

2001-2003



HONDA

SERVICE MANUAL

TRX500FA

RUBICON®

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the TRX500FA.

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 vehicle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.

Sections 4 through 23 describe parts of the vehicle, 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 26, Troubleshooting.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgement. You will find important safety information in a variety of forms including:

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol Δ and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

Δ DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

Δ WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

Δ CAUTION You CAN be HURT if you don't follow instructions.

- Instructions – how to service this vehicle correctly and safely.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING. HONDA MOTOR CO., LTD. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATEVER. NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT WRITTEN PERMISSION. THIS MANUAL IS WRITTEN FOR PERSONS WHO HAVE ACQUIRED BASIC KNOWLEDGE OF MAINTENANCE ON HONDA MOTORCYCLES, MOTOR SCOOTERS, OR ATVS.












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SERVICE PUBLICATIONS OFFICE

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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 3 or DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified. |
|  | Use Fork or Suspension Fluid. |

1. GENERAL INFORMATION

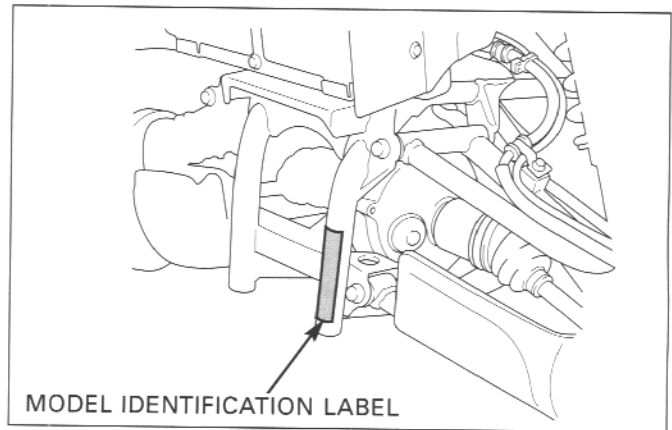
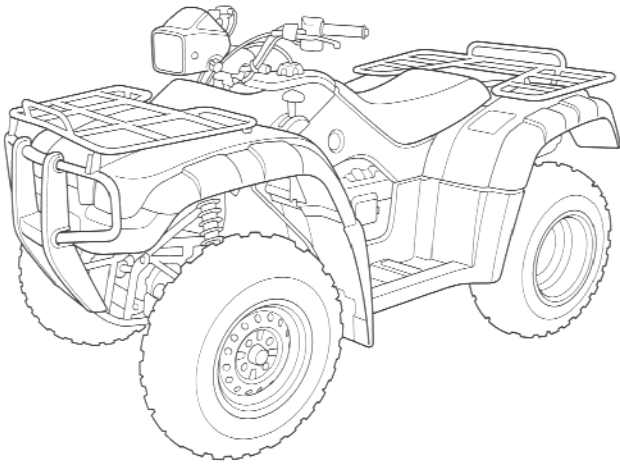
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SERVICE RULES

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 shown on pages 1-19 through 1-31, Cable & Harness Routing.

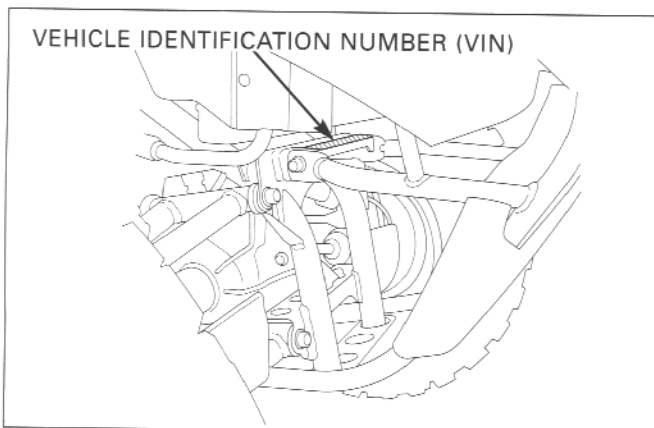
GENERAL INFORMATION

MODEL IDENTIFICATION



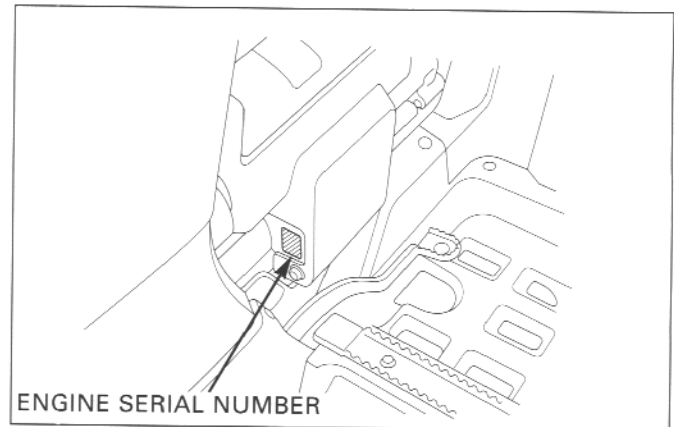
MODEL IDENTIFICATION LABEL

The model identification label is located on the left side frame down tube.



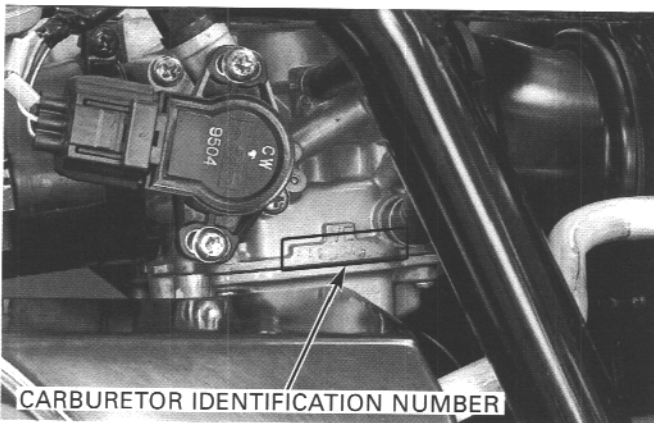
VEHICLE IDENTIFICATION NUMBER (VIN)

The vehicle identification number (VIN) is stamped on the front side of the frame.



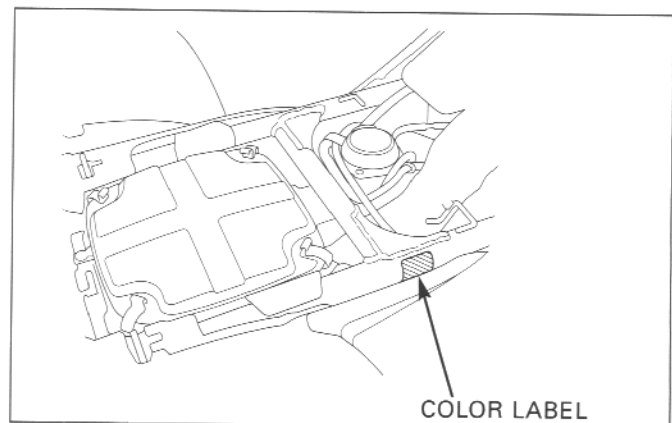
ENGINE SERIAL NUMBER

The engine serial number is stamped on the right side of the crankcase.



CARBURETOR IDENTIFICATION NUMBER

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



COLOR LABEL

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

SPECIFICATIONS

| GENERAL | | |
|------------|---|--|
| | ITEM | SPECIFICATIONS |
| DIMENSIONS | Overall length Overall width Overall height Wheelbase Front tread Rear tread Seat height Footpeg height Ground clearance Dry weight Curb weight Maximum weight capacity | 2,072 mm (81.6 in) 1,184 mm (46.6 in) 1,194 mm (47.0 in) 1,287 mm (50.7 in) 914 mm (36.0 in) 925 mm (36.4 in) 862 mm (33.9 in) 337 mm (13.3 in) 198 mm (7.8 in) 273 kg (602 lbs) 285 kg (628 lbs) 220 kg (485 lbs) |
| FRAME | Frame type Front suspension Front wheel travel Front damper Rear suspension Rear wheel travel Rear damper Front tire size Rear tire size Front rim size Rear rim size Front tire brand Rear tire brand Front brake Rear brake Caster angle Trail length Camber angle Fuel tank capacity Fuel tank reserve capacity | Double cradle Double wish-bone 170 mm (6.7 in) Double tube Swingarm 170 mm (6.7 in) Double tube AT25 x 8-12 ★★ AT25 x 10-12 ★★ 12 x 6.0 AT 12 x 7.5 AT DIRT HOOKS 15 (Bridgestone) DIRT HOOKS 14 (Bridgestone) Hydraulic drum brake (Dual leading) Mechanical drum brake (Leading-trailing) 3° 12 mm (0.5 in) 0° 14 liters (3.7 US gal, 3.1 Imp gal) 3.8 liters (1.00 US gal, 0.84 Imp gal) |
| ENGINE | Cylinder arrangement Bore and stroke Displacement Compression ratio Valve train Intake valve opens closes Exhaust valve opens closes Lubrication system Oil pump type Cooling system Air filtration Engine dry weight | Single cylinder, longitudinally installed 92 x 75 mm (3.6 x 3.0 in) 498.5 cm ³ (30.41 cu-in) 9.2 : 1 OHV 8° BTDC (at 1 mm lift) 35° ABDC (at 1 mm lift) 40° BBDC (at 1 mm lift) 5° ATDC (at 1 mm lift) Forced pressure (dry sump) Trochoid Liquid cooled Oiled urethane foam 63.2 kg (139.3 lbs) |

GENERAL INFORMATION

| GENERAL (Cont'd) | | |
|------------------|---|--|
| | ITEM | SPECIFICATIONS |
| CARBURETOR | Carburetor type Throttle bore | Constant Vacuum (VE type) 36 mm (1.4 in) |
| DRIVE TRAIN | Clutch system Transmission Primary reduction Secondary reduction Final reduction Front Rear Automatic transmission ratio Low—O.D. Sub-transmission gear ratio Drive Low Reverse Gearshift pattern | Centrifugal, wet HONDAMATIC (automatic; non-stage speed) with sub-transmission (constant mesh) 2.188 (70/67) 2.000 (40/20) 3.231 (42/13) 3.154 (41/13) 0.84—3.13 1.583 (38/24) 2.500 (45/18) 3.222 (29/18 x 28/14) R - N - D - L (Sub-transmission) D: 3-mode; Automatic 2-pattern (D1/D2) and Manual (ESP: 5-speeds) L: 2-mode; Automatic and Manual (ESP: 5-speeds) R: 1-mode (fixed low ratio) |
| ELECTRICAL | Ignition system Starting system Charging system Regulator/rectifier Lighting system | DC-CDI (Direct current-Capacitor discharge ignition) Electric starter motor and emergency recoil starter Triple phase output alternator SCR shorted, triple phase full wave rectification Battery |

GENERAL INFORMATION

Unit: mm (in)

LUBRICATION

| ITEM | | STANDARD | SERVICE LIMIT |
|------------------------------|------------------------------|--|---------------|
| Engine oil capacity | After draining | 4.7 liters (5.0 US qt, 4.1 Imp qt) | — |
| | After draining/filter change | 4.9 liters (5.2 US qt, 4.3 Imp qt) | — |
| | After disassembly | 5.5 liters (5.8 US qt, 4.8 Imp qt) | — |
| Recommended engine oil | | Honda GN4 4-stroke oil or equivalent motor oil API service classification SF or SG Viscosity: SAE 10W-40 | — |
| Oil pressure (80°C/176°F) | At 1,400 rpm | Above 150 kPa (1.5 kgf/cm ² , 22 psi) | — |
| | At 5,000 rpm | Above 800 kPa (8.2 kgf/cm ² , 116 psi) | — |
| Oil pump | Tip clearance | 0.15 (0.006) | 0.20 (0.008) |
| | Body clearance | 0.12—0.22 (0.005—0.009) | 0.25 (0.010) |
| | Side clearance | 0.02—0.09 (0.001—0.004) | 0.11 (0.004) |

FUEL SYSTEM

| ITEM | SPECIFICATIONS |
|----------------------------------|----------------------|
| Carburetor identification number | VE6AB |
| Main jet | #158 |
| Slow jet | #45 |
| Jet needle clip position | 2nd groove from top |
| Pilot screw opening | See page 5-15 |
| Float level | 18.5 mm (0.73 in) |
| Idle speed | 1,400 ± 100 rpm |
| Throttle lever free play | 3—8 mm (1/8—5/16 in) |

COOLING SYSTEM

| ITEM | SPECIFICATIONS | |
|--------------------------------|---|--------------------------------------|
| Coolant capacity | Radiator and engine | 1.7 liters (1.8 US qt, 1.5 Imp qt) |
| | Reserve tank | 0.40 liter (0.42 US qt, 0.35 Imp qt) |
| Radiator cap relief pressure | 108—137 kPa (1.1—1.4 kgf/cm ² , 16—20 psi) | |
| Thermostat | Begin to open | 80—84°C (176—183°F) |
| | Fully open | 95°C (203°F) |
| | Valve lift | 8 mm (0.3 in) minimum |
| Recommended antifreeze | Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing silicate-free corrosion inhibitors | |
| Standard coolant concentration | 50% mixture with distilled water | |

GENERAL INFORMATION

CYLINDER HEAD/VALVE

Unit: mm (in)

| ITEM | | STANDARD | SERVICE LIMIT |
|---------------------------------|---|---|-----------------------------------|
| Cylinder compression at 450 rpm | | 608—902 kPa (6.2—9.2 kgf/cm ² , 88—131 psi) | — |
| Valve clearance | IN | 0.15 (0.006) | — |
| | EX | 0.23 (0.009) | — |
| Valve, valve guide | Valve stem O.D. | IN | 5.475—5.490 (0.2156—0.2161) |
| | | EX | 5.455—5.470 (0.2148—0.2154) |
| | Valve guide I.D. | IN/EX | 5.500—5.512 (0.2165—0.2170) |
| | Stem-to-guide clearance | IN | 0.010—0.037 (0.0004—0.0015) |
| | | EX | 0.030—0.057 (0.0012—0.0022) |
| | Valve guide projection above cylinder head | IN | 15.8—16.2 (0.62—0.64) |
| EX | | 18.8—19.2 (0.74—0.76) | |
| Valve seat width | IN/EX | 1.0—1.1 (0.039—0.043) | 1.4 (0.06) |
| | Valve spring | Free length | Inner |
| Outer | | 51.17 (2.015) | 49.0 (1.93) |
| Rocker arm | Arm I.D. | IN/EX | 12.000—12.018 (0.4724—0.4731) |
| | Shaft O.D. | IN/EX | 11.964—11.984 (0.4710—0.4718) |
| | Arm-to-shaft clearance | IN/EX | 0.016—0.054 (0.0006—0.0021) |
| Camshaft and cam follower | Cam lobe height | IN | 33.9602—34.1202 (1.33701—1.34331) |
| | | EX | 34.1959—34.3559 (1.34629—1.35259) |
| | Cam follower O.D. | IN/EX | 22.467—22.482 (0.8845—0.8851) |
| | Follower bore I.D. | IN/EX | 22.510—22.526 (0.8862—0.8868) |
| Follower-to-bore clearance | IN/EX | 0.028—0.059 (0.0011—0.0023) | 0.07 (0.003) |
| Cylinder head warpage | | — | 0.10 (0.004) |

CYLINDER/PISTON

Unit: mm (in)

| ITEM | | STANDARD | SERVICE LIMIT | |
|---|-------------------------------------|-------------------------------|-------------------------|------------|
| Cylinder | I.D. | 92.000—92.010 (3.6220—3.6224) | 92.10 (3.626) | |
| | Out of round | — | 0.10 (0.004) | |
| | Taper | — | 0.10 (0.004) | |
| | Warpage | — | 0.10 (0.004) | |
| Piston, piston pin, piston ring | Piston O.D. at 15 (0.6) from bottom | 91.965—91.985 (3.6207—3.6214) | 91.90 (3.618) | |
| | Piston pin hole I.D. | 20.002—20.008 (0.7875—0.7877) | 20.04 (0.789) | |
| | Piston pin O.D. | 19.994—20.000 (0.7872—0.7874) | 19.96 (0.786) | |
| | Piston-to-piston pin clearance | 0.002—0.014 (0.0001—0.0006) | 0.08 (0.003) | |
| | Piston ring end gap | Top | 0.15—0.30 (0.006—0.012) | 0.5 (0.02) |
| | | Second | 0.30—0.45 (0.012—0.018) | 0.6 (0.02) |
| | | Oil (side rail) | 0.20—0.70 (0.008—0.028) | — |
| Piston ring-to-ring groove clearance | Top/Second | 0.030—0.060 (0.0012—0.0024) | 0.09 (0.004) | |
| Cylinder-to-piston clearance | | 0.015—0.045 (0.0006—0.0018) | 0.10 (0.004) | |
| Connecting rod small end I.D. | | 20.020—20.041 (0.7882—0.7890) | 20.07 (0.790) | |
| Connecting rod-to-piston pin clearance | | 0.020—0.047 (0.0008—0.0019) | 0.1 (0.004) | |

GENERAL INFORMATION

Unit: mm (in)

CENTRIFUGAL CLUTCH

| ITEM | | STANDARD | SERVICE LIMIT |
|--------------------------------|----------------------------------|-------------------------------|---------------|
| Clutch | Drum I.D. | 150.0—150.2 (5.906—5.913) | 150.4 (5.92) |
| | Weight lining thickness | 3.0 (0.12) | 2.0 (0.08) |
| | Clutch spring height | 3.72 (0.146) | 3.6 (0.14) |
| | Clutch weight spring free length | 23.2 (0.91) | 24.1 (0.95) |
| Clutch drum boss I.D. | | 29.000—29.020 (1.1417—1.1425) | 29.05 (1.144) |
| Crankshaft O.D. at clutch drum | | 28.959—28.980 (1.1401—1.1409) | 28.93 (1.139) |

Unit: mm (in)

ALTERNATOR/STARTER CLUTCH

| ITEM | STANDARD | SERVICE LIMIT |
|-------------------------------|-------------------------------|-----------------|
| Starter driven gear boss O.D. | 51.705—51.718 (2.0356—2.0361) | 51.705 (2.0356) |

Unit: mm (in)

SUB-TRANSMISSION

| ITEM | | STANDARD | SERVICE LIMIT | |
|--------------------------------------|----------------------------|-------------------------------|-------------------------------|---------------|
| Shift fork | I.D. | 11.000—11.021 (0.4331—0.4339) | 11.04 (0.435) | |
| | Claw thickness | 4.93—5.00 (0.194—0.197) | 4.5 (0.18) | |
| | Shaft O.D. | 10.966—10.984 (0.4317—0.4324) | 10.96 (0.431) | |
| Transmission | Gear I.D. | D., R., L. | 28.020—28.041 (1.1031—1.1040) | 28.07 (1.105) |
| | | Reverse idle | 14.000—14.018 (0.5512—0.5519) | 14.04 (0.553) |
| | Gear bushing O.D. | D./R. | 27.979—28.000 (1.1015—1.1024) | 27.93 (1.100) |
| | | L. | 27.984—28.005 (1.1017—1.1026) | 27.93 (1.100) |
| | Gear-to-bushing clearance | D., R. | 0.020—0.062 (0.0008—0.0024) | 0.10 (0.004) |
| | | L. | 0.015—0.057 (0.0006—0.0022) | 0.10 (0.004) |
| | Gear bushing I.D. | D./R. | 25.000—25.013 (0.9843—0.9848) | 25.04 (0.986) |
| | Countershaft O.D. | at D., R. | 24.959—24.980 (0.9826—0.9835) | 24.93 (0.981) |
| | Reverse idle shaft O.D. | | 13.966—13.984 (0.5498—0.5506) | 13.93 (0.548) |
| | Bushing-to-shaft clearance | D./R. | 0.020—0.054 (0.0008—0.0021) | 0.10 (0.004) |
| Reverse idle gear-to-shaft clearance | | 0.016—0.052 (0.0006—0.0020) | 0.10 (0.004) | |

Unit: mm (in)

CRANKSHAFT/AUTOMATIC TRANSMISSION UNIT

| ITEM | STANDARD | SERVICE LIMIT | |
|------------|--------------------------|-----------------------------|--------------|
| Crankshaft | Runout | — | 0.05 (0.002) |
| | Big end side clearance | 0.05—0.65 (0.002—0.026) | 0.8 (0.03) |
| | Big end radial clearance | 0.006—0.018 (0.0002—0.0007) | 0.05 (0.002) |

GENERAL INFORMATION

FRONT WHEEL/SUSPENSION/STEERING

| ITEM | | STANDARD | SERVICE LIMIT |
|--|------------|---|------------------|
| Minimum tire tread depth | | — | 4.0 mm (0.16 in) |
| Cold tire pressure | Standard | 25 kPa (0.25 kgf/cm ² , 3.6 psi) | — |
| | Minimum | 22 kPa (0.22 kgf/cm ² , 3.2 psi) | — |
| | Maximum | 28 kPa (0.28 kgf/cm ² , 4.0 psi) | — |
| | With cargo | 25 kPa (0.25 kgf/cm ² , 3.6 psi) | — |
| Tie-rod distance between the ball joints | | 382 ± 1 mm (15.0 ± 0.04 in) | — |
| Toe | | Toe-out: 24 ± 15 mm (1 ± 9/16 in) | — |

REAR WHEEL/SUSPENSION

| ITEM | | STANDARD | SERVICE LIMIT |
|--------------------------|------------|---|------------------|
| Minimum tire tread depth | | — | 4.0 mm (0.16 in) |
| Cold tire pressure | Standard | 25 kPa (0.25 kgf/cm ² , 3.6 psi) | — |
| | Minimum | 22 kPa (0.22 kgf/cm ² , 3.2 psi) | — |
| | Maximum | 28 kPa (0.28 kgf/cm ² , 4.0 psi) | — |
| | With cargo | 25 kPa (0.25 kgf/cm ² , 3.6 psi) | — |

BRAKE SYSTEM

Unit: mm (in)

| ITEM | | STANDARD | SERVICE LIMIT |
|-------------|----------------------------|-------------------------------|-----------------|
| Front brake | Recommended brake fluid | DOT 3 or DOT 4 brake fluid | — |
| | Drum I.D. | 160.0 (6.30) | 161 (6.34) |
| | Shoe lining thickness | 4.0 (0.16) | 2.0 (0.08) |
| | Brake panel warpage | — | 0.4 (0.02) |
| | Waterproof seal lip length | 22 (0.9) | 20 (0.8) |
| | Master cylinder I.D. | 14.000—14.043 (0.5512—0.5529) | 14.055 (0.5533) |
| | Master piston O.D. | 13.957—13.984 (0.4983—0.4994) | 13.945 (0.5490) |
| | Wheel cylinder I.D. | 19.050—19.102 (0.7500—0.7520) | 19.12 (0.753) |
| Rear brake | Wheel cylinder piston O.D. | 18.997—19.030 (0.7479—0.7492) | 18.81 (0.741) |
| | Drum I.D. | 180.0 (7.09) | 181 (7.1) |
| | Lining thickness | 5.3 (0.209) | To index mark |

FRONT DRIVING MECHANISM

Unit: mm (in)

| ITEM | | STANDARD | SERVICE LIMIT |
|--------------------|--------------------------------|---|---|
| Front differential | Oil capacity | After draining | 241 cm ³ (8.2 US oz, 8.5 Imp oz) |
| | | After disassembly | 275 cm ³ (9.3 US oz, 9.7 Imp oz) |
| | Recommended oil | Hypoid gear oil SAE #80 | — |
| | Gear backlash | 0.05—0.25 (0.002—0.010) | 0.4 (0.02) |
| | Backlash difference | — | 0.2 (0.01) |
| | Slip torque | 14—17 N·m (1.45—1.75 kgf·m, 10—13 lbf·ft) | 1.2 N·m (1.2 kgf·m, 9 lbf·ft) |
| | Face cam-to-housing distance | 6.3—6.7 (0.25—0.26) | 6.3 (0.25) |
| | Differential housing cap depth | 9.55—9.65 (0.376—0.380) | 9.55 (0.376) |
| | Cone spring free height | 2.8 (0.11) | 2.6 (0.10) |

GENERAL INFORMATION

Unit: mm (in)

REAR DRIVING MECHANISM

| ITEM | | STANDARD | SERVICE LIMIT | |
|------------------|---------------------------------|-------------------|---|------------|
| Axle runout | | — | 3.0 (0.12) | |
| Rear final drive | Oil capacity | After draining | 90 cm ³ (3.0 US oz, 3.2 Imp oz) | |
| | | After disassembly | 100 cm ³ (3.4 US oz, 3.5 Imp oz) | |
| | Recommended oil | | Hypoid gear oil SAE #80 | |
| | Gear backlash | | 0.05—0.25 (0.002—0.010) | 0.4 (0.02) |
| | Backlash difference | | — | 0.2 (0.01) |
| | Ring gear-to-stop pin clearance | | 0.3—0.6 (0.01—0.02) | — |

BATTERY/CHARGING SYSTEM

| ITEM | | SPECIFICATIONS | |
|------------|--------------------------------------|----------------|-----------------|
| Battery | Capacity | | 12 V - 12 Ah |
| | Current leakage | | 1 mA max. |
| | Voltage (20°C/68°F) | Fully charged | 13.0—13.2 V |
| | | Needs charging | Below 12.3 V |
| | Charging current | Normal | 1.4 A x 5—10 h |
| Quick | | 6.0 A x 1.0 h | |
| Alternator | Capacity | | 330 W/5,000 rpm |
| | Charging coil resistance (20°C/68°F) | | 0.1— 1.0Ω |

IGNITION SYSTEM

| ITEM | | SPECIFICATIONS |
|---------------------------------------|-----------------------------------|------------------------------|
| Spark plug | Standard | IJR7A9 (NGK), VX22BC (DENSO) |
| | For cold climate (below 5°C/41°F) | IJR6A9 (NGK), VX20BC (DENSO) |
| Spark plug gap | | 0.8—0.9 mm (0.03—0.04 in) |
| Ignition coil primary peak voltage | | 100 V minimum |
| Ignition pulse generator peak voltage | | 0.7 V minimum |
| Ignition timing ("F" mark) | | 15° BTDC at idle |

Unit: mm (in)

ELECTRIC STARTER

| ITEM | STANDARD | SERVICE LIMIT |
|----------------------------|-------------|---------------|
| Starter motor brush length | 12.5 (0.49) | 9.0 (0.35) |

GENERAL INFORMATION

LIGHTS/METER/SWITCHES

| | ITEM | SPECIFICATIONS |
|-------|-----------------------------------|--------------------|
| Bulbs | Headlight (high/low beam) | 12 V - 30/30 W x 2 |
| | Assist headlight | 12 V - 45 W |
| | Taillight | 12 V - 5 W x 2 |
| | Neutral indicator | LED |
| | Reverse indicator | LED |
| | Coolant/oil temperature indicator | LED |
| | Meter light | LED x 12 |
| Fuse | Main fuse | 30 A |
| | Transmission control motor | 30 A |
| | Sub-fuse | 15 A x 2, 10 A x 2 |

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) | 10 (1.0, 7) |
| 10 mm bolt and nut | 34 (3.5, 25) | 6 mm flange bolt (8 mm head, large flange) | 12 (1.2, 9) |
| 12 mm bolt and nut | 54 (5.5, 40) | 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 engine oil to the threads and seating surface.
 3. Apply grease to the threads and seating surface.
 4. ALOC bolt/screw: replace with a new one.
 5. Lock nut: replace with a new one.
 6. Castle nut: tighten to the specified torque and further tighten until its grooves aligns with the cotter pin hole.
 7. Special bolt: replace with a new one.
 8. Stake.
 9. Apply sealant to the threads.

| 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 lock nut | 4 | 6 | 17 (1.7, 12) | |
| Timing hole cap | 1 | 14 | 10 (1.0, 7) | |
| Engine oil drain bolt (crankcase and oil tank) | 2 | 12 | 25 (2.5, 18) | |
| Engine oil filter center bolt | 1 | 20 | 18 (1.8, 13) | |
| LUBRICATION SYSTEM | | | | |
| Oil gallery sealing bolt (front crankcase cover) | 2 | 10 | 34 (3.5, 25) | |
| FUEL SYSTEM | | | | |
| Carburetor insulator band screw | 2 | 5 | 4 (0.4, 2.9) | |
| CYLINDER HEAD/VALVE: | | | | |
| Cylinder head cover cap nut | 4 | 10 | 53 (5.4, 39) | NOTE 2 |
| CENTRIFUGAL CLUTCH: | | | | |
| Centrifugal clutch lock nut | 1 | 20 | 118 (12.0, 87) | NOTE 2, 8 |
| Oil feed pipe setting cap | 1 | 20 | 18 (1.8, 13) | |
| Oil gallery sealing bolt (inside of front crankcase cover) | 1 | 10 | 10 (1.0, 7) | |
| ALTERNATOR/STARTER CLUTCH: | | | | |
| Starter clutch outer bolt | 6 | 6 | 30 (3.1, 22) | NOTE 1 |
| Recoil starter driven pulley bolt | 1 | 12 | 108 (11.0, 80) | NOTE 2 |
| Alternator stator bolt | 3 | 6 | 10 (1.0, 7) | |
| Ignition pulse generator bolt | 2 | 5 | 6 (0.6, 4.3) | NOTE 1 |
| SUB-TRANSMISSION: | | | | |
| Gearshift drum center bolt | 1 | 8 | 26 (2.7, 20) | NOTE 1 |
| Gearshift drum stopper arm pivot bolt | 1 | 6 | 12 (1.2, 9) | NOTE 1 |
| CRANKSHAFT/AUTOMATIC TRANSMISSION: | | | | |
| Primary driven gear bolt | 4 | 6 | 17 (1.7, 12) | NOTE 2 |
| Oil pump driven sprocket bolt | 1 | 6 | 12 (1.2, 9) | NOTE 1 |
| LIGHTS/METER/SWITCHES: | | | | |
| Coolant thermosensor | 1 | PT 1/8 | 10 (1.0, 9) | NOTE 1 |
| Oil thermosensor | 1 | 12 | 18 (1.8, 13) | |

GENERAL INFORMATION

| ENGINE (Cont'd) | | | | |
|----------------------------|------|---------------------|-------------------------------|---------|
| ITEM | Q'TY | THREAD DIA. (mm) | TORQUE N·m (kgf·m, lbf·ft) | REMARKS |
| HONDAMATIC: | | | | |
| Angle sensor bolt | 2 | 5 | 6 (0.6, 4.3) | NOTE 1 |
| Throttle sensor torx screw | 2 | 5 | 4 (0.4, 2.9) | NOTE 1 |

| FRAME | | | | | |
|--|------|---------------------|-------------------------------|---------|--------|
| ITEM | Q'TY | THREAD DIA. (mm) | TORQUE N·m (kgf·m, lbf·ft) | REMARKS | |
| FRAME/BODY PANELS/EXHAUST SYSTEM: | | | | | |
| Front carrier/carry pipe bolt | 8 | 8 | 37 (3.8, 27) | NOTE 4 | |
| Gearshift lever knob screw | 2 | 5 | 2 (0.2, 1.4) | | |
| Rear carrier bolt | 6 | 8 | 37 (3.8, 27) | | |
| Muffler band bolt | 2 | 8 | 23 (2.3, 17) | | |
| Front exhaust pipe cover band screw | 2 | 5 | 3 (0.3, 2.2) | | |
| Rear exhaust pipe cover end band screw | 2 | 5 | 6 (0.6, 4.3) | | |
| center band screw | 1 | 5 | 3 (0.3, 2.2) | | |
| Muffler cover screw | 2 | 5 | 3 (0.3, 2.2) | | |
| Footpeg bracket nut | 4 | 8 | 32 (3.3, 24) | | |
| MAINTENANCE: | | | | | |
| Front differential oil filler cap | 1 | 30 | 12 (1.2, 9) | NOTE 5 | |
| drain bolt | 1 | 8 | 12 (1.2, 9) | | |
| Rear final gear case oil check bolt | 1 | 8 | 12 (1.2, 9) | | |
| filler cap | 1 | 30 | 12 (1.2, 9) | | |
| drain bolt | 1 | 8 | 12 (1.2, 9) | | |
| Tie-rod lock nut | 4 | 12 | 54 (5.5, 40) | | |
| FUEL SYSTEM: | | | | | |
| Starting enrichment (SE) valve nut | 1 | 14 | 2 (0.2, 1.4) | | |
| Throttle drum cover screw | 1 | 4 | 2 (0.2, 1.4) | | |
| ENGINE REMOVAL/INSTALLATION: | | | | | |
| Left lower engine hanger bracket bolt | 2 | 8 | 32 (3.3, 24) | NOTE 6 | |
| Lower engine hanger nut (left and right) | 2 | 10 | 54 (5.5, 40) | | |
| Upper engine hanger bolt (frame side) | 1 | 10 | 54 (5.5, 40) | | |
| (engine side) | 2 | 8 | 32 (3.3, 24) | | |
| SUB-TRANSMISSION: | | | | | |
| Gearshift lever box cover bolt | 2 | 6 | 5 (0.5, 3.6) | | |
| Gearshift lever linkage arm pivot bolt | 1 | 8 | 26 (2.7, 20) | | |
| Gearshift lever linkage tie-rod lock nut | 4 | 6 | 10 (1.0, 7) | | |
| FRONT WHEEL/SUSPENSION/STEERING: | | | | | |
| Handlebar lower holder nut | 2 | 10 | 39 (4.0, 29) | | NOTE 5 |
| Front wheel nut | 8 | 10 | 64 (6.5, 47) | | |
| Front wheel hub nut | 2 | 16 | 78 (8.0, 58) | | |
| Shock absorber mounting nut | 4 | 10 | 44 (4.5, 33) | | |
| Upper arm pivot nut | 2 | 10 | 34 (3.5, 25) | | |
| Lower arm pivot nut | 4 | 10 | 44 (4.5, 33) | | |
| Upper and lower arm ball joint nut | 4 | 12 | 29 (3.0, 22) | | |
| Brake hose clamp bolt | 4 | 6 | 12 (1.2, 9) | | |
| Tie-rod ball joint nut | 4 | 12 | 54 (5.5, 40) | | |
| Steering shaft end nut | 1 | 14 | 108 (11.0, 80) | | |
| Steering shaft holder bolt | 2 | 8 | 32 (3.3, 24) | | |
| REAR WHEEL/SUSPENSION: | | | | | |
| Rear wheel nut | 8 | 10 | 64 (6.5, 47) | NOTE 3 | |
| Shock absorber mounting bolt (lower) | 2 | 10 | 44 (4.5, 33) | | |
| Swingarm pivot bolt (left) | 1 | 30 | 112 (11.4, 82) | | |
| (right) | 1 | 30 | 10 (1.0, 7) | | |
| Swingarm right pivot lock nut | 1 | 30 | 112 (11.4, 82) | | |

GENERAL INFORMATION

| FRAME (Cont'd) | | | | |
|---|-------------|-----------------------------|---------------------------------------|----------------|
| ITEM | Q'TY | THREAD DIA. (mm) | TORQUE N·m (kgf·m, lbf·ft) | REMARKS |
| BRAKE SYSTEM: | | | | |
| Brake hose oil bolt | 3 | 10 | 34 (3.5, 25) | |
| Wheel cylinder bleed valve | 2 | 8 | 6 (0.6, 4.3) | |
| Front master cylinder reservoir cap screw | 2 | 4 | 2 (0.2, 1.4) | |
| Front brake lever pivot bolt | 1 | 6 | 1 (0.1, 0.7) | |
| nut | 1 | 6 | 6 (0.6, 4.3) | |
| Front brake switch screw | 1 | 4 | 1 (0.1, 0.7) | |
| Front master cylinder holder bolt | 2 | 6 | 12 (1.2, 9) | |
| Wheel cylinder bolt | 4 | 6 | 8 (0.8, 5.8) | |
| nut | 4 | 8 | 17 (1.7, 12) | |
| Wheel cylinder oil pipe joint nut | 4 | 10 | 16 (1.6, 12) | |
| Front brake panel bolt | 8 | 8 | 29 (3.0, 22) | NOTE 7 |
| Rear brake arm pinch bolt | 1 | 8 | 20 (2.0, 14) | |
| Rear wheel hub nut | 2 | 20 | 137 (14.0, 101) | NOTE 6 |
| Rear brake panel drain bolt | 1 | 8 | 12 (1.2, 9) | |
| FRONT DRIVING MECHANISM: | | | | |
| Differential ring gear bolt | 6 | 8 | 49 (5.0, 36) | NOTE 7 |
| Differential pinion bearing lock nut | 1 | 64 | 98 (10.0, 72) | NOTE 5, 8 |
| Differential case cover bolt | 2 | 10 | 49 (5.0, 36) | NOTE 1 |
| | 6 | 8 | 25 (2.6, 19) | |
| Differential mounting bolt | 1 | 10 | 44 (4.5, 33) | |
| | 2 | 8 | 22 (2.2, 16) | |
| nut | 1 | 10 | 44 (4.5, 33) | NOTE 5 |
| | 1 | 8 | 22 (2.2, 16) | |
| REAR DRIVING MECHANISM: | | | | |
| Final gear case pinion bearing lock nut | 1 | 64 | 98 (10.0, 72) | NOTE 5, 8 |
| Final gear case cover bolt | 2 | 10 | 49 (5.0, 36) | NOTE 1 |
| | 6 | 8 | 25 (2.6, 19) | |
| Final gear case mounting nut | 4 | 10 | 54 (5.5, 40) | NOTE 5 |
| Left and right axle housing nut | 12 | 10 | 44 (4.5, 33) | NOTE 5 |
| Skid plate bolt | 3 | 8 | 32 (3.3, 24) | |
| Rear brake panel nut | 4 | 10 | 44 (4.5, 33) | NOTE 5 |

GENERAL INFORMATION

TOOLS

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

| DESCRIPTION | TOOL NUMBER | REMARKS | REF. SECTION |
|-----------------------------------|---------------|--|--------------------------------|
| Carburetor float level gauge | 07401-0010000 | | 5 |
| Universal bearing puller | 07631-0010000 | NOTE 2 | 13 |
| Gear holder | 07724-0010100 | NOTE 3/NOTE 2 | 13 |
| Flywheel holder | 07725-0040000 | NOTE 2 | 11 |
| Bearing remover weight | 07741-0010201 | NOTE 4: 07936-371020A or 07936-3710200 (U.S.A. only) | 10, 12, 13, 15, 17, 18 |
| Valve guide driver, 5.5 mm | 07742-0010100 | | 8 |
| Attachment, 37 x 40 mm | 07746-0010200 | | 12, 13, 15 |
| Attachment, 42 x 47 mm | 07746-0010300 | | 10, 12, 13, 14 |
| Attachment, 52 x 55 mm | 07746-0010400 | | 12, 13, 14, 17, 18 |
| Attachment, 62 x 68 mm | 07746-0010500 | | 18 |
| Attachment, 24 x 26 mm | 07746-0010700 | | 11 |
| Attachment, 22 x 24 mm | 07746-0010800 | | 14, 15, 17, 18 |
| Attachment, 15 mm I.D. | 07746-0020200 | | 14, 17 |
| Attachment, 20 mm I.D. | 07746-0020400 | | 17 |
| Driver, 40 mm I.D. | 07746-0030100 | | 18 |
| Attachment, 30 mm I.D. | 07746-0030300 | | 18 |
| Pilot, 10 mm | 07746-0040100 | | 11 |
| Pilot, 15 mm | 07746-0040300 | | 13 |
| Pilot, 17 mm | 07746-0040400 | | 10, 12, 13 |
| Pilot, 20 mm | 07746-0040500 | | 13 |
| Pilot, 25 mm | 07746-0040600 | | 12, 13 |
| Pilot, 30 mm | 07746-0040700 | | 13, 14 |
| Pilot, 35 mm | 07746-0040800 | | 18 |
| Pilot, 40 mm | 07746-0040900 | | 13 |
| Pilot, 22 mm | 07746-0041000 | | 10, 14 |
| Pilot, 28 mm | 07746-0041100 | | 17, 18 |
| Pilot, 14 mm | 07746-0041200 | | 17, 18 |
| Pilot, 16 mm | 07746-0041300 | | 14, 15 |
| Driver | 07749-0010000 | | 10, 11, 12, 13, 14, 15, 17, 18 |
| Valve spring compressor | 07757-0010000 | | 8 |
| Valve seat cutter, 35 mm (IN 45°) | 07780-0010400 | NOTE 2 | 8 |
| Valve seat cutter, 33 mm (EX 45°) | 07780-0010800 | NOTE 2 | 8 |
| Flat cutter, 33 mm (EX 32°) | 07780-0012900 | NOTE 2 | 8 |
| Flat cutter, 36 mm (IN 32°) | 07780-0013500 | NOTE 2 | 8 |
| Interior cutter, 30 mm (EX 60°) | 07780-0014000 | NOTE 2 | 8 |
| Interior cutter, 34 mm (IN 60°) | 07780-0014700 | NOTE 2 | 8 |
| Cutter holder, 5.5 mm | 07781-0010101 | NOTE 2 | 8 |
| Lock nut wrench | 07908-4690003 | | 15 |
| Pilot screw wrench | 07908-4730002 | | 5 |
| Snap ring pliers | 07914-SA50001 | NOTE 4: 07914-3230001 | 16 |
| Lock nut wrench, 30 x 64 mm | 07916-MB00002 | | 17, 18 |
| Puller shaft | 07931-ME40000 | NOTE 4: 07931-ME4010B and 07931-HB3020A (U.S.A. only) | 18 |
| Flywheel puller | 07933-3950000 | | 11 |
| Bearing remover handle | 07936-3710100 | | 10, 12, 13 |
| Bearing remover, 17 mm | 07936-3710300 | | 10, 12, 13 |
| Bearing remover, 20 mm | 07936-3710600 | | 12, 13 |
| Attachment, 28 x 30 mm | 07946-1870100 | | 14 |
| Driver | 07949-3710001 | | 14 |
| Oil seal driver | 07965-KE80200 | NOTE 4: 07947-KA50100 (U.S.A. only) | 17, 18 |
| Oil seal driver | 07965-MC70100 | | 16 |

GENERAL INFORMATION

| DESCRIPTION | TOOL NUMBER | REMARKS | REF. SECTION |
|--------------------------------------|---------------|--|--------------|
| Assembly collar | 07965-VM00100 | | 13 |
| Assembly shaft | 07965-VM00200 | NOTE 3/NOTE 4: 07931-ME4010B and 07931-HB3020A(U.S.A. only) | 13, 17 |
| Threaded adaptor | 07965-VM00300 | NOTE 3/NOTE 4 07931-KF00200 | 13 |
| Valve guide reamer, 5.5 mm | 07984-2000001 | NOTE 4: 07984-200000D (U.S.A. only) | 8 |
| Pressure gauge hose | 07FPJ-7520110 | NOTE 3/NOTE 2 | 4 |
| Attachment, 78 x 90 mm | 07GAD-SD40101 | | 13 |
| Inspection adaptor | 07GMJ-ML80100 | | 22 |
| Hub bearing driver | 07HAD-SG00100 | | 10 |
| Pinion puller base | 07HMC-MM80110 | NOTE 4: 07HMC-MM8011A (U.S.A. only) | 17, 18 |
| Adjustable bearing remover set | 07JAC-PH80000 | NOTE 4: 07736-A01000B or *07736-A01000A (U.S.A. only) | 15 |
| Remover attachment | 07JAC-PH80100 | | 15 |
| Remover shaft assembly | 07JAC-PH80200 | | 15 |
| Oil seal driver attachment | 07JAD-PH80100 | | 18 |
| Oil seal driver | 07JAD-PH80101 | | 14 |
| Differential inspection tool | 07KMK-HC50101 | NOTE 4: 07KMK-HC5010A (U.S.A. only) | 17 |
| Pressure gauge attachment | 07KPJ-VD60100 | NOTE 3/ NOTE 4: 07KPJ-VD6010A (U.S.A. only) | 4 |
| Driver attachment | 07LAD-PW50500 | | 18 |
| Ball joint remover | 07MAC-SL00200 | | 14, 17 |
| Pilot, 32 mm | 07MAD-PR90200 | | 13, 18 |
| Recoil pulley holder | 07SMB-HM70100 | | 11 |
| Pinion holder | 07SMB-HM70200 | | 18 |
| Bearing remover head, 14 mm | 07WMC-KFG0100 | NOTE 4: 07936-KC10200 and 07YMC-001010A (U.S.A. only) | 17, 18 |
| Bearing remover shaft, 15 mm | 07936-KC10100 | | 17, 18 |
| Ball joint remover/installer | 07WMF-HN00100 | | 14 |
| Oil pressure gauge | 07YAJ-0010100 | NOTE 3/NOTE 2 | 4 |
| Oil pressure gauge | 07YAJ-0010300 | | 4 |
| Differential Bearing Clip Compressor | 07YME-HN4010A | | 17 |
| Threaded adaptor | 07YMF-HN4010A | | 17 |
| Clutch holder set | 07ZMB-HN20000 | NOTE 1 | 10 |
| Clutch holder plate | 07ZMB-HN20100 | | 10 |
| Clutch holder pin | 07ZMB-HN20200 | | 10 |
| Outside screw puller, 40 x 1.5 mm | 07ZMC-HN20100 | NOTE 1 | 10 |

*Use with commercially available 3/8"x16 slide hammer.

GENERAL INFORMATION

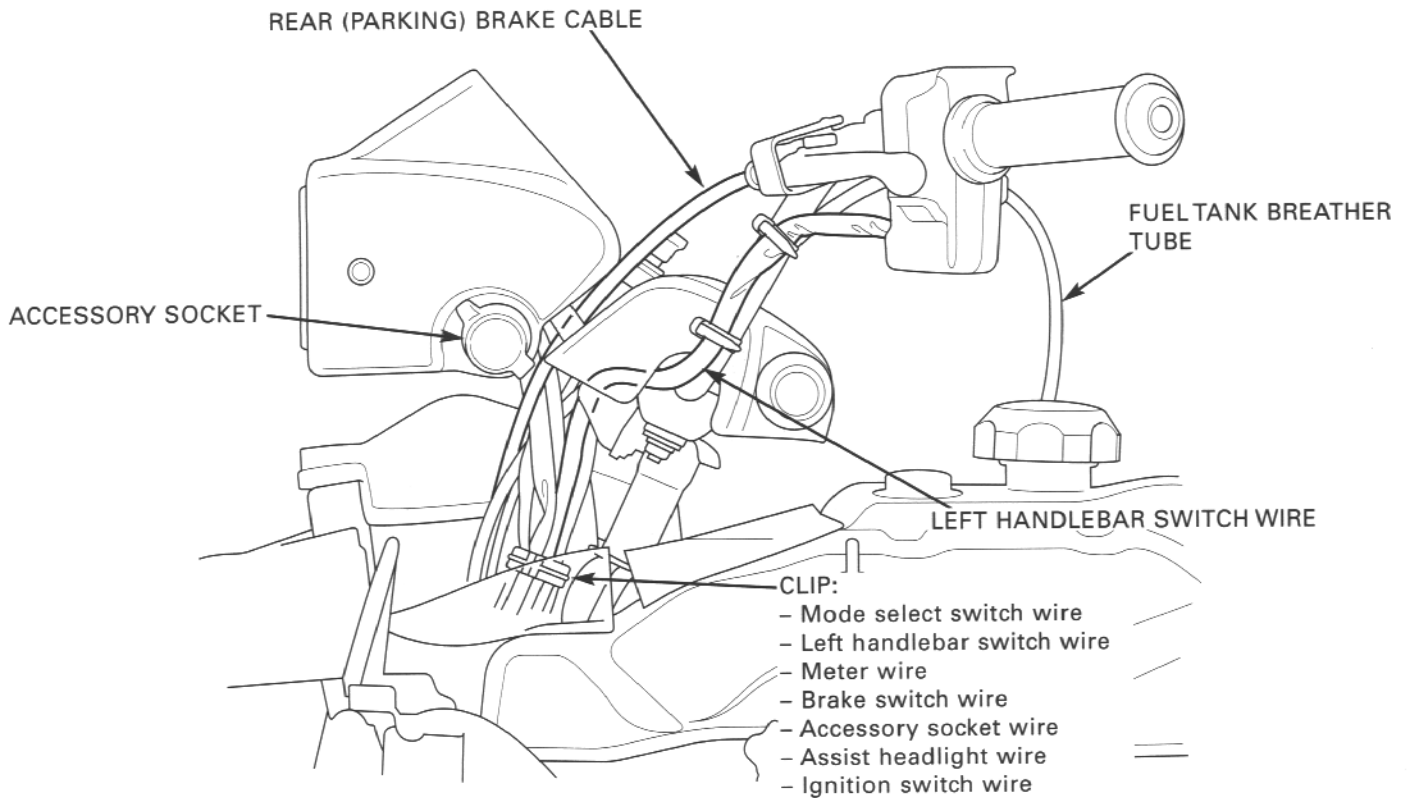
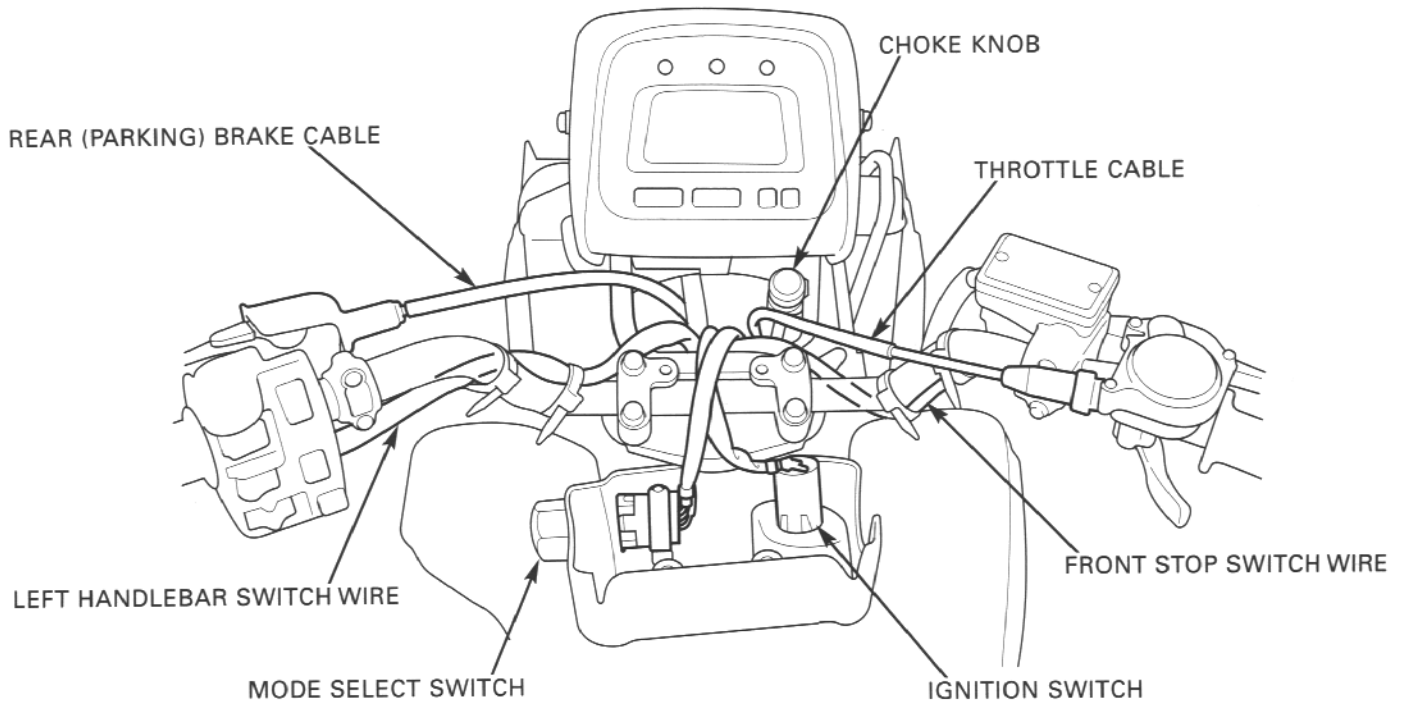
LUBRICATION & SEAL POINTS

| ENGINE | | |
|--|---|----------------------------------|
| LOCATION | MATERIAL | REMARKS |
| Camshaft cam lobes Rocker arm shaft sliding surface Valve stem (valve guide sliding surface) Piston pin outer surface Starter driven gear bearing Starter reduction gear shaft and journals Starter reduction gear teeth Sub-transmission gear sliding surfaces and gear bushings Starter motor shaft spline Control motor shaft splines | Molybdenum disulfide solution (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease) | |
| Rocker arm followers and adjusting screw tips Cam chain Cam follower whole surfaces Cylinder head cap nut threads and seating surfaces Connecting rod small end inner surface Piston outer surface and piston pin hole Piston rings Cylinder bore Centrifugal clutch drum crankshaft contacting surface Centrifugal clutch drive plate sprag clutch contacting surface Centrifugal clutch center lock nut threads and seating surface Automatic transmission control motor reduction gear teeth, driven gear teeth and shaft Recoil starter driven pulley bolt threads and seating surface Starter sprag clutch whole surface Sub-transmission gear teeth Sub-transmission mainshaft and countershaft journals Shift fork shaft Shift drum grooves Primary driven gear bolt threads and seating surfaces Each bearing rotating area Each O-ring whole surface Each oil seal lip | Engine oil | |
| Recoil starter driven pulley oil seal lips | Multi-purpose grease | |
| Oil gallery separate plate bolt threads (inside of oil tank) Ignition pulse generator bolt threads Starter clutch bolt threads Oil gallery sealing bolt threads (inside of front crankcase cover) Gearshift spindle stopper plate bolt threads Gearshift drum stopper arm pivot bolt threads Gearshift drum center bolt threads Oil pump driven sprocket bolt threads Cam chain tensioner slider pivot bolt threads Primary driven gear bolt threads Angle sensor bolt threads Coolant thermosensor threads | Locking agent | Do not apply to the sensor head. |
| Oil tank mating surfaces Alternator/ignition pulse generator wire grommet seating groove Front crankcase cover mating surface Rear crankcase cover mating surface Crankcase mating surface | Liquid sealant | |

GENERAL INFORMATION

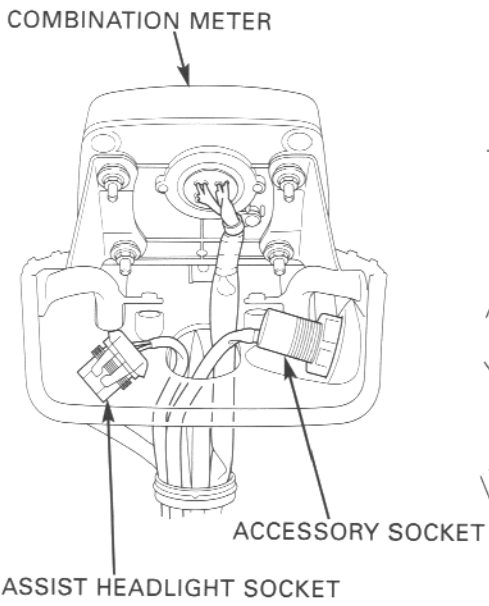
| FRAME (Cont'd) | | |
|---|--|---------|
| LOCATION | MATERIAL | REMARKS |
| Front brake lever-to-master piston contacting area Front brake lever pivot and sub-arm pivot collar Wheel cylinder adjuster screw threads and adjuster nut spindle outer surface Wheel cylinder body boot groove and piston boot groove Brake panel shoe metal contacting areas Wheel cylinder adjuster groove and piston groove (shoe contacting grooves) | Silicone grease | |
| Throttle cable outer inside Choke cable outer inside Rear brake cable (pedal and lever) outer inside | Cable lubricant | |
| Master cylinder piston and cups Wheel cylinder piston and cup | DOT 4 brake fluid | |
| Handlebar grip rubber inside Air cleaner case-to-connecting tube (carburetor and air intake duct) mating surface | Honda Bond A or Honda Hand Grip Cement (U.S.A. only) or equivalent | |
| Wheel cylinder-to-brake panel mating surface Front differential case cover mating surface Rear final gear case cover mating surface | Liquid sealant | |
| Cooling fan motor shaft nut threads | Locking agent | |

CABLE & HARNESS ROUTING

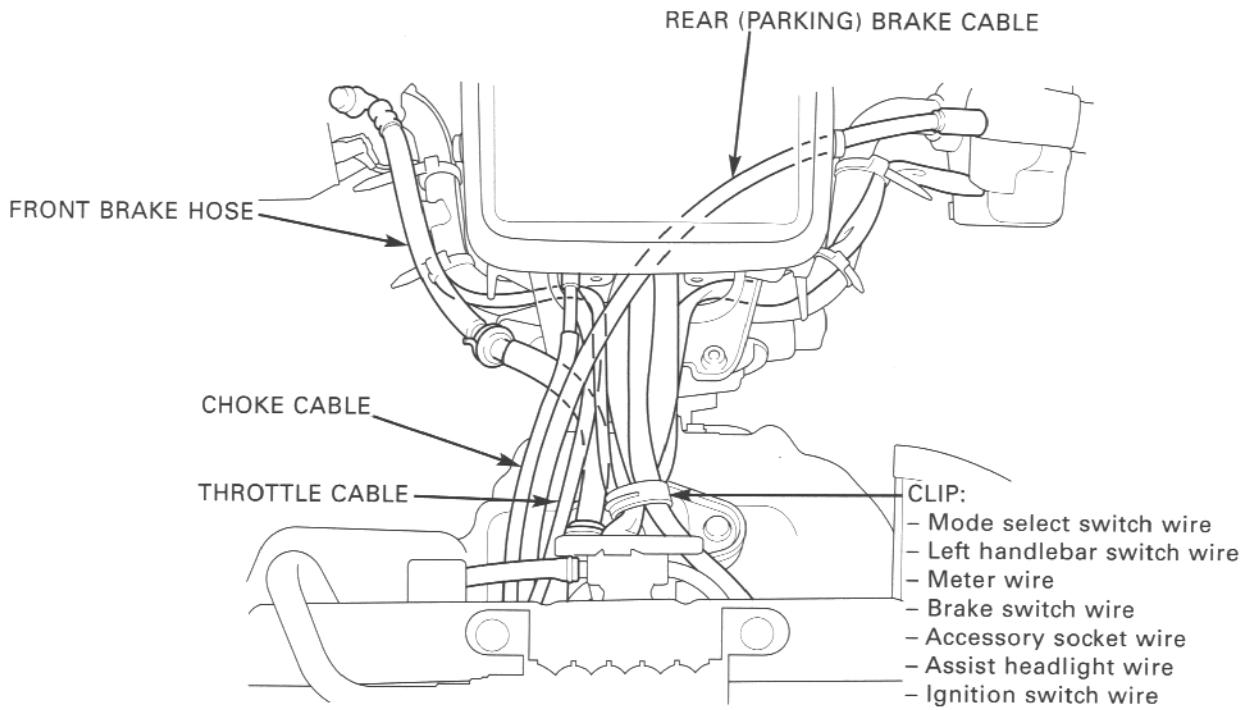
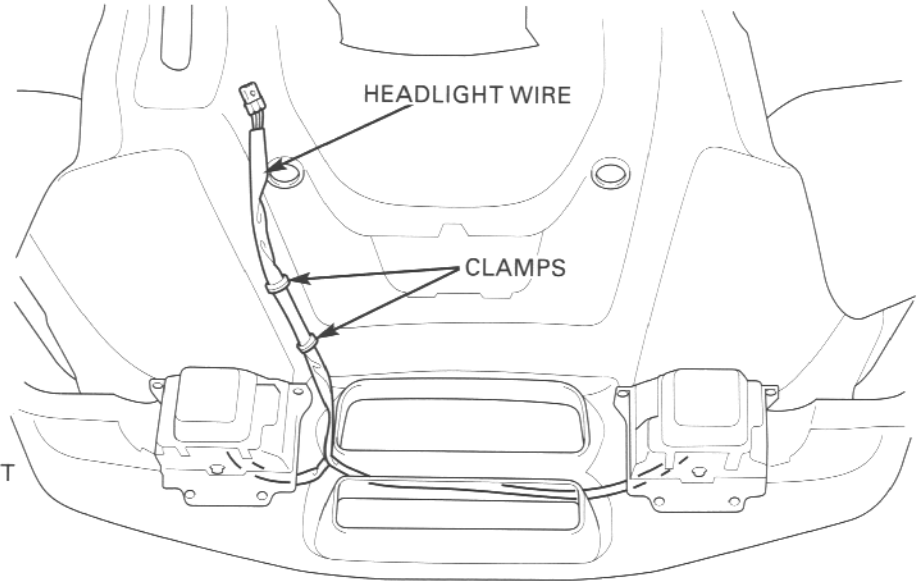


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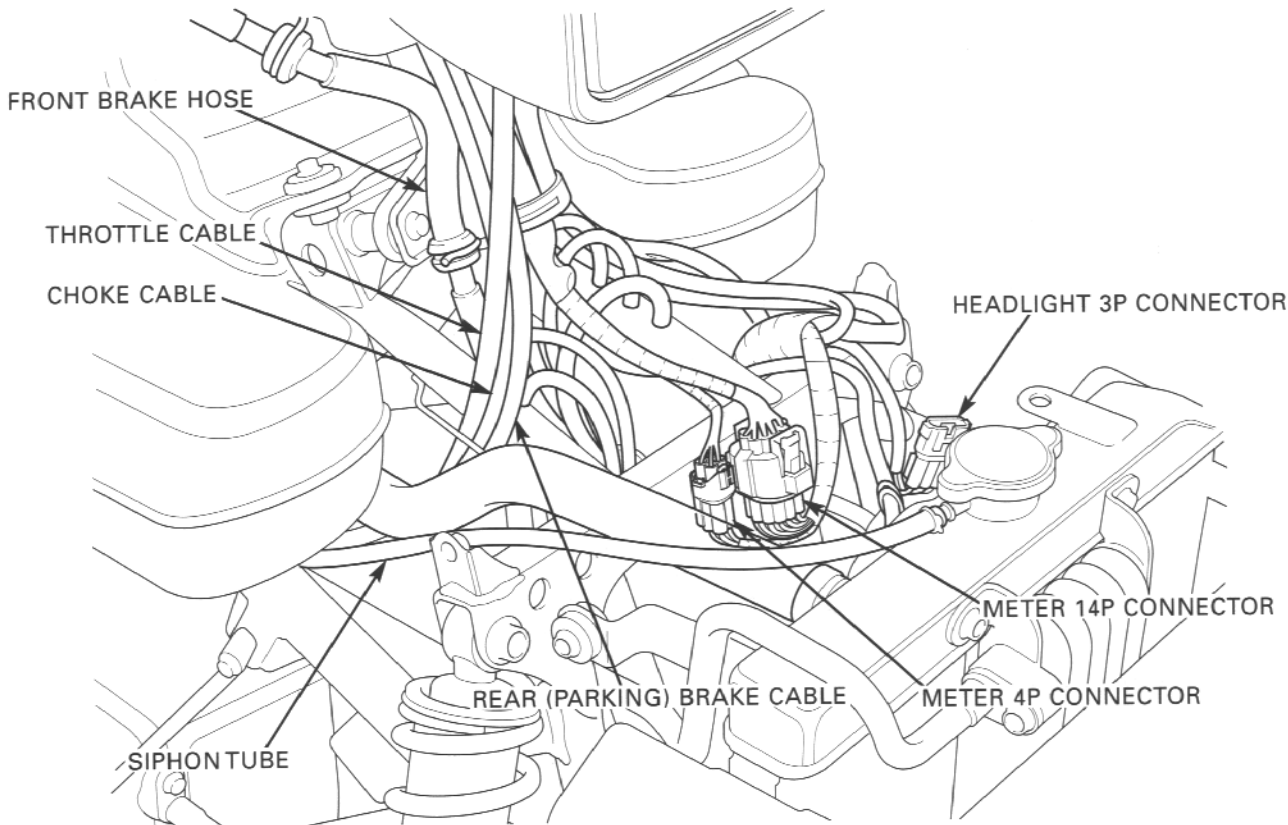
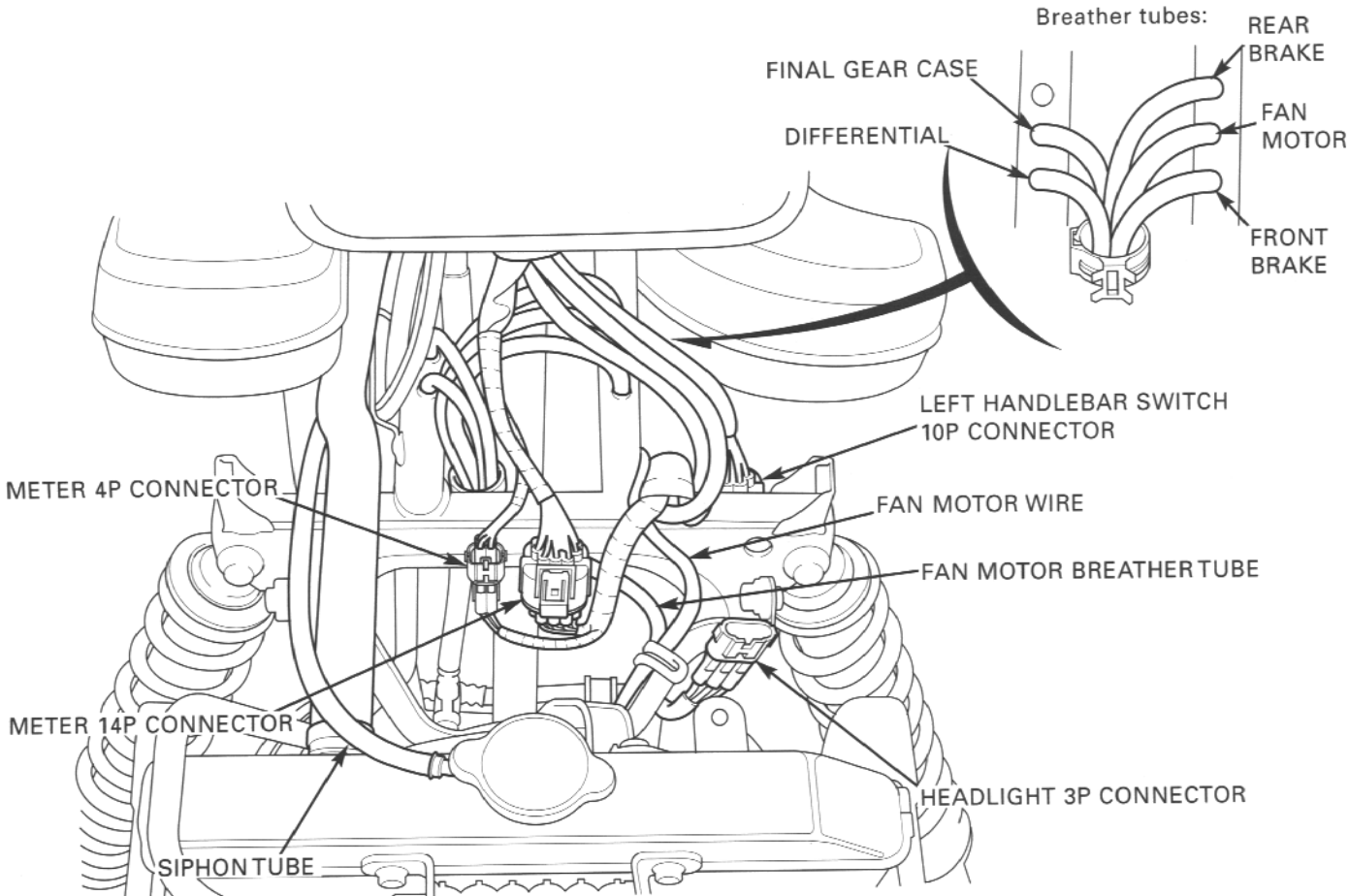
Inside of the assist headlight case:



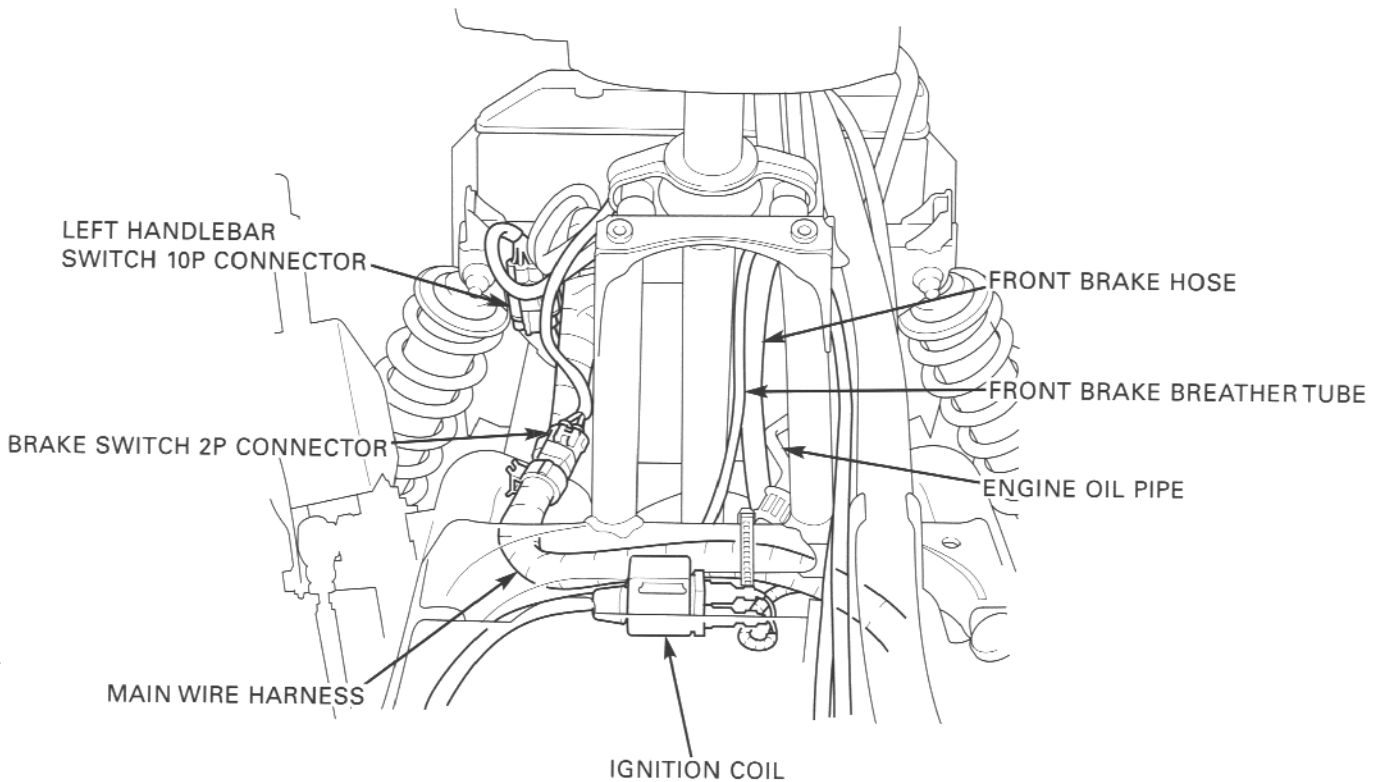
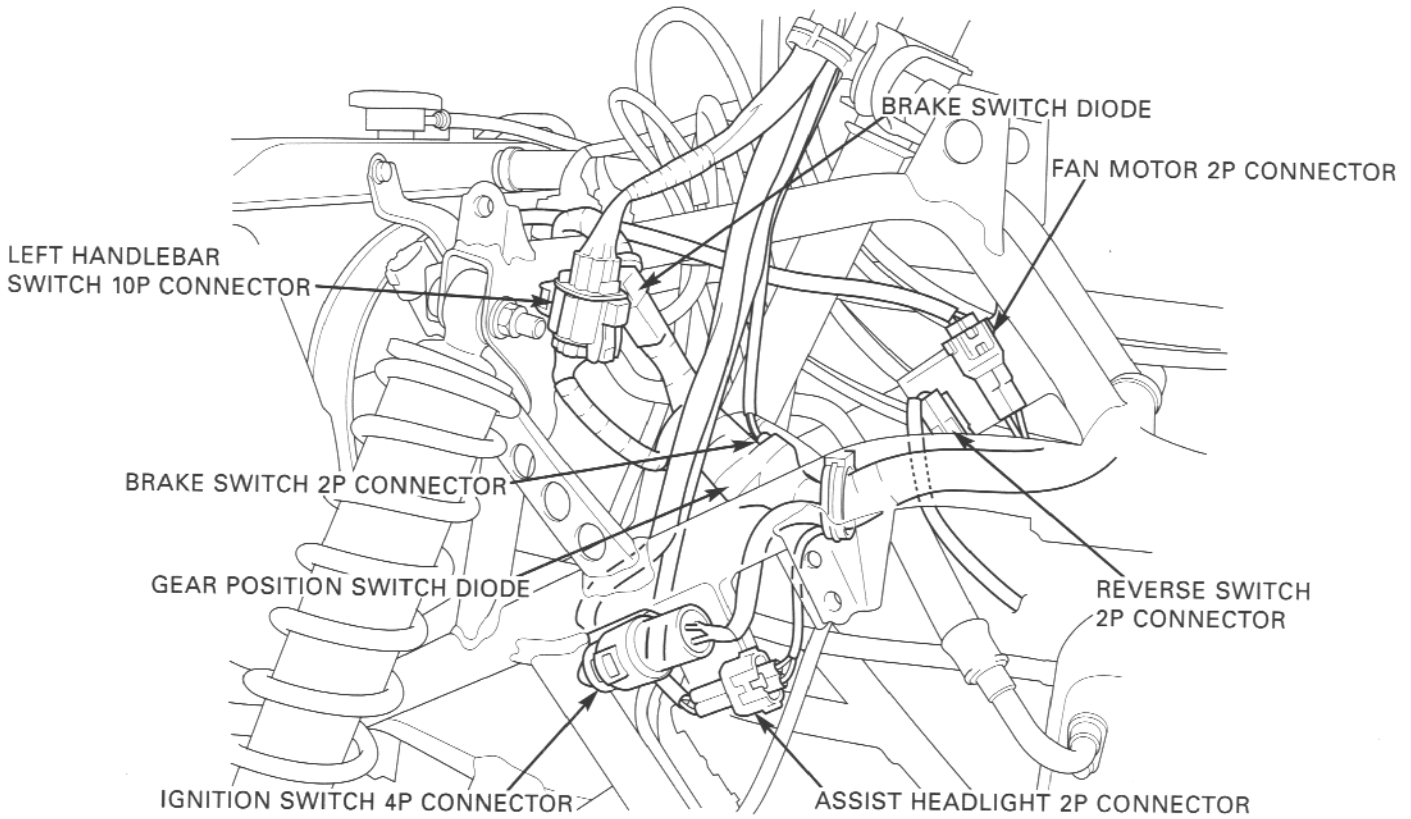
Reverse side of the front fender:

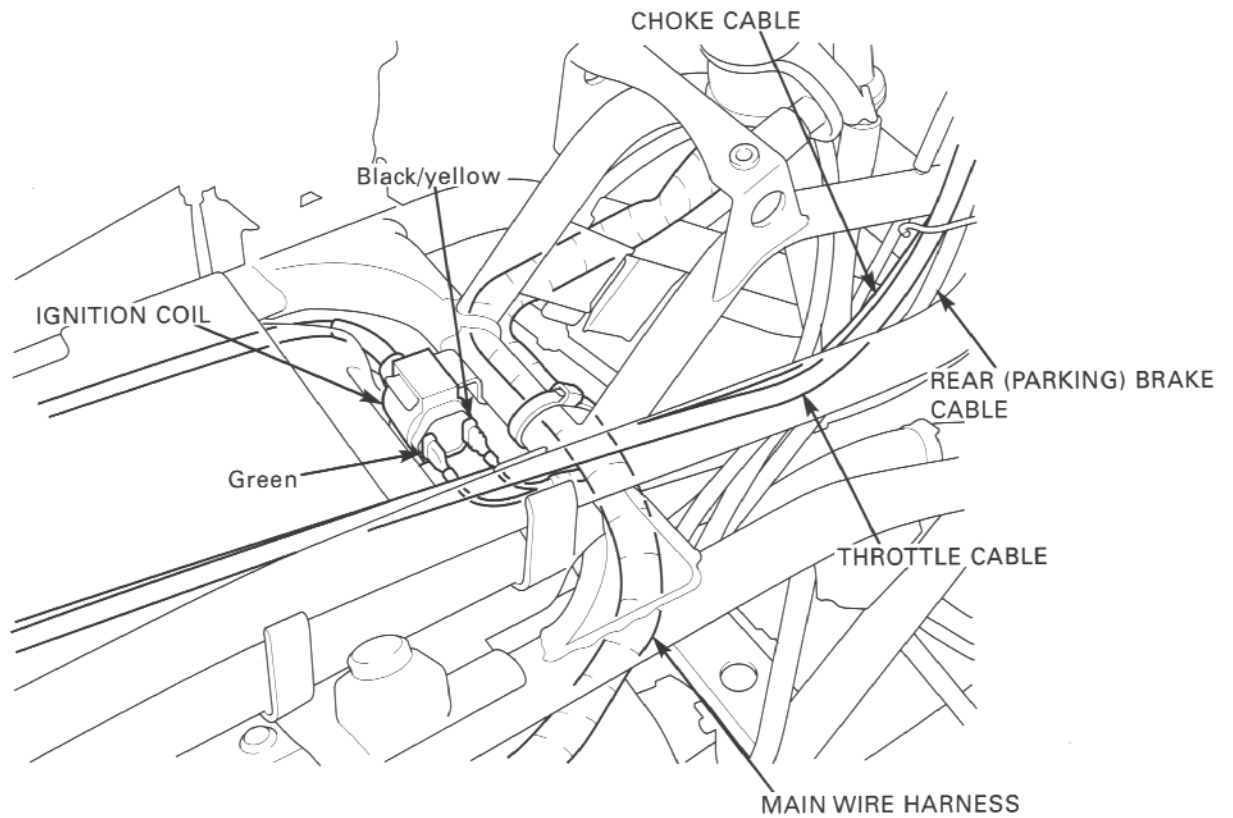


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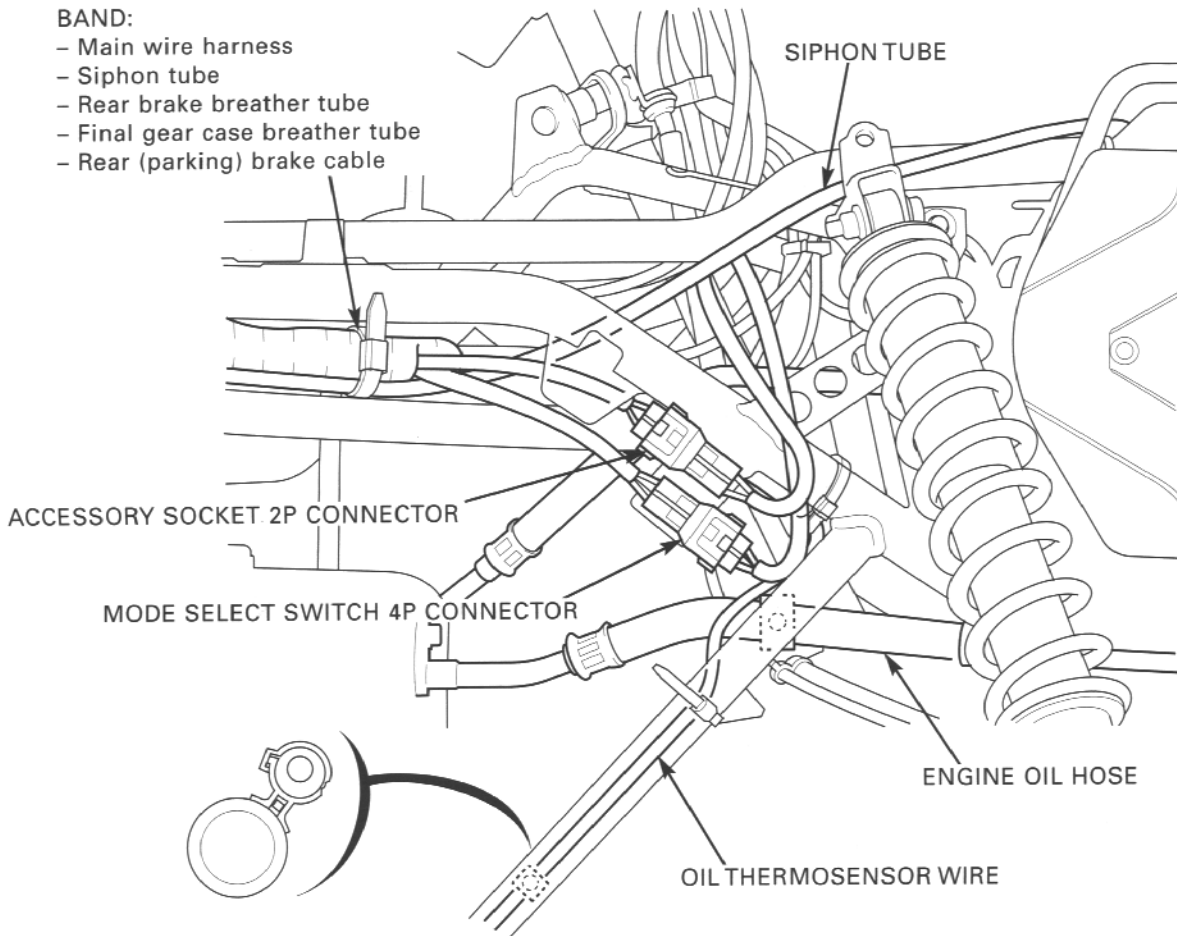
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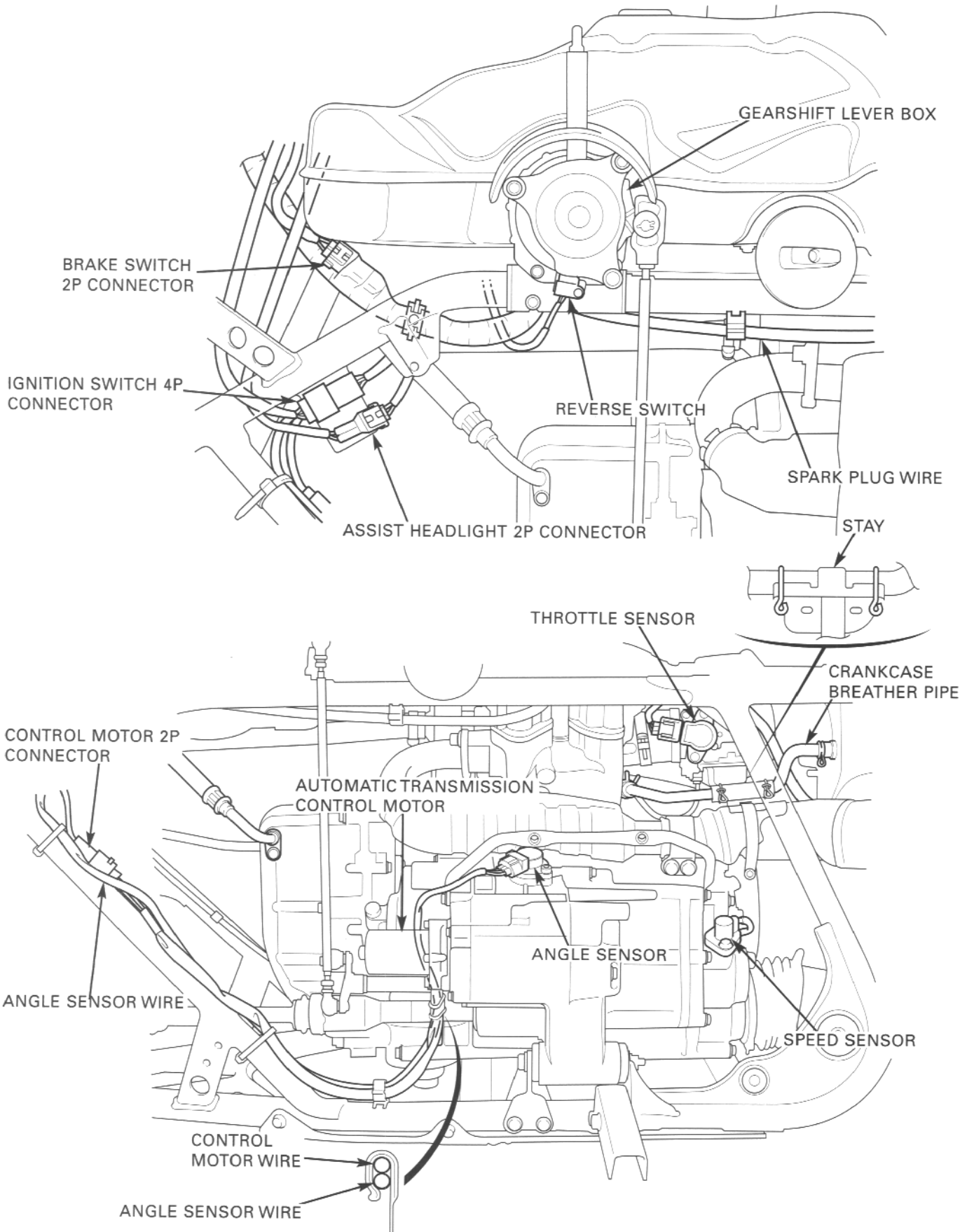


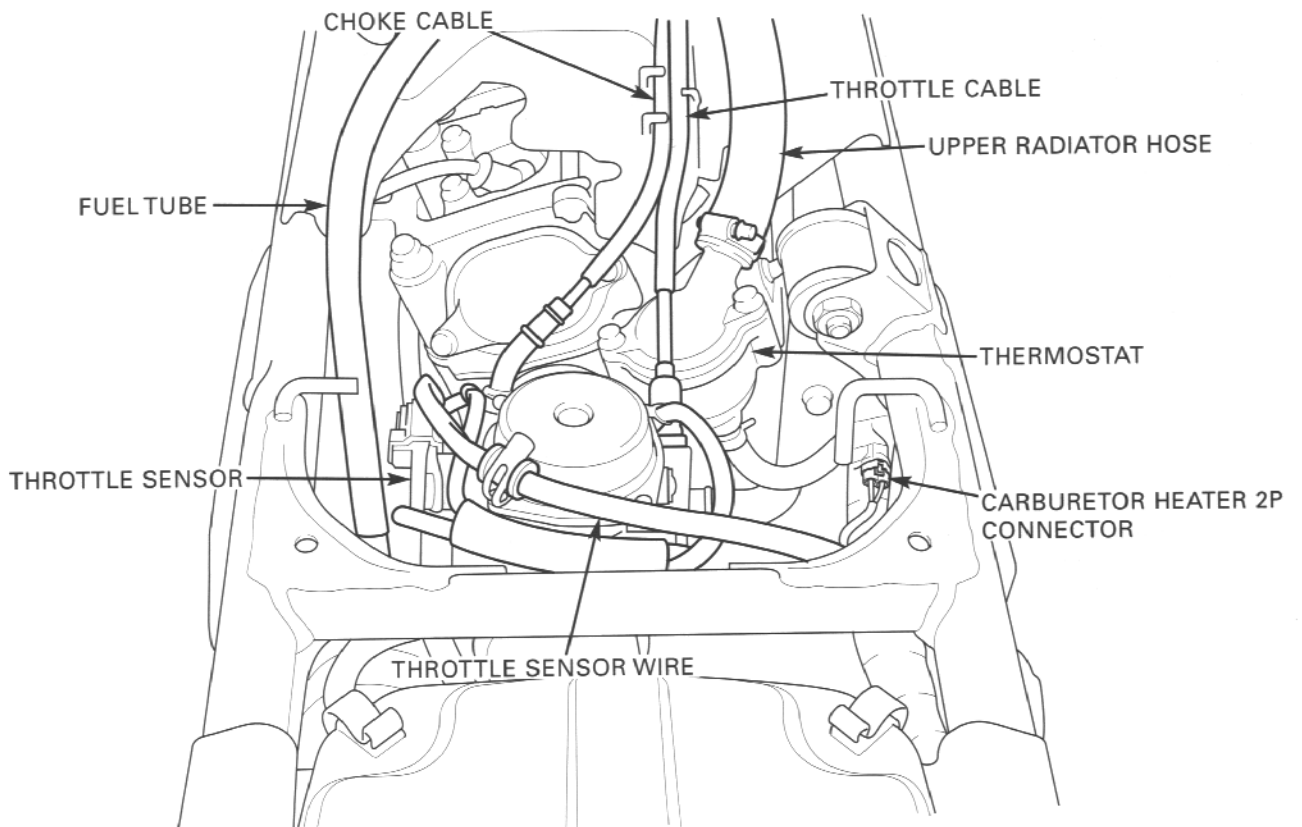
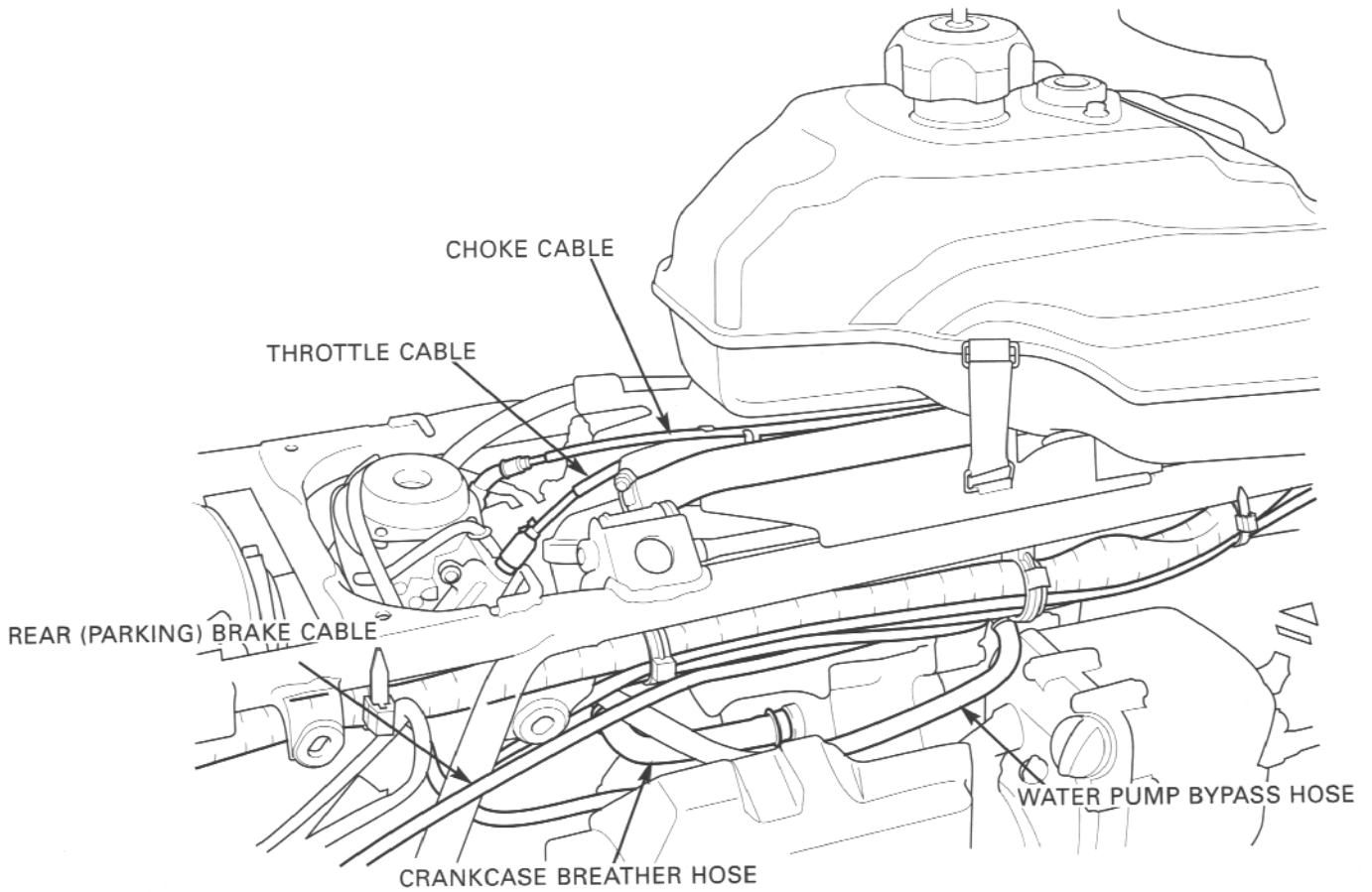
BAND:

- Main wire harness
- Siphon tube
- Rear brake breather tube
- Final gear case breather tube
- Rear (parking) brake cable



GENERAL INFORMATION

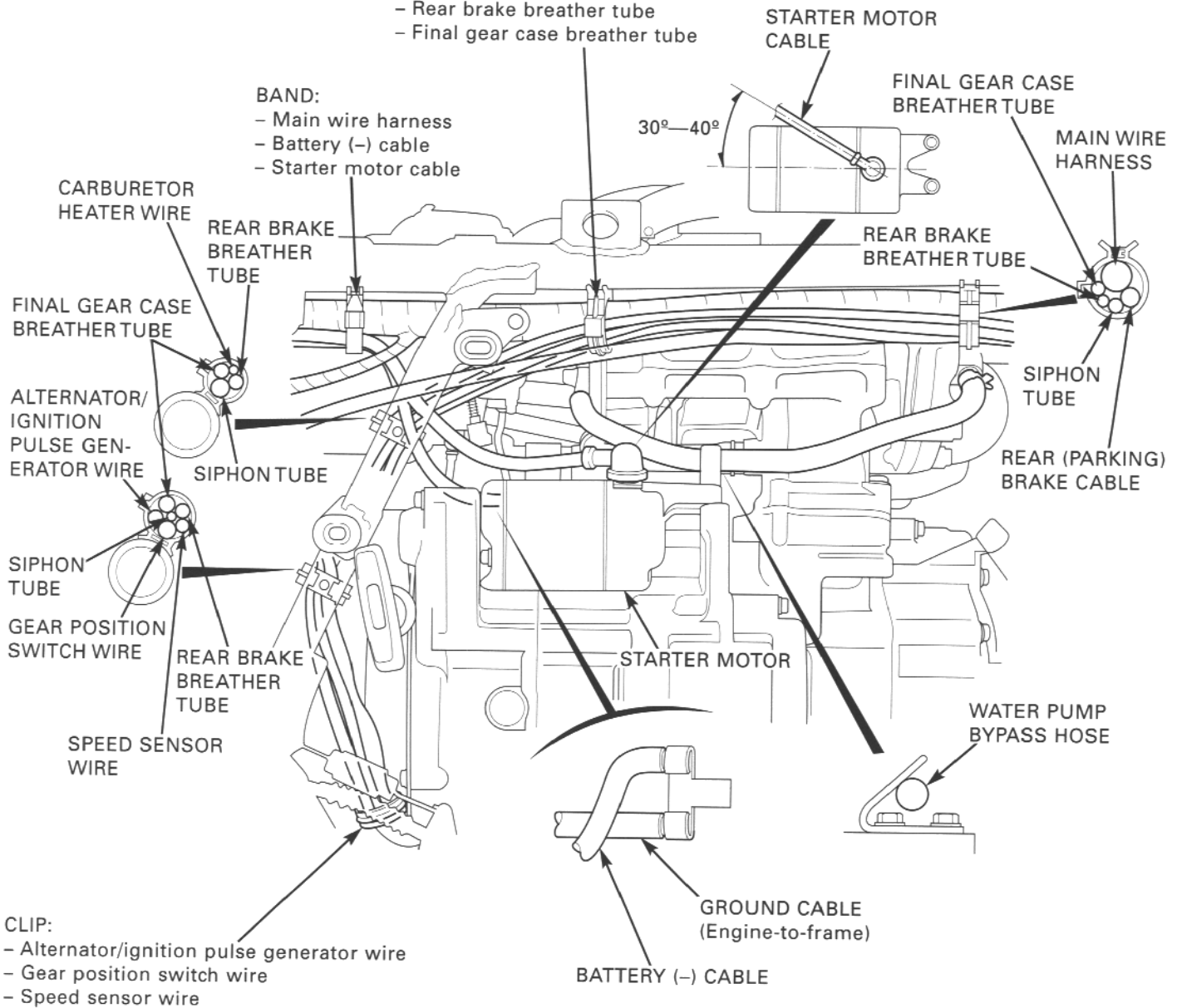


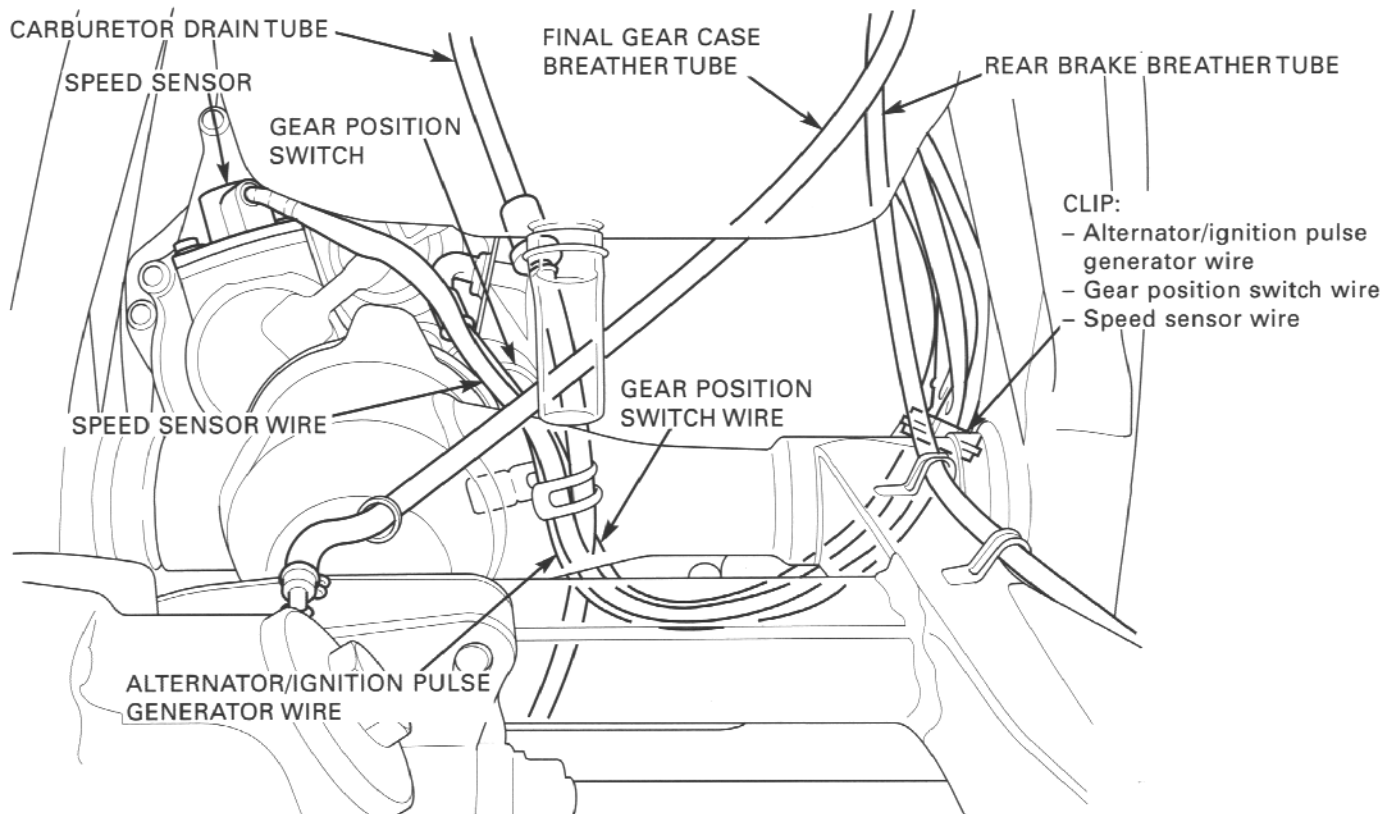
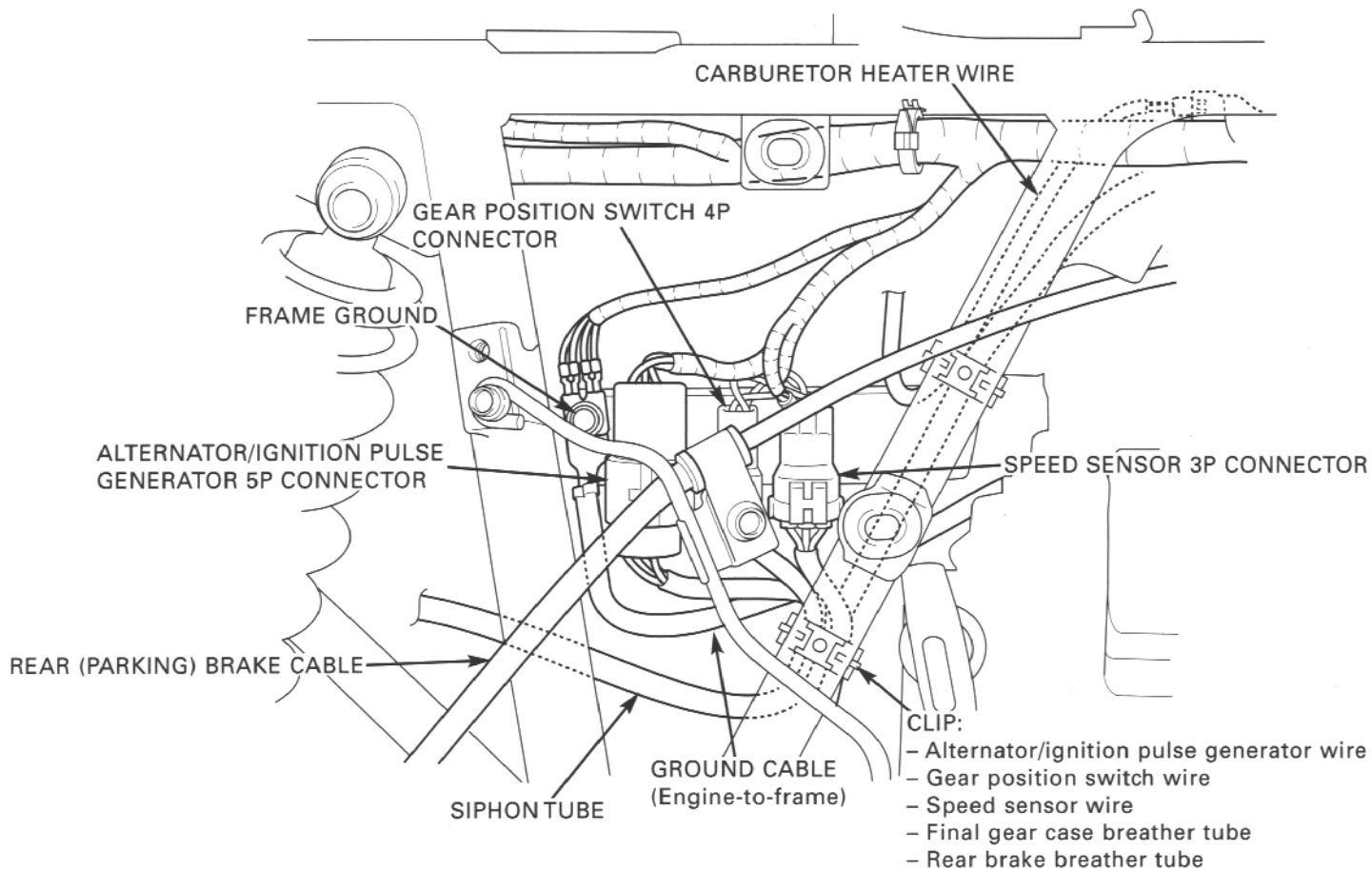


GENERAL INFORMATION

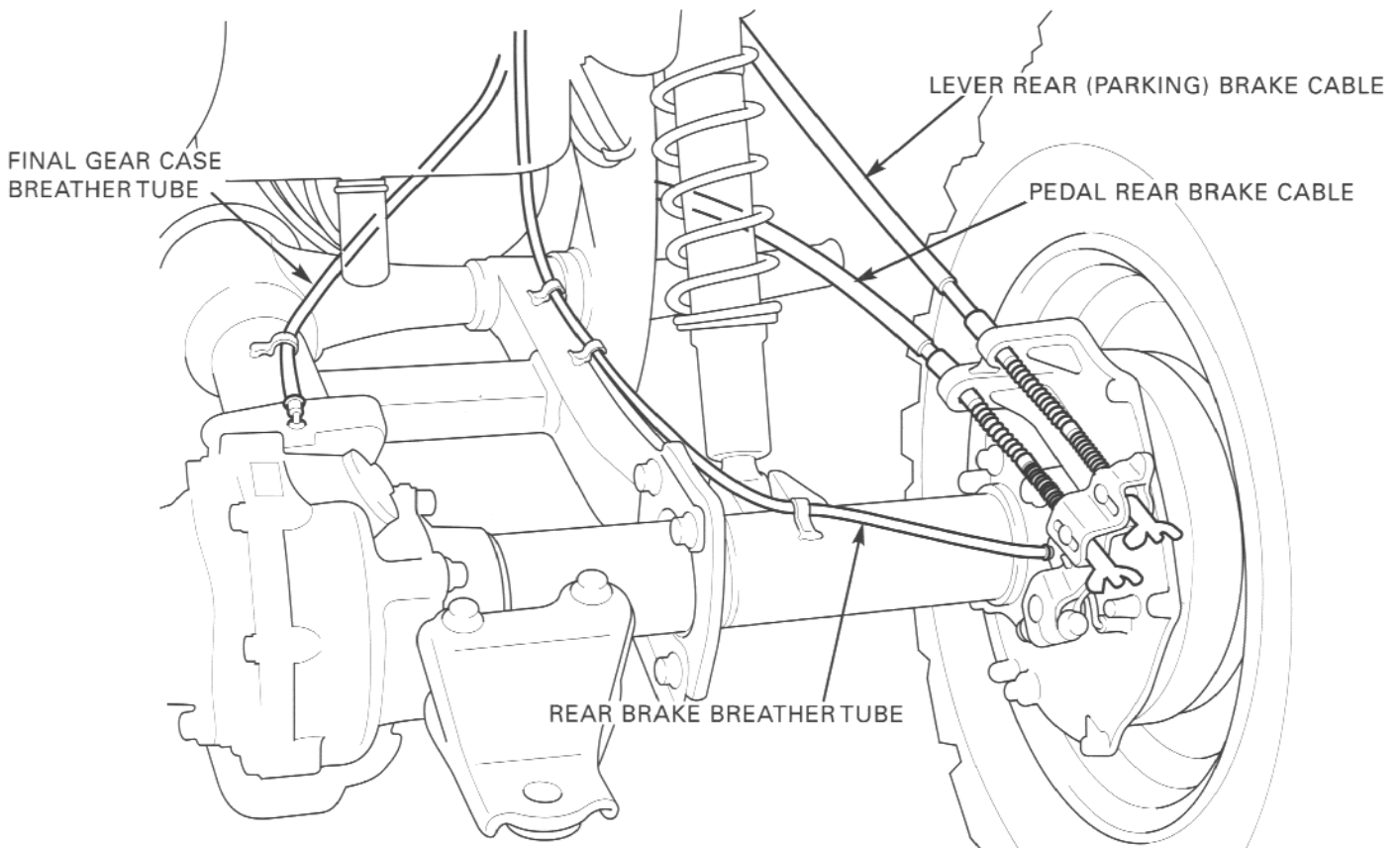
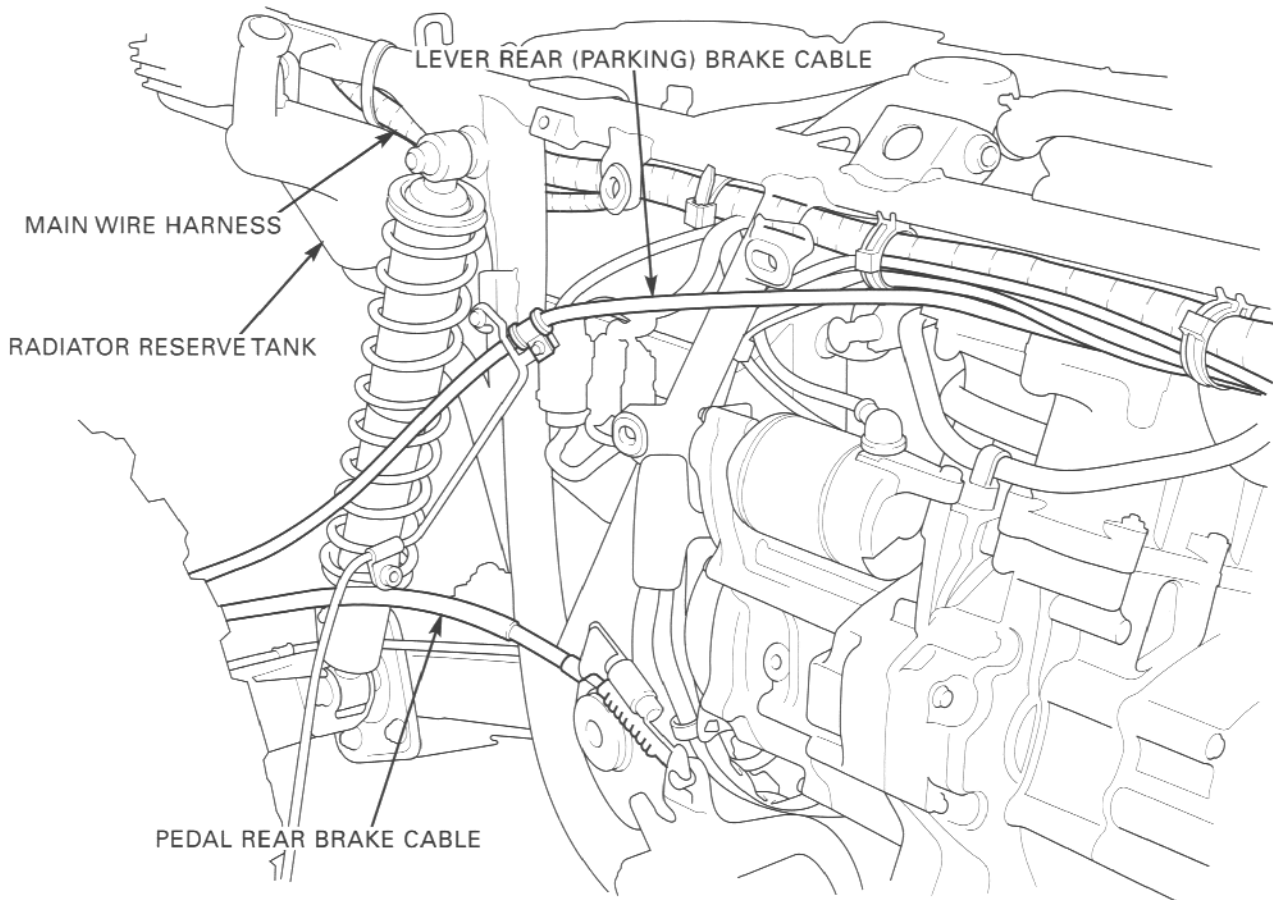
- CLIP:
 - Main wire harness
 - Siphon tube
 - Rear brake breather tube
 - Final gear case breather tube

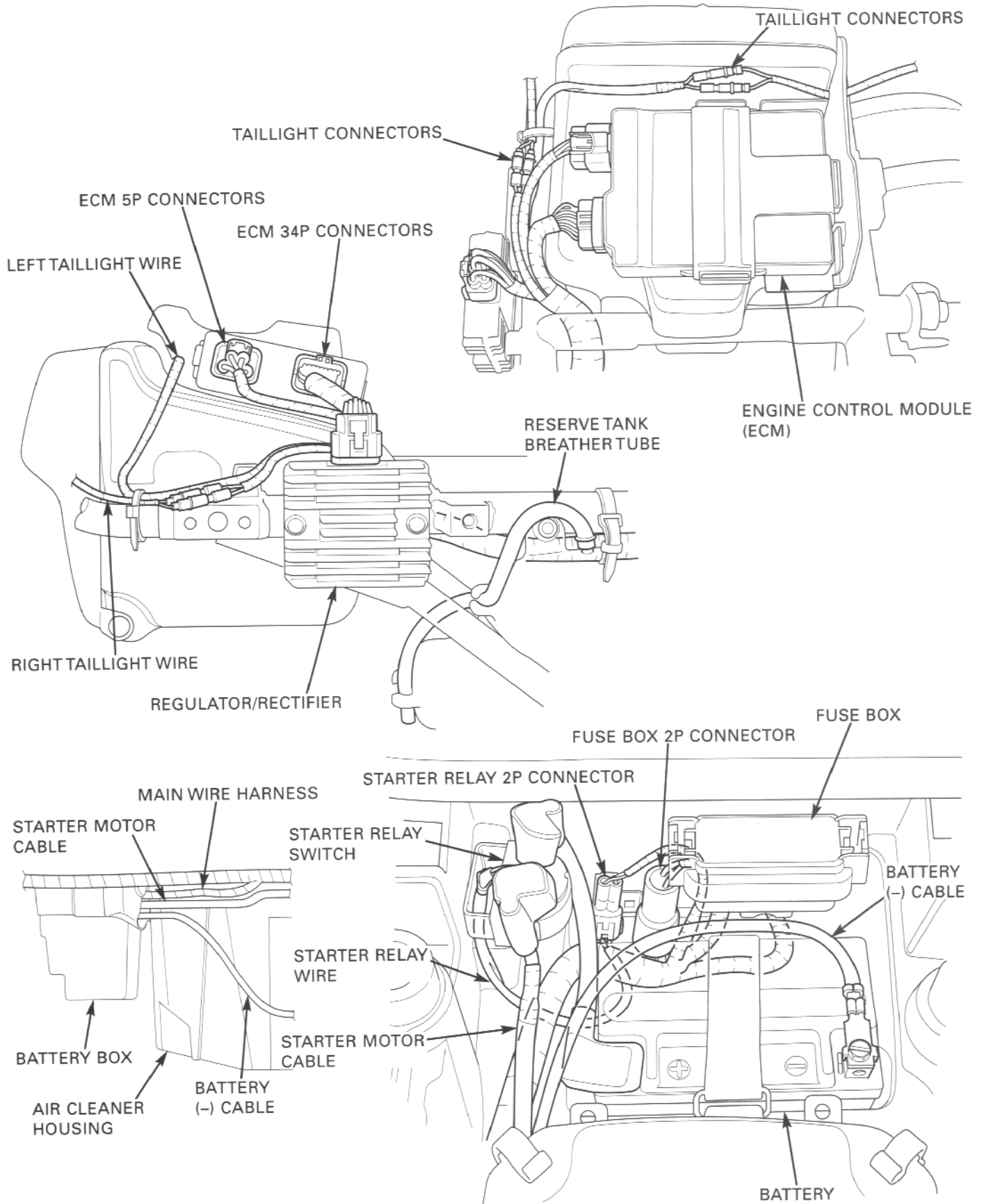
- BAND:
 - Main wire harness
 - Battery (-) cable
 - Starter motor cable



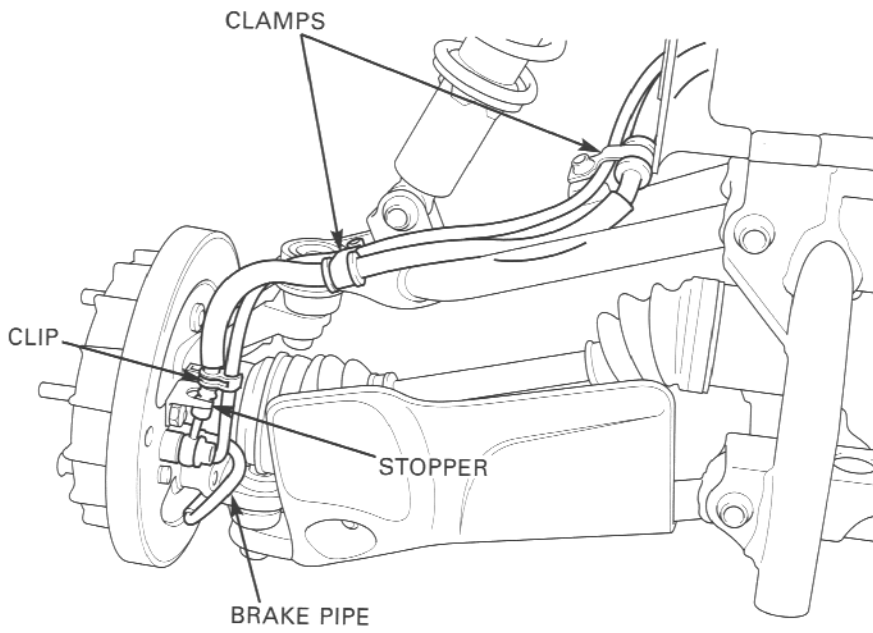
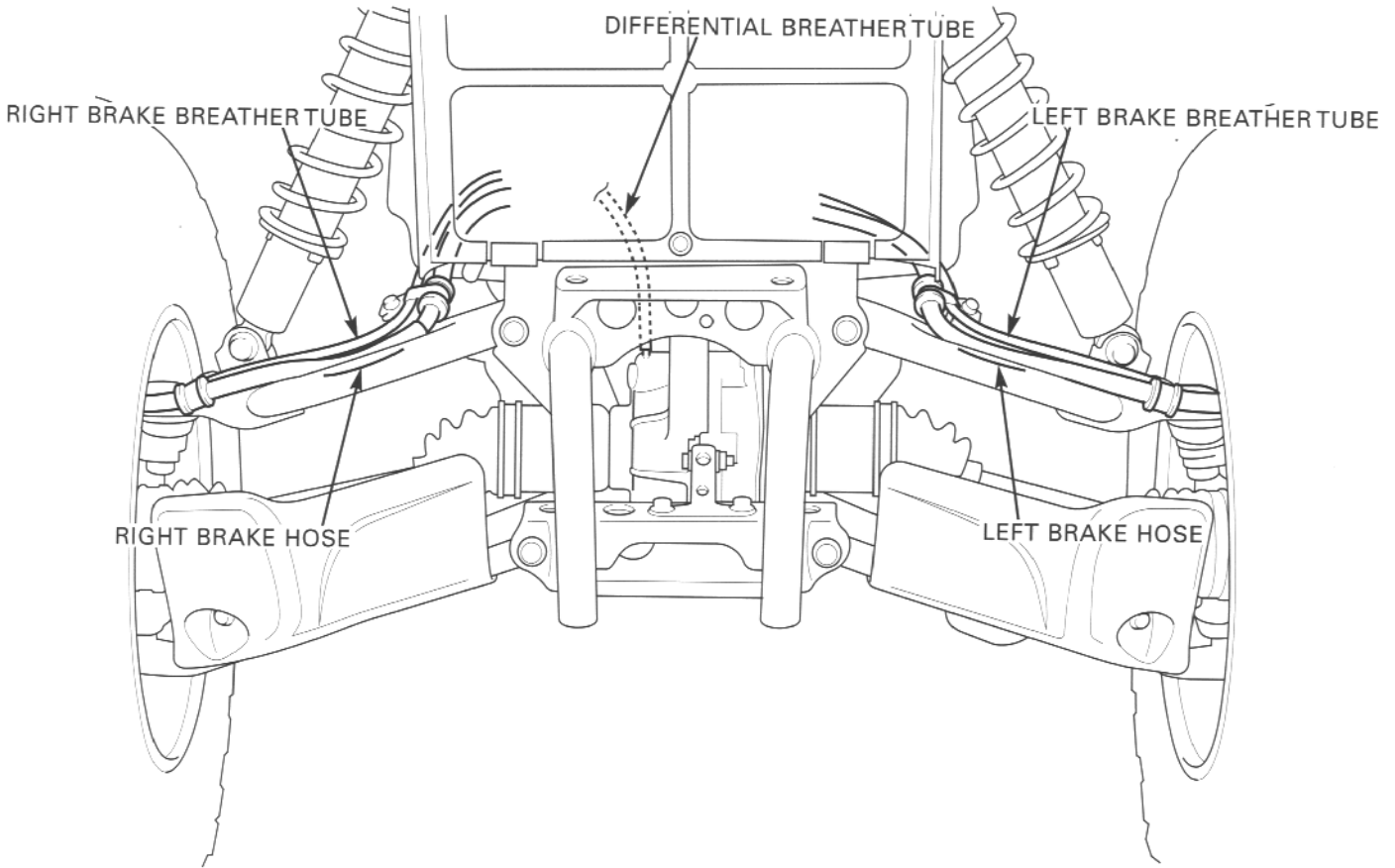


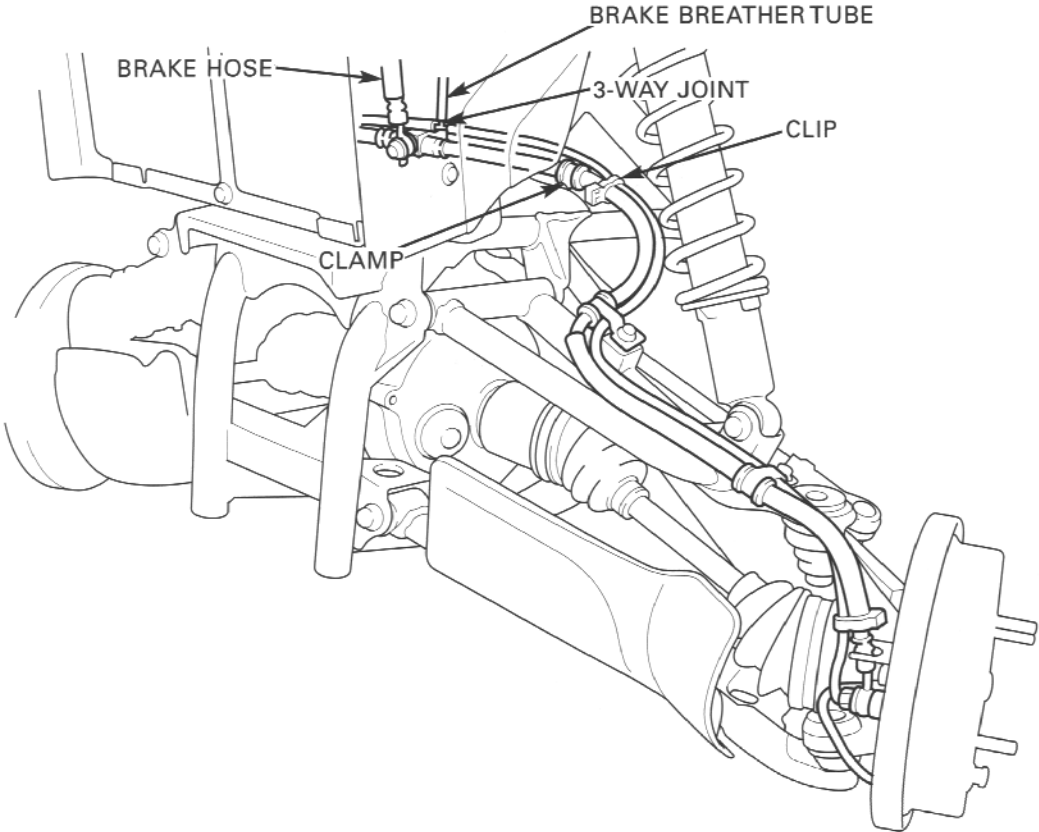
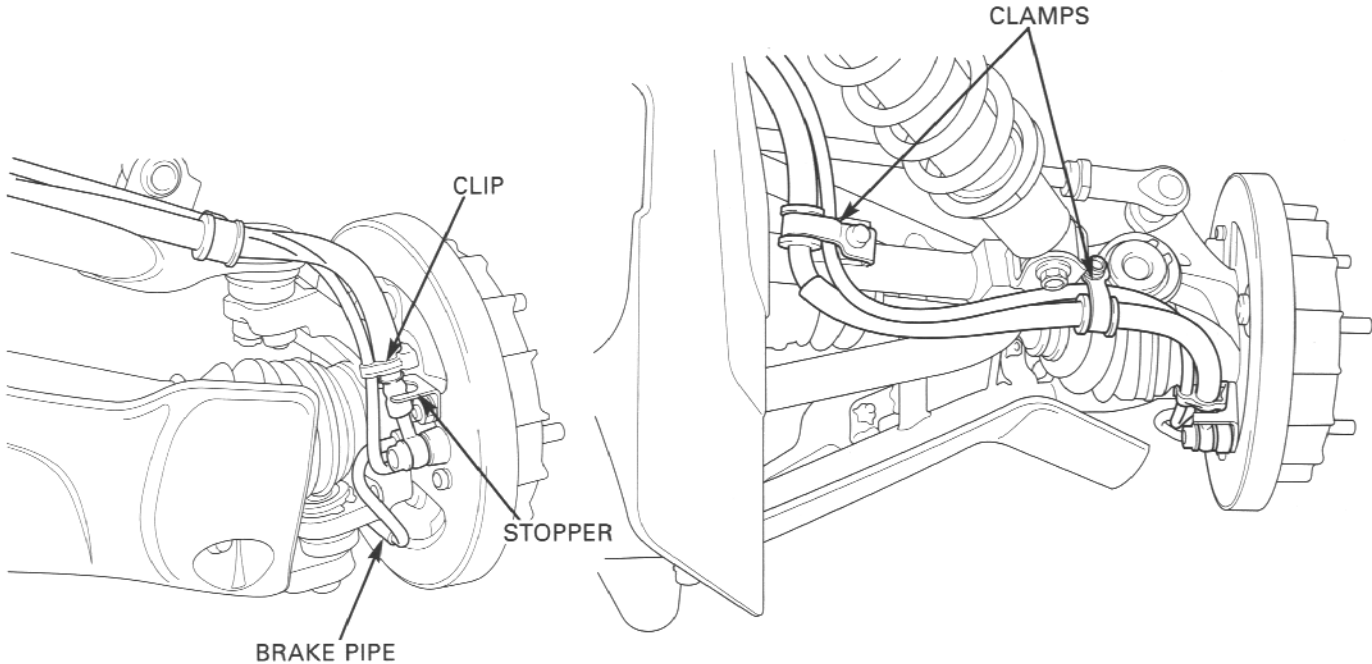
GENERAL INFORMATION





GENERAL INFORMATION





GENERAL INFORMATION

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.

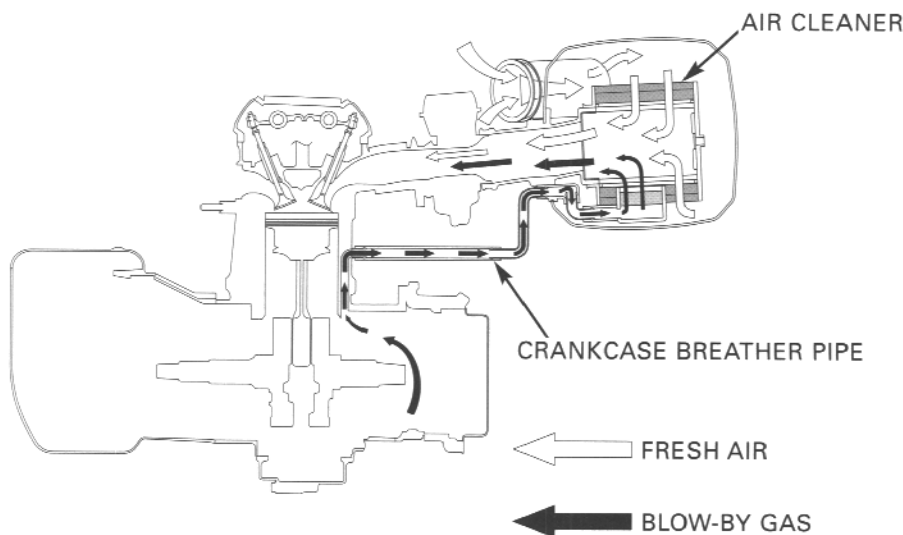
Honda Motor Co., Ltd. utilizes lean carburetor settings as well as other systems, to reduce carbon monoxide and hydrocarbons.

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

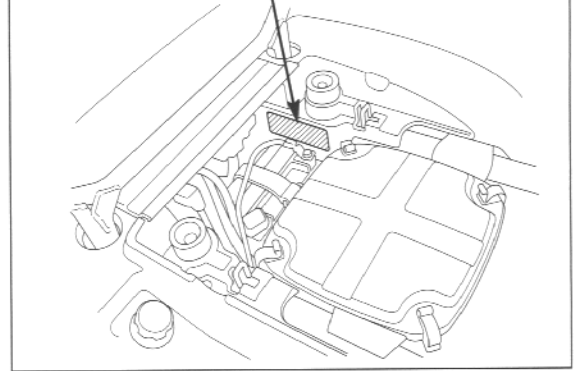
AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:

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 (U.S.A. only)

The Vehicle Emission Control Information Label is attached on the left of the battery box.

EMISSION CONTROL INFORMATION LABEL



MEMO



2. FRAME/BODY PANELS/EXHAUST SYSTEM

| | | | |
|----------------------|-----|--------------------------|------|
| SERVICE INFORMATION | 2-1 | INNER FENDER | 2-6 |
| TROUBLESHOOTING | 2-1 | FRONT CARRIER/CARRY PIPE | 2-7 |
| BODY PANEL LOCATIONS | 2-2 | FRONT FENDER | 2-7 |
| RECOIL STARTER COVER | 2-3 | REAR CARRIER | 2-8 |
| SEAT | 2-3 | REAR FENDER | 2-8 |
| ENGINE GUARD | 2-3 | TOOL BOX | 2-9 |
| SIDE COVER | 2-4 | OUTER FENDER | 2-9 |
| FUEL TANK COVER | 2-5 | HEADLIGHT GRILL | 2-9 |
| CENTER MUD GUARD | 2-5 | EXHAUST SYSTEM | 2-10 |
| FRONT MUD GUARD | 2-6 | | |

SERVICE INFORMATION

GENERAL

- This section covers removal and installation of the body panels and exhaust system.
- Always replace the gaskets when removing the exhaust system.
- Always inspect the exhaust system for leaks after installation.

TORQUE VALUES

| | |
|--|--|
| Front carrier/carry pipe bolt | 37 N·m (3.8 kgf·m, 27 lbf·ft) |
| Gearshift lever knob screw | 2 N·m (0.2 kgf·m, 1.4 lbf·ft) ALOC screw |
| Rear carrier bolt | 37 N·m (3.8 kgf·m, 27 lbf·ft) |
| Muffler band bolt | 23 N·m (2.3 kgf·m, 17 lbf·ft) |
| Front exhaust pipe cover band screw | 3 N·m (0.3 kgf·m, 2.2 lbf·ft) |
| Rear exhaust pipe cover end band screw | 6 N·m (0.6 kgf·m, 4.3 lbf·ft) |
| center band screw | 3 N·m (0.3 kgf·m, 2.2 lbf·ft) |
| Muffler cover screw | 3 N·m (0.3 kgf·m, 2.2 lbf·ft) |
| Footpeg bracket nut | 32 N·m (3.3 kgf·m, 24 lbf·ft) |

TROUBLESHOOTING

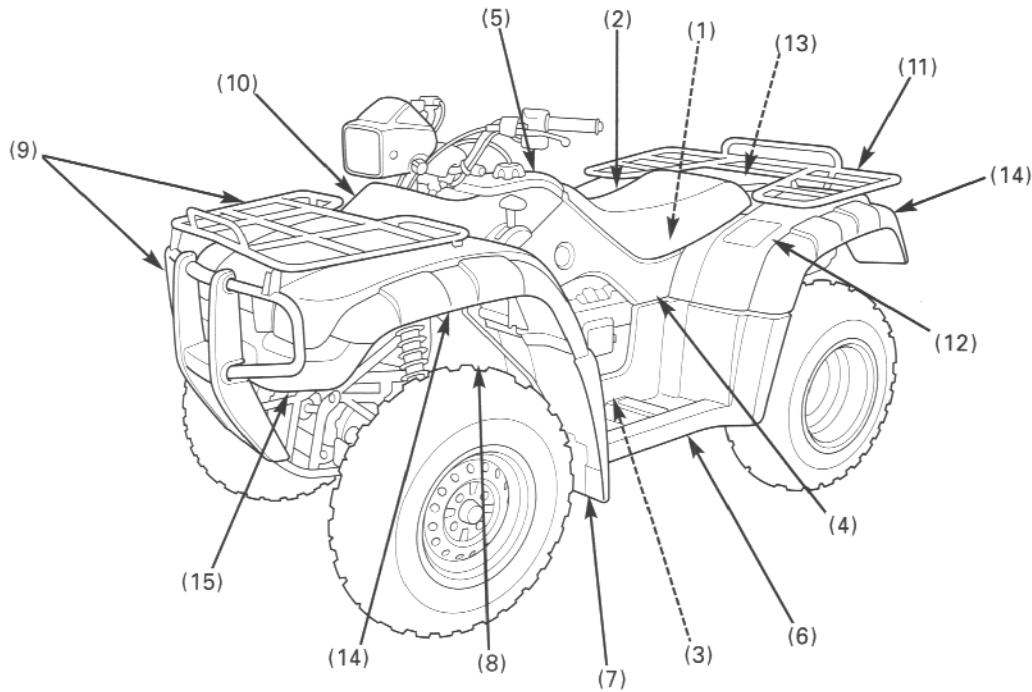
Excessive exhaust noise

- Broken exhaust system
- Exhaust gas leaks

Poor performance

- Deformed exhaust system
- Exhaust gas leaks
- Clogged muffler

BODY PANEL LOCATIONS

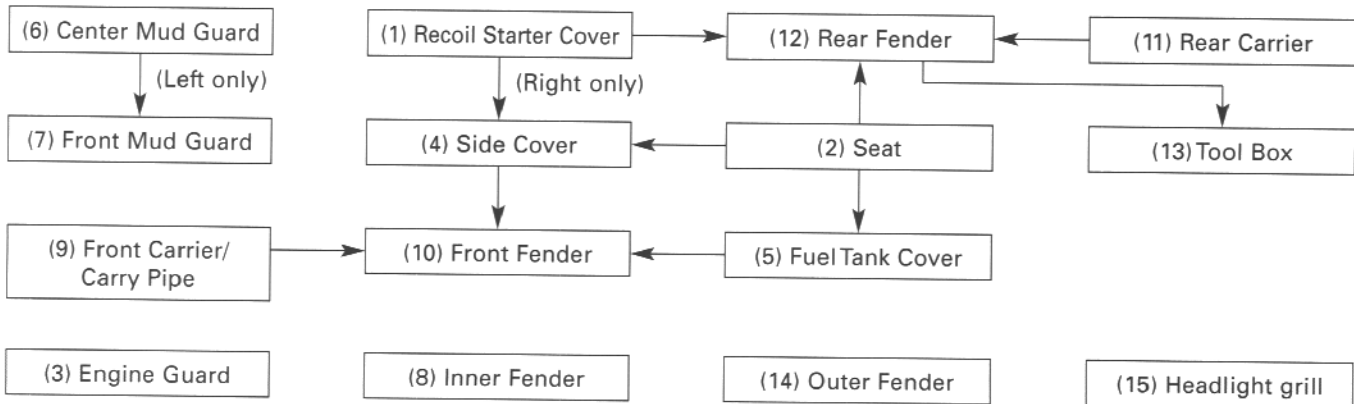


- (1) Recoil starter cover (page 2-3)
- (2) Seat (page 2-3)
- (3) Engine guard (page 2-3)
- (4) Side Cover (page 2-4)
- (5) Fuel Tank Cover (page 2-5)
- (6) Center Mud Guard (page 2-5)
- (7) Front Mud Guard (page 2-6)
- (8) Inner Fender (page 2-6)

- (9) Front Carrier/Carry Pipe (page 2-7)
- (10) Front Fender (page 2-7)
- (11) Rear Carrier (page 2-8)
- (12) Rear Fender (page 2-8)
- (13) Tool Box (page 2-9)
- (14) Outer Fender (page 2-9)
- (15) Headlight Grill (page 2-9)

BODY PANEL REMOVAL CHART

This chart shows removal order of body panels by means of arrow.



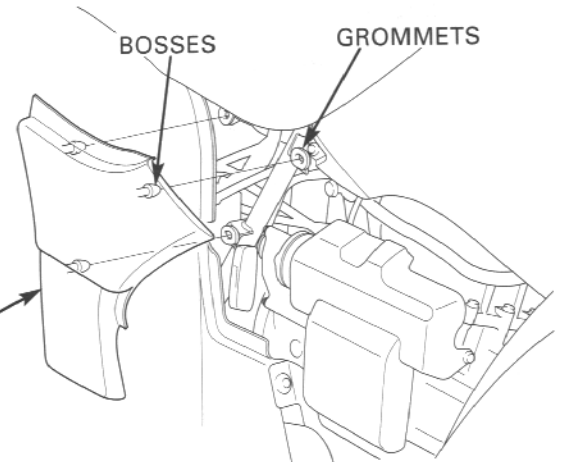
RECOIL STARTER COVER

Remove the recoil starter cover by releasing the three bosses from the grommets.

Be careful not to dislodge the grommets in the frame.

Install the recoil starter cover in the reverse order of removal.

RECOIL STARTER COVER



SEAT

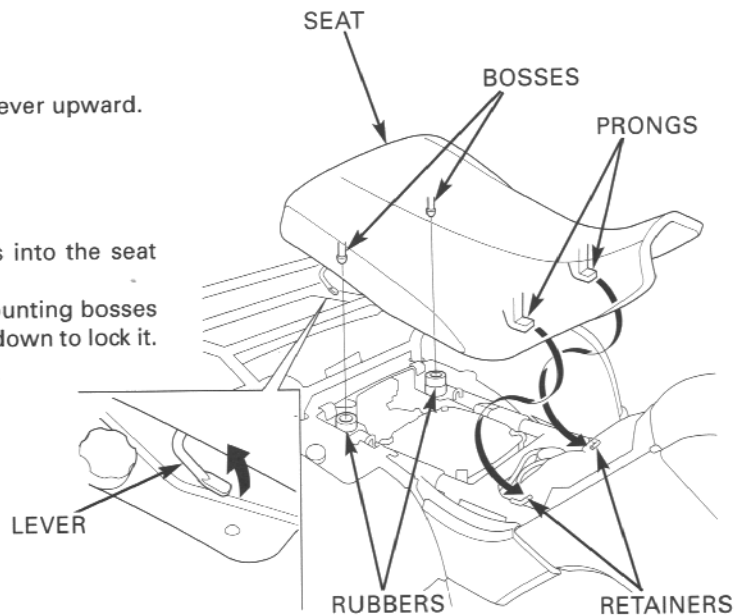
REMOVAL

Unlock the seat by turning the release lever upward. Pull the seat back and remove it.

INSTALLATION

Install the seat by inserting the prongs into the seat retainer on the frame.

Push the seat forward and align the mounting bosses with the mounting rubbers, then press down to lock it.

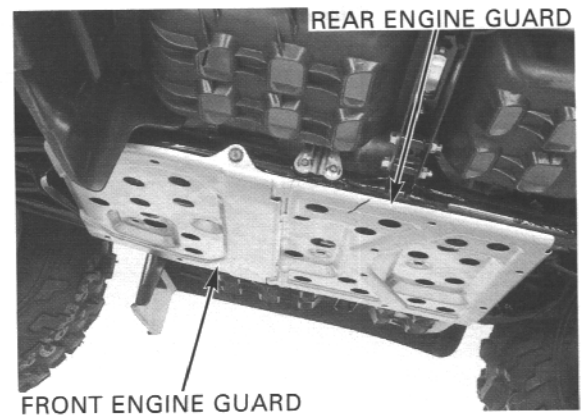


ENGINE GUARD

Remove the following:

- four bolts and 28 mm washers
- front engine guard
- two bolts and 28 mm washers
- rear engine guard

Installation is in the reverse order of removal.



SIDE COVER

RIGHT SIDE:

Remove the following:

- seat (page 2-3)
- recoil starter cover (page 2-3)
- four trim clips
- side cover (release two tabs of cover by sliding cover rearward)

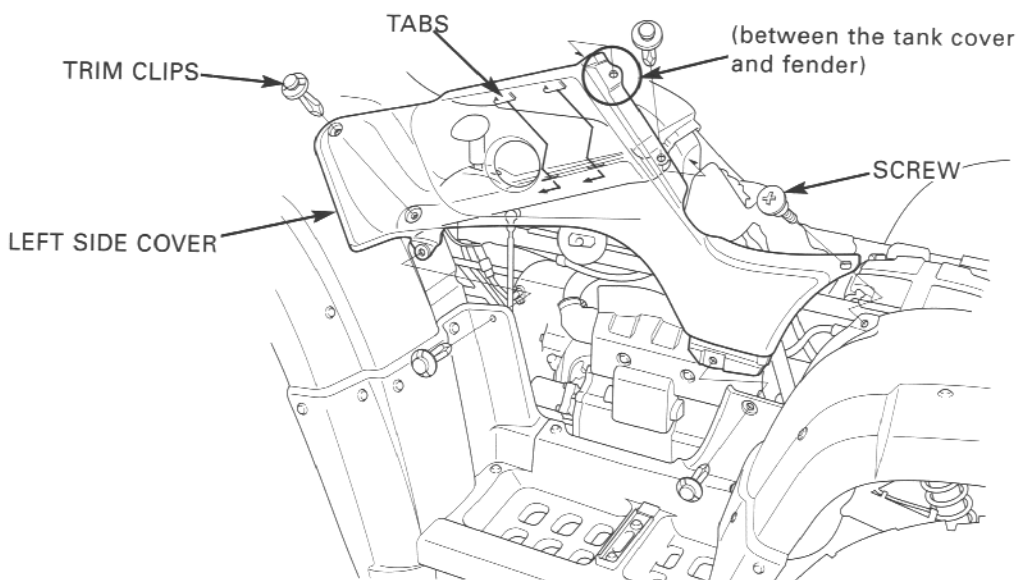
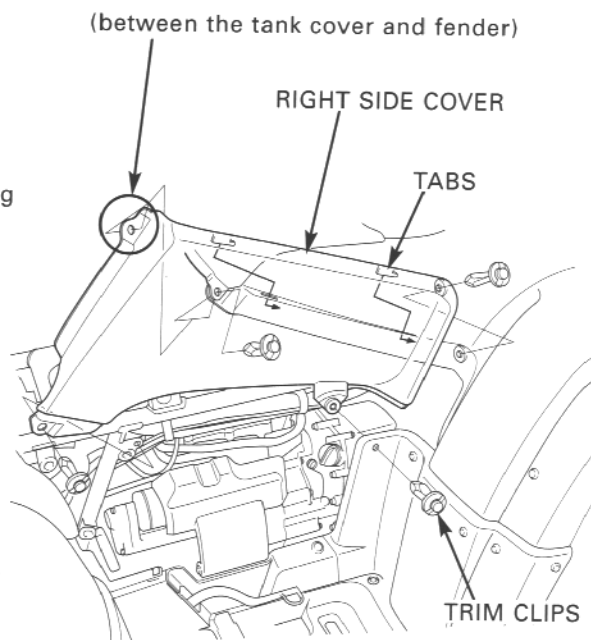
Installation is in the reverse order of removal.

LEFT SIDE:

Remove the following:

- seat (page 2-3)
- setting screw
- four trim clips
- side cover (release two tabs of cover by sliding cover rearward)

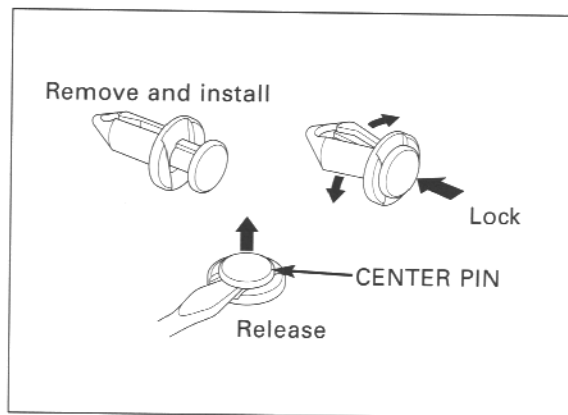
Installation is in the reverse order of removal.



Trim clip removal and retaining procedure:

- Release by pulling the center pin up using a snap ring pliers or flat blade screwdriver and remove the trim clip.
- Install the clip and lock it by pushing the center pin securely.

When installing the trim clip, carefully align the clip hole to avoid damaging the clip.



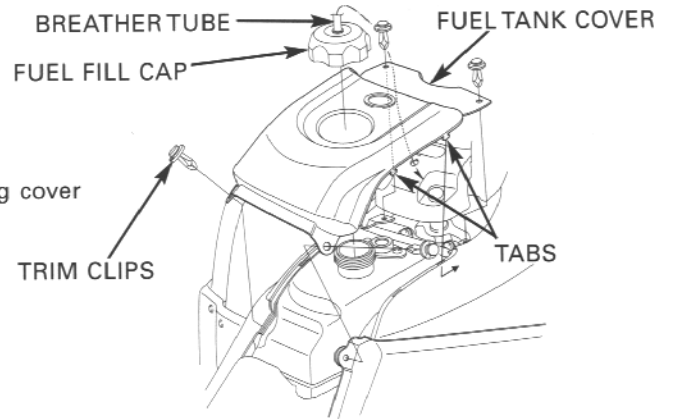
FUEL TANK COVER

Remove the following:

- seat (page 2-3)
- four trim clips
- fuel tank breather tube and fuel fill cap
- fuel tank cover (release four tabs by sliding cover rearward)

Install the fuel fill cap.

Installation is in the reverse order of removal.



CENTER MUD GUARD

RIGHT SIDE:

Remove the following:

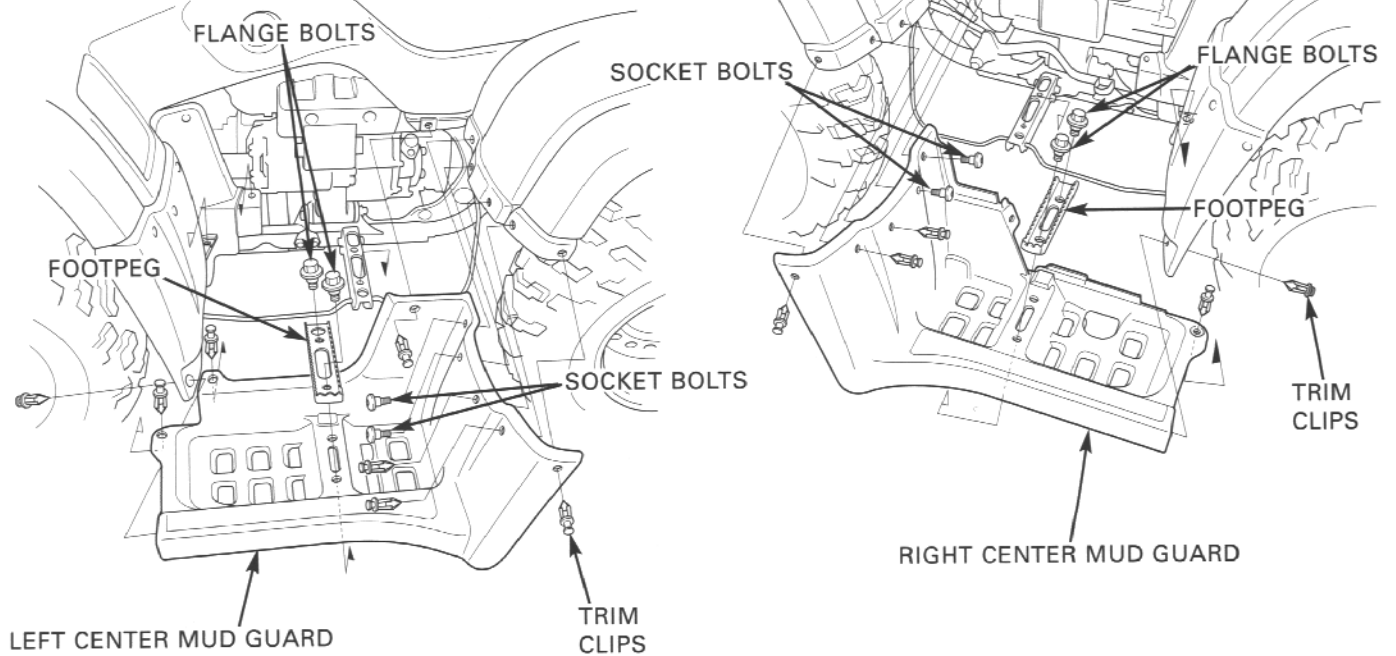
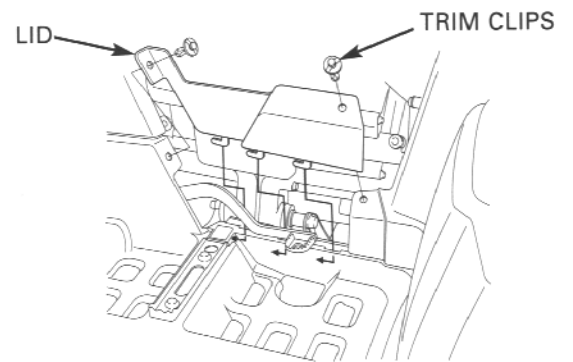
- recoil starter cover (page 2-3)
- two trim clips and mud guard lid
- two bolts and footpeg
- two socket bolts
- five trim clips
- center mud guard

LEFT SIDE:

Remove the following:

- two bolts and footpeg
- two socket bolts
- seven trim clips
- center mud guard

Installation is in the reverse order of removal.



FRONT MUD GUARD

RIGHT SIDE:

Remove the following:

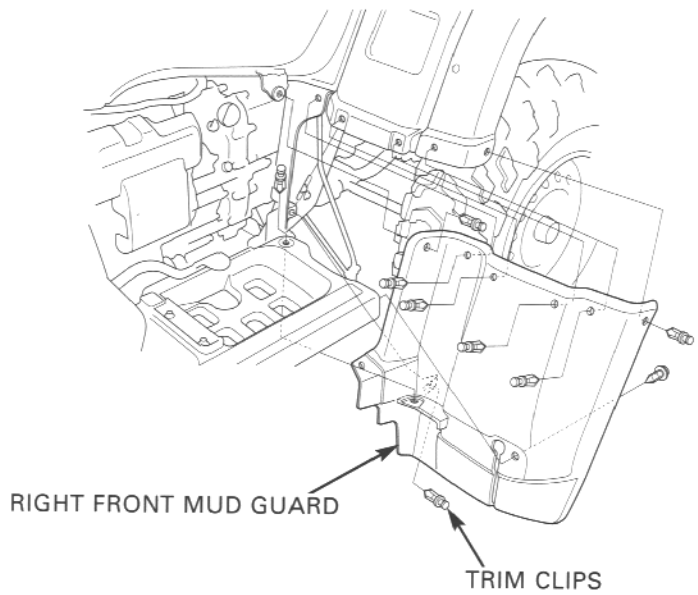
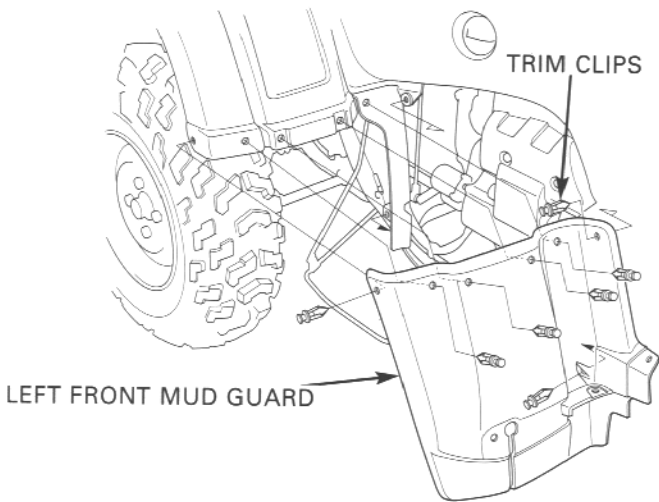
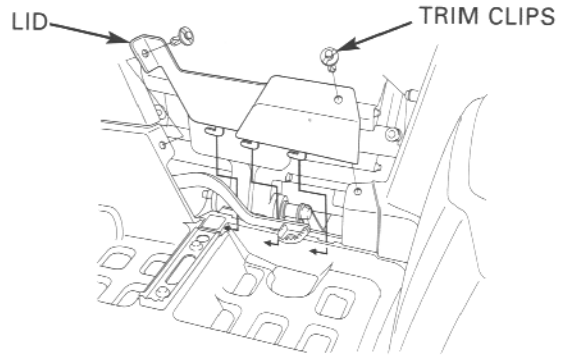
- two trim clips and mud guard lid
- nine trim clips
- front mud guard

LEFT SIDE:

Remove the following:

- left center mud guard (page 2-5)
- seven trim clips
- front mud guard

Installation is in the reverse order of removal.

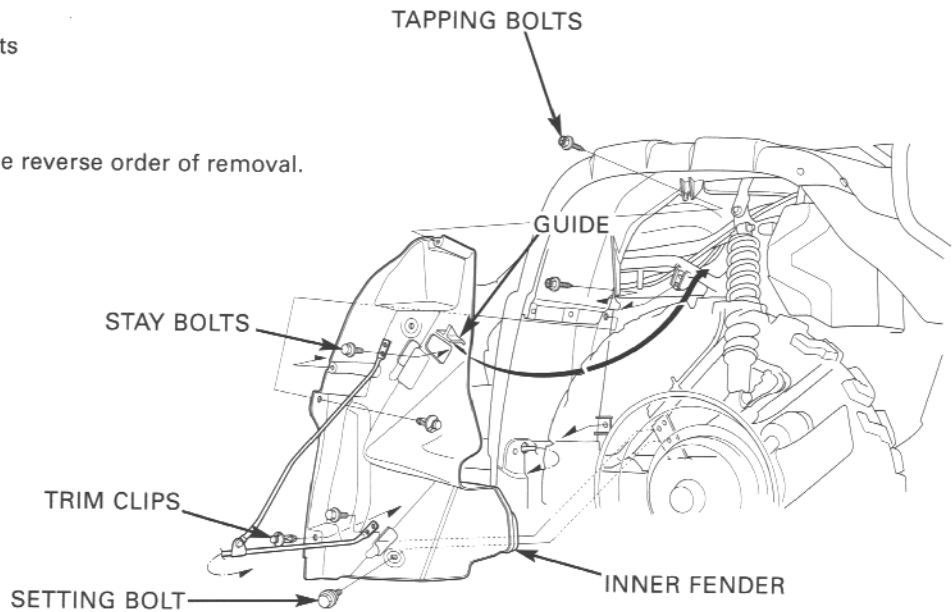


INNER FENDER

Remove the following:

- two stay bolts
- two trim clips
- two tapping bolts
- setting bolt
- inner fender

Installation is in the reverse order of removal.



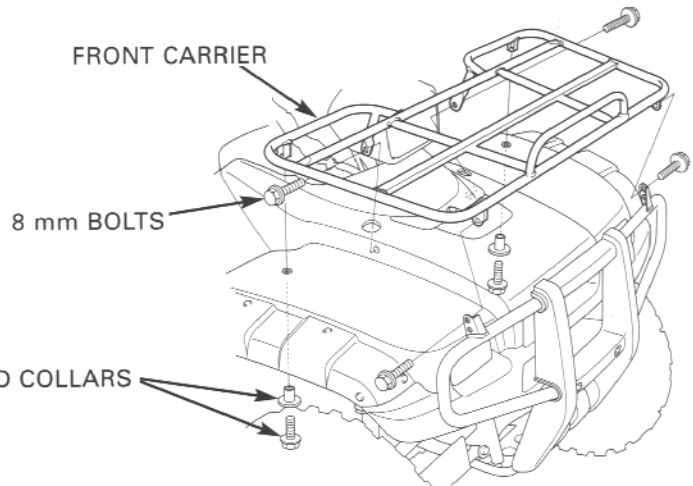
FRONT CARRIER/CARRY PIPE

FRONT CARRIER:

Remove the following:

- two 6 mm bolts and two collars
- four 8 mm bolts
- front carrier

Be careful not to scratch the front fender.



CARRY PIPE:

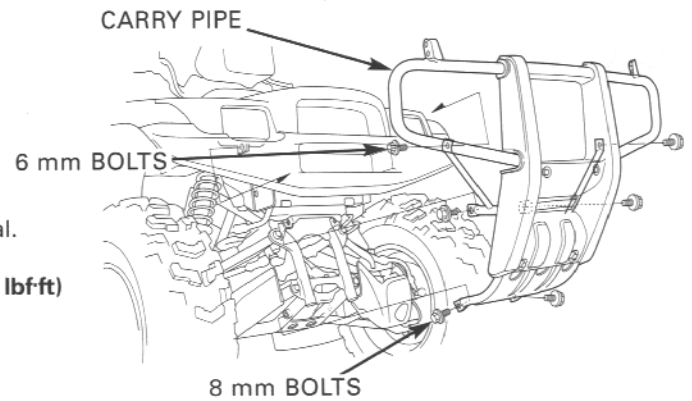
Remove the following:

- front carrier (page 2-7)
- two 6 mm bolts (headlight case)
- four 8 mm bolts
- carry pipe

Be careful not to damage the headlight grill.

Installation is in the reverse order of removal.

TORQUE: 8 mm bolts: 37 N·m (3.8 kgf·m, 27 lbf·ft)



FRONT FENDER

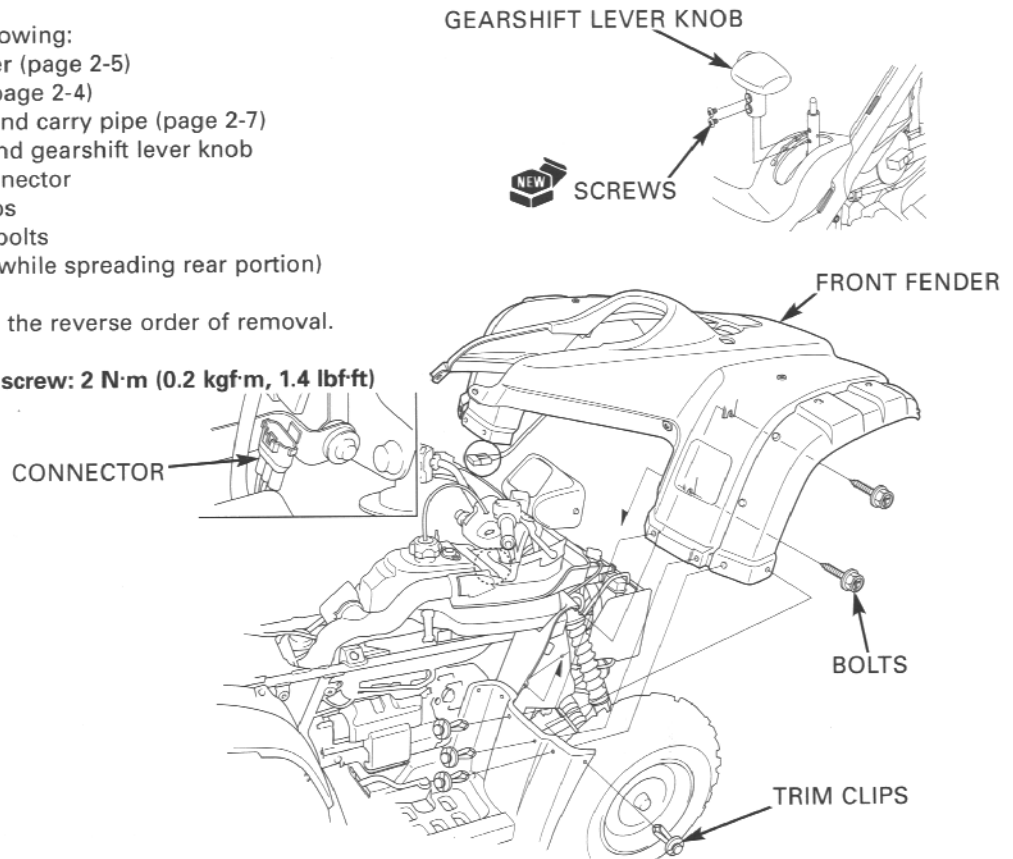
Remove the following:

- fuel tank cover (page 2-5)
- side covers (page 2-4)
- front carrier and carry pipe (page 2-7)
- two screws and gearshift lever knob
- headlight connector
- eight trim clips
- four tapping bolts
- front fender (while spreading rear portion)

Gearshift lever knob screws should be replaced with new ones.

Installation is in the reverse order of removal.

TORQUE: Knob screw: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)



REAR CARRIER

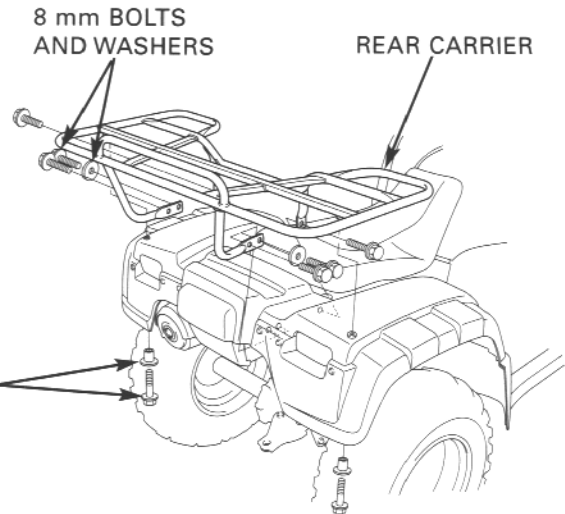
Remove the following:

- taillight wiring harness band
- two 6 mm bolts and two collars
- six 8 mm bolts and two washers
- rear carrier

Installation is in the reverse order of removal.

TORQUE: 8 mm bolts: 37 N·m (3.8 kgf·m, 27 lbf·ft)

6 mm BOLTS AND COLLARS



REAR FENDER

Remove the battery (page 19-4)

Remove the following from the battery box:

- fuse box
- 2P connectors
- starter relay switch

Remove the following body panels:

- recoil starter cover (page 2-3)
- left side cover (page 2-4)
- rear carrier (see above)

Remove the following from the rear fender:

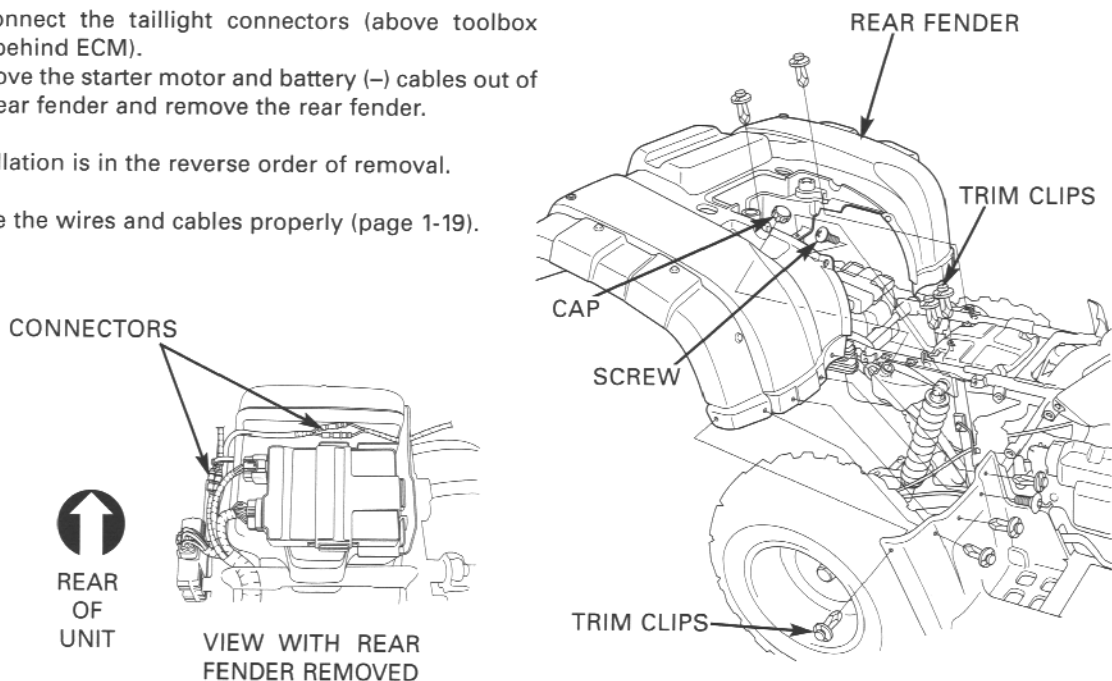
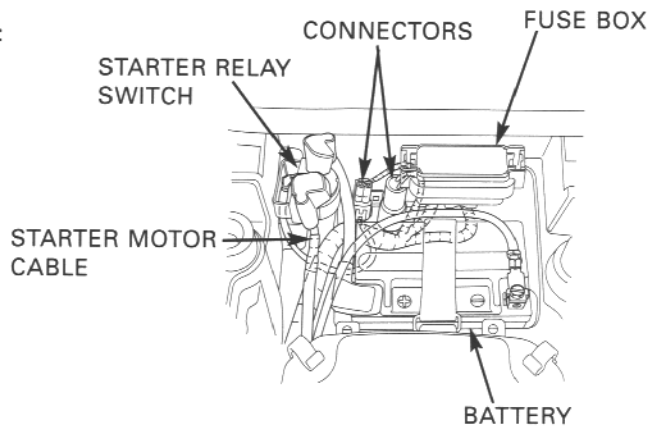
- radiator reserve tank cap
- setting screw (right side)
- four trim clips (upper side)
- eight trim clips (mud guard side)

Disconnect the taillight connectors (above toolbox and behind ECM).

Remove the starter motor and battery (-) cables out of the rear fender and remove the rear fender.

Installation is in the reverse order of removal.

Route the wires and cables properly (page 1-19).



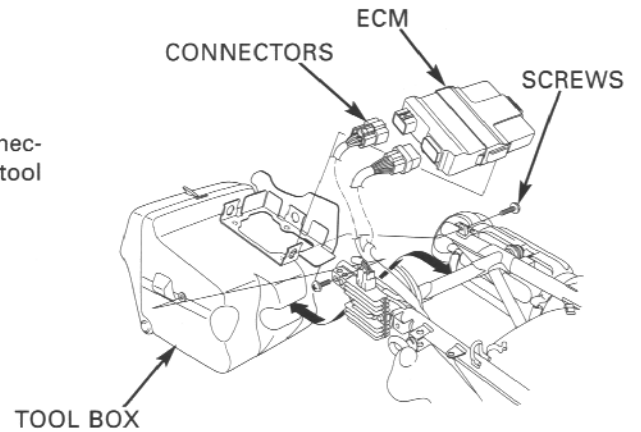
TOOL BOX

Remove the rear fender (page 2-8).

Disconnect the engine control module (ECM) connectors and remove the ECM from the stay on the tool box.

Remove the two screws and the tool box.

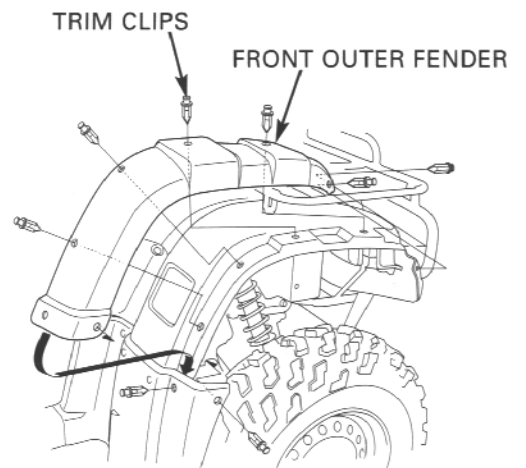
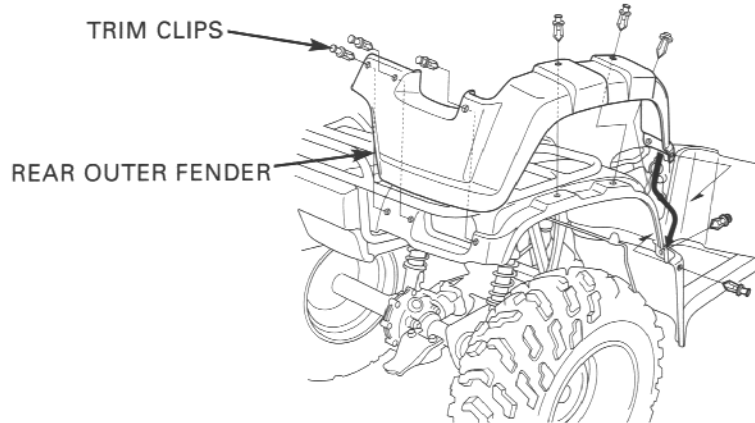
Installation is in the reverse order of removal.



OUTER FENDER

Remove the eight trim clips and the outer fender.

Installation is in the reverse order of removal.



HEADLIGHT GRILL

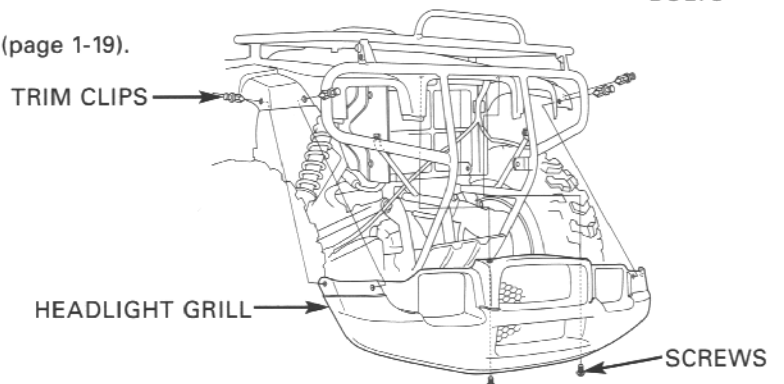
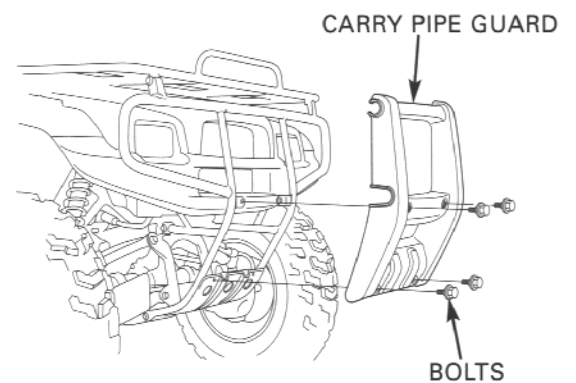
Remove the headlights (page 22-3).

Remove the following:

- four bolts and carry pipe guard
- two screws
- four trim clips
- headlight grill (releasing from four tabs of fender)

Installation is in the reverse order of removal.

Route the headlight wires properly (page 1-19).



EXHAUST SYSTEM

REMOVAL

EXHAUST PIPE

Remove the two bolts and left engine side cover.

Loosen the muffler band bolts.

Remove the joint nuts and pull the exhaust pipe forward gradually to disconnect it from the muffler.

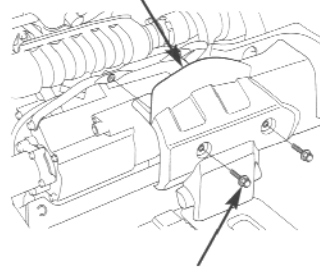
Remove the joint gasket and muffler gasket.

MUFFLER

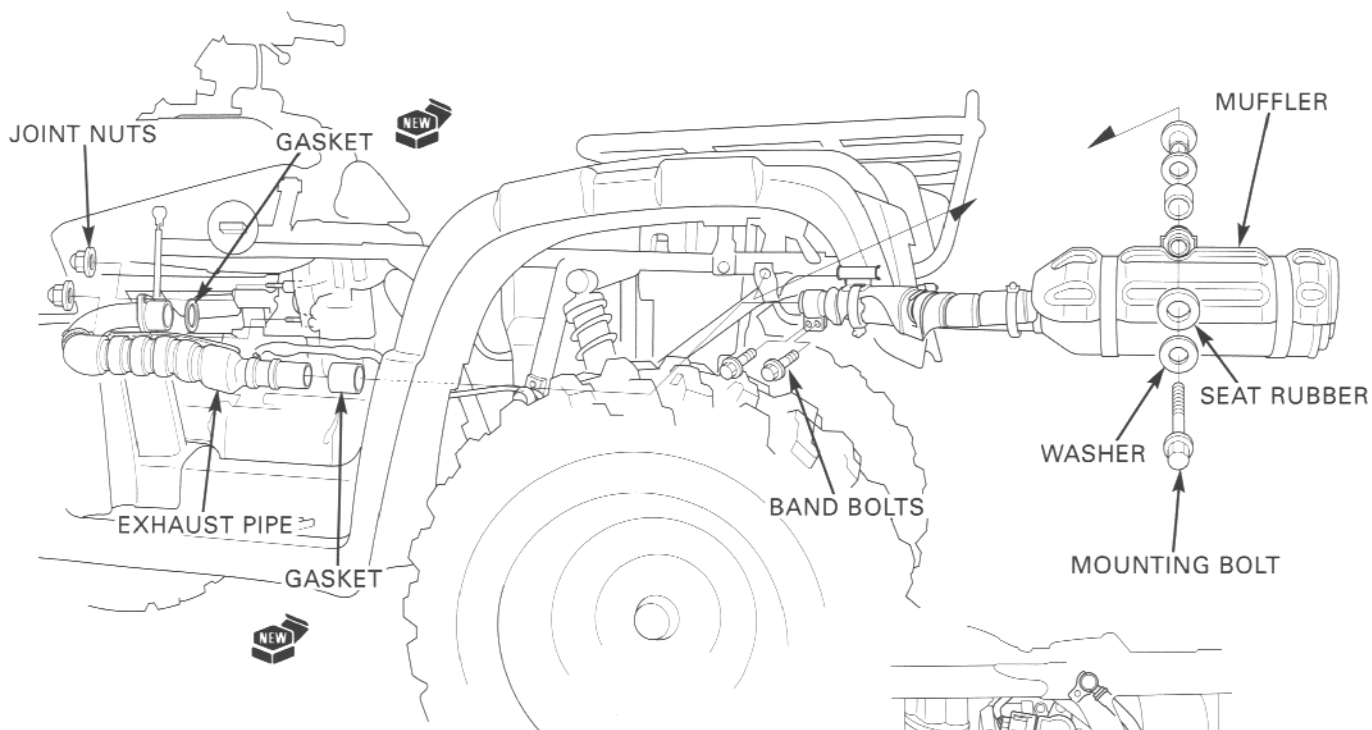
Release the crankcase breather pipe clips from the stay on the muffler.

Remove the mounting bolt, washer and seat rubber, and the muffler from the frame.

LEFT ENGINE SIDE COVER



COVER BOLTS



INSTALLATION

Install new joint and muffler gaskets.

Install the muffler and exhaust pipe in the reverse order of removal by loosely tightening all fasteners.

Tighten the joint nuts first, then tighten the mounting nut and the band bolts.

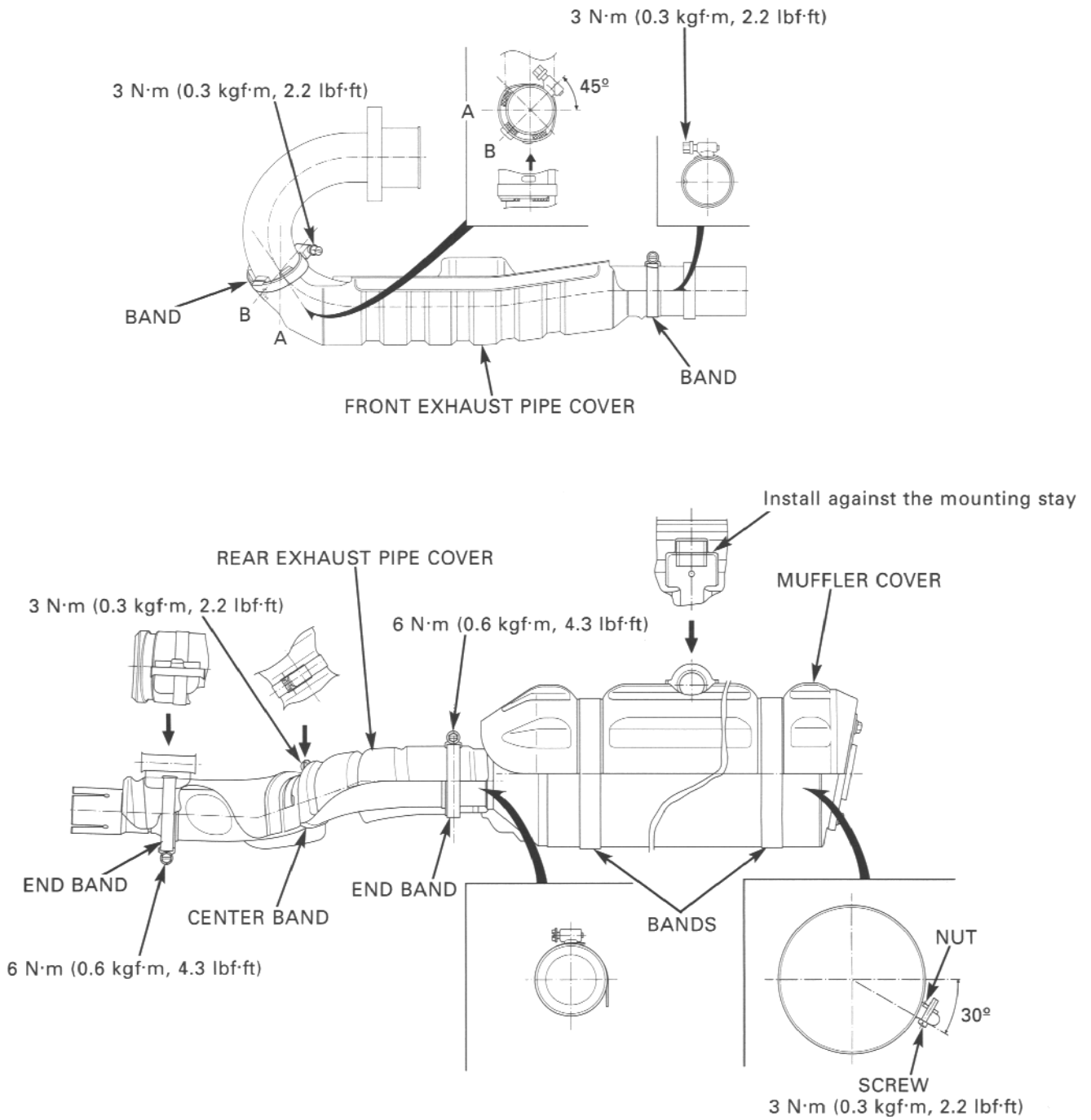
TORQUE:

Muffler band bolt: 23 N·m (2.3 kgf·m, 17 lbf·ft)

After installation, inspect the exhaust system for leaks.

Install the left engine cover and the fender stay by tightening the bolts.

DISASSEMBLY/ASSEMBLY



MEMO



3. MAINTENANCE

| | | | |
|--------------------------------|------|---|------|
| SERVICE INFORMATION | 3-1 | DRIVE SHAFT BOOTS | 3-13 |
| MAINTENANCE SCHEDULE | 3-3 | REAR FINAL GEAR CASE OIL AND DIFFERENTIAL OIL | 3-14 |
| FUEL LINE | 3-4 | BRAKE FLUID | 3-15 |
| THROTTLE OPERATION | 3-4 | BRAKE SHOE WEAR | 3-16 |
| CARBURETOR CHOKE | 3-5 | BRAKE SYSTEM | 3-17 |
| AIR CLEANER | 3-5 | SKID PLATE, ENGINE GUARD | 3-18 |
| AIR CLEANER HOUSING DRAIN TUBE | 3-7 | SUSPENSION | 3-18 |
| SPARK PLUG | 3-7 | SPARK ARRESTER | 3-19 |
| VALVE CLEARANCE | 3-8 | NUTS, BOLTS, FASTENERS | 3-20 |
| ENGINE OIL | 3-10 | WHEELS/TIRES | 3-20 |
| ENGINE OIL FILTER | 3-11 | STEERING SHAFT HOLDER BEARING | 3-20 |
| ENGINE IDLE SPEED | 3-12 | STEERING SYSTEM | 3-21 |
| RADIATOR COOLANT | 3-12 | | |
| COOLING SYSTEM | 3-13 | | |

SERVICE INFORMATION

GENERAL

- Place the vehicle on level ground before starting any work.

SPECIFICATIONS

| ITEM | | SPECIFICATIONS |
|---------------------------------|-----------------------------------|--|
| Throttle lever free play | | 3—8 mm (1/8—5/16 in) |
| Spark plug | Standard | IJR7A9 (NGK), VX22BC (DENSO) |
| | For cold climate (below 5°C/48°F) | IJR6A9 (NGK), VX20BC (DENSO) |
| Spark plug gap | | 0.8—0.9 mm (0.03—0.04 in) |
| Valve clearance | IN | 0.15 mm (0.006 in) |
| | EX | 0.23 mm (0.009 in) |
| Engine oil capacity | After draining | 4.7 liters (5.0 US qt, 4.1 Imp qt) |
| | After draining/filter change | 4.9 liters (5.2 US qt, 4.3 Imp qt) |
| | After disassembly | 5.5 liters (5.8 US qt, 4.8 Imp qt) |
| Recommended engine oil | | Honda GN4 4-stroke oil or equivalent motor oil API service classification SF or SG Viscosity: SAE 10W-40 |
| Engine idle speed | | 1,400 ± 100 rpm |
| Front differential oil capacity | After draining | 241 cm ³ (8.2 US oz, 8.5 Imp oz) |
| | After disassembly | 275 cm ³ (9.3 US oz, 9.7 Imp oz) |
| Recommended differential oil | | Hypoid gear oil SAE #80 |
| Rear final drive oil capacity | After draining | 90 cm ³ (3.0 US oz, 3.2 Imp oz) |
| | After disassembly | 100 cm ³ (3.4 US oz, 3.5 Imp oz) |
| Recommended final drive oil | | Hypoid gear oil SAE #80 |

MAINTENANCE

| ITEM | | SPECIFICATIONS |
|--------------------------------------|------------|--|
| Recommended brake fluid | | DOT 3 or DOT 4 brake fluid |
| Front brake shoe lining thickness | | Standard: 4.0 mm (0.16 in)/Service limit: 2.0 mm (0.08 in) |
| Front brake lever free play | | 25—30 mm (1—1-3/16 in) |
| Rear (parking) brake lever free play | | 15—20 mm (9/16—13/16 in) |
| Rear brake pedal free play | | 15—20 mm (9/16—13/16 in) |
| Cold tire pressure (Front/Rear) | Standard | 25 kPa (0.25 kgf/cm ² , 3.6 psi) |
| | Minimum | 22 kPa (0.22 kgf/cm ² , 3.2 psi) |
| | Maximum | 28 kPa (0.28 kgf/cm ² , 4.0 psi) |
| | With cargo | 25 kPa (0.25 kgf/cm ² , 3.6 psi) |
| Tire size | Front | AT25 x 8-12 |
| | Rear | AT25 x 10-12 |
| Tire brand | Front | DIRT HOOKS 15 (Bridgestone) |
| | Rear | DIRT HOOKS 14 (Bridgestone) |
| Minimum tread depth (Front/Rear) | | 4.0 mm (0.16 in) |
| Toe | | Toe-out: 24 ± 15 mm (1 ± 9/16 in) |

TORQUE VALUES

| | |
|---|-------------------------------|
| Spark plug | 18 N·m (1.8 kgf·m, 13 lbf·ft) |
| Valve adjusting lock nut | 17 N·m (1.7 kgf·m, 12 lbf·ft) |
| Timing hole cap | 10 N·m (1.0 kgf·m, 7 lbf·ft) |
| Engine oil drain bolt | 25 N·m (2.5 kgf·m, 18 lbf·ft) |
| Engine oil filter center bolt | 18 N·m (1.8 kgf·m, 13 lbf·ft) |
| Front differential oil filler cap | 12 N·m (1.2 kgf·m, 9 lbf·ft) |
| Front differential oil drain bolt | 12 N·m (1.2 kgf·m, 9 lbf·ft) |
| Rear final gear case oil check bolt | 12 N·m (1.2 kgf·m, 9 lbf·ft) |
| Rear final gear case oil filler cap | 12 N·m (1.2 kgf·m, 9 lbf·ft) |
| Rear final gear case oil drain bolt | 12 N·m (1.2 kgf·m, 9 lbf·ft) |
| Front master cylinder reservoir cap screw | 2 N·m (0.2 kgf·m, 1.4 lbf·ft) |
| Tie-rod lock nut | 54 N·m (5.5 kgf·m, 40 lbf·ft) |

MAINTENANCE SCHEDULE

Perform the PRE-RIDE INSPECTION in the Owner's Manual at each scheduled maintenance period.
 I: Inspect and Clean, Adjust, Lubricate or Replace if necessary.
 C: Clean R: Replace A: Adjust L: Lubricate

| ITEMS | FREQUENCY | WHICHEVER COMES FIRST → ↓ NOTE | INITIAL MAINTENANCE | | | REGULAR MAINTENANCE INTERVAL | | Refer to page |
|----------------------------|---|---|---------------------|-----|--------------------|------------------------------|------|---------------|
| | | | mi | 100 | 600 | 1,200 | | |
| | | | km | 150 | 1,000 | 2,000 | | |
| | | | HOURS | 20 | 100 | 200 | | |
| EMISSION RELATED ITEMS | * FUEL LINE | | | | | I | 3-4 | |
| | * THROTTLE OPERATION | | | | | I | 3-4 | |
| | * CARBURETOR CHOKE | | | | | I | 3-5 | |
| | AIR CLEANER | NOTE 1 | | | C | C | 3-5 | |
| | AIR CLEANER HOUSING DRAIN TUBE | NOTE 2 | | | I | I | 3-7 | |
| | SPARK PLUG | | | | | I | 3-7 | |
| | * VALVE CLEARANCE | | | I | I | I | 3-8 | |
| | ENGINE OIL | | | R | R | R | 3-9 | |
| | ENGINE OIL FILTER | | | R | R | R | 3-11 | |
| | * ENGINE IDLE SPEED | | | I | I | I | 3-12 | |
| | RADIATOR COOLANT | NOTE 3 | | | I | I | 3-12 | |
| | * COOLING SYSTEM | NOTE 2 | | | I | I | 3-13 | |
| NON-EMISSION RELATED ITEMS | DRIVE SHAFT BOOTS | | | | | I | 3-13 | |
| | REAR FINAL GEAR CASE OIL AND DIFFERENTIAL OIL | | | | (R: Every 2 years) | I | 3-14 | |
| | * BRAKE FLUID | NOTE 3 | | | | I | 3-15 | |
| | * BRAKE SHOE WEAR | NOTE 1 | | | | I | 3-16 | |
| | BRAKE SYSTEM | | | I | I | I | 3-17 | |
| | SKID PLATE, ENGINE GUARD | | | | | I | 3-18 | |
| | * SUSPENSION | | | | | I | 3-18 | |
| | * SPARK ARRESTER | | | | C | C | 3-19 | |
| | * NUTS, BOLTS, FASTENERS | | | I | | I | 3-20 | |
| | ** WHEELS/TIRES | | | I | I | I | 3-20 | |
| | ** STEERING SHAFT HOLDER BEARING | | | | | I | 3-20 | |
| ** STEERING SYSTEM | | | | | I | 3-21 | | |

* Should be serviced by your Honda dealer, unless the owner has proper tools and service data and is mechanically qualified.
 ** In the interest of safety, we recommend these items be serviced only by your Honda dealer.

NOTES: 1. Service more frequently when riding in dusty areas, sand or snow.
 2. Service more frequently after riding in very wet or muddy conditions.
 3. Replace every 2 years. Replacement requires mechanical skill.

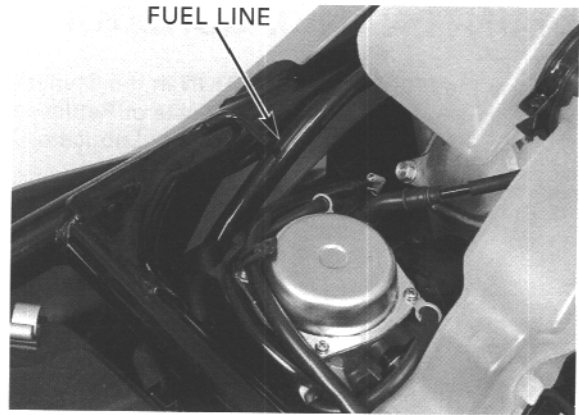
MAINTENANCE

FUEL LINE

Remove the seat (page 2-3).

Check the fuel line for deterioration, damage or leakage.

Replace the fuel line if necessary.



THROTTLE OPERATION

Check for any deterioration or damage to the throttle cable. Check the throttle lever for smooth operation. Check that the throttle opens and automatically closes in all steering positions.

If the throttle lever does not return properly, lubricate the throttle cable and overhaul and lubricate the throttle housing.

For cable lubrication: Disconnect the throttle cable at its upper end. Thoroughly lubricate the cable and its pivot point with a commercially available cable lubricant or a light weight oil.

Reusing a damaged or abnormally bent or kinked throttle cable can prevent proper throttle slide operation and may lead to a loss of throttle control while riding.

If the throttle lever still does not return properly, replace the throttle cable.

With the engine idling, turn the handlebar all the way to the right and left to ensure that the idle speed does not change. If idle speed increases, check the throttle lever free play and the throttle cable connection.

Measure the throttle lever free play at the tip of the throttle lever.

THROTTLE LEVER FREE PLAY:

3—8 mm (1/8—5/16 in)

Throttle lever free play can be adjusted at either end of the throttle cable. Minor adjustments are made with the upper adjuster.

Slide the rubber boot off the adjuster. Loosen the lock nut, turn the adjuster as required and tighten the lock nut.

Install the rubber boot securely.

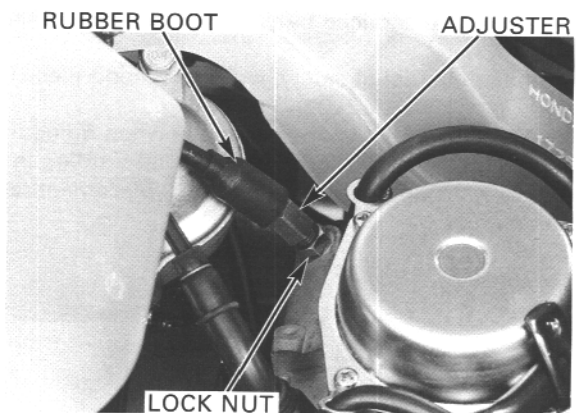
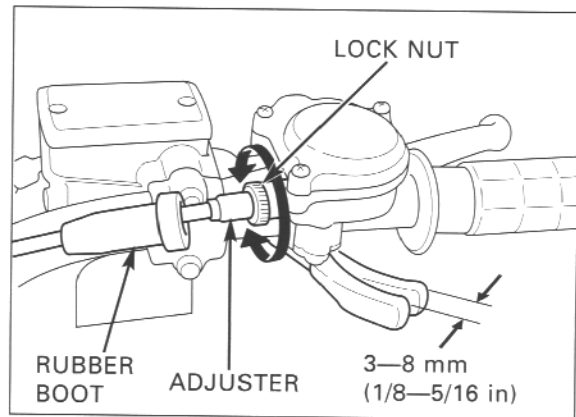
Major adjustments are made with the lower adjuster.

Remove the seat (page 2-3).

Slide the rubber boot off the adjuster. Loosen the lock nut, turn the adjuster as required and tighten the lock nut.

Install the rubber boot securely.

Recheck the throttle operation and install the seat (page 2-3).

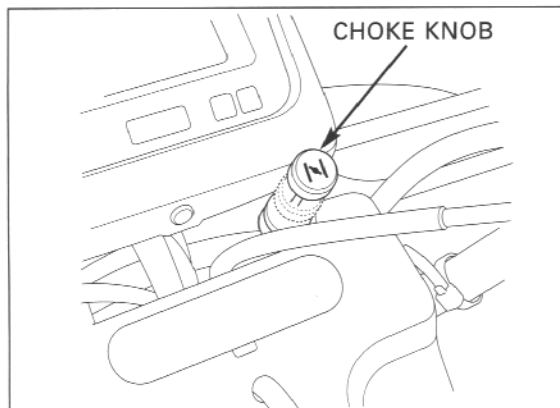


CARBURETOR CHOKE

This model's choke system uses a fuel enriching circuit controlled by a starting enrichment (SE) valve. The SE valve opens the enriching circuit via a cable when the choke knob on the handlebar is pulled up.

Check for smooth choke knob operation and lubricate the choke cable if required.

Check the choke cable for fraying, kinking or other damage.



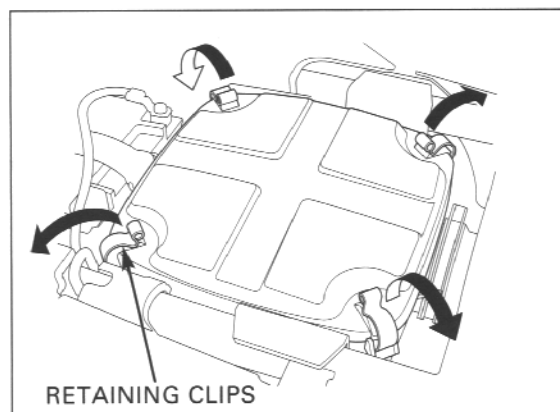
AIR CLEANER

Remove the seat (page 2-3).

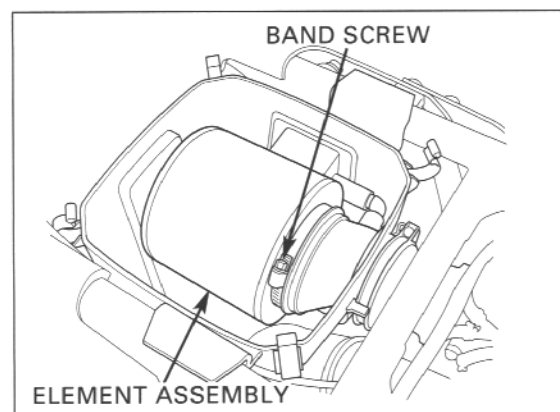
Release the retaining clips from the air cleaner housing cover and remove the cover.

NOTE:

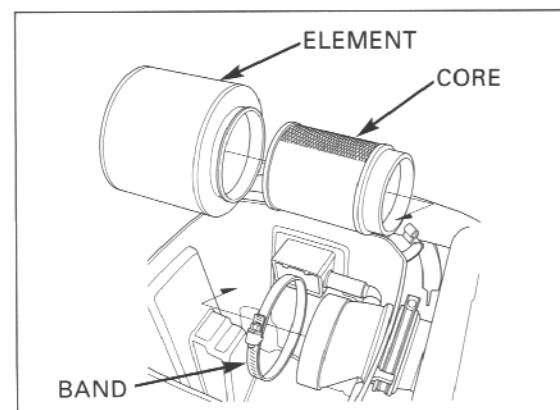
- If the vehicle is used in dusty areas, sand or snow, more frequent inspections are required.



Loosen the air cleaner element band screw. Remove the air cleaner element assembly from the housing.



Remove the air cleaner element band and element core from the element.





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