | 10 | 39 (3.9, 28) | |
| Upper crankcase bolt (6 mm) | 7 | 6 | 12 (1.2, 9) | |
| Lower crankcase bolt (9 mm) | 8 | 9 | 31 (3.1, 22) | Note 6 |
| Lower crankcase bolt (8 m) | 1 | 8 | 23 (2.3, 17) | |
| Lower crankcase bolt (6 mm) | 8 | 6 | 12 (1.2, 9) | |
| Cam chain tensioner slipper bolt | 2 | 6 | 12 (1.2, 9) | Note 2 |
| Cam chain slipper bolt | 2 | 6 | 12 (1.2, 9) | Note 2 |
| Connecting rod bearing cap nut | 8 | 8 | 33 (3.3, 24) | Note 6 |
| Sealing bolt | 1 | 8 | 18 (1.8, 13) | Note 2 |
| **Alternator:** | | | | |
| Left crankcase cover bolt | 6 | 6 | 12 (1.2, 9) | |
| Flywheel bolt | 1 | 10 | 83 (8.3, 61) | Note 6 |
| Stator mounting bolt | 3 | 6 | 12 (1.2, 9) | |
| **Ignition System:** | | | | |
| Pulse generator mounting bolt | 3 | 6 | 10 (1.0, 7) | |
| **Starter Clutch:** | | | | |
| Starter motor flange nut | 1 | 6 | 10 (1.0, 7) | |
| Starter motor case bolt | 2 | 5 | 5 (0.5, 3.6) | |
| Starter clutch bolt | 1 | 12 | 90 (9.0, 65) | Note 6 |
| Starter clutch outer cover bolt | 3 | 8 | 40 (4.0, 29) | Note 2 |
| **Lights/Meters/Switches:** | | | | |
| Neutral switch | 1 | 10 | 12 (1.2, 9) | |

Frame

| Item | Q'ty | Thread dia. (mm) | Torque N·m (kg-m, ft-lb) | Remarks |
|---|---|---|---|---|
| **Engine mounting:** | | | | |
| Front cylinder head mounting bolt | 2 | 10 | 54 (5.4, 39) | |
| Front engine mounting bracket bolt | 4 | 8 | 39 (3.9, 28) | |
| Front engine mounting bolt | 2 | 10 | 44 (4.4, 32) | |
| Rear engine mounting bracket bolt | 2 | 8 | 39 (3.9, 28) | |
| Rear engine mounting bolt | 1 | 12 | 64 (6.4, 46) | Note 9 |
| Rear cylinder head mount bolt | 2 | 10 | 44 (4.4, 32) | |
| Rear cylinder head mount bracket bolt | 4 | 8 | 39 (3.8, 28) | |

Frame

| Item | Q'ty | Thread dia. (mm) | Torque N·m (kg-m, ft-lb) | Remarks |
|---|---|---|---|---|
| **Front Suspension:** | | | | |
| Handlebar upper holder bolt | 4 | 6 | 23 (2.3, 17) | |
| Front fender bolt | 4 | 6 | 12 (1.2, 9) | |
| Steering stem nut | 1 | 24 | 105 (10.5, 76) | page 12-12 |
| Lock nut | 1 | 26 | — | |
| Steering head bearing adjusting nut | 1 | 26 | 30 (3.0, 22) | |
| Fork pinch bolt (upper) | 2 | 8 | 27 (2.7, 20) | |
| (lower) | 2 | 10 | 39 (3.9, 28) | |
| Fork cap | 2 | 37 | 23 (2.3, 17) | |
| Fork socket bolt | 2 | 8 | 20 (2.0, 14) | Note 2 |
| Fork drain bolt | 2 | 6 | 8 (0.8, 5.8) | |
| **Rear Suspension:** | | | | |
| Frame pivot adjusting bolt | 1 | 20 | 15 (1.5, 11) | page 13-10 |
| Frame lock nut | 1 | 20 | 64 (6.4, 46) | |
| Frame lock bolt | 1 | 10 | 39 (3.9, 28) | |
| Swingarm pivot nut | 1 | 14 | 89 (8.9, 65) | Note 11 |
| Chain slider screw | 2 | 5 | 6 (0.6, 4.3) | |
| Chain tensioner | 2 | 8 | 22 (2.2, 16) | |
| Shock absorber mounting bolt (upper) | 2 | 8 | 27 (2.7, 20) | |
| (lower) | 2 | 10 | 37 (3.7, 27) | |
| **Wheels:** | | | | |
| Speedometer cable screw | 1 | 5 | 4 (0.4, 2.9) | |
| Rear axle nut | 1 | 18 | 93 (9.3, 63) | Note 11 |
| Front axle bolt | 1 | 14 | 59 (5.9, 43) | |
| Axle pinch bolt | 4 | 8 | 22 (2.2, 16) | |
| Brake disc bolt | 6 | 8 | 42 (4.2, 30) | Note 12 |
| Driven sprocket nut | 5 | 12 | 108 (10.8, 79) | Note 11 |
| **Brake System:** | | | | |
| Brake hose bolt | 2 | 10 | 35 (3.5, 25) | |
| Caliper bracket bolt | 2 | 8 | 31 (3.1, 22) | Note 12 |
| Front brake hose clamp nut | 2 | 6 | 12 (1.2, 9) | Note 11 |
| Front master cylinder holder bolt | 2 | 6 | 12 (1.2, 9) | |
| Front master cylinder reservoir cover screw | 2 | 4 | 1.5 (0.15, 1.1) | |
| Front brake light switch screw | 1 | 4 | 1.2 (0.12, 0.9) | |
| Front brake lever pivot bolt | 1 | 6 | 1 (0.1, 0.7) | |
| nut | 1 | 6 | 6 (0.6, 4.3) | |
| Pad pin plug | 1 | 10 | 2.5 (0.25, 1.8) | |
| Pad pin | 1 | 10 | 18 (1.8, 13) | |
| Brake caliper bleeder bolt | 1 | 8 | 5.5 (0.55, 4) | |
| Brake caliper bracket pin bolt | 1 | 8 | 13 (1.3, 9) | Note 2 |
| Brake caliper pin bolt | 1 | 8 | 23 (2.3, 17) | Note 2 |
| Rear brake pedal pivot bolt | 1 | 10 | 39 (3.9, 28) | |
| Rear brake pedal linkage joint pinch bolt | 1 | 8 | 27 (2.7, 20) | |
| Rear brake arm pinch bolt | 1 | 8 | 29 (2.9, 21) | Note 12 |
| Rear brake stopper arm nut | 2 | 8 | 22 (2.2, 16) | |
| **Frame/Exhaust Systems:** | | | | |
| Exhaust pipe joint nut | 8 | 8 | 12 (1.2, 9) | |
| Exhaust pipe band bolt | 4 | 8 | 21 (2.1, 15) | |
| Exhaust pipe protector bolt | 6 | 6 | 12 (1.2, 9) | |
| Muffler mounting bolt | 2 | 8 | 27 (2.7, 20) | |
| **Lights/Meters/Switches:** | | | | |
| Side stand pivot bolt | 1 | 10 | 10 (1.0, 7) | |
| nut | 1 | 10 | 30 (3.0, 22) | |
| Side stand switch | 1 | 6 | 10 (1.0, 7) | |
| **Others:** | | | | |
| Footpeg bracket bolt | 4 | 8 | 27 (2.7 20) | |
| Fuel valve | 1 | 22 | 23 (2.3, 17) | |

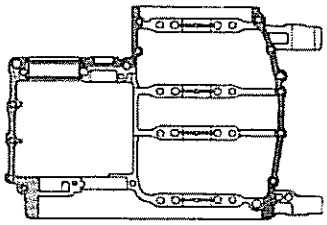
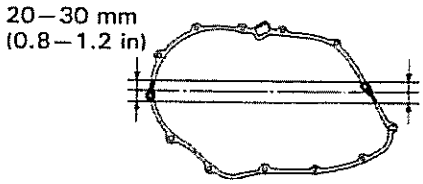
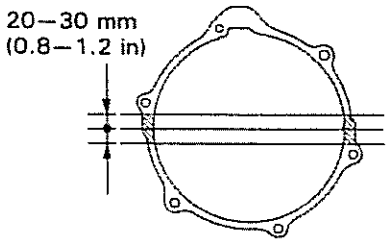
# Tools

| Description | Tool Nunber | Applicability |
|---|---|---|
| **Maintenance:** | | |
| Oil filter wrench | 07HAA–PJ70100 | |
| Drive chain cutter | 07HMH–MR10102 | |
| | or 07HMH–MR1010B | U.S.A. only |
| Link plate holder | 07NMH–MW00110 | |
| | or 07PMH–MZ20110 | |
| **Lubrication:** | | |
| Oil pressure gauge | 07506–3000000 | |
| Oil pressure gauge attachment | 07510–4220100 | |
| **Fuel System:** | | |
| Float level gauge | 07401–0010000 | |
| Pilot screw wrench (Canadian type) | 07908–4220201 | |
| (49 states, California type) | 07MMA–MV9010A | |
| **Cylinder Head/Cylinder/Piston:** | | |
| Valve spring compressor | 07757–0010000 | |
| Valve spring compressor attachment | 07959–KM30101 | |
| Tappet hole protector | 07HMG–MR70002 | Not available in U.S.A. |
| Valve guide drivier | 07HMD–ML00101 | |
| Valve guide reamer, 4.5 mm | 07HMH–ML00101 | |
| Valve seat cutter | | |
| seat cutter, 24.5 mm (45° EX) | 07780–0010100 | |
| 29 mm (45° IN) | 07780–0010300 | |
| flat cutter, 25 mm (32° EX) | 07780–0012000 | |
| 30 mm (32° IN) | 07780–0012200 | |
| interior cutter, 26 mm (60° EX) | 07780–0014500 | |
| 30 mm (60° IN) | 07780–0014000 | |
| cutter holder, 4.5 mm | 07781–0010600 | |
| Compression gauge attachment | 07JMJ–KY20100 | |
| Tensioner stopper | 07NMG–MY90100 | Not available in U.S.A. |
| **Clutch/Gearshift Linkage:** | | |
| Lock nut wrench, 26 x 30 mm | 07716–0020203 | '94 only |
| Extension bar | 07716–0020500 | '94 only |
| Clutch center holder | 07724–0050001 | Equivalent commercially available in U.S.A. |
| **Crankshaft/Transmission:** | | |
| Universal bearing puller | 07631–0010000 | |
| Inner driver C | 07746–0030100 | |
| Attachment, I.D. 25 mm | 07746–0030200 | |
| **Front Wheel/Suspension/Steering:** | | |
| Bearing remover shaft | 07746–0050100 | |
| Bearing remover head, 20 mm | 07746–0050600 | |
| Attachment, 42 x 47 mm | 07746–0010300 | |
| Pilot, 20 mm | 07746–0040500 | |
| Fork seal driver | 07947–KA50100 | |
| Fork seal driver attachment | 07947–KF00100 | |
| Steering stem socket wrench | 07916–3710101 | |
| Ball race remover | 07953–MJ10000 | |
| – attachment | 07953–MJ10100 | |
| | or 07953–MJ1000A | U.S.A. only |
| – driver handle | 07953–MJ10200 | |
| | or M9360–277–91774 | U.S.A. only |
| Ball race remover | 07946–3710500 | |
| Attachment, 52 x 55 mm | 07746–0010400 | |
| Steering stem driver | 07946–MB00000 | |
| Driver | 07749–0010000 | |

| Description | Tool Number | Applicability |
|---|---|---|
| **Rear Wheel/Suspension:** | | |
| Bearing remover shaft | 07746–0050100 | |
| Bearing remover head, 20 mm | 07746–0050600 | |
| Attachment, 42 x 47 mm | 07746–0010300 | |
| Pilot, 20 mm | 07746–0040500 | |
| Attachment, 52 x 55 mm | 07746–0010400 | |
| Attachment, 62 x 68 mm | 07746–0010500 | |
| Pilot, 25 mm | 07746–0040600 | |
| Shock absorber compressor | 07959–3290001 | |
| Driver shaft | 07946–MJ00100 or 07949–3710001 | U.S.A. only |
| Attachment, 28 x 30 mm | 07946–1870100 | |
| Pilot, 22 mm | 07746–0041000 | |
| Attachment, 32 x 35 mm | 07746–0010100 | |
| Pilot, 15 mm | 07746–0040300 | |
| Needle bearing remover attachment | 07GMD–KT70200 or M967X–038–XXXXX | U.S.A. only |
| Bearing remover | 07746–0030300 | U.S.A. only |
| Attachment, 30 mm | 07749–0010000 | |
| Driver | | |
| **Brake:** | | |
| Snap ring pliers | 07914–3230001 | |
| **Charging System/Alternator:** | | |
| Flywheel holder | 07725–0040000 | |
| Rotor puller | 07733–0020001 | |
| **Electric Starter/Starter Clutch:** | | |
| Gear holder | 07724–0010100 | |
| **Electrical Equipment:** | | |
| Digital multimeter (KOWA) | 07411–0020000 | Equivalent commercially available in U.S.A. |
| Analog tester | 07308–0020001 (SANWA) or TH-5H (KOWA) | Not available in U.S.A. |

# Lubrication & Seal Points

Engine

| Location | Material | Remarks |
|---|---|---|
| Crankcase mating surface<br>  <br>Right crankcase cover mating surface<br>  <br><br>Left crankcase cover mating surface<br>  <br><br>Cylinder head semi-circular cut-out | Liquid sealant | • Wipe off the excess sealant<br>• Do not apply the sealant to near the bearing |
| Crankshaft main bearing thrust surface<br>Connecting rod big end bearing<br>small end<br>Valve stem (valve guide sliding surface)<br>Valve lifter outer sliding surface<br>Camshaft lobes/journals<br>M3/4, C5 and shifter gear (shift fork grooves)<br>Shift fork shaft sliding area<br>Shift drum<br>Primary drive gear sliding area<br>Each gear | Molybdenum disulfide oil<br>(A mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease) | |
| Cylinder head cover gasket mating surface (cover side) | Honda Bond A | |

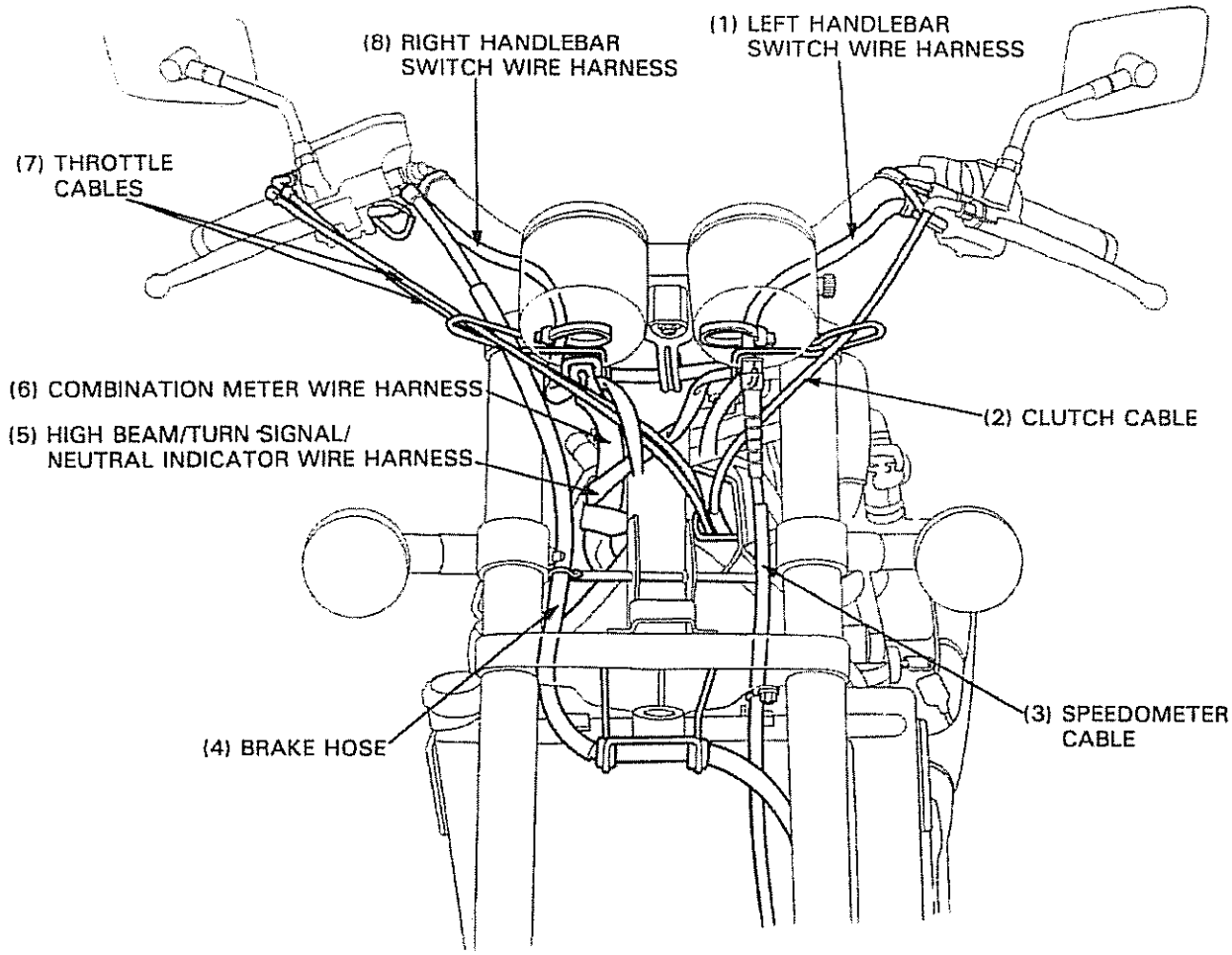
Engine

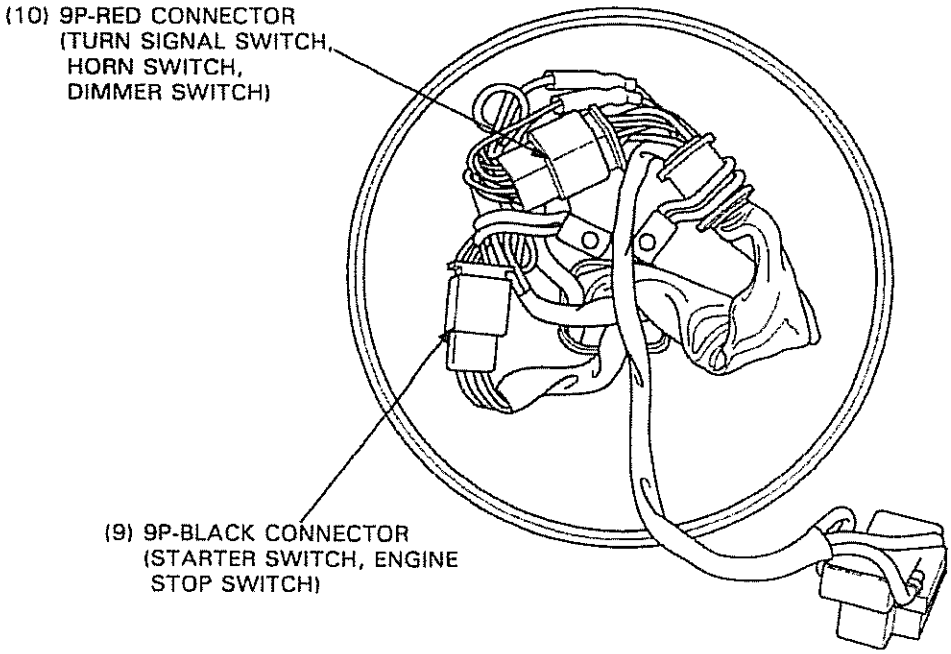
| Location | Material | Remarks |
|---|---|---|
| Right crankcase cover rubber plate bolt threads<br>Drive chain guard bolt threads<br>Crankcase sealing bolt threads<br>Oil pump driven sprocket bolt threads<br>Cam chain tensioner slipper bolt threads<br>Cam chain slipper bolt threads<br>Mainshaft bearing set plate bolt threads<br>Shift drum bearing set plate bolt threads<br>Shift drum center bolt<br>Starter clutch outer cover bolt<br>Oil filter stud bolt threads<br>Cylinder head sealing bolt threads | Locking agent | Clean and apply to the threads<br>Apply area: 5.5—7.5 mm |
| Oil pressure switch threads<br>Thermo sensor threads | Liquid sealant | |
| Lower crankcase bolt (9 mm) threads<br>Cylinder head bolt (9 mm) threads and flange surface<br>Camshaft holder bolt (6 mm) threads and flange surface<br>Piston sliding surface<br>pin hole<br>ring<br>Connecting rod bolt and nut threads<br>Starter clutch bolt threads and seating surface<br>Flywheel bolt threads and seating surface<br>Oil filter threads<br>Clutch disc lining surface<br>Clutch center lock nut<br>Each bearing | Engine oil | |
| Clutch lifter guide<br>Timing hole cap threads<br>Each oil seal lips<br>Each O-ring | Multi-purpose grease | |

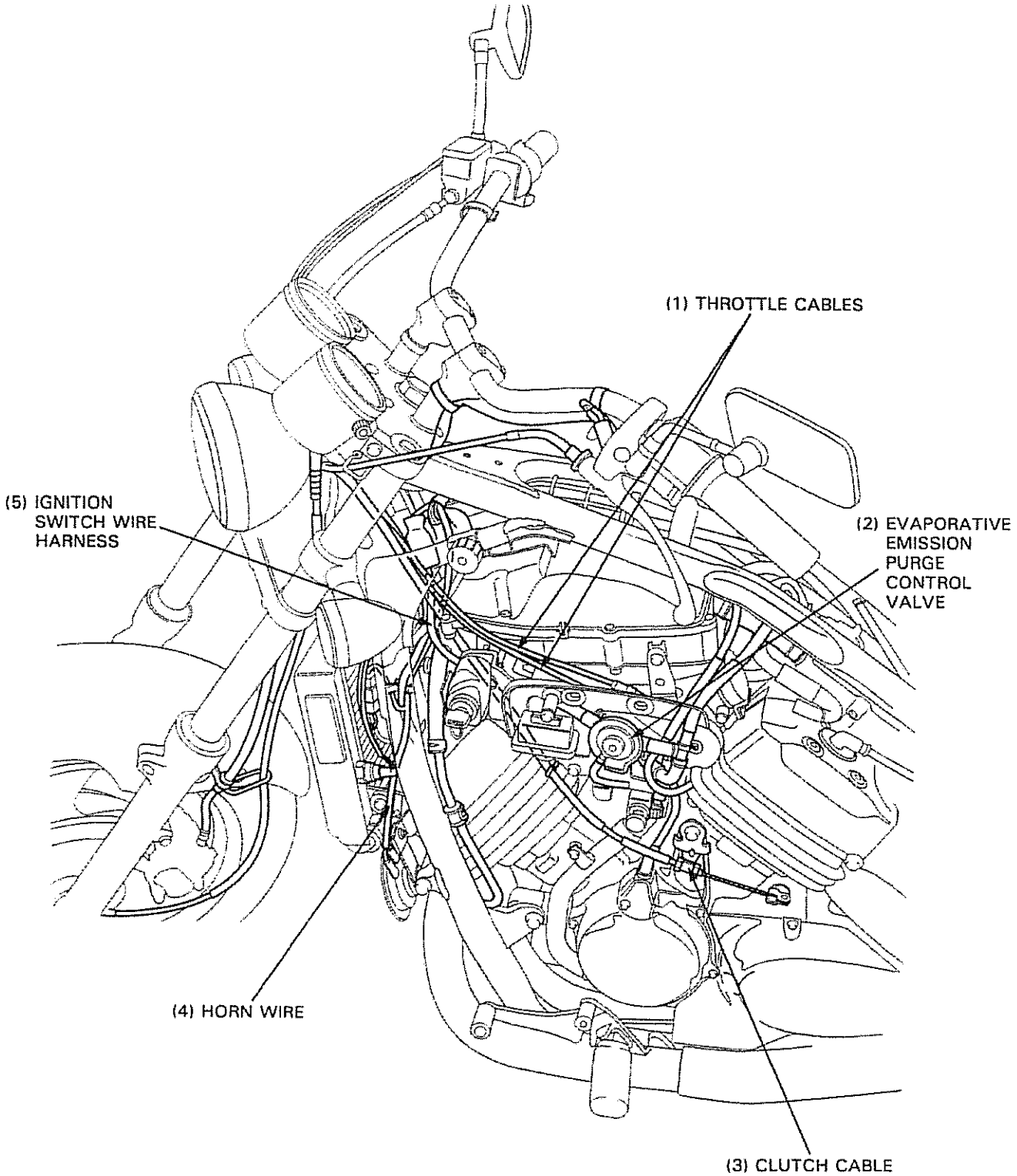
Frame

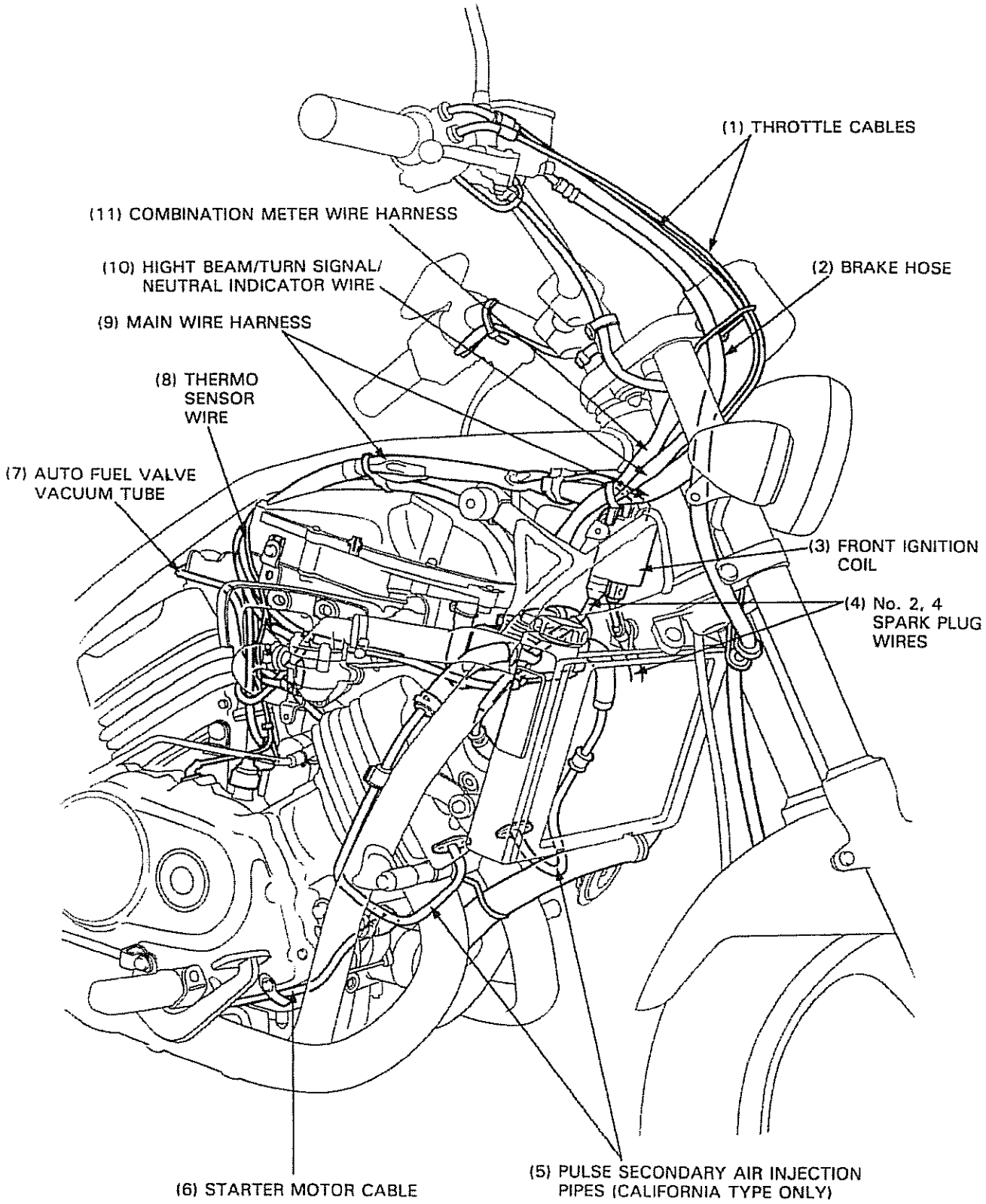
| Location | Material | Remarks |
|---|---|---|
| Side stand pivot bolt sliding surface<br>Rear brake pedal linkage sliding surface<br>Rear brake pedal pivot surface<br>Rear brake spindle sliding surface<br>Right/left footpeg sliding surface<br>Gearshift pedal pivot surface<br>Throttle pipe sliding surface<br>Clutch lever pivot bolt sliding surface<br>Steering head bearings<br>Steering head bearing dust seal lips<br>Swingarm pivot nut flange surface<br>Swingarm bearings<br>Swingarm dust seal lips<br>Front wheel dust seal lips<br>Rear wheel dust seal lips<br>Rear wheel sliding surface (driven flange)<br>Rear engine mounting nut threads and seating surface<br>Each bearing<br>Each dust seal lips | Multi-purpose grease | Apply thin coat of grease |
| Throttle cables<br>Choke cable<br>Clutch cable<br>Speedometer cable<br>Steering stem lock nut threads<br>Flywheel bolt threads and flange surface | Engine oil | |
| Handle grip inner surface | Honda Bond A | Honda Hand Grip Cement (U.S.A. only) |
| Front brake lever pivot and piston tips<br>Brake caliper pin bolt sliding surface<br>Brake caliper bracket pin bolt sliding surface<br>Brake cam sliding surface<br>Brake anchor pin sliding surface | Silicone grease | |
| Brake caliper pin bolt threads<br>Brake caliper bracket pin bolt threads<br>Fork socket bolt threads | Locking agent | Clean and apply to the threads |
| Front fork oil seal/dust seal lips<br>Front fork | Fork fluid | |
| Brake master cylinder | DOT 4 brake fluid | |

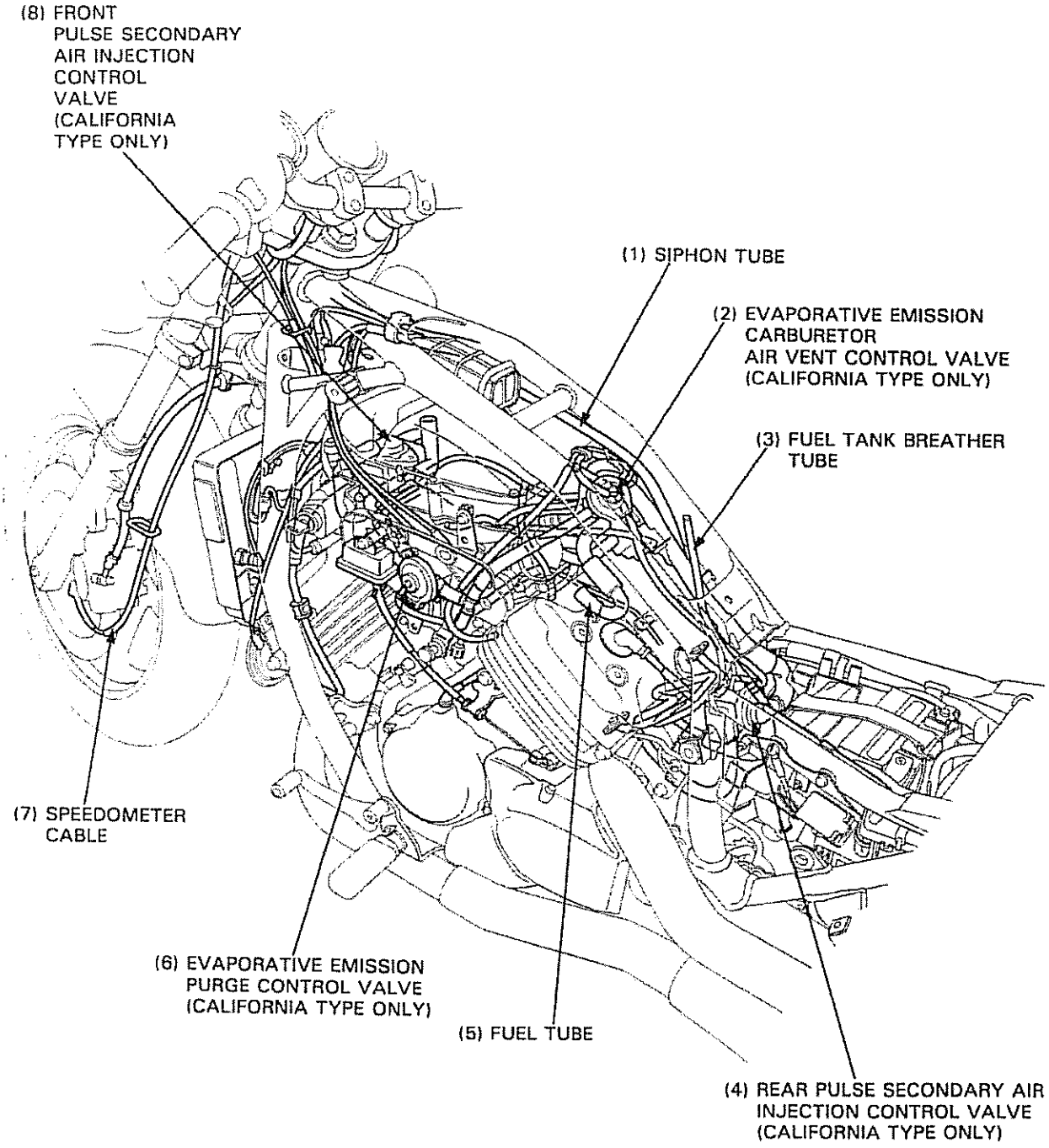
# Cable & Harness Routing

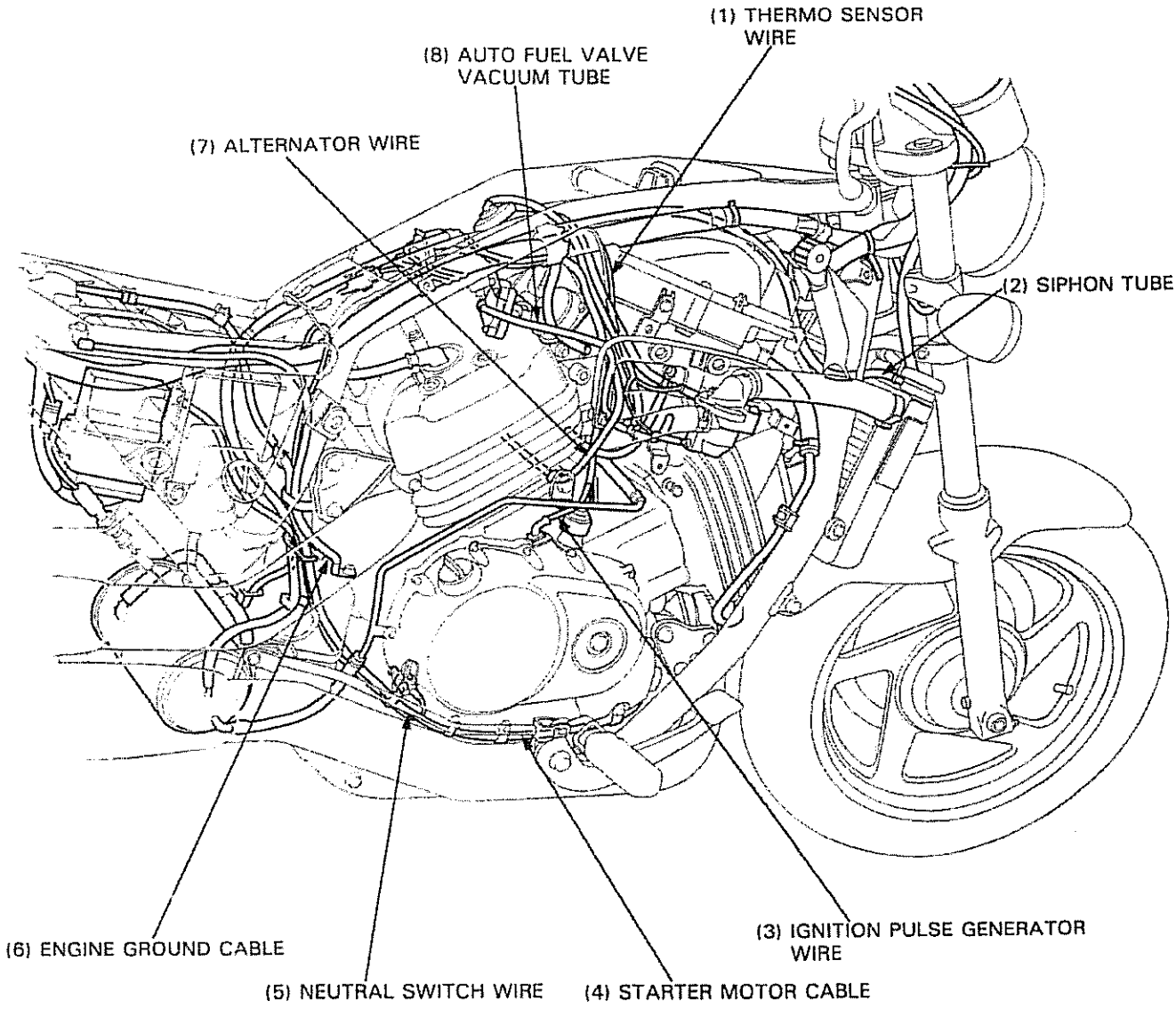


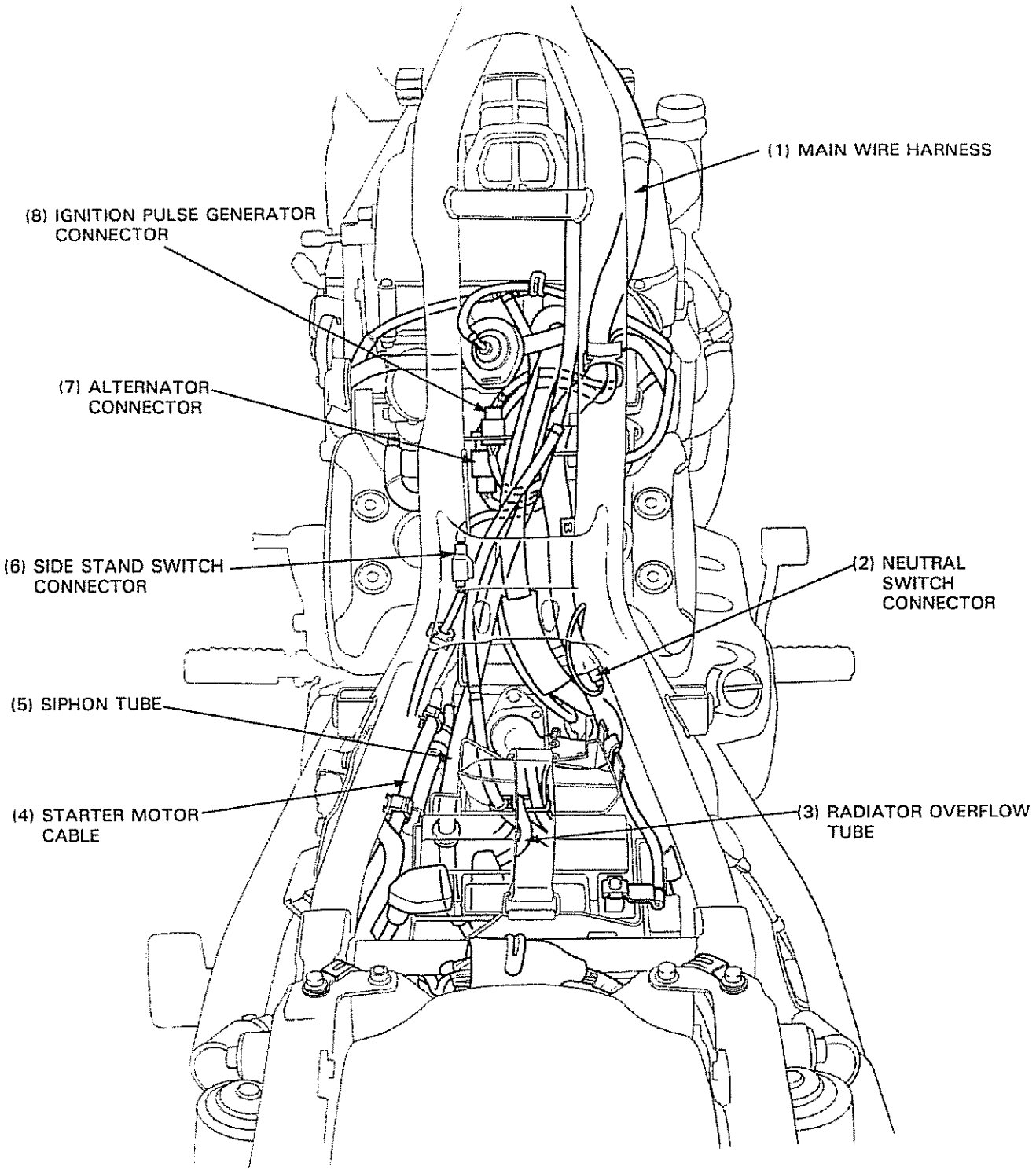



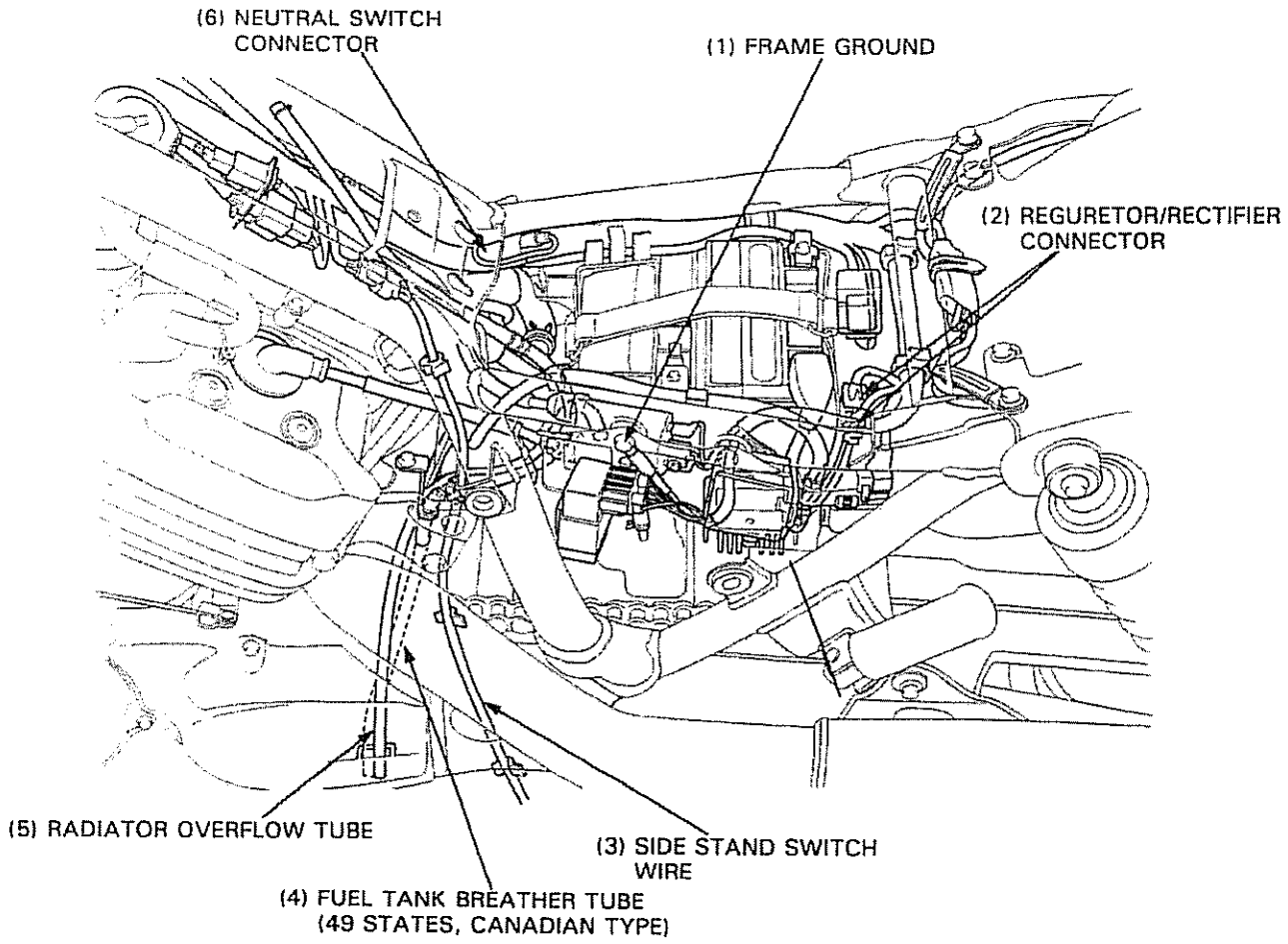

(1) THROTTLE CABLES
(2) EVAPORATIVE EMISSION PURGE CONTROL VALVE
(3) CLUTCH CABLE
(4) HORN WIRE
(5) IGNITION SWITCH WIRE HARNESS

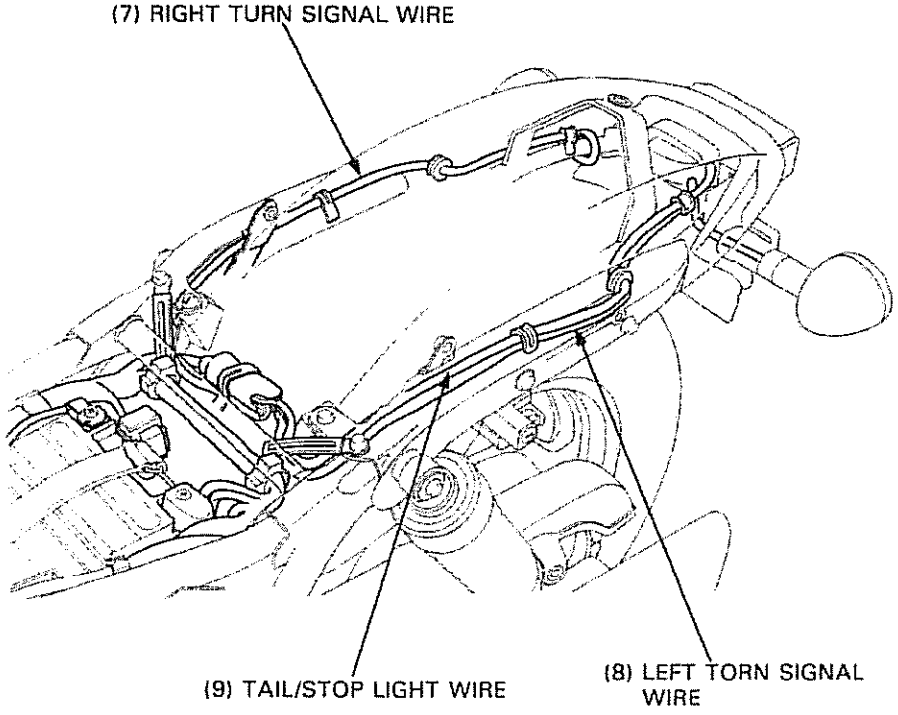

(1) THROTTLE CABLES
(11) COMBINATION METER WIRE HARNESS
(10) HIGHT BEAM/TURN SIGNAL/ NEUTRAL INDICATOR WIRE
(2) BRAKE HOSE
(9) MAIN WIRE HARNESS
(8) THERMO SENSOR WIRE
(7) AUTO FUEL VALVE VACUUM TUBE
(3) FRONT IGNITION COIL
(4) No. 2, 4 SPARK PLUG WIRES
(6) STARTER MOTOR CABLE
(5) PULSE SECONDARY AIR INJECTION PIPES (CALIFORNIA TYPE ONLY)


(8) FRONT PULSE SECONDARY AIR INJECTION CONTROL VALVE (CALIFORNIA TYPE ONLY)
(1) SIPHON TUBE
(2) EVAPORATIVE EMISSION CARBURETOR AIR VENT CONTROL VALVE (CALIFORNIA TYPE ONLY)
(3) FUEL TANK BREATHER TUBE
(7) SPEEDOMETER CABLE
(6) EVAPORATIVE EMISSION PURGE CONTROL VALVE (CALIFORNIA TYPE ONLY)
(5) FUEL TUBE
(4) REAR PULSE SECONDARY AIR INJECTION CONTROL VALVE (CALIFORNIA TYPE ONLY)


(1) THERMO SENSOR WIRE
(8) AUTO FUEL VALVE VACUUM TUBE
(7) ALTERNATOR WIRE
(2) SIPHON TUBE
(6) ENGINE GROUND CABLE
(3) IGNITION PULSE GENERATOR WIRE
(5) NEUTRAL SWITCH WIRE
(4) STARTER MOTOR CABLE


(1) MAIN WIRE HARNESS
(8) IGNITION PULSE GENERATOR CONNECTOR
(7) ALTERNATOR CONNECTOR
(6) SIDE STAND SWITCH CONNECTOR
(2) NEUTRAL SWITCH CONNECTOR
(5) SIPHON TUBE
(4) STARTER MOTOR CABLE
(3) RADIATOR OVERFLOW TUBE


(6) NEUTRAL SWITCH CONNECTOR
(1) FRAME GROUND
(2) REGURETOR/RECTIFIER CONNECTOR
(5) RADIATOR OVERFLOW TUBE
(3) SIDE STAND SWITCH WIRE
(4) FUEL TANK BREATHER TUBE (49 STATES, CANADIAN TYPE)


(7) RIGHT TURN SIGNAL WIRE
(9) TAIL/STOP LIGHT WIRE
(8) LEFT TORN SIGNAL WIRE

# Emission Control System

The U.S. Environmental Protection Agency and California Air Resources Board (CARB) require manufacturers to certify that their motorcycles comply with applicable exhaust emissions standard 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 1 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 Warranties for Honda Motorcycle Emission Control Systems is necessary in order to keep the emissions system warranty in effect.

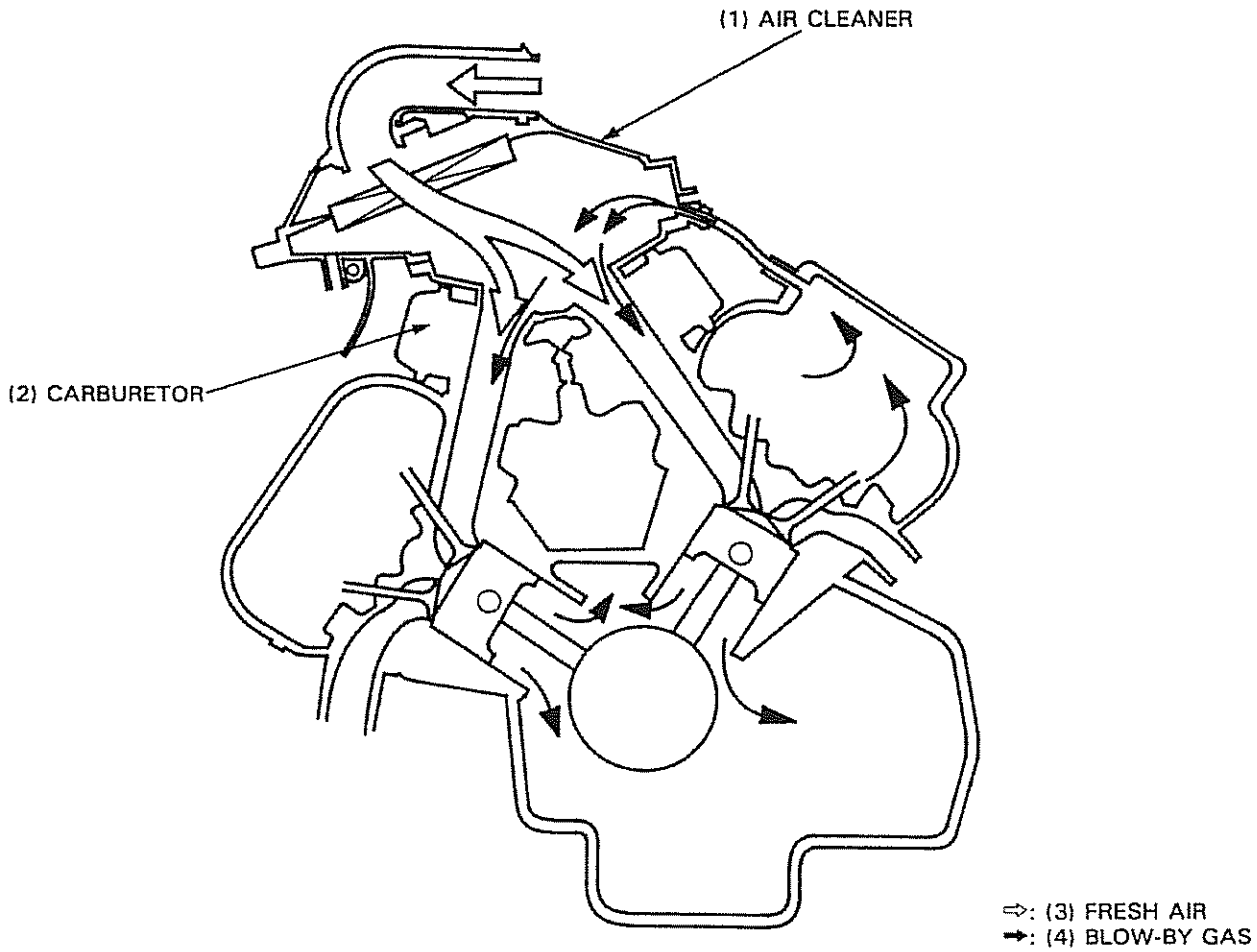
## Source Of Emissions

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 crankcase emission control system routes crankcase emissions through the air cleaner and into the combustion chamber.



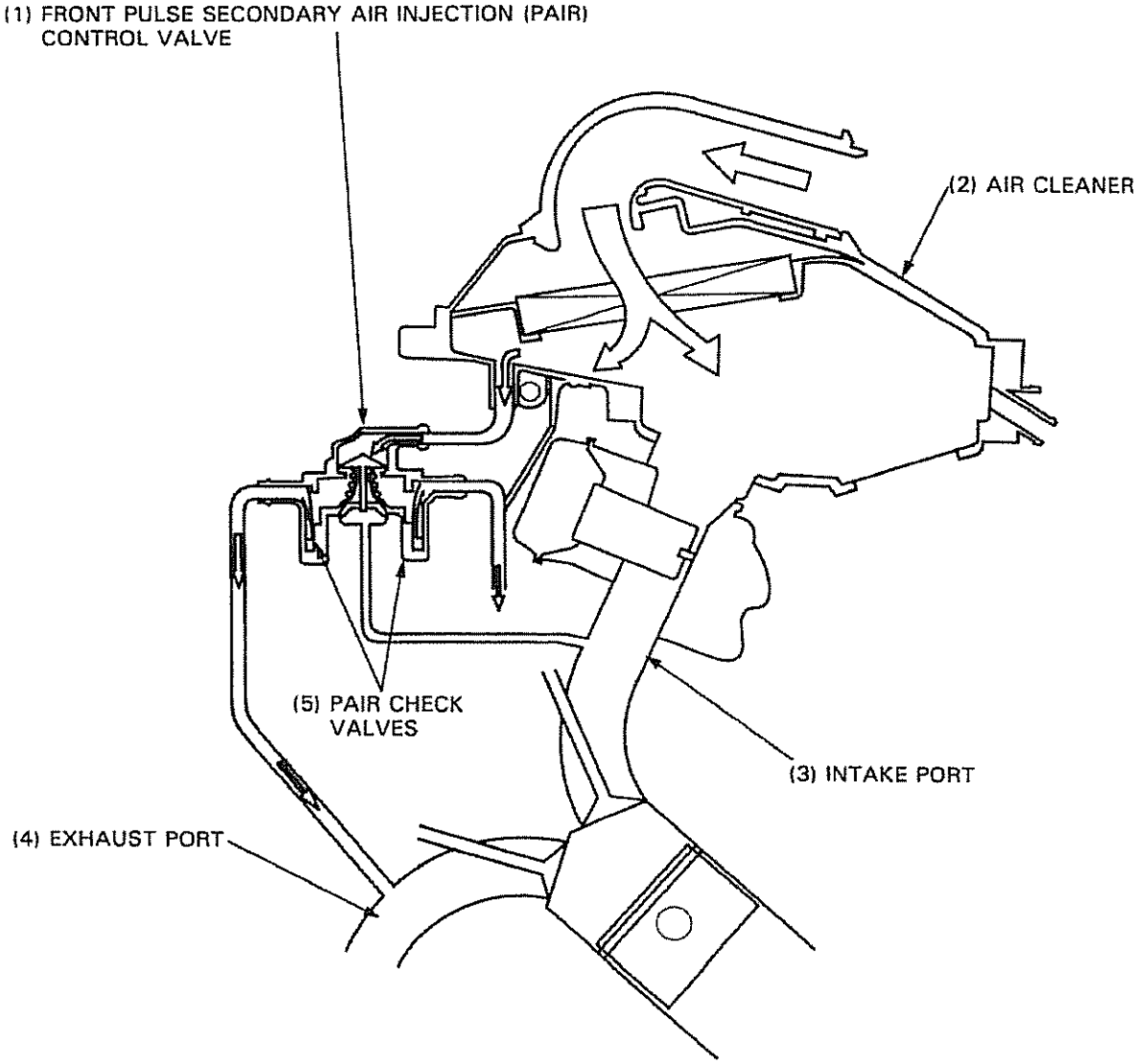
## Exhaust Emission Control System (Pulse Secondary Air Injection System)

**California type only**

The exhaust emission control system consists of a pulse secondary air injection system which introduces filtered air into the exhaust gases in the exhaust port. Fresh air is drawn into the exhaust port whenever there is a negative pressure pulse in the exhaust system. This charge of fresh air promotes burning of the unburned exhaust gases and changes a considerable amount of hydrocarbons and carbon monoxide into relatively harmless carbon dioxide and water vapor.

This model has two pulse secondary air injection control valves with built-in check valves. The PAIR check valves prevent reverse air flow through the system. The pulse secondary air injection control valve reacts to high intake manifold vacuum and will cut off the supply of fresh air during engine deceleration, thereby preventing afterburn in the exhaust system.

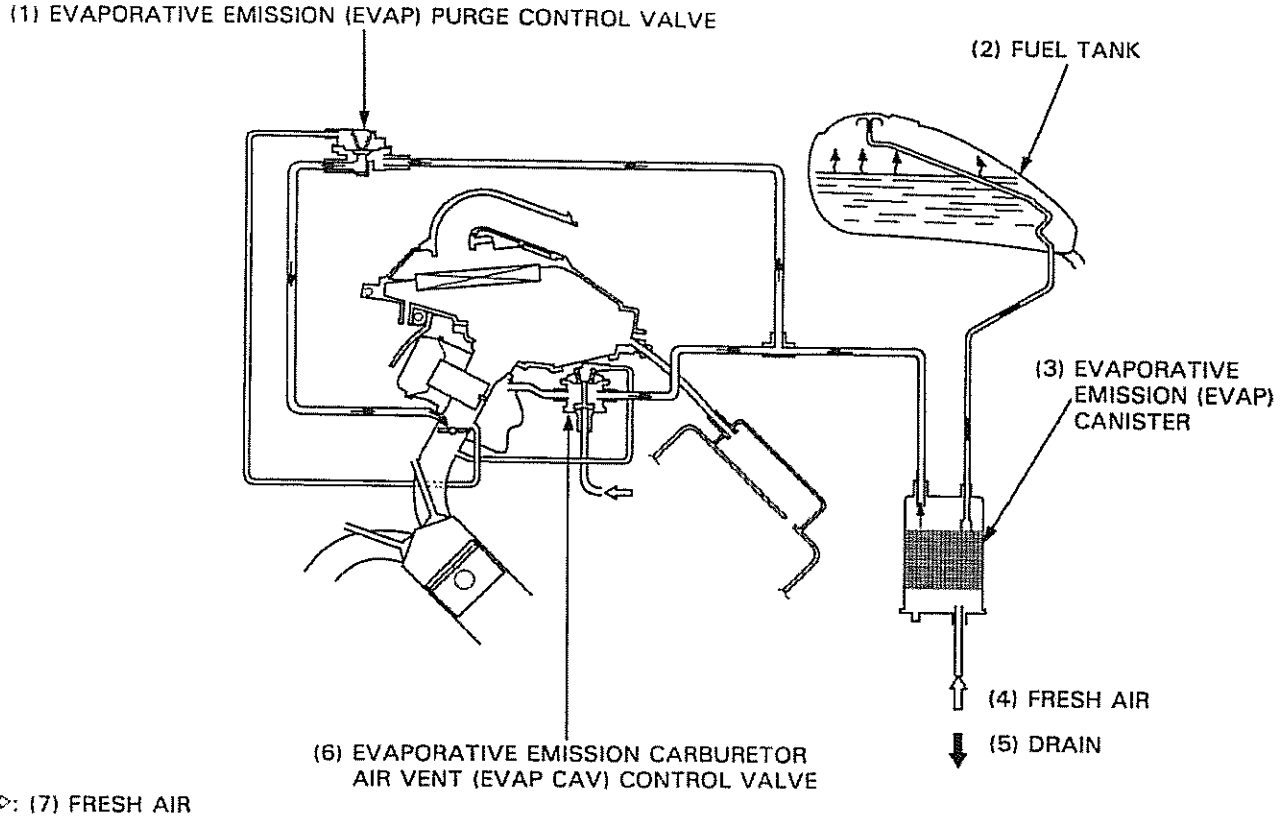
No adjustments to the secondary air supply system should be made, although periodic inspection of the components is recommended.



## Evaporative Emission Control System (California Type Only)

This vehicle complies with the California Air Resources Board requirements for control of evaporative emissions.

Fuel vapor from the fuel tank and carburetor is routed into the evaporative emission canister where it is absorbed and stored while the engine is stopped. When the engine is running and the evaporative emission purge control diaphragm valve is open fuel vapor in the evaporative emission canister is drawn into the engine through the carburetor. At the same time, the evaporative emission carburetor air vent control valve is open and air is drawn into the carburetor through the valve.




## Noise Emission Control System

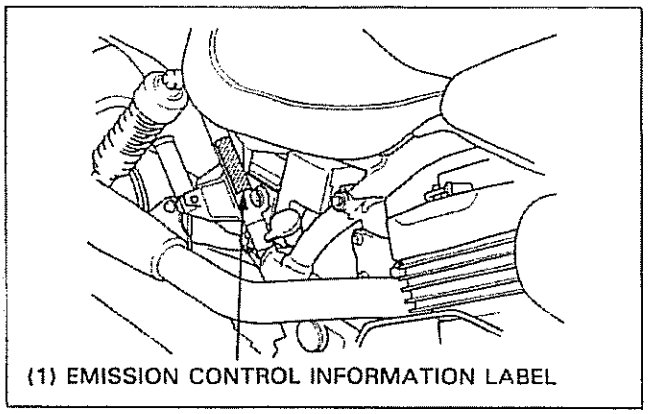
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: Federal law prohibits the following acts or the causing thereof: (1) the removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for 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 the muffler, baffles, header pipes or any other component which conducts exhaust gases.
2. Removal of, or puncturing of any parts 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)

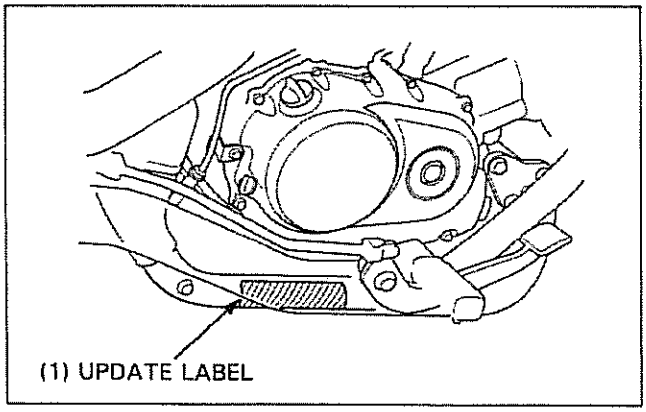
An Emission Information Label is located on the frame as shown. The right side cover must be removed to view it. It gives basic tune-up specifications.




## Vehicle Emission Control Information Update Label

After making a high altitude carburetor adjustment, attach an update label on the right down tube as shown.

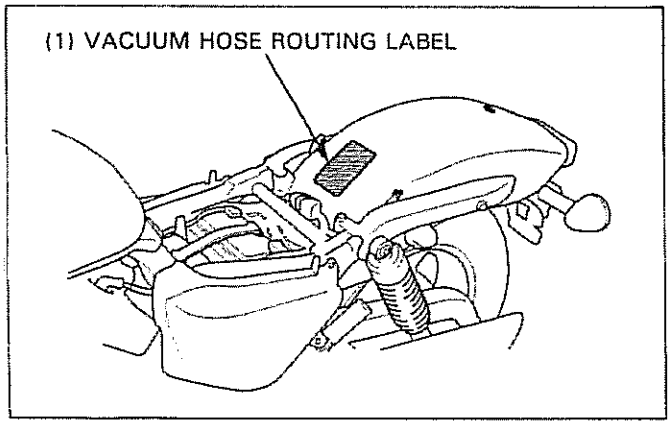
After re-adjusting the carburetor back to standard settings for low alitude, remove the update label.

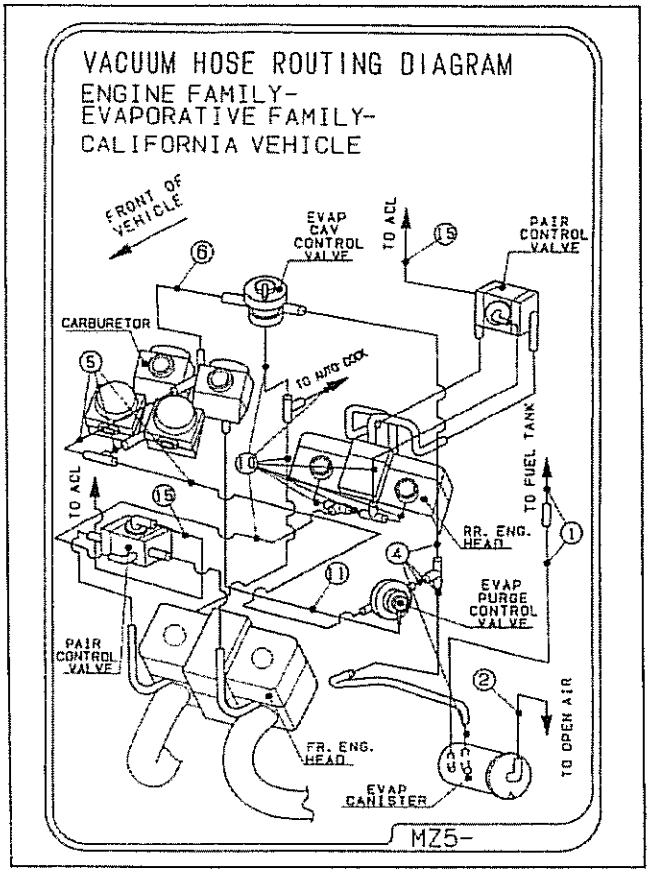



## Vacuum Hose Routing Diagram Label (California Type Only)

The Vacuum Hose Routing Diagram Label is on the rear fender as shown.
The seat must be removed to view it.

Route the vacuum hoses as shown on this label.



# 2. Frame/Body Panels/Exhaust System





## Service Information

**⚠ 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 working area or where gasoline is stored can cause a fire or explosion.
- This section covers removal and installation of the frame body panels, fuel tank and exhaust system.
- Always replace the exhaust pipe gaskets after removing the exhaust pipe from the engine.
- When installing the exhaust pipe, install all the fasteners loosely. Next, tighten the exhaust pipe joint nuts first, then tighten the mounting fasteners. If you tighten the mounting fasteners first, the exhaust pipe may not seat properly.
- Always inspect the exhaust system for leaks after installation.

## Troubleshooting

**Excessive Exhaust Noise**
- Broken exhaust system
- Exhaust gas leak

**Poor Performance**
- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

# Seat Removal/Installation

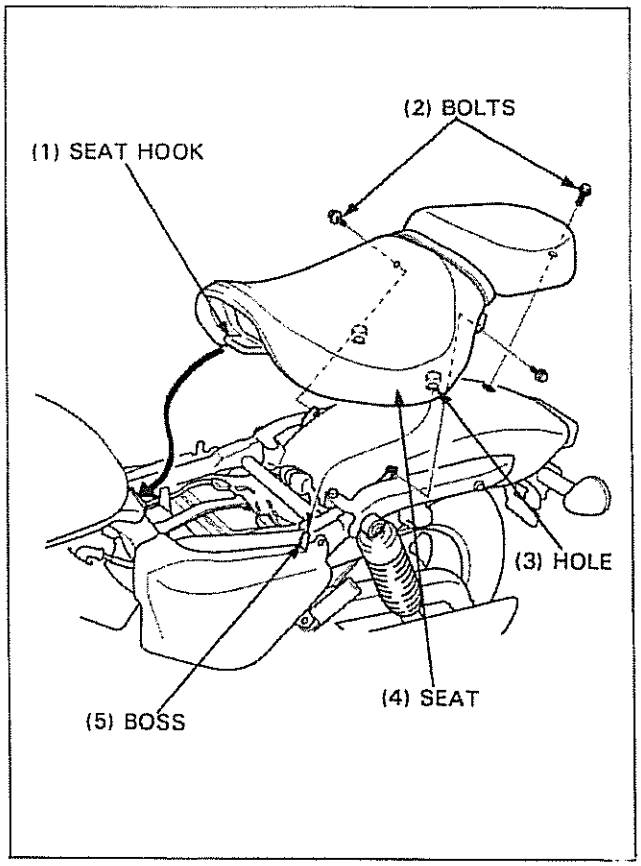
Remove the seat by removing the three mounting bolts.

During seat installation, align the seat hook with the frame hook and holes of the seat with the bosses on the side covers.

Install the three mounting bolts.

CAUTION

- **Be careful not to pinch the wire harness between the seat and frame.**




# Fuel Tank Removal/Installation

**⚠ WARNING**

- **Gasoline is extremely flammable and is explosive under certain conditions.**

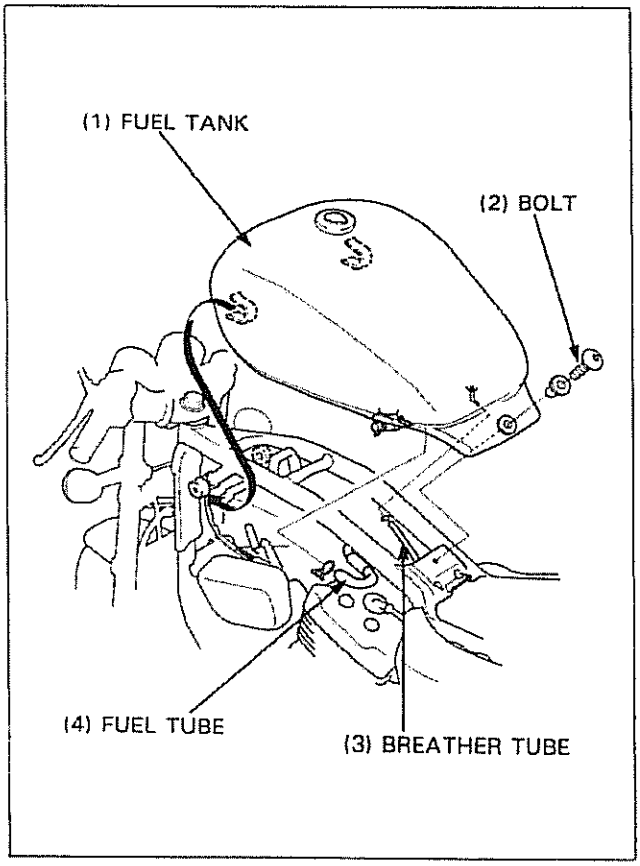
Remove the seat (above).

Turn the fuel valve OFF.
Disconnect the fuel tube.
Remove the mounting bolt and collar.
Disconnect the breather tube.

Remove the fuel tank.

Install the fuel tank in the reverse order of removal.
After installation, turn the fuel valve ON and check the fuel line for leakage.

Install the seat (above).



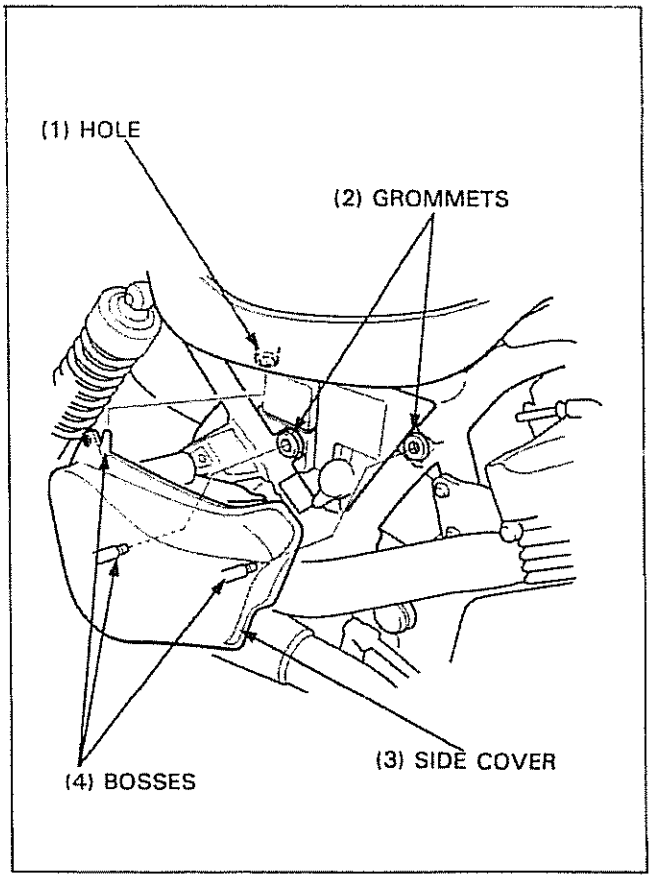
## Side Cover Removal/Installation

Pull the cover bosses from the grommets.
Slide the cover boss down from the hole in the seat and remove the side cover.

NOTE

- Be careful not to damage the boss.

Install the side cover in the reverse order of removal.



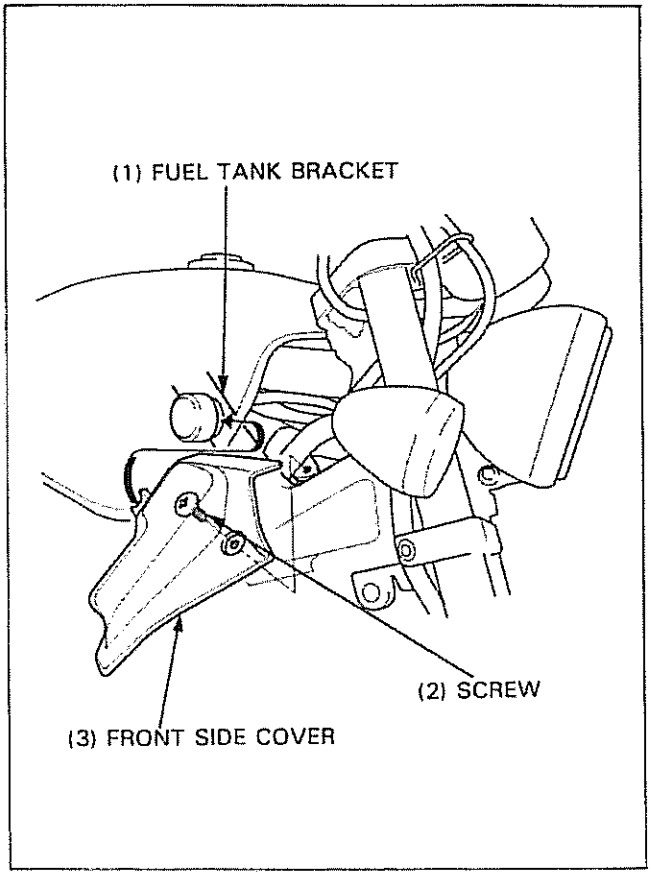

## Front Side Cover Removal/Installation

Remove the front side cover mounting screw. Then remove the cover by sliding it forward.

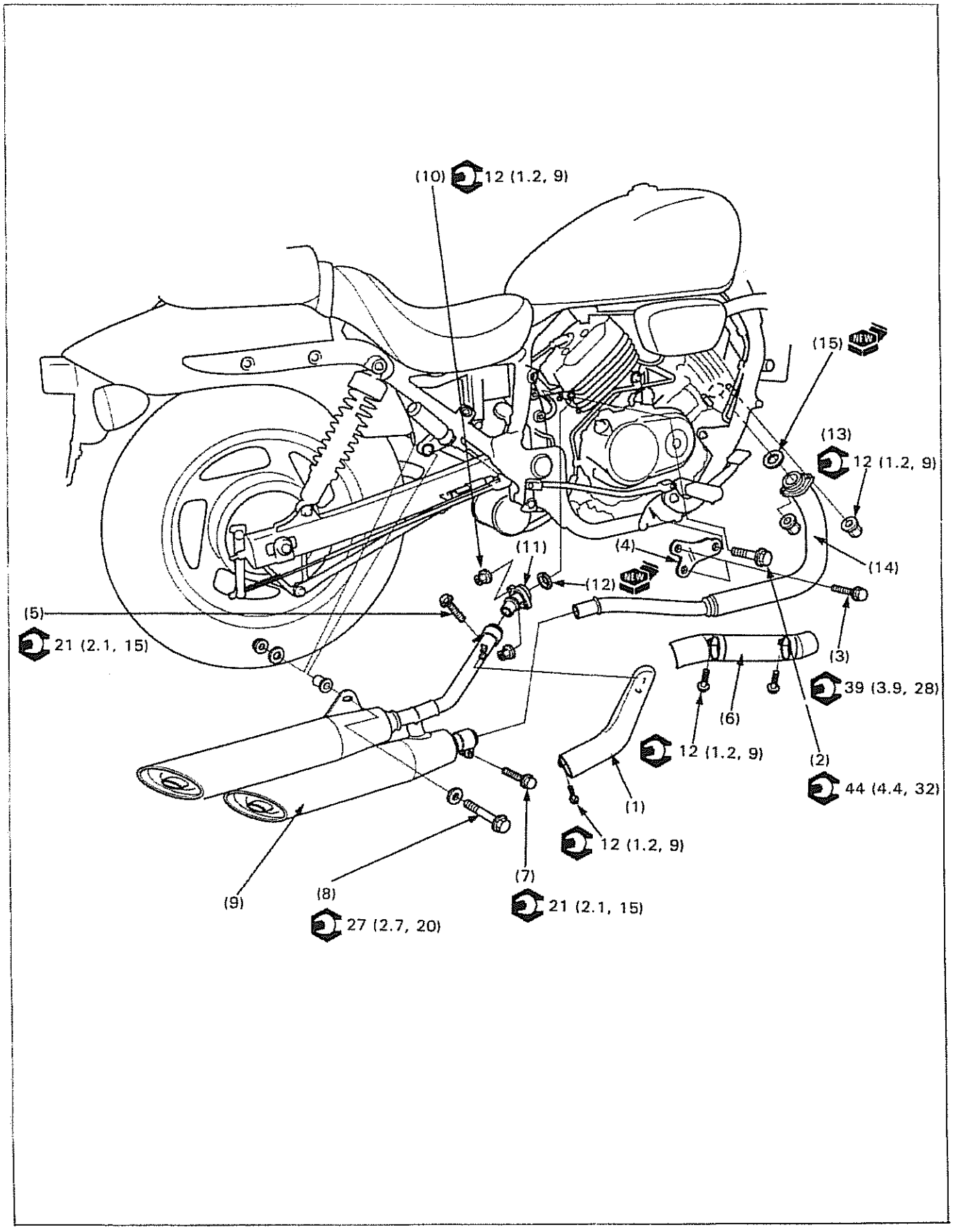
Install the front side cover in the reverse order of removal.

NOTE

- At installation, align the tab of the front side cover with the groove of fuel tank mount bracket.



# Exhaust System Removal/Installation



**⚠ WARNING**

- Do not service the exhaust system while it is hot.

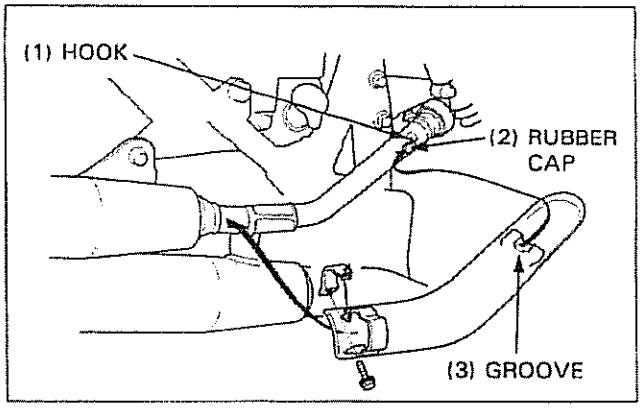
NOTE

- When installing the exhaust pipe/muffler, always tighten the exhaust pipe joint nuts first, then tighten the mounting fasteners, see next page.

| | Procedure | Q'ty | Remarks |
|---|---|---|---|
| | **Removal Order** | | Installation is in the reverse order of removal. |
| (1) | Rear exhaust pipe protector | 1 | Installation (page 2-6) |
| (2) | Rear cylinder head mount bolt | 1 | |
| (3) | Rear cylinder heat mount bracket bolt | 2 | |
| (4) | Rear cylinder head mount bracket | 1 | |
| (5) | Rear exhaust pipe band bolt | 1 | Loosen the band bolt. |
| (6) | Front exhaust pipe protector | 1 | |
| (7) | Front exhaust pipe band bolt | 1 | Loosen the band bolt. |
| (8) | Muffler mounting bolt | 1 | |
| (9) | Muffler assembly | 1 | |
| (10) | Rear exhaust pipe joint nut | 2 | |
| (11) | Rear exhaust pipe | 1 | |
| (12) | Exhaust pipe gasket | 1 | |
| (13) | Front exhaust pipe joint nut | 2 | |
| (14) | Front exhaust pipe | 1 | |
| (15) | Exhaust pipe gasket | 1 | |

## Rear Exhaust Pipe Protector Installation

Install the rubber cap to the rear exhaust pipe hook.
Align the hook of the rear exhaust pipe with groove of the rear exhaust pipe protector.

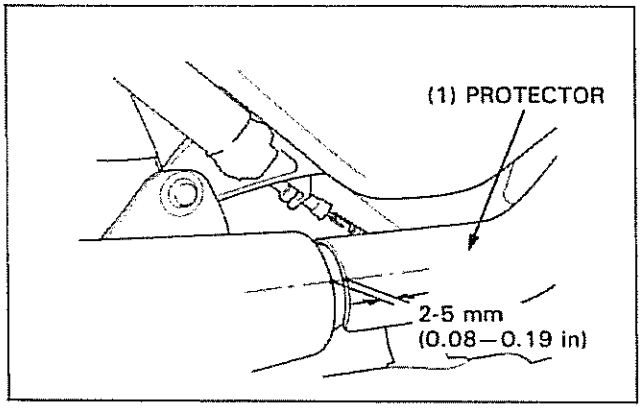



Adjust the clearance by moving the protector.

**Standard: 2—5 mm (0.08—0.19 in)**

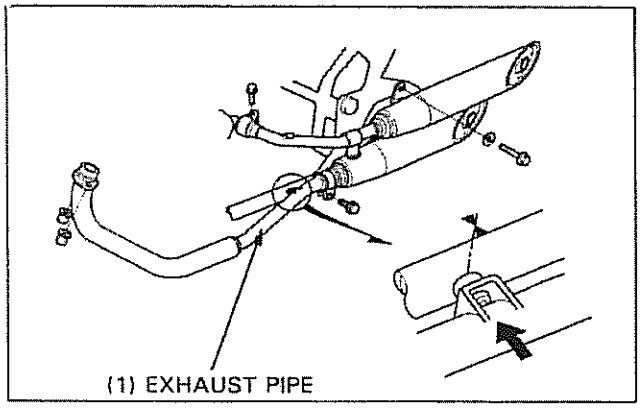
Tighten the exhaust pipe protector bolt.

**Torque: 12 N·m (1.2 kg-m, 9 ft-lb)**

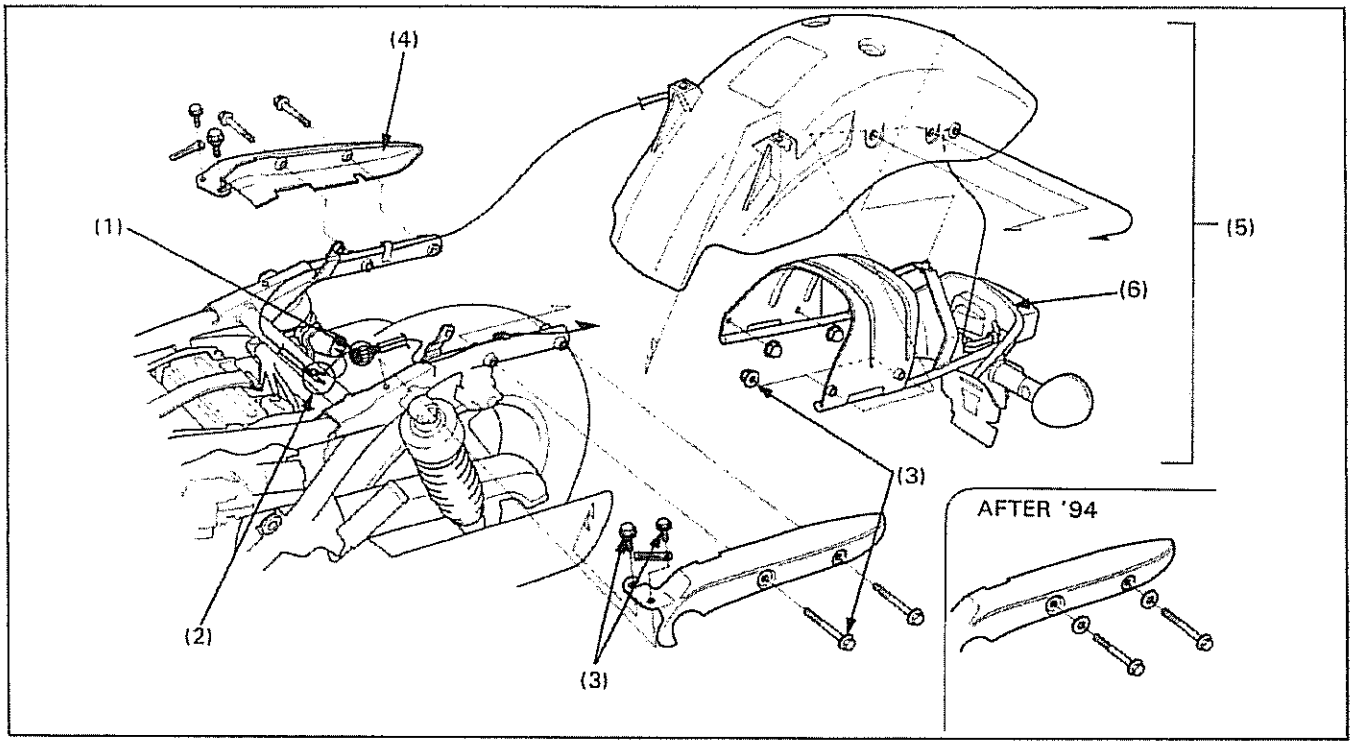



## Exhaust Pipe/muffler Mounting Fasteners Tightening

When tighten the exhaust pipe/muffler mounting fasteners, while push the exhaust pipe to inside.



# Rear Fender Removal/Installation




NOTE

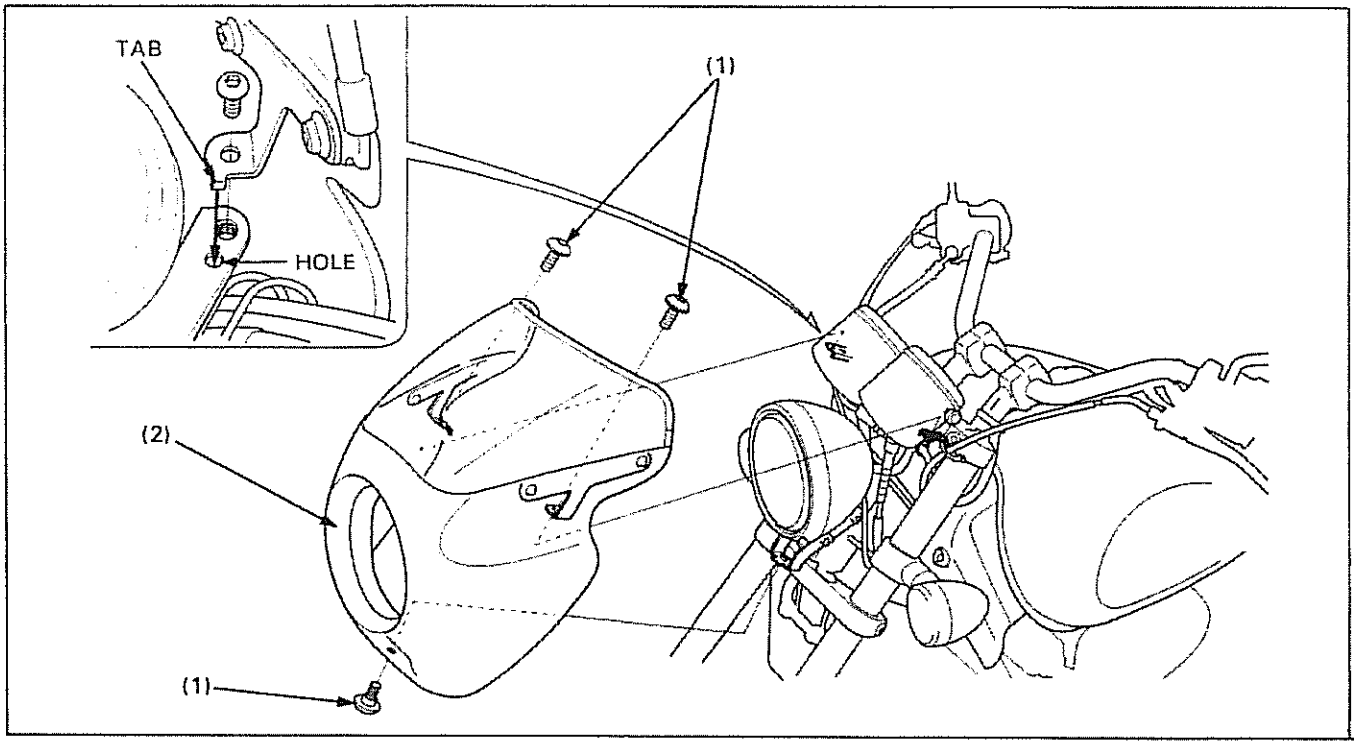
- Route the wire harness properly (page 1-20).

## Requisite Service

- Seat removal/installation (page 2-2).
- Side covers removal/installation (page 2-3)

| | Procedure | Q'ty | Remarks |
|---|---|---|---|
| | **Removal Order** | | Installation is in the reverse order of removal. |
| (1) | Rear turn signal light connector | 4 | Disconnect the connector. |
| (2) | Brake/taillight connector | 3 | Disconnect the connector. |
| (3) | Rear fender mounting bolt/nut | 8/4 | |
| (4) | Grab rail | 2 | |
| (5) | Rear fender assembly | 1 | |
| (6) | Sub frame | 1 | |

# Upper Fairing Removal/Installation (VF750CD)




**CAUTION**

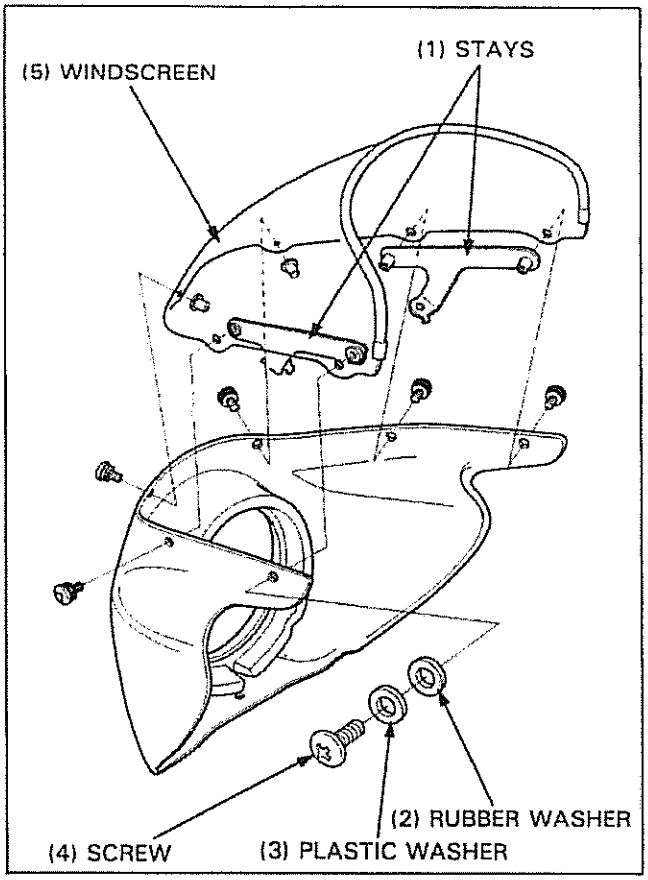
- **Do not scratch and damage the windscreen.**

| | Procedure | Q'ty | Remarks |
|---|---|---|---|
| | **Removal Order** | | Installation is in the reverse order of removal. |
| (1) | Upper fairing mounting bolt | 3 | |
| (2) | Upper fairing | 1 | At installation, align the tab of the upper fairing stay with the hole of the cable guige. |

## Windscreen Replacement

Remove the screws, plastic washers and rubber washers. Remove the windscreen and upper fairing stays.

Installation is in the reverse order of removal.



# 3. Maintenance





## Service Information

- Refer to Common Service Manual for items not included in this manual.
- Refer to Specifications (Section 1) for maintenance data.

# Poor Performance At High Speed

| | | Possible Cause |
|---|---|---|
| 1. Check ignition timing | Incorrect | • Faulty ICM<br>• Faulty ignition pulse generator |
| Correct ↓ | | |
| 2. Disconnect fuel tube at carburetor | Fuel Flow Restricted | • Clogged fuel line<br>• Clogged fuel tank breather<br>• Clogged fuel strainer screen |
| Fuel Flows Freely ↓ | | |
| 3. Remove the carburetor and check for clogged juts | Clogged | • Clean |
| Not clogged ↓ | | |
| 4. Check valve timing | Incorrect | • Cam sprocket not installed properly |
| Correct ↓ | | |
| 5. Check valve spring | Weak | • Faulty spring |
| Not Weakened | | |

# Poor Handling

| | Possible Cause |
|---|---|
| 1. If steering is heavy | • Steering stem adjusting nut too tight<br>• Damaged steering head bearings |
| 2. If either wheel is wobbling | • Excessive wheel bearing play<br>• Bent rim<br>• Improperly installed wheel hub<br>• Swingarm pivot bushing excessively worn<br>• Bent frame |
| 3. If the motorcycle pulls to one side | • Faulty shock absorber<br>• Front and rear wheel not aligned<br>• Bent fork<br>• Bent swingarm<br>• Bent axle |

# 22. Index