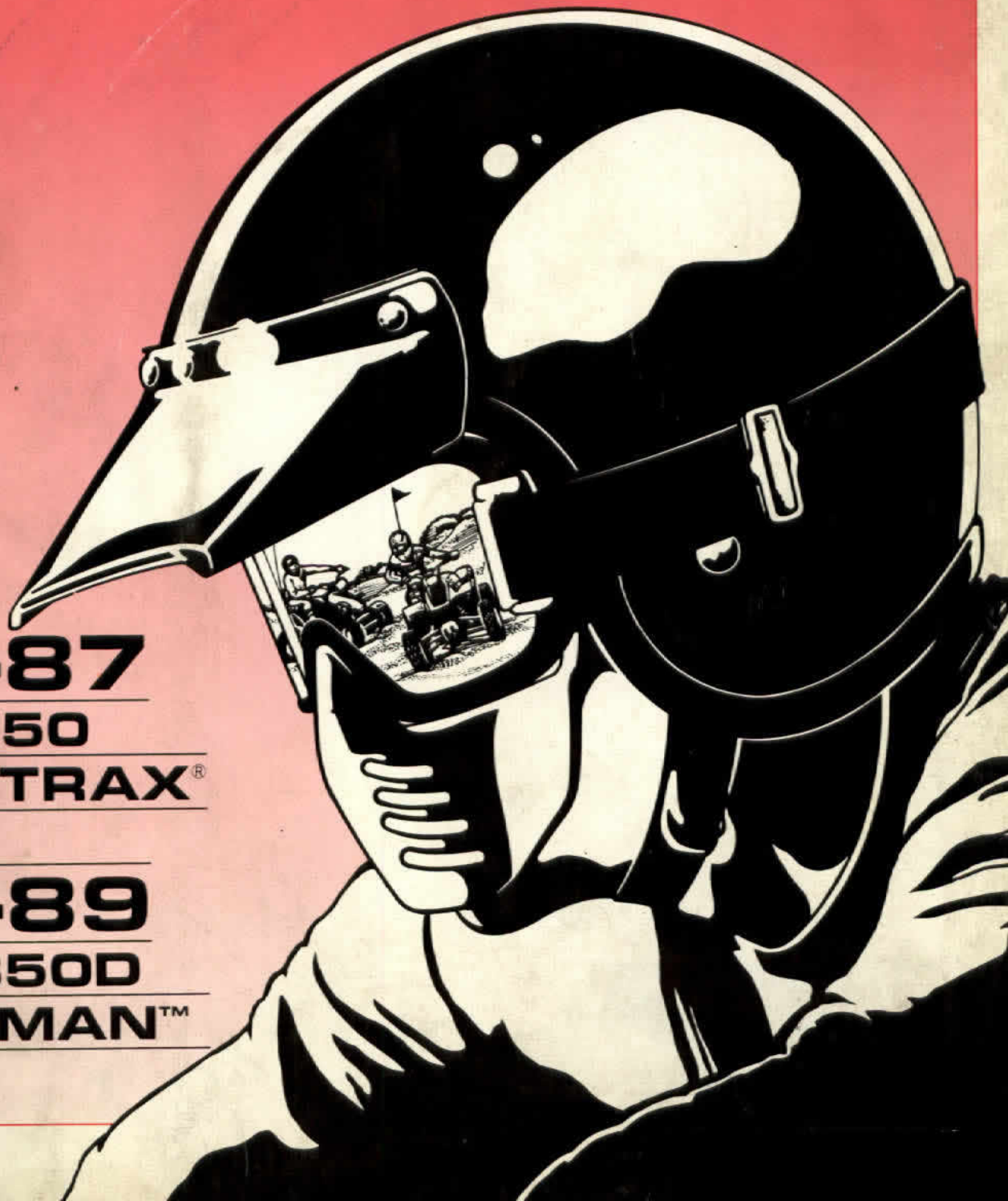


# HONDA

## SERVICE MANUAL



**86-87**

**TRX350**

**FOURTRAX<sup>®</sup>**

**4×4**


**87-89**

**TRX350D**

**FOREMAN<sup>™</sup>**

**4×4**

## IMPORTANT SAFETY NOTICE

 **WARNING** *Indicates a strong possibility of severe personal injury or death if instructions are not followed.*

**CAUTION:** *Indicates a possibility of personal injury or equipment damage if instructions are not followed.*

**NOTE:** Gives helpful information.

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. It is important to note that this manual contains some warnings and cautions against some specific service methods which could cause **PERSONAL INJURY** to service personnel or could damage a vehicle or render it unsafe. Please understand that those warnings could not cover all conceivable ways in which service, whether or not recommended by Honda might be done or of the possibly hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized by the service method or tools selected.

## HOW TO USE THIS MANUAL

Sections 1 through 3 apply to the complete FOURTRAX and FOREMAN, while sections 4 through 21 describe parts of the FOURTRAX and FOREMAN, grouped according to location.

Find the section you want on this page, then turn to the table of contents on page 1 of that section.

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

If you are not familiar with this vehicle, read the Technical Features in section 22.

If you don't know the source of the trouble, go to section 23, Troubleshooting.

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# 1. GENERAL INFORMATION

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## GENERAL SAFETY

### WARNING

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

### WARNING

*The battery generates hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near the battery, especially while charging it.*

### WARNING

*Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your work area.*

### WARNING

*The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.*

### WARNING

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

### CAUTION:

*Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.*

## SERVICE RULES

1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that don't meet HONDA's design specifications may cause damage to the vehicle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the vehicle. 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 1-5 steps, unless a particular sequence is specified.
6. Clean parts in non-flammable or high flash point solvent upon disassembly.
7. Lubricate any sliding surfaces before reassembly.
8. After reassembly, check all parts for proper installation and operation.

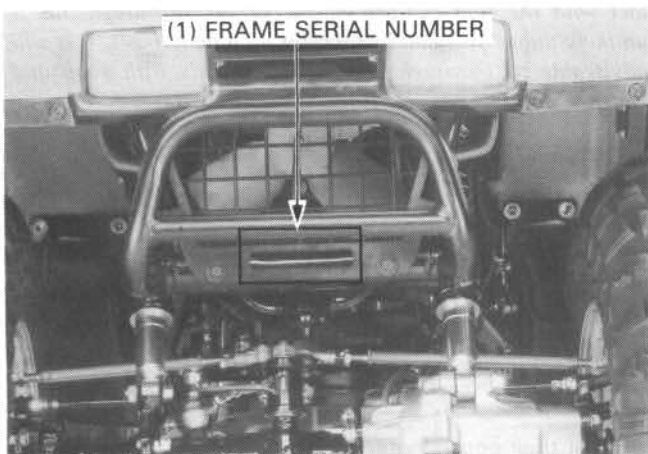
## GENERAL INFORMATION

# MODEL IDENTIFICATION

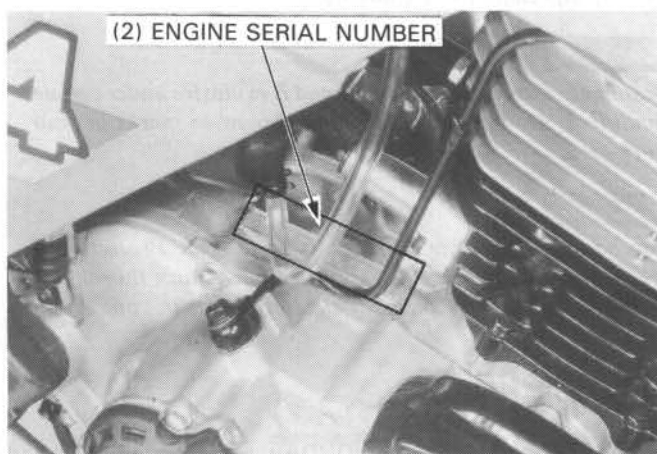
FOREMAN ('87 Shown; After '87 similar)



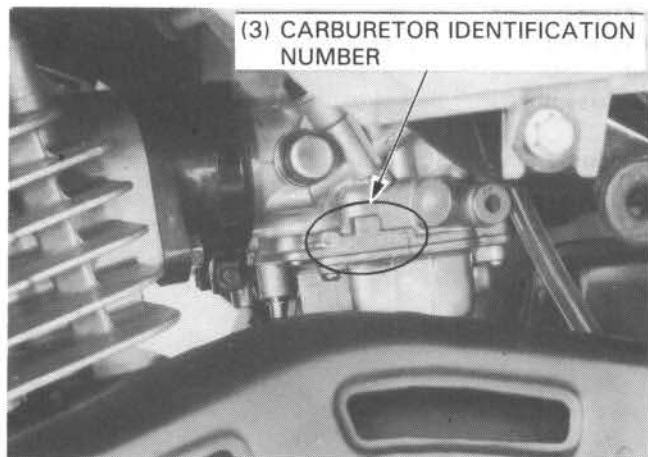
FOURTRAX ('86 Shown; '87 similar)



(3) The frame serial number is stamped on the front bumper.



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



(5) The carburetor identification number is on the left side of the carburetor body.

## GENERAL INFORMATION

|                           |                           |                          |   |
|---------------------------|---------------------------|--------------------------|---|
| DRIVE TRAIN               | Clutch                    |                          | Wet multi-plate, semi-automatic   |
|                           | Transmission              |                          | 5-speed constant mesh with reverse  |
|                           | Primary reduction         |                          | 2.103 (29/61)   |
|                           | Gear ratio                | S/L                      | 4.083 (12/49)   |
|                           |                           | I                        | 2.389 (18/43)   |
|                           |                           | II                       | 1.609 (23/37)   |
|                           |                           | III                      | 1.179 (28/33)   |
|                           |                           | IV                       | 0.906 (32/29)   |
|                           | Reverse                   |                          | 4.781   |
|                           | Final reduction           | Middle                   | 1.172 x 1.461 (29/34 x 13/19) Final 3.889 (9/35)                            |
|                           | Gearshift pattern         |                          | Left foot operated return system,<br>Forward: N-S/L-1-2-3-4<br>Reverse: N-R |
|                           |                           |                          |   |
|                           | Differential oil capacity | '86:                     | 135 cc (4.6 oz) at disassembly  |
|                           |                           | After '86:               | 100-110 cc (3.4-3.7 oz) after draining                                      |
|                           | Final drive oil capacity  |                          | 225 cc (7.6 oz) at disassembly  |
|                           |                           |                          | 200-210 cc (6.8-7.1 oz) after draining                                      |
|                           |                           |                          | 135 cc (4.6 oz) at disassembly  |
|                           |                           |                          | 100-110 cc (3.4-3.7 oz) after draining                                      |
| ELECTRICAL                | Ignition                  |                          | CDI   |
|                           | Ignition timing           | Initial                  | 10° BTDC at idle  |
|                           |                           | Full advance             | 30° BTDC at 3,500 rpm   |
|                           | Alternator                | Capacity                 | 240 W/5,000 rpm <310 W/5,000 rpm>   |
|                           | Battery                   |                          | 12V-12AH  |
|                           |                           |                          |   |
|                           |                           | NGK                      | DR8ES-L (DR8ES, DR7ES)  |
|                           |                           | ND                       | X24ESR-U (X27ESR-U, X22ESR-U)   |
|                           |                           |                          |   |
|                           | Spark plug gap            |                          | 0.6-0.7 mm (0.024-0.028 in)   |
| Headlight                 |                           | 12V 60/55W               |   |
| Taillight                 |                           | 12V 5W X2                |   |
| Neutral indicator         |                           | 12V 3W                   |   |
| Reverse indicator         |                           | 12V 3W                   |   |
| Oil temperature indicator |                           | 12V 3W                   |   |
| Accessory light           |                           | 12V 5W X2<12 V 25 W x 2> |   |



## TORQUE VALUES

## ENGINE

| Item                                       | Q'ty<br>After<br>'87    | Thread Dia.<br>(mm) | Torque  |           |       |
|--|-------------------------|---------------------|---------|-----------|-------|
|  |                         |                     | N·m     | kg-m      | ft-lb |
| Engine oil drain bolt                      | '86, '87:<br>After '87: | 12                  | 15-25   | 1.5-2.5   | 11-18 |
| Oil filter cover                           | 3                       | 6                   | 20-30   | 2.0-3.0   | 14-22 |
| Clutch adjusting screw lock nut            | 1                       | 8                   | 8-12    | 0.8-1.2   | 6-9   |
| Valve adjusting lock nut                   | 1                       | 8                   | 19-25   | 1.9-2.5   | 14-18 |
| Spark plug                                 | 4                       | 6                   | 15-18   | 1.5-1.8   | 11-13 |
| Insulator band screw                       | 1                       | 12                  | 15-20   | 1.5-2.0   | 11-14 |
| Oil hose set piece bolt                    | 3                       | 5                   | 3-5     | 0.3-0.5   | 2-4   |
| Cylinder head cap nut                      | 2                       | 6                   | 10-14   | 1.0-1.4   | 7-10  |
| Cylinder head flange bolt                  | 4                       | 10                  | 35-45   | 3.5-4.5   | 25-33 |
| Cam sprocket bolt (NOTE 1)                 | 2                       | 10                  | 35-45   | 3.5-4.5   | 25-33 |
| Cylinder head cover (7 mm flange bolt)     | 2                       | 7                   | 17-23   | 1.7-2.3   | 12-17 |
| (6 mm SH bolt)                             | 4                       | 7                   | 13-17   | 1.3-1.7   | 9-12  |
| (6 mm flange bolt)                         | 7 (6)                   | 6                   | 8-12    | 0.8-1.2   | 6-9   |
| Oil path pipe bolt (Oil control bolt B)    | 3 (4)                   | 6                   | 10-14   | 1.0-1.4   | 7-10  |
| Cylinder mounting bolt                     | 2                       | 8                   | 12-16   | 1.2-1.6   | 9-12  |
| Oil pipe bolt                              | '86, '87:<br>After '87: | 7                   | 8-12    | 0.8-1.2   | 6-9   |
| Mainshaft bearing stopper plate            | 1                       | 7                   | 10-14   | 1.0-1.4   | 7-10  |
| Change clutch lock nut                     | 2                       | 6                   | 10-14   | 1.0-1.4   | 7-10  |
| Centrifugal clutch lock nut (NOTE 1 and 2) | 1                       | 18                  | 100-120 | 10.0-12.0 | 72-87 |
| Clutch spring bolt                         | 1                       | 20                  | 110-130 | 11.0-13.0 | 80-94 |
| Relief valve nut (After '87 only) (NOTE 1) | 4                       | 6                   | 10-14   | 1.0-1.4   | 7-10  |
| Flywheel bolt                              | 1                       | 8                   | 13-18   | 1.3-1.8   | 10-13 |
| Starter clutch torx bolt                   | 1                       | 12                  | 100-120 | 10.0-12.0 | 72-87 |
| Drive shaft holder bolt                    | 6                       | 8                   | 20-25   | 2.0-2.5   | 14-18 |
| Crankcase bolt                             | 2                       | 8                   | 20-25   | 2.0-2.5   | 14-18 |
| Output gear case mounting bolt             | 12                      | 6                   | 8-12    | 0.8-1.2   | 6-9   |
| Output gear bearing lock nut (Outer)       | 4                       | 8                   | 30-34   | 3.0-3.4   | 22-25 |
| (Inner)                                    | 2                       | 64                  | 90-110  | 9.0-11.0  | 65-80 |
| Output gear bearing holder socket bolt     | 2                       | 30                  | 70-80   | 7.0-8.0   | 51-58 |
| Cam chain tensioner lifter bolt            | 4                       | 8                   | 20-25   | 2.0-2.5   | 14-18 |
| Kick starter plate socket bolt             | 3                       | 6                   | 8-12    | 0.8-1.2   | 6-9   |
| Neutral switch                             | 2                       | 6                   | 10-14   | 1.0-1.4   | 7-10  |
| Oil temperature sensor                     | 1                       | 10                  | 11-15   | 1.1-1.5   | 8-11  |
| Gear shift return spring pin               | 1                       | 12                  | 15-20   | 1.5-2.0   | 11-15 |
| Decompressor cable nut ('86, '87 only)     | 1                       | 8                   | 18-25   | 1.8-2.5   | 13-18 |
|  | 1                       | 6                   | 5-7     | 0.5-0.7   | 4-5   |

NOTE: 1, Apply locking agent to the threads.  
2, Left-hand threads.

## FRAME

| Item                            | Q'ty                      | Thread Dia.<br>(mm) | Torque |         |       |
|---------------------------------|---------------------------|---------------------|--------|---------|-------|
|                                 |                           |                     | N·m    | kg-m    | ft-lb |
| Handlebar upper holder bolt     | 4                         | 8                   | 18-30  | 1.8-3.0 | 13-22 |
| Handlebar lower holder nut      | 2                         | 10                  | 40-48  | 4.0-4.8 | 29-35 |
| Front wheel nut                 | 8                         | 10                  | 60-70  | 6.0-7.0 | 43-51 |
| Tie rod end nut                 | '86, '87:<br>☆ After '87: | 6                   | 65-75  | 6.5-7.5 | 50-54 |
| Tie rod lock nut                | 6                         | 10                  | 35-45  | 3.5-4.5 | 25-33 |
| Pivot arm nut                   | 6                         | 10                  | 35-45  | 3.5-4.5 | 25-33 |
| Knuckle holder nut              | 1                         | 14                  | 60-70  | 6.0-7.0 | 43-51 |
| Lower kingpin bolt              | '86, '87:<br>☆ After '87: | 8                   | 60-80  | 6.0-8.0 | 43-58 |
| Upper kingpin bolt              | 8                         | 10                  | 35-45  | 3.5-4.5 | 25-33 |
| Kingpin lock nut                | 2                         | 20                  | 50-70  | 5.0-7.0 | 37-51 |
| Front brake panel bolt (NOTE 3) | 2                         | 20                  | 5-10   | 0.5-1.0 | 4-7   |
|                                 | 8                         | 8                   | 50-70  | 5.0-7.0 | 37-51 |
|                                 |                           |                     | 27-33  | 2.7-3.3 | 20-24 |

## GENERAL INFORMATION

| Item                                     | Q'ty           | Thread Dia.<br>(mm) | Torque  |           |         |
|--|----------------|---------------------|---------|-----------|---------|
|  |                |                     | N·m     | kg·m      | ft·lb   |
| Front shock absorber                     |                |                     |         |           |         |
| lower mount bolt (left)                  | 1              | 14                  | 60-80   | 6.0-8.0   | 43-58   |
| upper/lower (right) mount nut            | '86, '87: 3    | 10                  | 60-80   | 6.0-8.0   | 43-58   |
|  | ☆After '87: 3  | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Swingarm left pivot bolt                 | 2              | 30                  | 100-130 | 10.0-13.0 | 72-94   |
| Swingarm right pivot bolt                | 2              | 30                  | 16-20   | 1.6-2.0   | 12-14   |
| lock nut                                 | 2              | 30                  | 100-130 | 10.0-13.0 | 72-94   |
| Differential gear case nut               | '86, '87: 12   | 10                  | 60-80   | 6.0-8.0   | 43-58   |
|  | ☆After '87: 12 | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Front axle nut                           | 2              | 16                  | 80-100  | 8.0-10.0  | 58-72   |
| Swingarm joint nut                       | '86, '87: 6    | 10                  | 80-90   | 8.0-9.0   | 58-65   |
|  | ☆After '87: 6  | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Steering stem nut                        | 1              | 14                  | 100-120 | 10.0-12.0 | 72-87   |
| Steering lower stay lock nut             | 1              | 46                  | 50-70   | 5.0-7.0   | 37-51   |
| Front skid plate bolt                    | 3              | 8                   | 18-25   | 1.8-2.5   | 13-18   |
| Front guard plate/pipe bolt              | 5              | 8                   | 18-25   | 1.8-2.5   | 13-18   |
| Rear wheel nut                           | 8              | 10                  | 60-70   | 6.0-7.0   | 43-51   |
| Rear axle nut                            | 2              | 18                  | 120-160 | 12.0-16.0 | 87-116  |
| Master cylinder hose bolt                | 2              | 10                  | 25-35   | 2.5-3.5   | 18-25   |
| Wheel cylinder hose bolt                 | 2              | 10                  | 25-35   | 2.5-3.5   | 18-25   |
| Rear brake panel nut                     | '86, '87: 4    | 10                  | 50-60   | 5.0-6.0   | 36-43   |
|  | ☆After '87: 4  | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Reservoir cover screw                    | 2              | 4                   | 1-2     | 0.1-0.2   | 0.7-1.4 |
| Foot peg bolt                            | 4              | 10                  | 40-50   | 4.0-5.0   | 29-36   |
| Brake pipe joint                         | 5              | 10                  | 12-15   | 1.2-1.5   | 9-11    |
| Rear shock absorber                      |                |                     |         |           |         |
| upper mount nut                          | '86, '87: 2    | 10                  | 40-50   | 4.0-5.0   | 29-36   |
|  | ☆After '87: 2  | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| lower mount bolt/nut                     | '86, '87: 2    | 10                  | 60-80   | 6.0-8.0   | 43-58   |
|  | ☆After '87: 2  | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Trailer hitch                            | 4              | 10                  | 70-80   | 7.0-8.0   | 51-58   |
| Final gear case (cover) joint nut        | '86, '87: 12   | 10                  | 60-80   | 6.0-8.0   | 43-58   |
|  | ☆After '87: 12 | 10                  | 35-45   | 3.5-4.5   | 25-33   |
| Differential assembly                    |                |                     |         |           |         |
| case rear cap torx bolt                  | 6              | 8                   | 30-35   | 3.0-3.5   | 22-25   |
| case cap torx bolt                       | 6              | 8                   | 30-35   | 3.0-3.5   | 22-25   |
| Ring gear bolt                           | 6              | 8                   | 45-55   | 4.5-5.5   | 33-40   |
| Pinion bearing lock nut                  | 1              | 60                  | 90-110  | 9.0-11.0  | 65-80   |
| Differential gear cover 10 mm bolt       | 2              | 10                  | 45-50   | 4.5-5.0   | 33-36   |
| 8 mm bolt                                | 6              | 8                   | 23-28   | 2.3-2.8   | 17-20   |
| Differential gear pinion joint nut       | 1              | 16                  | 100-120 | 10.0-12.0 | 72-87   |
| Final drive gear lock nut                | 1              | 60                  | 90-110  | 9.0-11.0  | 65-80   |
| Final drive gear cover 10 mm bolt        | 2              | 10                  | 45-50   | 4.5-5.0   | 33-36   |
| 8 mm bolt                                | 6              | 8                   | 23-28   | 2.3-2.8   | 17-20   |
| Final drive gear pinion joint nut        | 1              | 16                  | 100-120 | 10.0-12.0 | 72-87   |
| Differential/final drive oil filler cap  | 2              | 30                  | 10-14   | 1.0-1.4   | 7-10    |
| Top engine hanger nut                    | 1              | 10                  | 70-80   | 7.0-8.0   | 51-58   |
| Top engine hanger plate bolt             | 4              | 8                   | 34-40   | 3.4-4.0   | 25-29   |
| Front engine mounting bolt (upper/lower) | 2              | 10                  | 70-80   | 7.0-8.0   | 51-58   |
| Engine hanger bracket nut                | 4              | 10                  | 70-80   | 7.0-8.0   | 51-58   |
| Rear engine mounting nut (upper/lower)   | 2              | 10                  | 70-80   | 7.0-8.0   | 51-58   |
| Muffler band bolt                        | 2              | 8                   | 18-28   | 1.8-2.8   | 13-20   |
| Exhaust pipe joint nut                   | 4              | 8                   | 24-30   | 2.4-3.0   | 17-22   |
| Muffler mounting bolt                    | 3              | 10                  | 50-60   | 5.0-6.0   | 36-43   |

NOTE 3: (After '87 Only) Using again strictly prohibited.

### CAUTION

☆: Nut for After '87 is a self-locking nut with the nut-head peened; nut for '86 and '87 is a self-locking nut (U-locking nut). Tighten each nut to each specified torque, or the nut is broken or loosened.



('86, '87) (After '87)



Torque specifications listed on the previous pages are for the most important tightening points. If a torque specification is not listed, follow the standards given below.

STANDARD TORQUE VALUES

| Item            | Torque N·m (kg·m, ft·lb) | Item  | Torque N·m (kg·m, ft·lb) |
|-----------------|--------------------------|---|--------------------------|
| 5 mm bolt, nut  | 4.5–6 (0.45–0.6, 3–4)    | 5 mm screw                                  | 3.5–5 (0.35–0.5, 2–4)    |
| 6 mm bolt, nut  | 8–12 (0.8–1.2, 6–9)      | 6 mm screw, 6 mm flange bolt with 8 mm head | 7–11 (0.7–1.1, 5–8)      |
| 8 mm bolt, nut  | 18–25 (1.8–2.5, 13–18)   | 6 mm flange bolt, nut                       | 10–14 (1.0–1.4, 7–10)    |
| 10 mm bolt, nut | 30–40 (3.0–4.0, 22–29)   | 8 mm flange bolt, nut                       | 24–30 (2.4–3.0, 17–22)   |
| 12 mm bolt, nut | 50–60 (5.0–6.0, 36–43)   | 10 mm flange bolt, nut                      | 35–45 (3.5–4.5, 25–33)   |

TOOLS

SPECIAL

| DESCRIPTION                        | TOOL NUMBER   | ALTERNATE TOOL  | REF. SEC.         |
|------------------------------------|---------------|---|-------------------|
| Camber/caster gauge attachment     | 07910–MJ30100 | (Not available in U.S.A.)   | 3                 |
| Valve guide reamer, 5.5 mm         | 07984–2000000 | or 07984–200000A (U.S.A. only)  | 7                 |
| Remover handle                     | 07936–3710100 |   | 9, 11, 14, 15     |
| Remover weight                     | 07741–0010201 | or 07936–3710200  | 9, 10, 11, 14, 15 |
| Bearing remover, 17 mm             | 07936–3710300 |   | 9, 11             |
| Clutch center holder               | 07923–KE10000 | or Plate holder 07HGB–001010A and clutch center collar "A" 07HGB–001020A (U.S.A. only)    | 9                 |
| Clutch holder                      | 07GMB–HA70100 |   | 9                 |
| Bearing remover set, 10 mm         | 07936–GE00000 |   | 10                |
| Shaft holder                       | 07923–6890101 |   | 11                |
| Lock nut wrench, 30 x 64 mm        | 07916–MB00001 |   | 11                |
| Lock nut wrench attachment         | 07GMA–HA70110 | or 07916–HA0020A  | 11                |
| Attachment, 61.5 mm                | 07946–3600000 |   | 11                |
| Bearing remover, 20 mm             | 07936–3710600 |   | 11                |
| Lock nut wrench, 34 x 44 mm        | 07916–ME50001 |   | 11, 15            |
| Lock nut wrench attachment         | 07916–9690100 |   | 11                |
| Universal bearing puller           | 07931–4630000 | or 07631–0010000 or equivalent commercially available in U.S.A. (Not available in U.S.A.) | 11, 15            |
| Crank assembly tool set            | 07931–KF00000 |   | 11                |
| –Crankshaft assembly collar        | 07931–KF00100 |   | 11                |
| –Shaft puller                      | 07931–ME40000 | or 07931–ME4000A (U.S.A. only)  | 11, 15            |
| –Threaded adapter                  | 07931–KF00200 |   | 11                |
| Attachment, 28 x 30 mm             | 07946–1870100 |   | 11                |
| Attachment                         | 07946–HA00000 |   | 11                |
| Spring compressor adaptor          | 07967–KC10000 | (Not available in U.S.A.)   | 12                |
| Lock nut wrench                    | 07908–4690001 | or KS–HBA–08–469 (U.S.A. only)  | 12                |
| Bearing remover set                | 07936–8890101 | (Not available in U.S.A.)   | 12, 14            |
| –Remover head                      | 07936–8890200 | (Not available in U.S.A.)   | 12, 14            |
| –Bearing remover, 30 mm            | 07936–8890300 |   | 12, 14            |
| –Remover weight                    | 07741–0010201 | or 07936–3710200  | 12                |
| –Remover handle                    | 07936–3710100 |   | 12                |
| Wrench adaptor                     | 07GMA–HA70200 |   | 12                |
| Attachment                         | 07965–SA00600 |   | 13                |
| Shock absorber compressor base     | 07959–MB10000 |   | 12, 14            |
| Spring compressor adaptor          | 07967–KC10000 | (Not available in U.S.A.)   | 12, 14            |
| Pivot lock nut wrench              | 07908–4690001 | or KS–HBA–08–469 (U.S.A. only)  | 14                |
| Ball race driver                   | 07945–3330300 |   | 14                |
| Driver                             | 07949–3710001 |   | 14                |
| Differential inspection attachment | 07GMK–HA70100 |   | 15                |

## GENERAL INFORMATION

### SPECIAL (Cont'd)

| DESCRIPTION            | TOOL NUMBER   | ALTERNATE TOOL   | REF. SEC. |
|------------------------|---------------|--|-----------|
| Pinion holder          | 07924-HA00000 | Must be modified pinion holder (4) hole                      | 15        |
| Bearing remover, 12 mm | 07936-1660100 |  | 15        |
| Pinion gear driver     | 07945-HA00000 | (Not available in U.S.A.) or Driver 40 mm I.D. 07746-0030100 | 15        |
| Attachment             | 07960-1870100 |  | 15        |

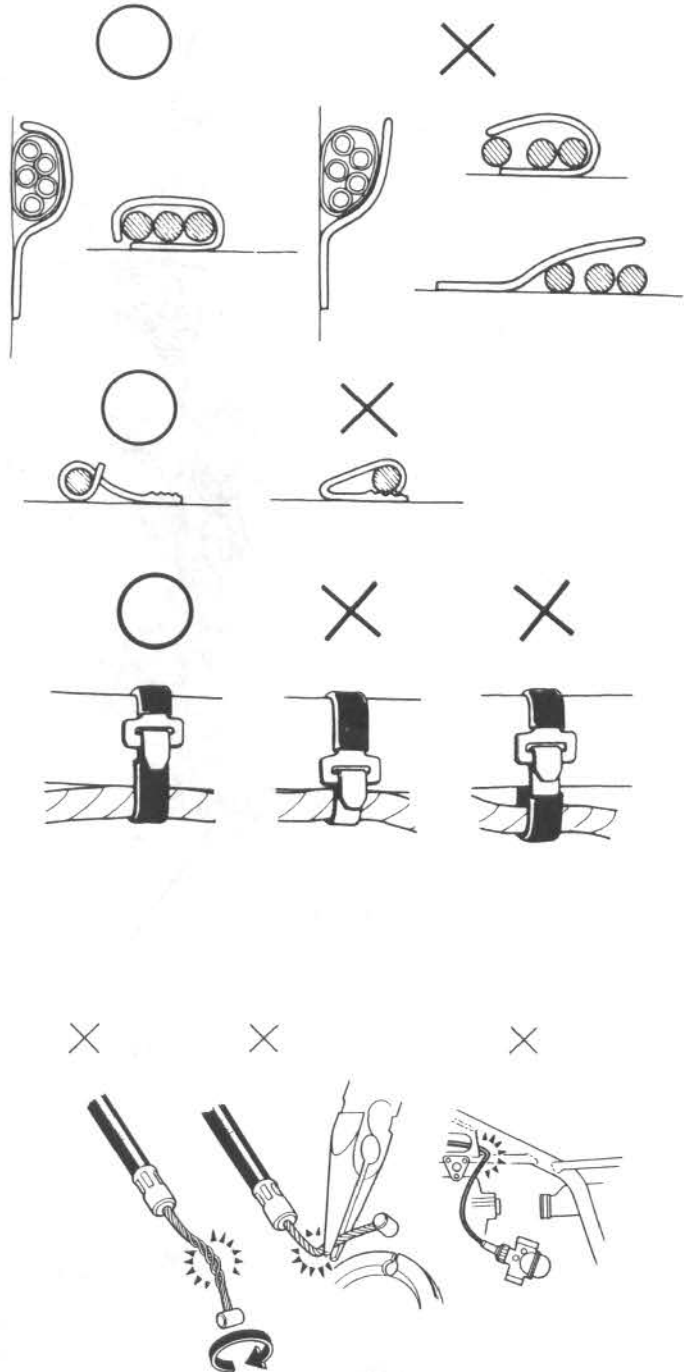
### COMMON

| DESCRIPTION                        | TOOL NUMBER   | ALTERNATE TOOL  | REF. SEC.             |
|------------------------------------|---------------|---|-----------------------|
| Valve adjusting wrench, 10 x 12 mm | 07708-0030200 | or equivalent commercially available in U.S.A.          | 3                     |
| Valve adjusting wrench B           | 07708-0030400 | or valve adjusting wrench 089201-200-000                | 3                     |
| Float level gauge                  | 07401-0010000 |   | 4                     |
| Valve guide remover, 5.5 mm        | 07742-0010100 |   | 7                     |
| Valve spring compressor            | 07757-0010000 |   | 7                     |
| Driver                             | 07749-0010000 |   | 9, 10, 11, 12, 14, 15 |
| Attachment, 24 x 26 mm             | 07746-0010700 |   | 9, 10                 |
| Attachment, 42 x 47 mm             | 07746-0010300 |   | 9, 11, 12, 15         |
| Pilot, 17 mm                       | 07746-0040400 |   | 9, 11                 |
| Pilot, 20 mm                       | 07746-0040500 |   | 9, 11, 12             |
| Puller                             | 07933-HB3000A | (U.S.A. only)   | 9                     |
| Flywheel holder                    | 07725-0040000 | or strap wrench, commercially available in U.S.A.       | 10                    |
| Roter puller                       | 07733-0020001 |   | 10                    |
| Torx driver bit (T40)              | 07703-0010100 | or equivalent commercially available in U.S.A.          | 10                    |
| Socket bit, 17 mm                  | 07703-0020500 | or equivalent commercially available in U.S.A.          | 12, 14                |
| Attachment, 72 x 75 mm             | 07746-0010600 |   | 11                    |
| Attachment, 37 x 40 mm             | 07746-0010200 |   | 11, 12, 14            |
| Pilot, 40 mm                       | 07746-0040900 |   | 11                    |
| Attachment, 52 x 55 mm             | 07746-0010400 |   | 11, 12, 14, 15        |
| Pilot, 22 mm                       | 07746-0041000 |   | 11, 12, 15            |
| Inner driver                       | 07746-0030100 |   | 11, 15                |
| Attachment, 30 mm I.D.             | 07746-0030300 |   | 11                    |
| Attachment, 32 x 35 mm             | 07746-0010100 |   | 11, 12, 14, 15        |
| Pilot, 28 mm                       | 07746-0041100 |   | 12, 14, 15            |
| Pilot, 30 mm                       | 07746-0040700 |   | 12                    |
| Attachment, 62 x 68 mm             | 07746-0010500 |   | 14, 15                |
| Shock absorber compressor          | 07959-3290001 |   | 12, 14                |
| Tire bead breaker set              | 07772-0050001 | ] or Universal bead breaker GN-AH-958-BB1 (U.S.A. only) | 14                    |
| Breaker arm                        | 07772-0050200 |   | 14                    |
| Breaker arm compressor             | 07772-0050100 |   | 14                    |
| Pilot, 35 mm                       | 07746-0040800 |   | 15                    |
| Pilot, 12 mm                       | 07746-0040200 |   | 15                    |
| Attachment, 35 mm I.D.             | 07746-0030400 |   | 15                    |
| Inner driver                       | 07746-0020100 |   | 15                    |
| Inspection adaptor                 | 07508-0012500 | Not available in U.S.A.                                 | 17                    |
| Digital multitester                | 07411-0020000 | or KS-AHH-32-003 (U.S.A. only)                          | 17, 18                |
| Circuit tester (SANWA)             | 07308-0020000 | or TH-5H (KOWA)   | 17, 18                |

# CABLE & HARNESS ROUTING

Note the following when routing cables and wire harnesses:

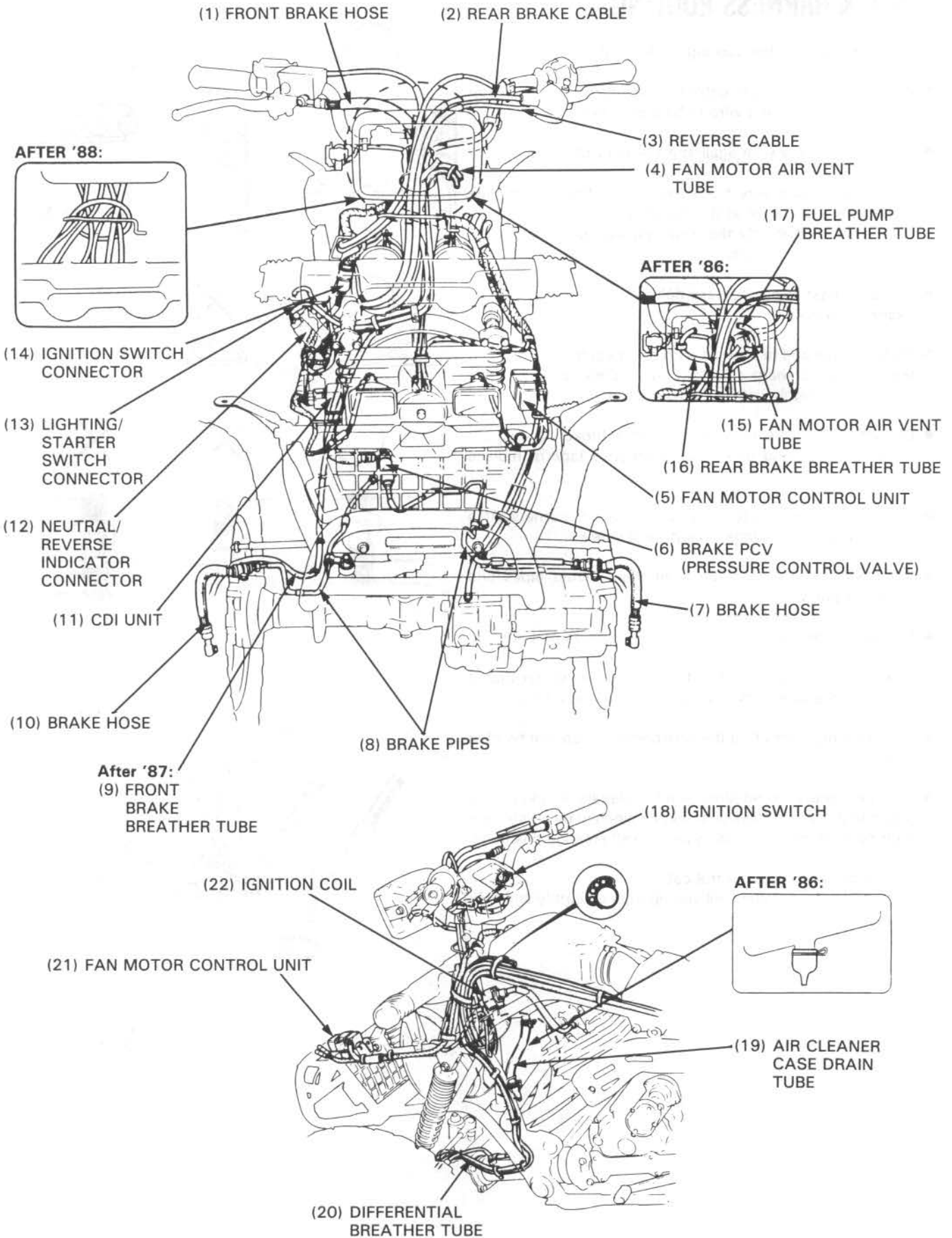
- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure.
- Do not squeeze a wire against a welds or clamps.
- Secure wires and wire harnesses to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wires or wire harnesses.
- Route harnesses so they are neither pulled taut nor have excessive slack.
- Protect wires and harnesses with electrical tape or tubing if they contact a sharp edge or corner. Clean the attaching surface thoroughly before applying tape.
- Do not use a wire or harness with a broken insulation. Repair by wrapping them with protective tape or replace them.
- Route wire harnesses to avoid sharp edges or corners. Also avoid the projected ends of bolts and screws.
- Keep wire harnesses away from the exhaust pipes and other hot parts.
- Be sure grommets are seated in their grooves properly.
- After clamping, check each harness to be certain that it dose not interfere with any moving of sliding parts.
- After routing, check that the wire harnesses are not twisted or kinked.
- Wire harnesses routed along the handlebars should not be pulled taut, have excessive slack, be pinched by or interfere with adjacent or surrounding parts in all steering positions.
- Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.

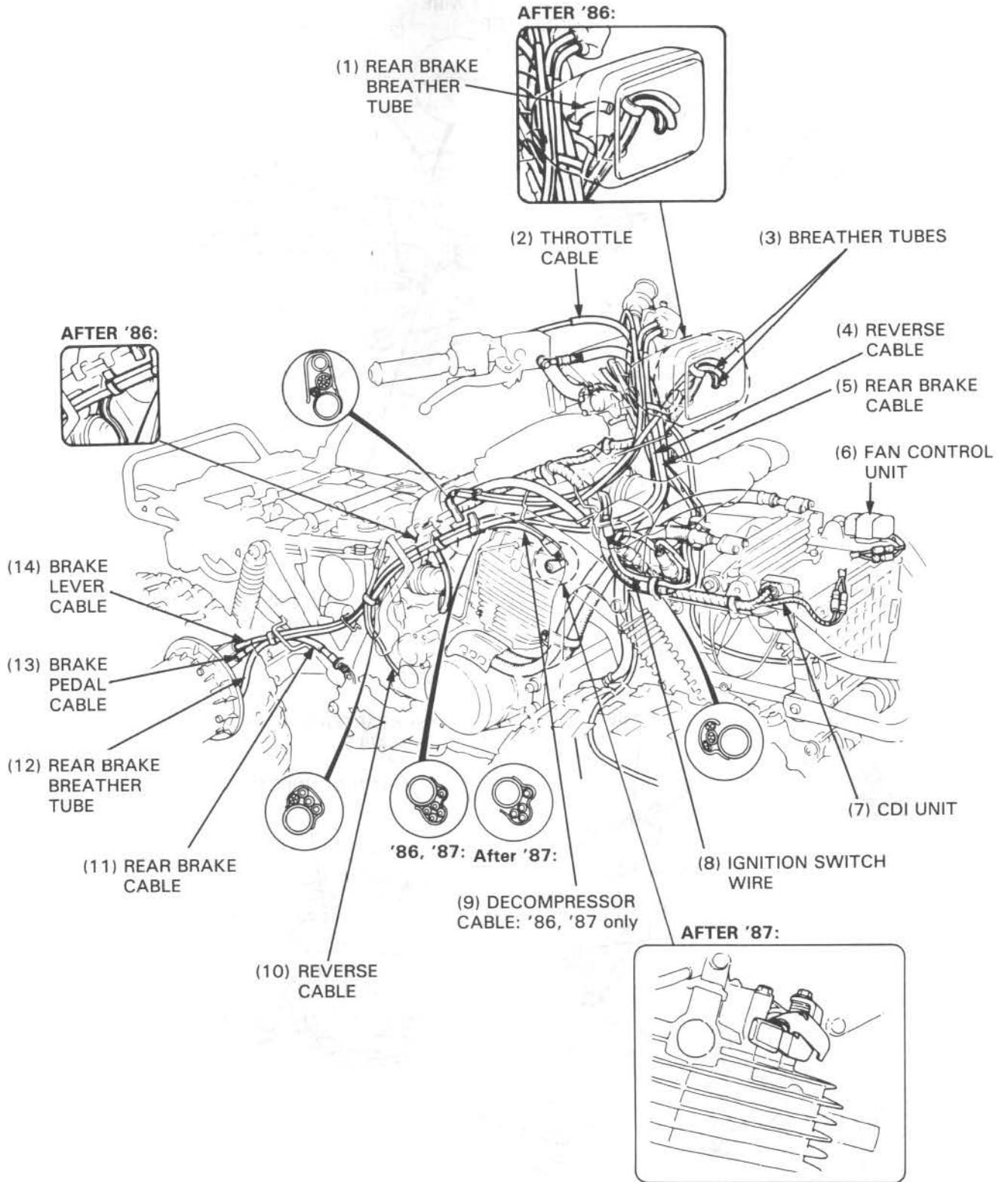


O: CORRECT  
X: INCORRECT



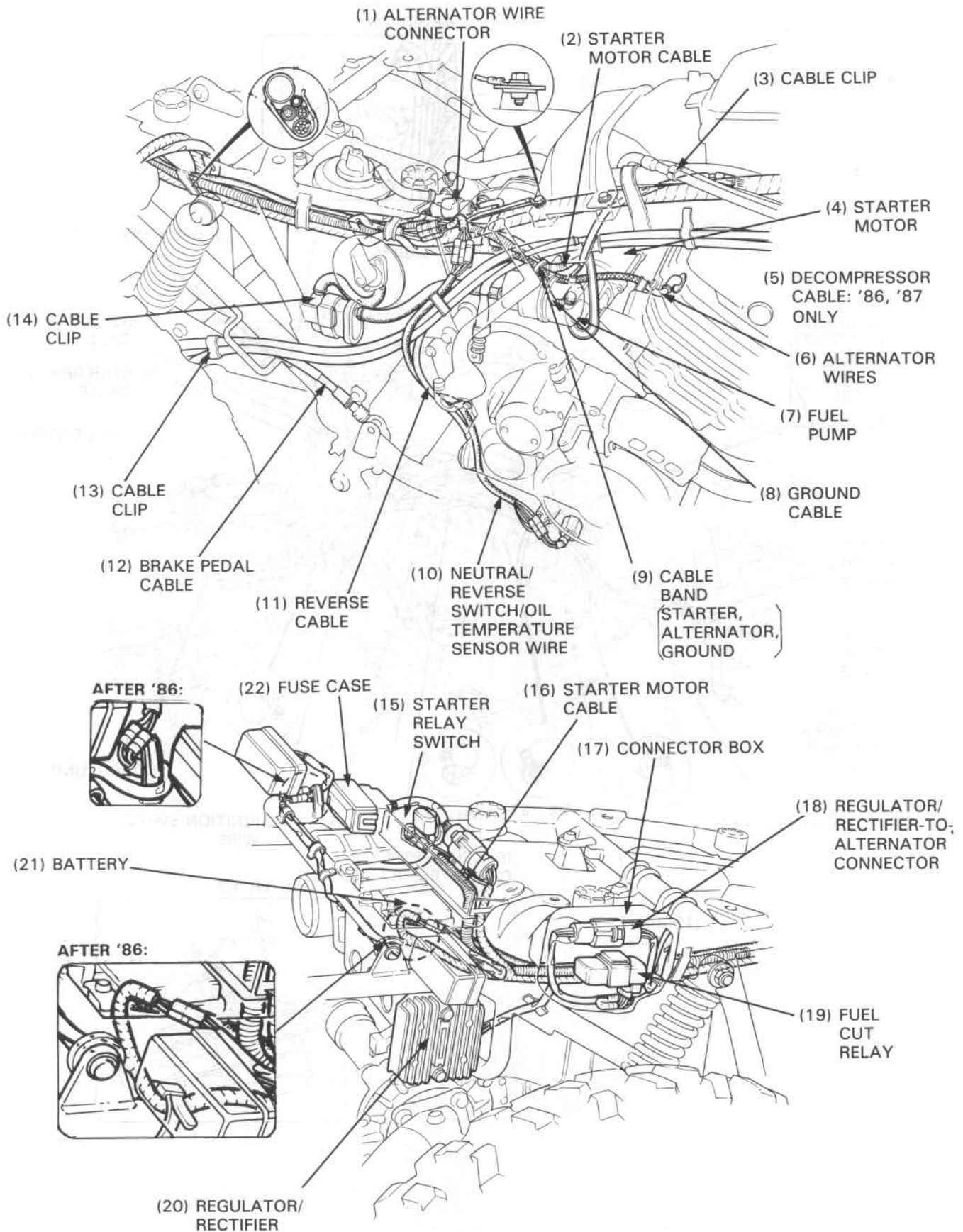
**GENERAL INFORMATION**



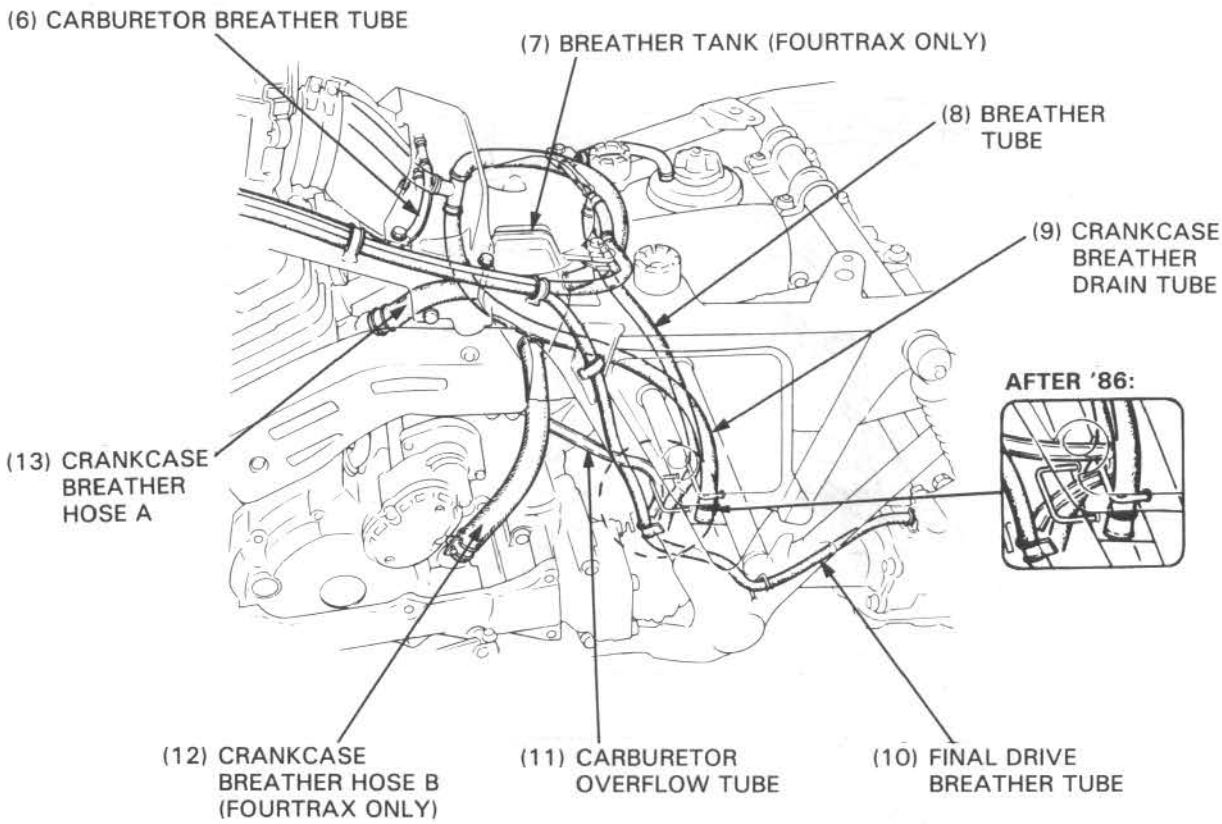
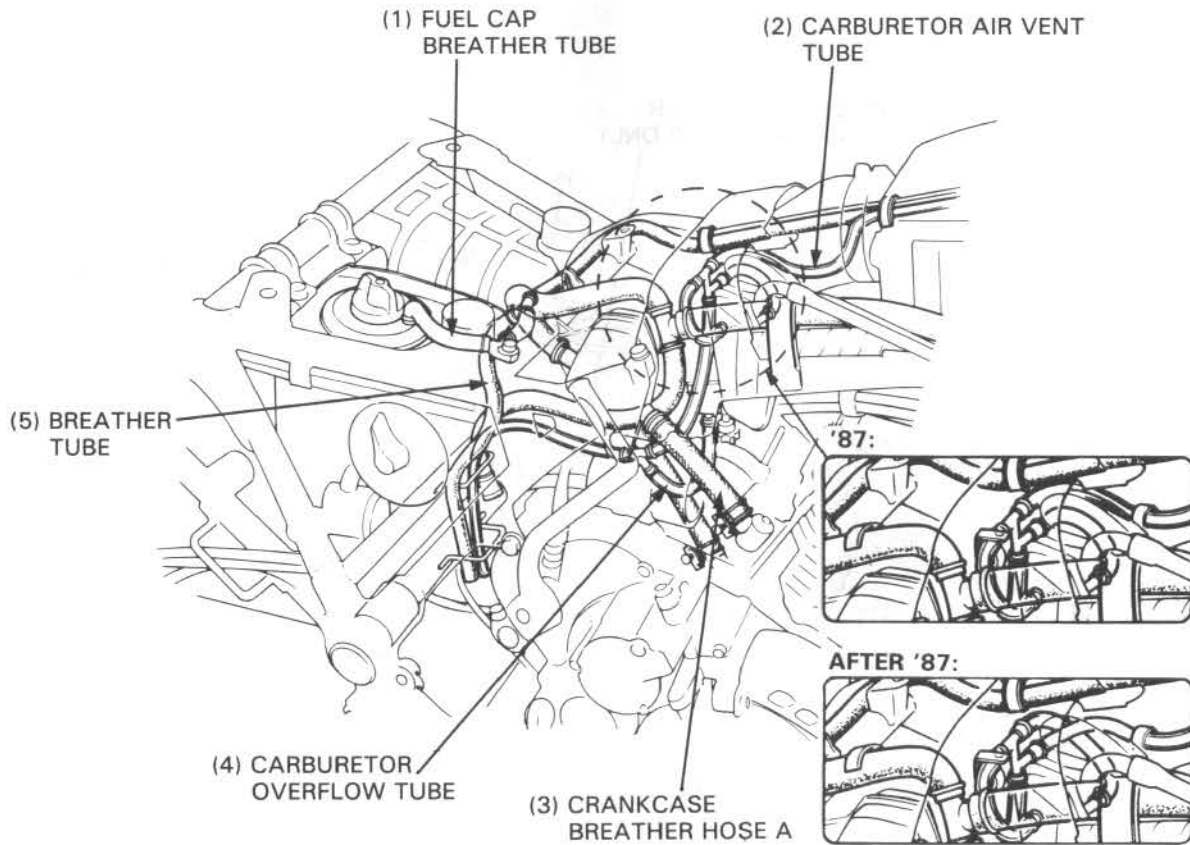




**GENERAL INFORMATION**

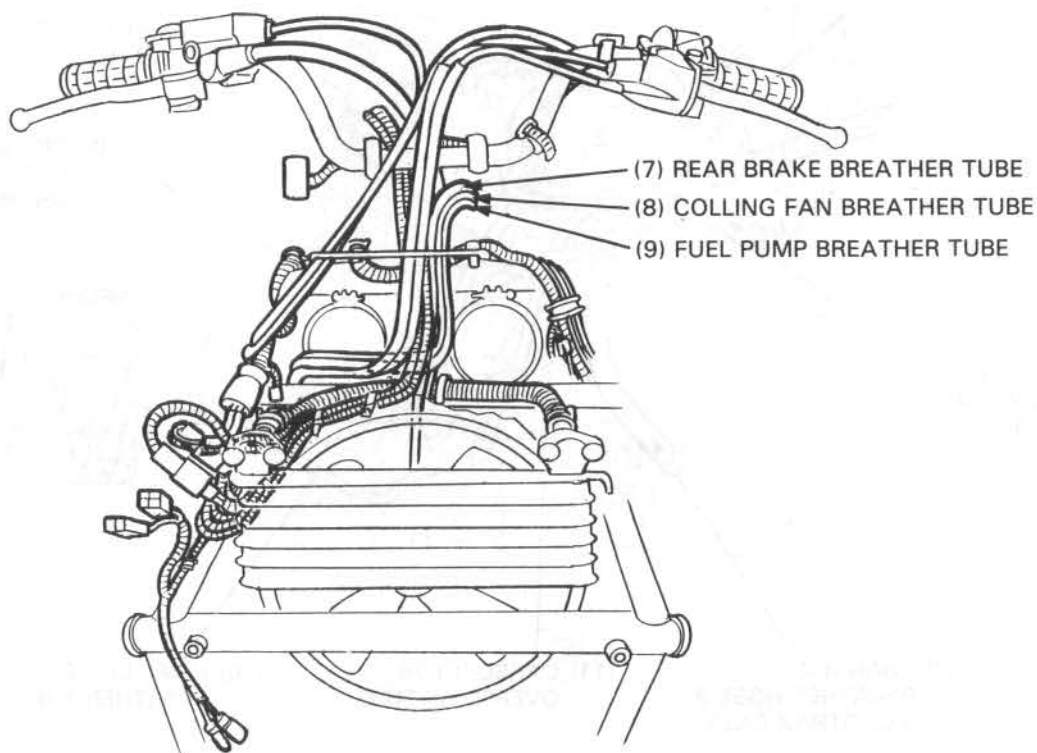
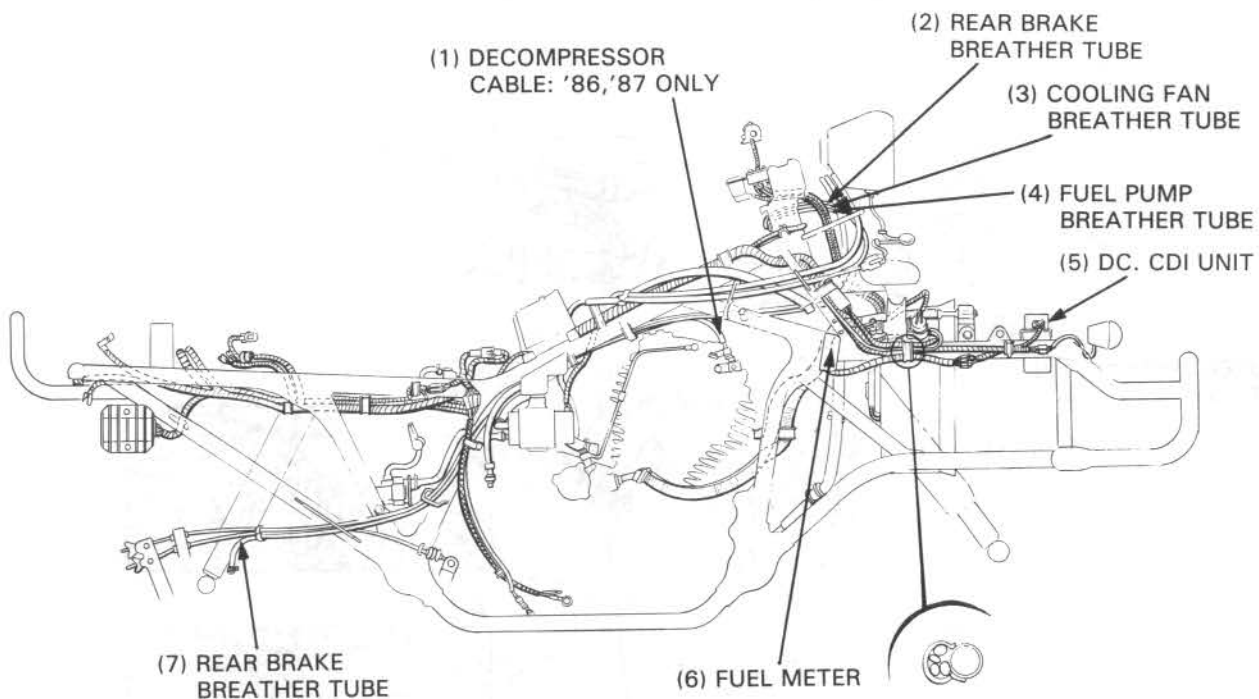




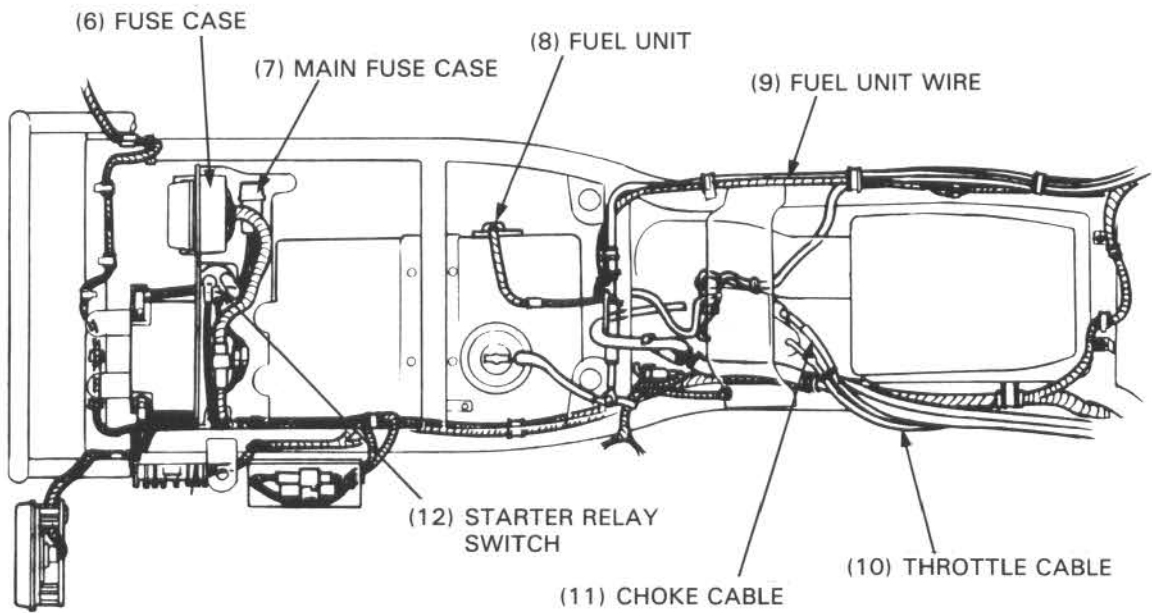
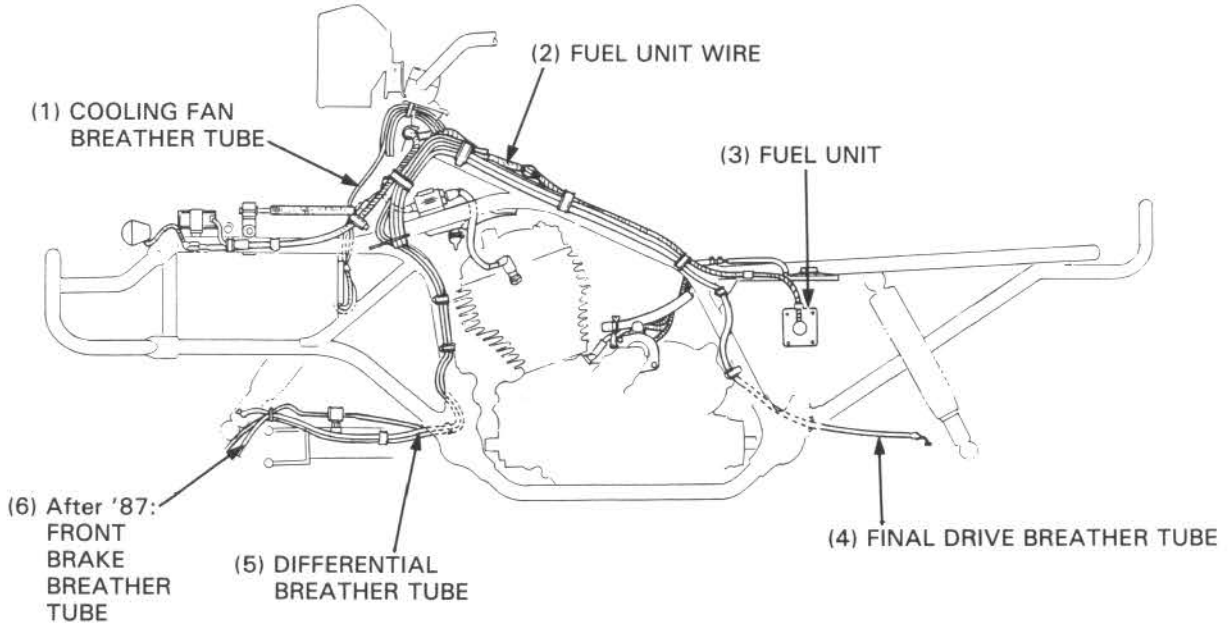


**GENERAL INFORMATION**

**FOREMAN**



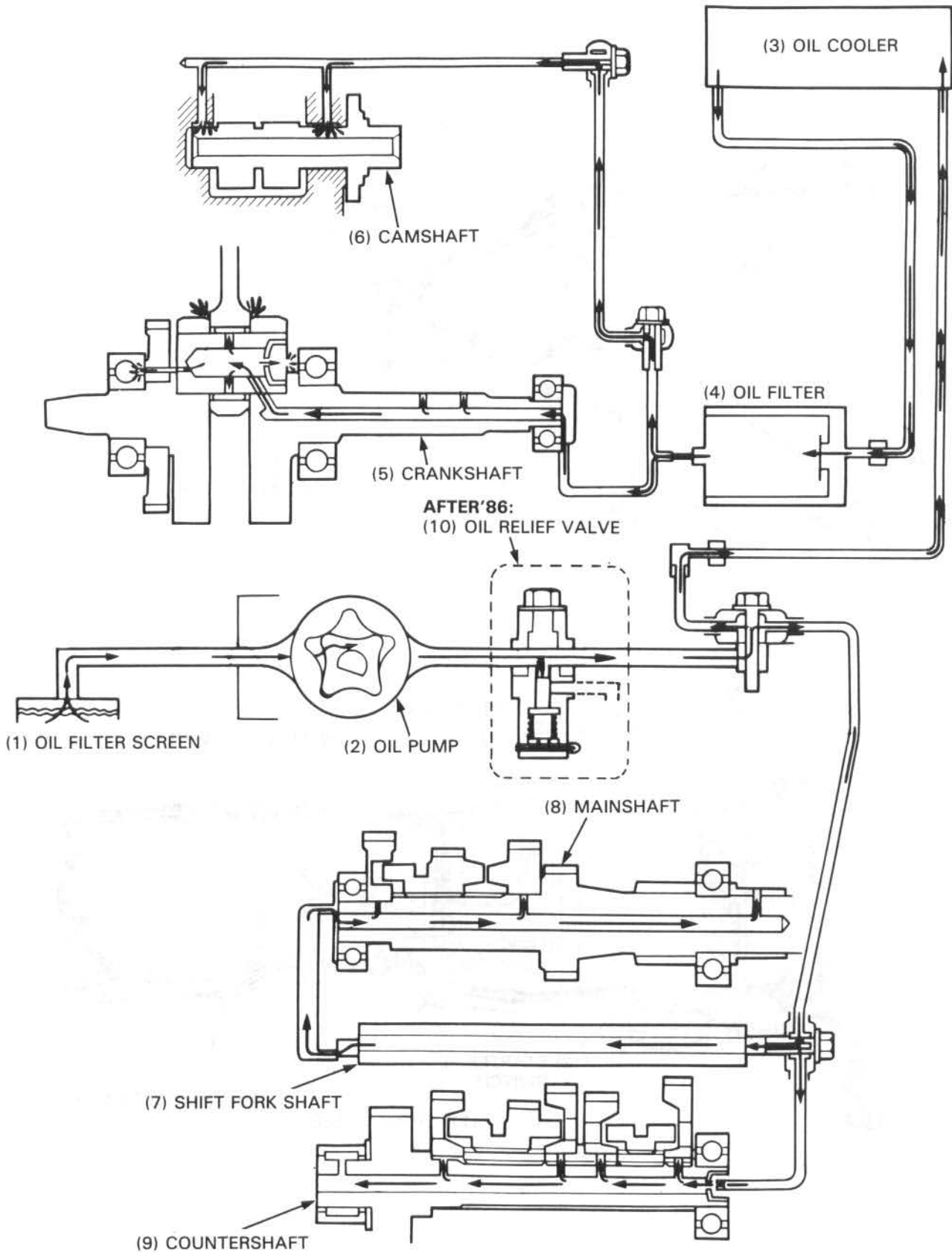
FOREMAN





LUBRICATION

LUBRICATION DIAGRAM



# 2. LUBRICATION

|                            |            |                                       |            |
|----------------------------|------------|---------------------------------------|------------|
| <b>SERVICE INFORMATION</b> | <b>2-1</b> | <b>ENGINE OIL &amp; FILTER CHANGE</b> | <b>2-2</b> |
| <b>TROUBLESHOOTING</b>     | <b>2-1</b> | <b>DIFFERENTIAL/FINAL DRIVE OIL</b>   | <b>2-3</b> |
| <b>ENGINE OIL LEVEL</b>    | <b>2-2</b> | <b>LUBRICATION POINTS</b>             | <b>2-4</b> |

## SERVICE INFORMATION

### GENERAL

- Refer to section 6 for oil cooler and cooling fan services.
- Section 9 shows how to service the oil pump.

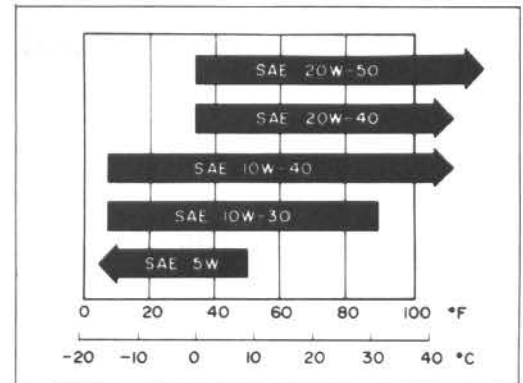
### SPECIFICATIONS

Engine oil capacity      2.8 lit (3.0 US qt, 2.5 Imp qt) at disassembly  
    2.3 lit (2.4 US qt, 2.0 Imp qt) after draining

Engine oil recommendation    Use Honda 4-stroke oil or equivalent.  
    API Service Classification: SE or SF  
    Viscosity: SAE 10W-40

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

ENGINE OIL VISCOSITIES



### Differential

Oil capacity      '86: 135 cc (4.6 oz) at disassembly  
    100-110 cc (3.4-3.7 oz) after draining  
    After '86: 225 cc (7.6 oz) at disassembly  
    200-210 cc (6.8-7.1 oz) after draining

Oil recommendation      Hypoid gear oil, SAE #80

### Final Drive

Oil capacity      135 cc (4.6 oz) at disassembly  
    100-110 cc (3.4-3.7 oz) after draining

Oil recommendation      Hypoid gear oil, SAE #80

### TORQUE VALUES

Engine oil drain bolt      '86, '87: 15-25 N·m (1.5-2.5 kg-m, 11-18 ft-lb)  
    After '87: 20-30 N·m (2.0-3.0 kg-m, 14-22 ft-lb)

Differential/final drive oil filler cap      10-14 N·m (1.0-1.4 kg-m, 7-10 ft-lb)

Oil filter cover      8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)

## TROUBLESHOOTING

### Oil level too low—high oil consumption

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

### Oil contamination

- Oil or filter not changed often enough
- Head gasket faulty
- Worn piston rings

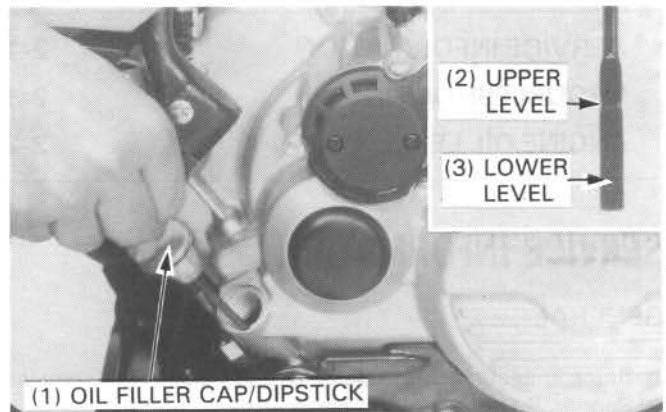
## LUBRICATION

### ENGINE OIL LEVEL

Place the vehicle on level ground.

Check the oil level using the oil filler cap/dipstick by inserting it into the filler hole without screwing it in.

If the oil level is below or near the lower level line on the dipstick, add the recommended oil (page 2-1) up to the upper level line.



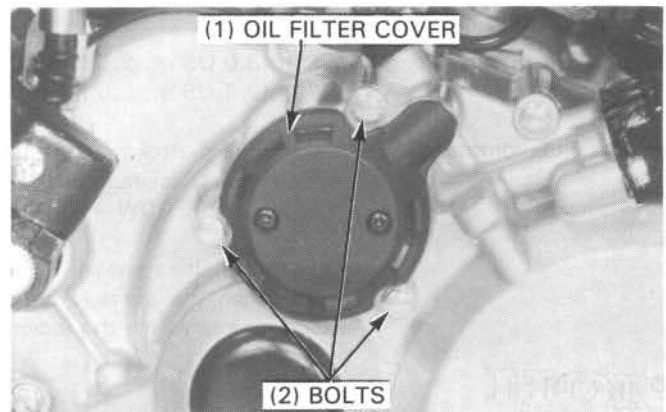
### ENGINE OIL & FILTER CHANGE

#### NOTE

- Change engine oil with the engine warm and the vehicle on level ground to assure complete draining.

Remove the oil filler cap and drain bolt.

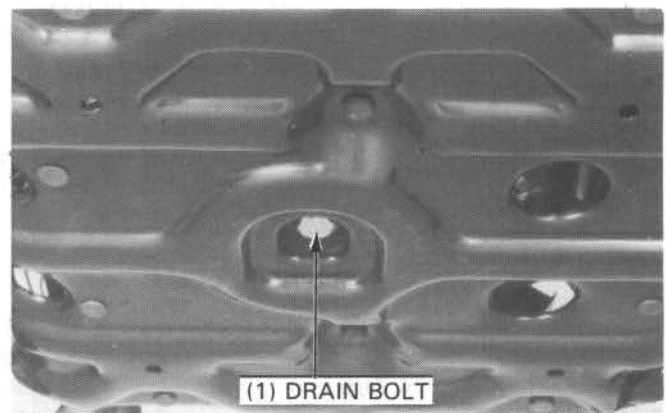
Remove the three bolts attaching the oil filter cover, oil filter and spring. Discard the oil filter.



Check that the sealing washer on the drain bolt is in good condition and install the drain bolt.

#### TORQUE:

'86, '87: 15–25 N·m (1.5–2.5 kg-m, 11–18 ft-lb)  
After '87: 20–30 N·m (2.0–3.0 kg-m, 14–22 ft-lb)



Make sure that the oil filter cover O-ring and the other O-ring in the crankcase are in good condition. Install the oil filter spring, filter and cover, and tighten the three bolts.

**TORQUE: 8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)**

Fill the crankcase with recommended oil (page 2-1).

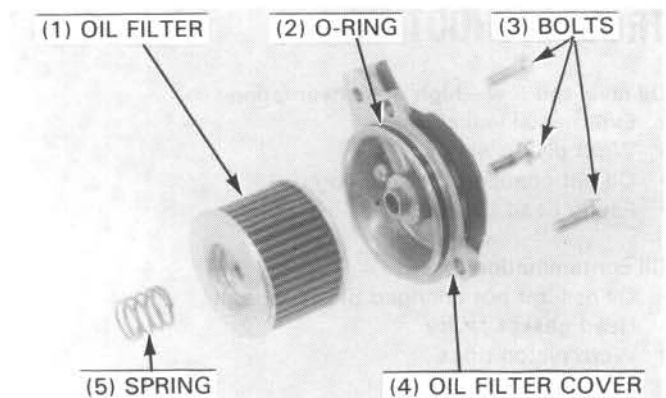
#### OIL CAPACITY:

2.8 lit (3.0 US qt, 2.5 Imp qt) at disassembly  
2.3 lit (2.4 US qt, 2.0 Imp qt) after draining

Install the oil filler cap/dipstick.

Start the engine and let it idle for 2 or 3 minutes.

Stop the engine and check that the oil level is at the upper level line on the dipstick. Make sure there are no oil leaks.





## DIFFERENTIAL/FINAL DRIVE OIL

### CHECK

Place the vehicle on level surface.

Front differential only: Remove the front guard plate by removing the mounting bolts.

Remove the oil filler cap.

Check that the oil level is within the indicated range (illustration: lower right).

Fill with the recommended oil if the oil level is below the standard level (The bottom of the threaded section).

Install the oil filler cap.

Front differential only: Install the front guard plate.

### CHANGE

Front differential only: Remove the front guard plate by removing the mounting bolts.

Remove the oil filler cap and the drain bolt to drain all oil from the gear case.

Install the drain bolt securely.

Fill with the recommended oil to the standard level (The bottom of the threaded section).

### OIL CAPACITY:

**DIFFERENTIAL:** 135 cc (4.6 oz) at disassembly  
100–110 cc (3.4–3.7 oz) after draining.

**After '86:** 225 cc (7.6 oz) at disassembly  
200–210 cc (6.8–7.1 oz) after draining

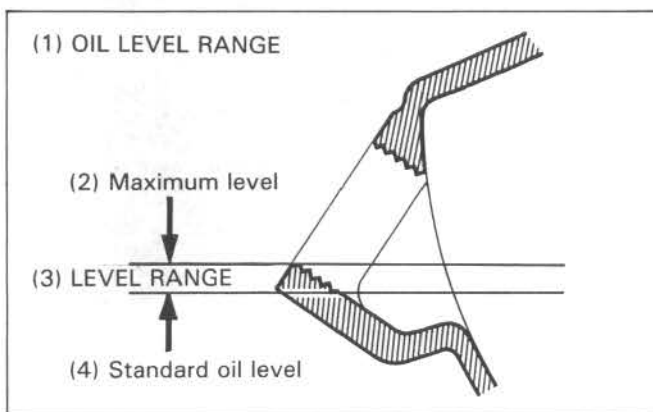
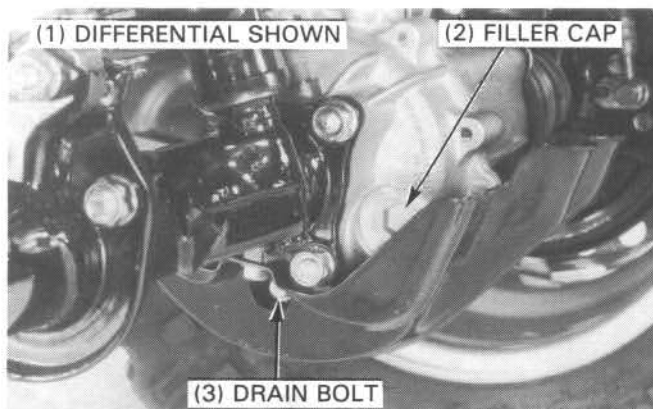
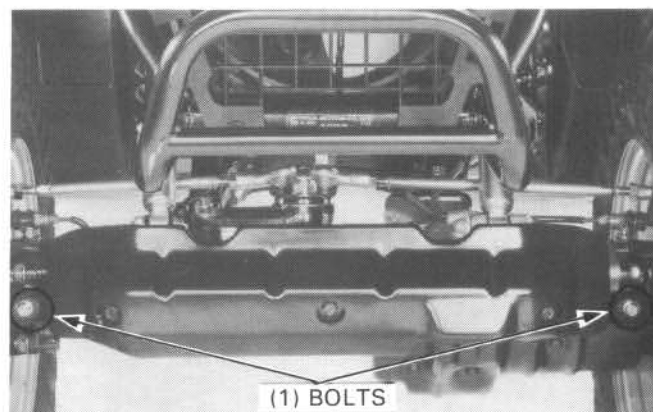
**FINAL DRIVE:** 135 cc (4.6 oz) at disassembly  
100–110 cc (3.4–3.7 oz) after draining

**RECOMMENDED OIL:** Hypoid gear oil SAE #80

Install the filler cap.

**TORQUE:** 10–14 N·m (1.0–1.4 kg·m, 7–10 ft·lb)

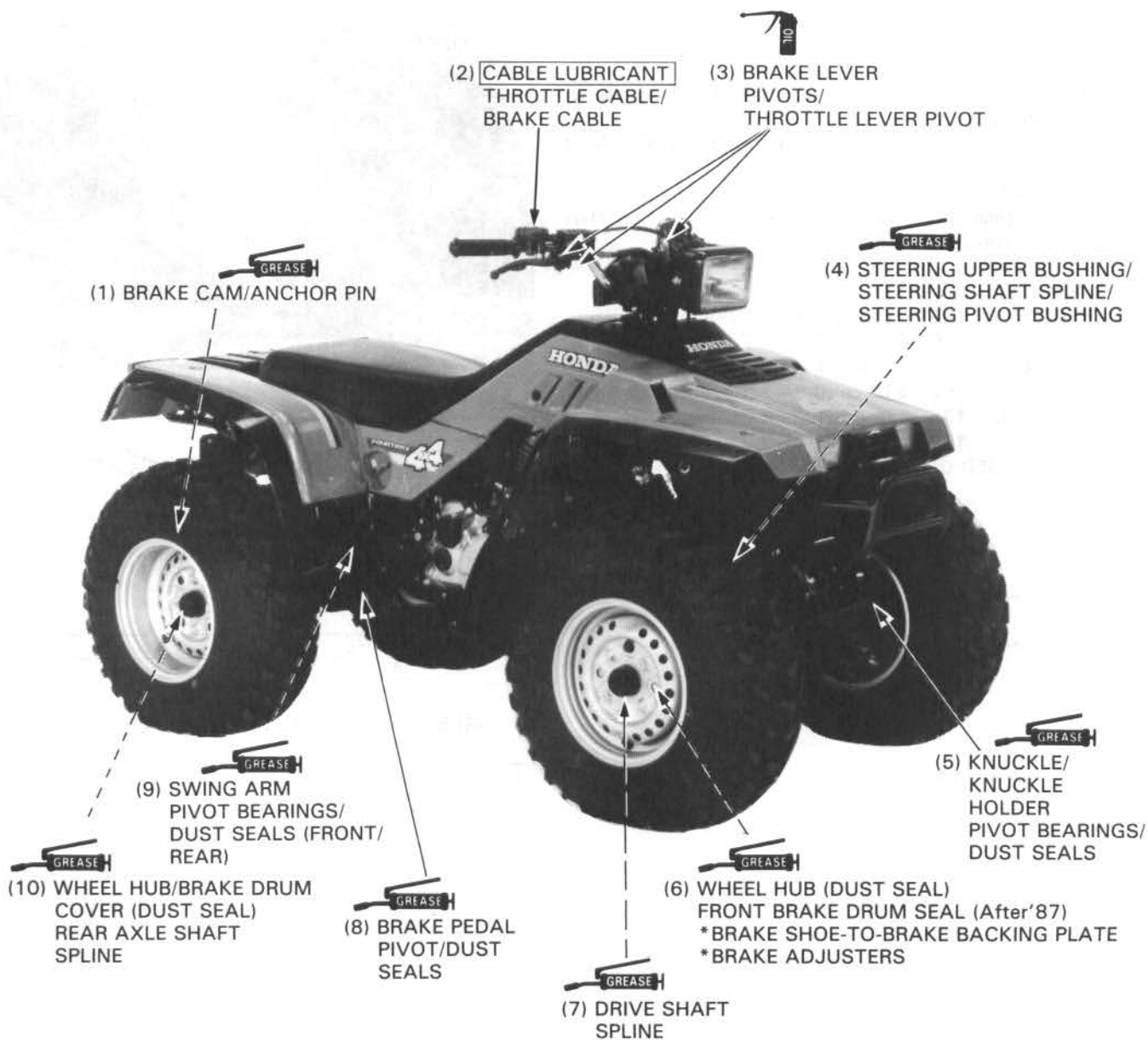
Front differential only: Install the front guard plate.



## LUBRICATION POINTS

Use general purpose grease when no other specification is given. Apply oil or grease to any 2 sliding surfaces and cables not shown here.

\* Apply silicone grease.



# 3. MAINTENANCE

3

|                       |     |   |      |
|-----------------------|-----|---|------|
| SERVICE INFORMATION   | 3-1 | BRAKE SHOES                             | 3-8  |
| MAINTENANCE SCHEDULE  | 3-2 | BRAKE SYSTEM                            | 3-8  |
| FUEL LINE             | 3-3 | REVERSE LOCK SYSTEM                     | 3-10 |
| FUEL FILTER           | 3-3 | CLUTCH SYSTEM                           | 3-10 |
| THROTTLE OPERATION    | 3-3 | SUSPENSION                              | 3-11 |
| CARBURETOR CHOKE      | 3-4 | SPARK ARRESTER CLEANING                 | 3-11 |
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| SPARK PLUG            | 3-5 | WHEELS/TIRES                            | 3-12 |
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| CYLINDER COMPRESSION  | 3-7 |   |      |
| BRAKE FLUID           | 3-7 |   |      |

## SERVICE INFORMATION

### SPECIFICATIONS

|                                       |  |
|---------------------------------------|--|
| Spark plug gap:                       | 0.6–0.7 mm (0.024–0.028 in)                                      |
| Recommended spark plugs:              | NGK: DR8ES-L (DR8ES, DR7ES)<br>ND: X24ESR-U (X27ESR-U, X22ESR-U) |
| Valve clearance: Intake:              | 0.08 mm (0.003 in)   |
| Exhaust:                              | 0.08 mm (0.003 in)   |
| Decompressor free play                | 1–3 mm (1/32–1/8 in)   |
| Idle speed:                           | 1,400 ± 100 rpm  |
| Cylinder compression                  | 125–145 kPa (12.5–14.5 kg/cm <sup>2</sup> , 178–206 psi)         |
| Throttle lever free play:             | 3–8 mm (1/8–5/16 in)   |
| Front brake lever free play:          | 25–30 mm (1–1-1/4 in)  |
| Rear (parking) brake lever free play: | 15–20 mm (5/8–3/4 in)  |
| Rear brake pedal free play:           | 15–20 mm (5/8–3/4 in)  |
| Reverse selector lever free play:     | 2–4 mm (1/16–1/8 in)   |
| Front tire size:                      | 24 x 9.00–11   |
| Rear tire size:                       | 24 x 9.00–11   |
| Recommended tire pressure: Front:     | 2.2 psi (15 kPa, 0.15 kg/cm <sup>2</sup> )                       |
| Rear:                                 | 2.2 psi (15 kPa, 0.15 kg/cm <sup>2</sup> )                       |
| Front tire toe-in                     | 0 mm (0 in)  |
| camber:                               | 0°   |
| caster:                               | 3°   |

### TORQUE VALUES

|                                 |                                       |
|---------------------------------|---------------------------------------|
| Clutch adjusting screw lock nut | 19–25 N·m (1.9–2.5 kg-m, 14–18 ft-lb) |
| Valve adjusting lock nut        | 15–18 N·m (1.5–1.8 kg-m, 11–13 ft-lb) |
| Spark plug                      | 15–20 N·m (1.5–2.0 kg-m, 11–14 ft-lb) |
| Top engine hanger nut           | 70–80 N·m (7.0–8.0 kg-m, 51–58 ft-lb) |
| Top engine hanger plate bolt    | 34–40 N·m (3.4–4.0 kg-m, 25–29 ft-lb) |

### TOOLS

#### Special

|                                |   |
|--------------------------------|---|
| Camber/caster gauge attachment | 07910–MJ30100 (Not available in U.S.A.) |
|--------------------------------|---|

#### Common

|                                    |  |
|------------------------------------|--|
| Valve adjusting wrench, 10 x 12 mm | 07708–0030200 or equivalent commercially available in U.S.A. |
| Valve adjusting wrench B           | 07708–0030400 or valve adjusting wrench 089201–200–000       |



# MAINTENANCE SCHEDULE

The maintenance intervals shown in the following schedule are based upon average riding conditions. The vehicle's subjected to severe use, or ridden in unusually wet or dusty areas, require more frequent servicing.

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<br>C: Clean      R: Replace<br>A: Adjust |  | INITIAL SERVICE PERIOD<br>(First week of operation) | REGULAR SERVICE PERIOD<br>(Every 30 operating days) | Refer to page |
|---|--|---|---|---------------|
| *   | FUEL LINE                              | I: (EVERY YEAR)                                     |   | 3-3           |
| *   | FUEL FILTER                            | R: (EVERY 6 MONTHS)                                 |   | 3-3           |
| *   | THROTTLE OPERATION                     | I   | I   | 3-3           |
| *   | CARBURETOR CHOKE                       |   | I   | 3-4           |
|   | AIR CLEANER                            | NOTE 2  | C   | 3-4           |
|   | SPARK PLUG                             |   | I   | 3-5           |
| *   | VALVE CLEARANCE                        | I   | I   | 3-5           |
|   | ENGINE OIL                             | R   | R   | 2-2           |
|   | ENGINE OIL FILTER                      | R   | R   | 2-2           |
| *   | CARBURETOR IDLE SPEED                  | I   | I   | 3-7           |
|   | FINAL DRIVE/<br>FRONT DIFFERENTIAL OIL | I: (EVERY YEAR)<br>R: (EVERY 2 YEARS)               |   | 2-3           |
|   | BRAKE FLUID                            | '86, '87  | R: (EVERY 2 YEARS)                                  | 3-7           |
|   |  | After '87   | *R: (EVERY 2 YEARS)                                 |               |
|   |  | After '88   | NOTE 5  |               |
| *   | BRAKE SHOE WEAR                        | NOTE 3  | I: (EVERY YEAR)                                     | 3-8           |
|   | BRAKE SYSTEM                           | I   | I   | 3-8           |
| *   | REVERSE LOCK SYSTEM                    | I   | I   | 3-10          |
| *   | CLUTCH SYSTEM                          | I   | I   | 3-10          |
| *   | SUSPENSION                             |   | I   | 3-11          |
| *   | SPARK ARRESTER                         | NOTE 1  | C   | 3-11          |
| *   | NUTS, BOLTS, FASTENERS                 | I   | I   | 3-11          |
| **  | WHEELS/TIRES                           | I   | I   | 3-12          |
| **  | STEERING SHAFT HOLDER<br>BEARINGS      | I: (EVERY YEAR)                                     |   | 3-12          |
| **  | STEERING SYSTEM                        | I: (EVERY YEAR)                                     |   | 3-12          |
|   | SKID PLATE, GUARD PLATE                | NOTE 4  | I   | 3-13          |

\* Should be serviced by an authorized Honda dealer, unless the owner has proper tools and service data and mechanically qualified.

\*\* In the interest of safety, we recommend these items be serviced only by an authorized Honda dealer.

NOTES: 1. U.S.A. only.

2. Service more frequently when riding in dusty areas, sand or snow.

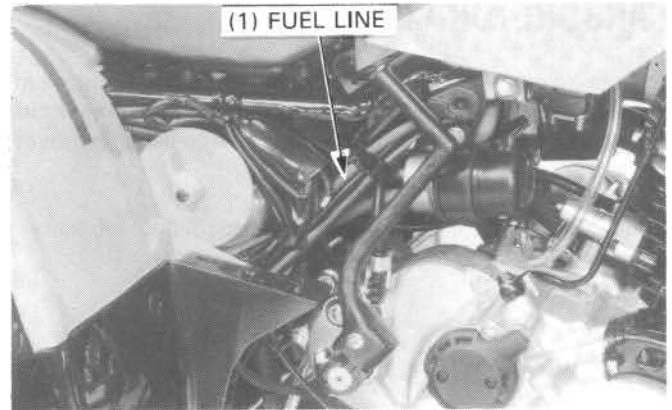
3. Service more frequently after riding in very wet or muddy conditions.

4. After '86 models.

5. Replace every 2 years. Replacement requires mechanical skill.

## FUEL LINE

Check the fuel lines.  
 Replace any which show signs of deterioration, damage or leaks.

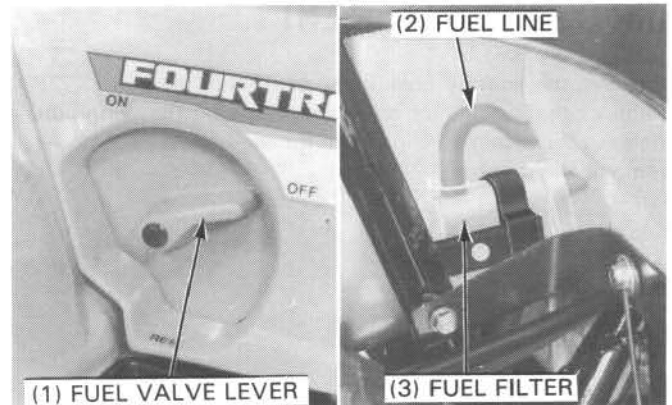


## FUEL FILTER

Turn the fuel valve OFF.  
 Pull the fuel filter from its clamp.  
 Clamp the fuel line between the fuel filter and the fuel pump.  
 Disconnect the fuel lines from the filter.  
 Replace the fuel filter with a new one as indicated by the maintenance schedule. (See page 3-2).

**WARNING**

- *Gasoline is flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.*



Secure the new filter in the frame clamp.  
 After installing, turn the fuel valve ON and check for fuel leaks.

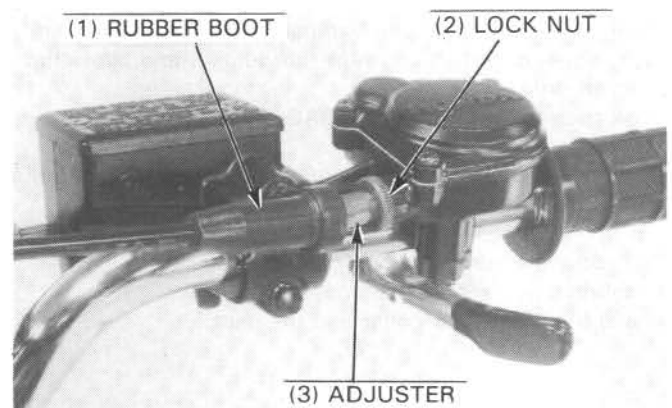
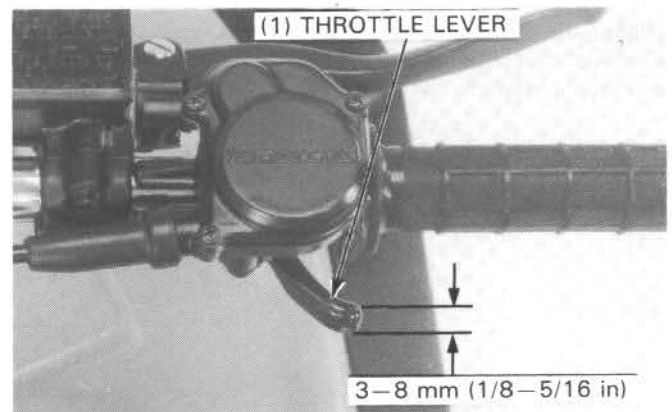
## THROTTLE OPERATION

Check for smooth throttle lever operation with complete opening and automatic closing in all steering positions. Make sure there is no deterioration, damage or kinking in the throttle cable. Replace any damaged parts.

Disconnect the throttle cable at the upper end.  
 Thoroughly lubricate the cable and pivot point with a commercially available cable lubricant.  
 Install the throttle cable in the reverse order of removal.  
 Measure the throttle lever free play at the tip of the throttle lever.

**FREE PLAY: 3–8 mm (1/8–5/16 in)**

Adjust as follows:  
 Slide the rubber boot off the cable adjuster.  
 Loosen the lock nut and adjust the throttle lever free play by turning the cable adjuster.  
 Tighten the lock nut and install the rubber boot securely.



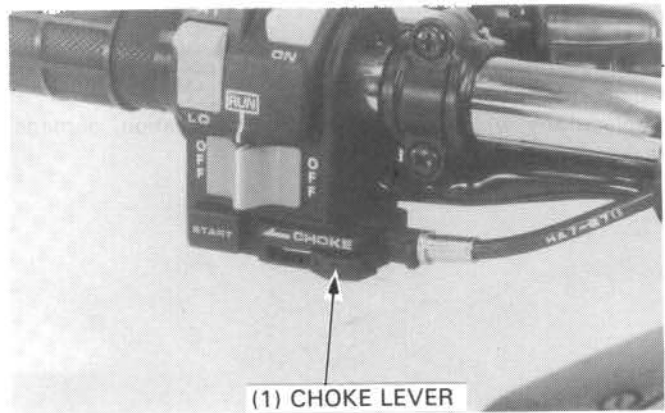


## MAINTENANCE

### CARBURETOR CHOKE

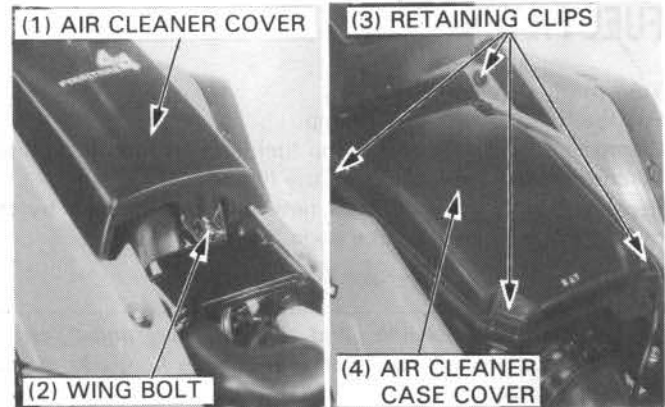
The choke system uses a fuel enrichment circuit controlled by a starter valve. The starter valve opens the enrichment circuit via a cable when the choke lever on the handlebar is moved to the left.

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



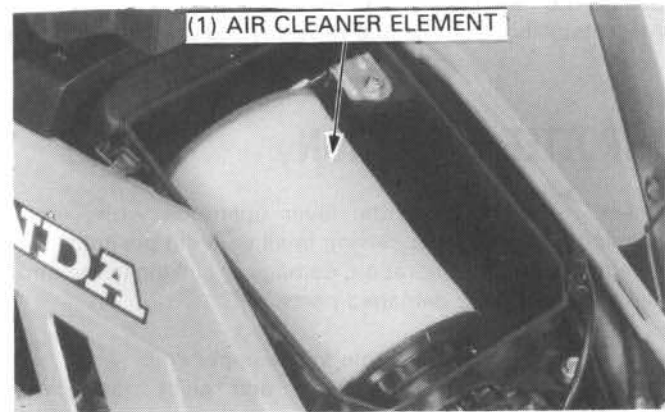
### AIR CLEANER ELEMENT

Remove the seat by pulling the seat latch lever. Remove the air cleaner cover by removing the wing bolt. Release the retaining clips from the air cleaner case cover, and remove the cover.



Loosen the air cleaner element band screw. Remove the element holder attaching screw and remove the air cleaner element assembly from the case.

Remove the element holder by turning it counterclockwise. Remove the element band and separate the element from the element core.

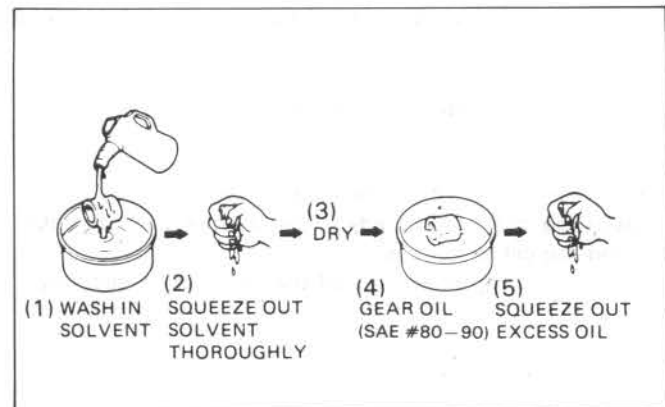


Wash the element in non-flammable or high flash point solvent, squeeze out the solvent thoroughly, and allow the element to dry.

Soak the element in gear oil (SAE #80–90) and squeeze out the excess.

Place the element onto the core and replace the element band and holder.

Install the element in the air cleaner case. Install the air cleaner case cover and clips. Install the air cleaner cover and the seat.





## SPARK PLUG

Disconnect the spark plug cap and remove the spark plug. Visually inspect the spark plug electrodes for wear. The center electrode should have square edges and the side electrode should have a constant thickness. Discard the spark plug if there is apparent wear or if the insulator is cracked or chipped. Measure the gap with a wire-type feeler gauge and adjust if necessary by carefully bending the side electrode.

### SPARK PLUG GAP:

0.6–0.7 mm (0.024–0.028 in)

### RECOMMENDED REPLACEMENT PLUG:

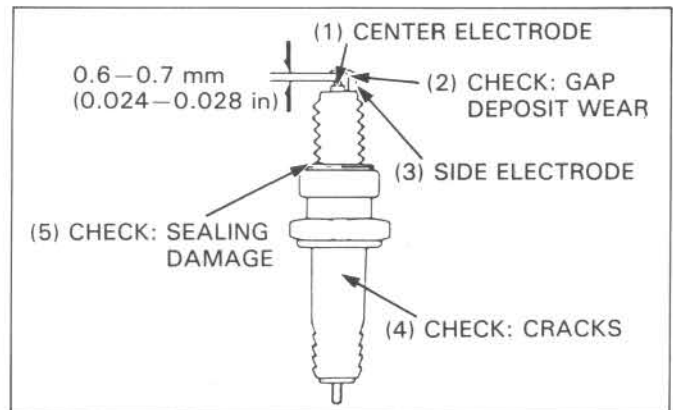
NGK: DR8ES-L (DR8ES, DR7ES)

ND : X24ESR-U (X27ESR-U, X22ESR-U)

Check the sealing washer and replace with a new one if damaged.

With the sealing washer attached, thread the spark plug in by hand to prevent cross-threading. Tighten the spark plug to the specified torque.

**TORQUE:** 15–20 N·m (1.5–2.0 kg·m, 11–14 ft·lb)

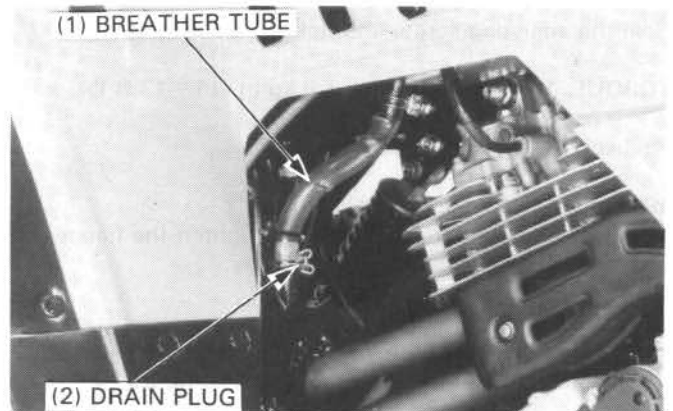


## BREATHER TUBE

Remove the plug from the drain tube to empty any deposits. Install the drain plug.

### NOTE

- Service more frequently when riding in rain, at full throttle, or if deposit level can be seen in the transparent section of the drain tube.



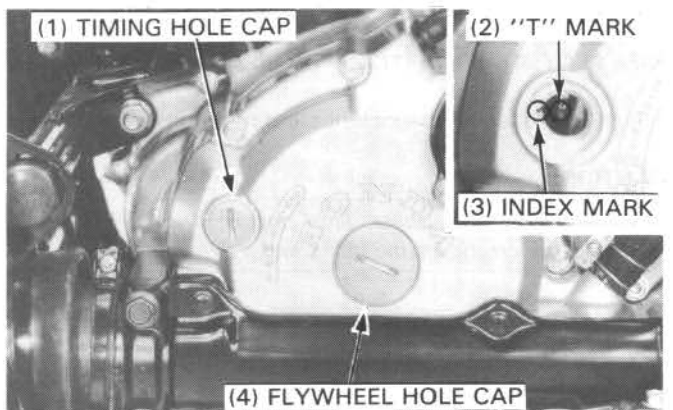
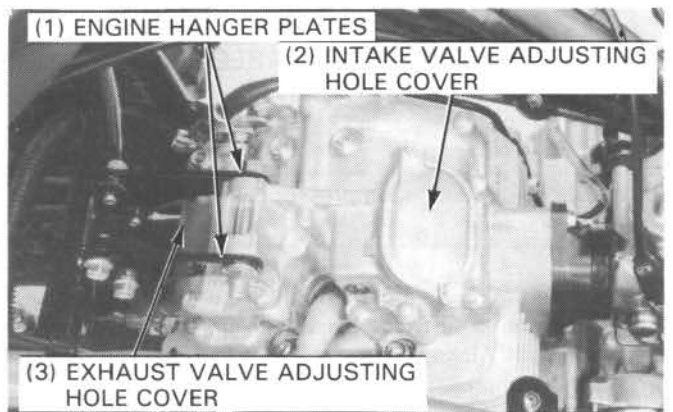
## VALVE CLEARANCE

### NOTE

- Inspect and adjust the valve clearance while the engine is cold (below 35°C/95°F).

Remove the air cleaner case (page 4-5). Remove the engine hanger plates by removing the mounting bolts. Remove the intake and exhaust valve adjusting hole covers.

Remove the timing hole and flywheel hole caps. Rotate the crankshaft clockwise and align the "T" mark on the rotor with the index mark. The piston must be at TDC on the compression stroke.





## MAINTENANCE

Inspect the intake and exhaust valve clearances by inserting a feeler gauge between the adjusting screw and valve stem.

### VALVE CLEARANCES:

Intake: 0.08 mm (0.003 in)  
Exhaust: 0.08 mm (0.003 in)

Adjust by loosening the lock nut and turning the adjusting screw until there is a slight drag on the feeler gauge.

### TOOLS:

Valve adjusting wrench, 10 x 12 mm 07708-0030200  
or equivalent commercially available in U.S.A.  
Valve adjusting wrench B 07708-0030400  
or valve adjusting wrench 089201-200-000

Hold the adjusting screw and tighten the lock nut.

**TORQUE: 15–18 N·m (1.5–1.8 kg·m, 11–13 ft·lb)**

Recheck the valve clearance.

Install the valve adjusting hole covers.  
Install the engine hanger plates and tighten the hanger bolts and nuts to the specified torque values.

### TORQUE VALUES:

10 mm nut: 70–80 N·m (7.0–8.0 kg·m, 51–58 ft·lb)  
8 mm bolt: 34–40 N·m (3.4–4.0 kg·m, 25–29 ft·lb)

Install the air cleaner case.

## STARTER DECOMPRESSOR FREE PLAY ADJUSTMENT ('86, '87 only)

### NOTE

- Always adjust the decompressor linkage after adjusting the valve clearance.

Remove the timing hole cap and flywheel hole cap.  
Rotate the crankshaft clockwise to align the "T" mark with the index mark. Make sure the piston is at TDC (Top Dead Center) on the compression stroke.

Measure the free play at the tip of the decompressor valve lifter.

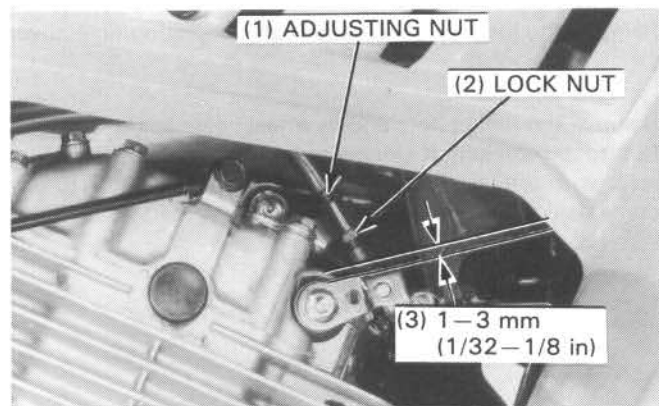
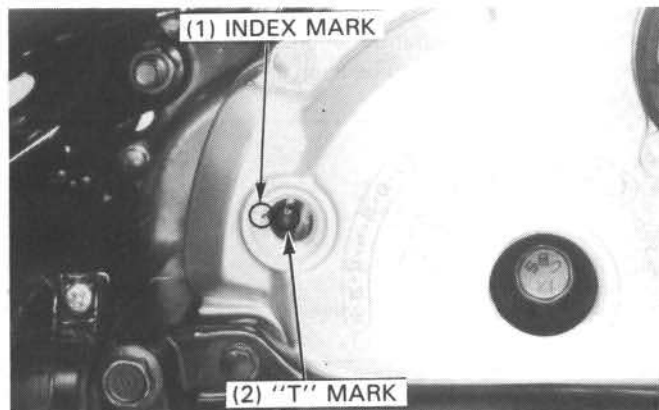
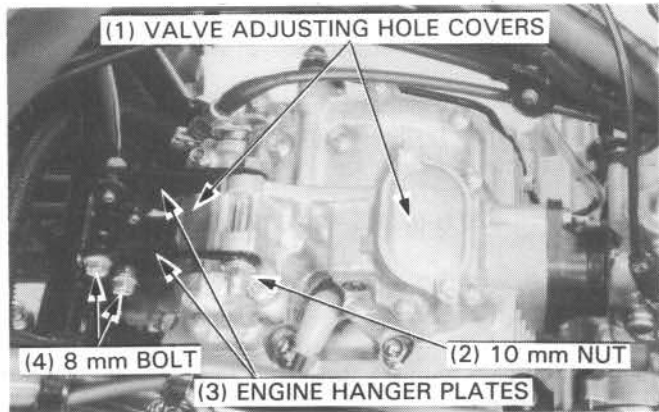
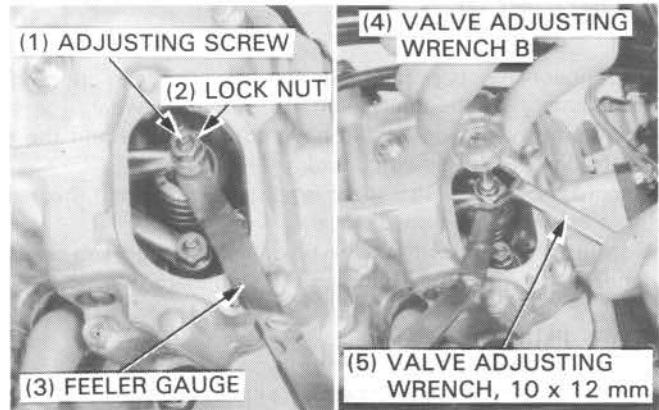
**FREE PLAY: 1–3 mm (1/32–1/8 in)**

Adjust by loosening the lock nut and turning the adjusting nut.

### CAUTION

- Excessive free play causes hard starting. Insufficient free play may cause erratic engine idling and valve damage.

Tighten the lock nut. Operate the kick starter and check the operation of the decompressor mechanism.  
Recheck free play.



## CARBURETOR IDLE SPEED

### NOTE

- Inspect and adjust the idle speed after all other engine maintenance items have been performed and are within specifications.
- The engine must be warm for accurate idle speed inspection and adjustment.

Warm up the engine for about ten minutes.  
Turn the throttle stop screw as required to obtain the specified idle speed.

**IDLE SPEED: 1,400 ± 100 rpm**

## CYLINDER COMPRESSION

Warm up the engine.  
Stop the engine and remove the spark plug.  
Install a compression gauge.  
Open the throttle all the way and crank the engine with the starter motor until the gauge reading stops rising.

### NOTE

- The maximum reading is usually reached within 4–7 seconds.

### COMPRESSION PRESSURE:

**125–145 kPa (12.5–14.5 kg/cm<sup>2</sup>, 178–206 psi)**

Low compression can be caused by:

- blown cylinder head gasket
- improper valve adjustment
- valve leakage
- worn piston ring or cylinder

High compression can be caused by:

- carbon deposits in combustion chamber or on piston head

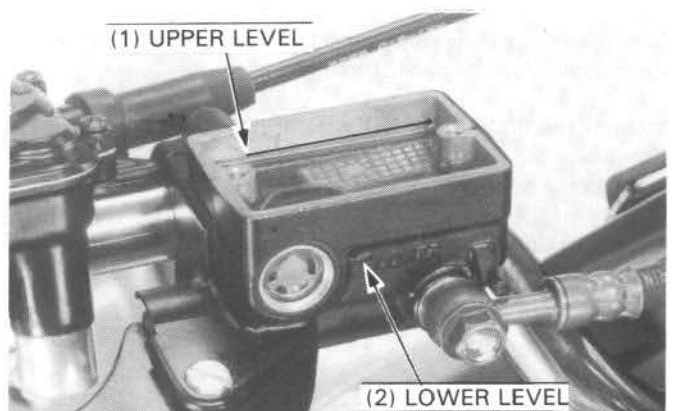
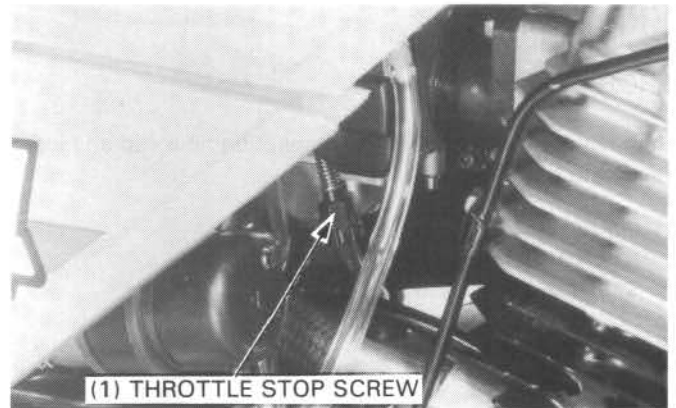
## BRAKE FLUID

Check that the brake fluid reservoir is full. If the level is near the lower level mark, fill the reservoir up to the upper level mark.

Check the entire system for leaks if the level is low.

### CAUTION

- *When adding brake fluid, be sure the reservoir is horizontal before the cap is removed, or brake fluid may spill out.*
- *Use only DOT 3 or 4 brake fluid from a sealed container.*
- *Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.*
- *Never allow contamination (dirt, water, etc.) to enter the brake fluid reservoir.*





## MAINTENANCE

### BRAKE SHOES

#### FRONT BRAKE

Remove the brake shoe lining inspection hole cap and inspect the lining thickness.

#### Lining thickness:

**STANDARD:** 4.0 mm (0.16 in)

**SERVICE LIMIT:** 1.0 mm (0.04 in)

#### NOTE

- If either lining is worn beyond the limit, both brake shoes must be replaced.

After checking, install the inspection hole cap securely to the drum while pushing the cap with screwdriver as shown.

#### REAR BRAKE

Replace the brake shoes if the indicator plate aligns with the brake panel index mark when the rear brake lever or pedal is applied.

### BRAKE SYSTEM

#### FRONT BRAKE

Measure the distance the brake lever moves before the brake starts to take hold.

Measure at the tip of the front brake lever, should be within the standard.

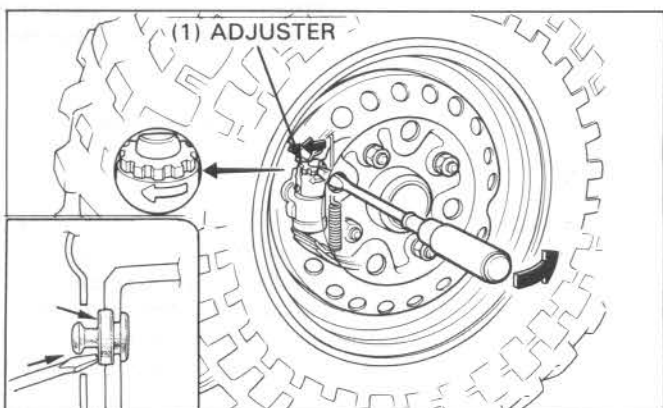
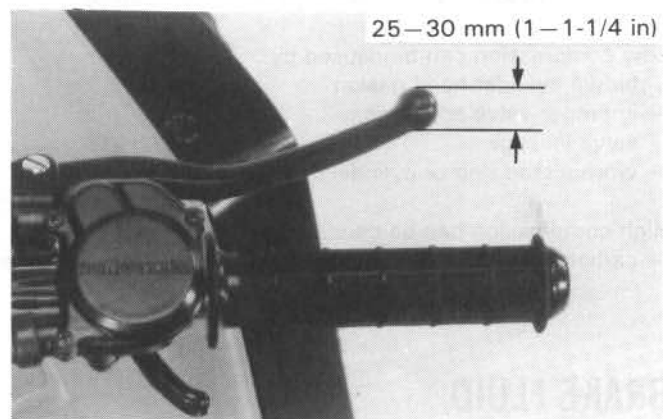
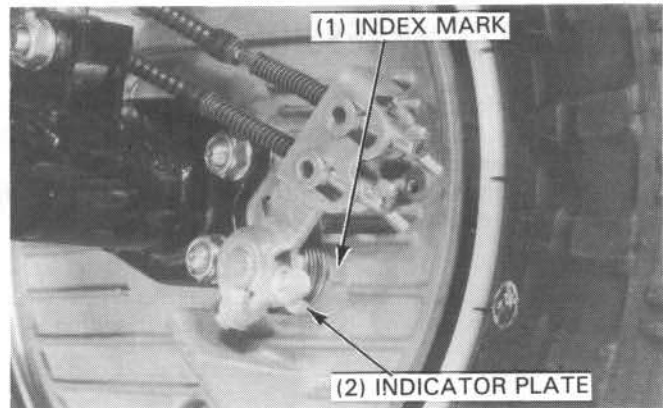
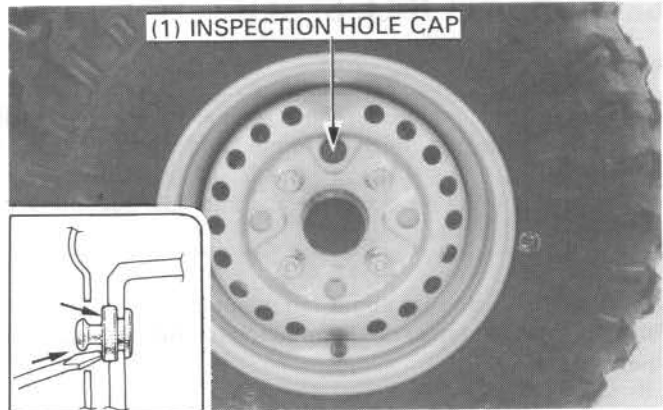
**FREE PLAY:** 25–30 mm (1–1-1/4 in)

If the brake lever free play is excessive and the brake linings are not worn beyond the recommended limit, adjust the brake shoe lining-to-drum clearance.

Turn the brake shoe adjuster up with a screwdriver until the shoes lock, then back off three stops.

Recheck the brake lever free play. If free play is still excessive after adjusting the brake lining clearance, there is probably air in the brake system and it must be bled out (section 13).

After checking, install the inspection hole cap securely to the drum while pushing the cap with a screwdriver as shown.



**REAR BRAKE**

Check the cable, brake lever and brake pedal for loose connections, excessive play or other damage. Replace or repair if necessary.

Disconnect the brake cables at the brake lever or pedal ends.

Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.

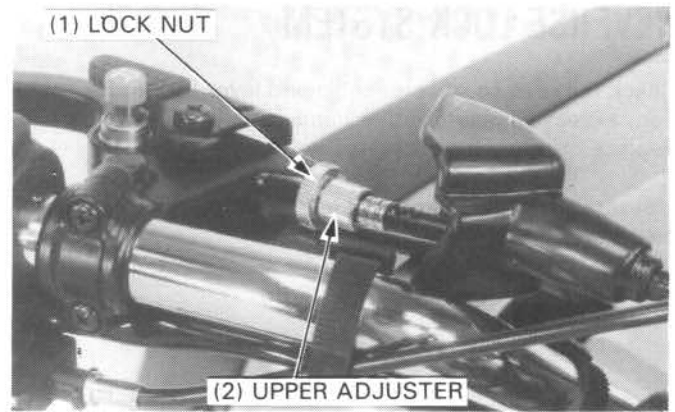
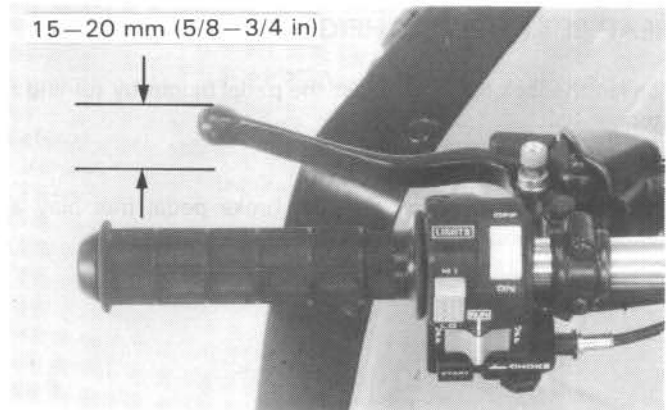
Install the cables.

Measure the rear (parking) brake lever free play at the end of the brake lever.

**REAR BRAKE LEVER FREE PLAY: 15–20 mm (5/8–3/4 in)**

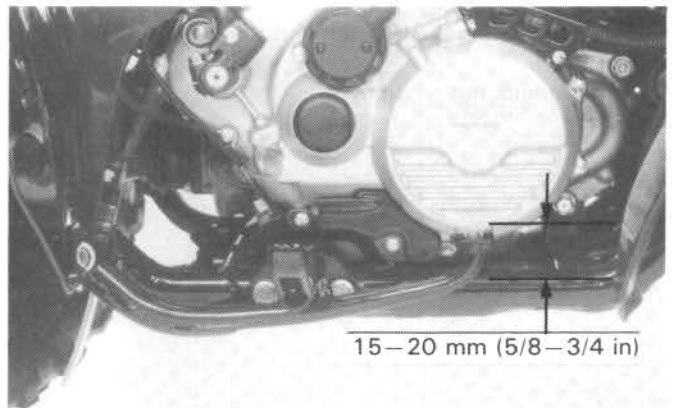
Minor adjustments can be made with the upper adjuster. Slide the rubber cover off the adjuster, loosen the lock nut and adjust.

Major adjustments should be made with the lower adjusting nut at the rear brake arm.



Measure the brake pedal free play at the end of the brake pedal and adjust as described below.

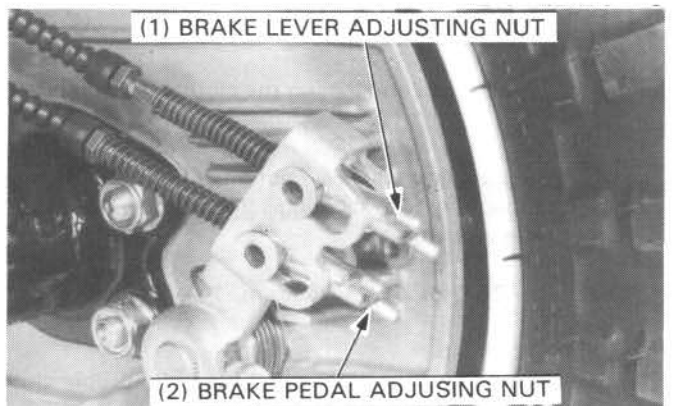
**BRAKE PEDAL FREE PLAY: 15–20 mm (5/8–3/4 in)**



Adjust the rear brake lever and pedal free play by turning the adjusting nuts at the lower end of the cables.

**NOTE**

- Make sure the cut-out of each adjusting nut is seated on the brake arm pin.



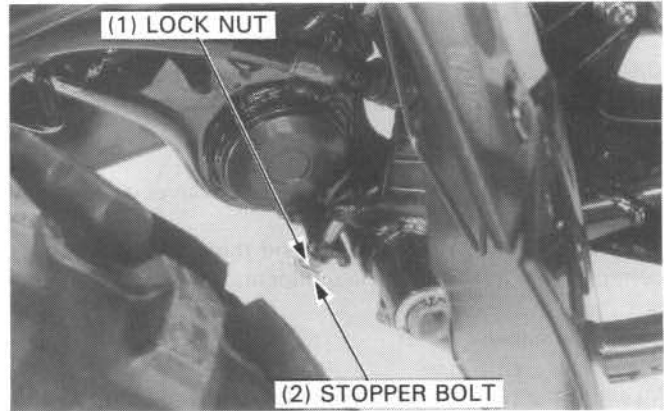


## MAINTENANCE

### REAR BRAKE PEDAL HEIGHT

Loosen the lock nut and adjust the pedal height by turning the stopper bolt.  
Tighten the lock nut securely.

After adjustment, check the rear brake pedal free play and adjust if necessary.

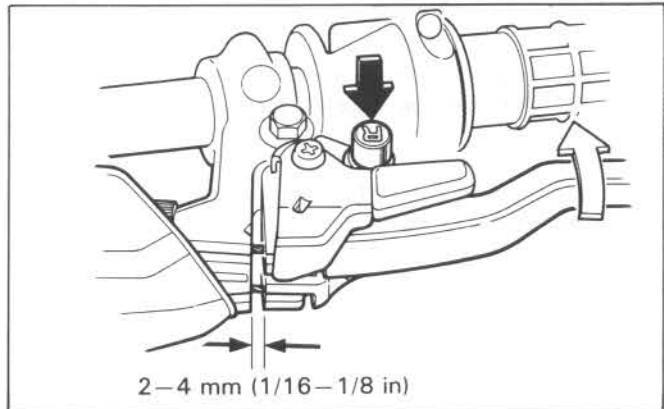


### REVERSE LOCK SYSTEM

Check the reverse selector cable and lever for a loose connection, excessive play or other damage.  
Replace or repair if necessary.

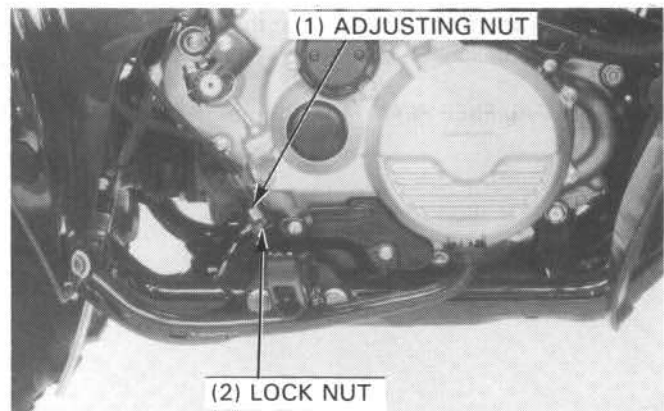
Measure the reverse selector lever free play at the lever end near the cable.

**FREE PLAY: 2–4 mm (1/16–1/8 in)**



Adjust by loosening the lock nut and turning the adjusting nut.

Tighten the lock nut securely.



### CLUTCH SYSTEM

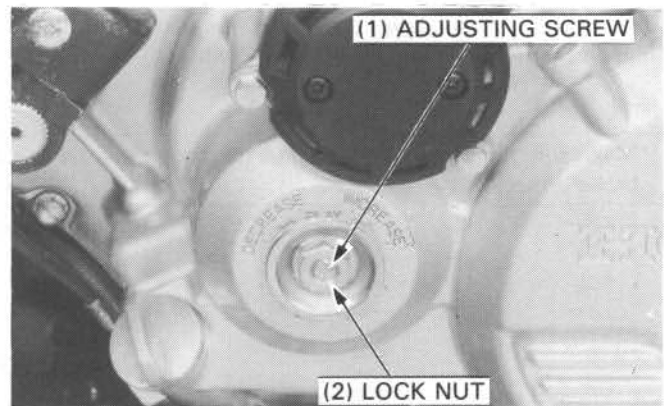
Remove the rubber cap and loosen the clutch adjusting screw lock nut.

Slowly turn the adjusting screw counterclockwise until resistance is felt. Then turn the adjusting screw clockwise 1/4 turn, and tighten the lock nut.

**TORQUE: 19–25 N·m (1.9–2.5 kg·m, 14–18 ft·lb)**

Install the rubber cap.

After adjustment, start the engine and check for proper clutch operation.



## SUSPENSION

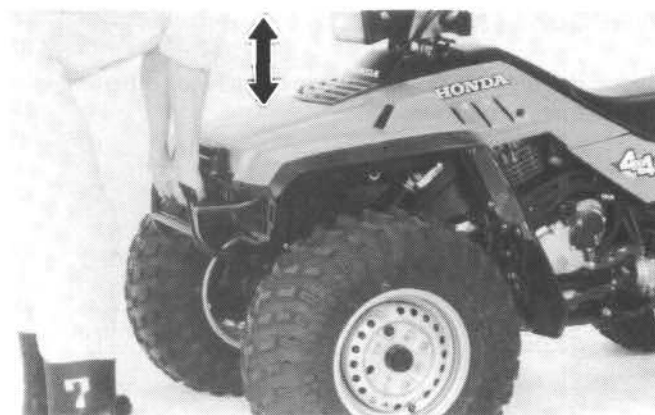
**WARNING**

- *Do not ride a vehicle with faulty suspension. Loose, worn or damaged suspension parts impair vehicle stability and control.*

Check the action of the front/rear shock absorber by pushing down them several times.

Check the entire shock absorber assembly for leaks or damage. Replace damaged components which cannot be repaired.

Tighten all nuts and bolts.



## SPARK ARRESTER CLEANING

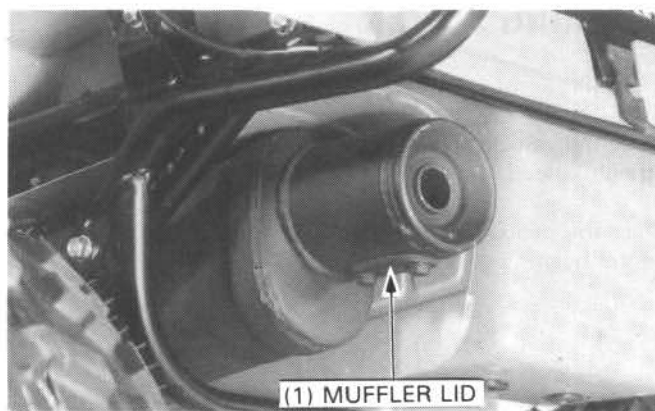
**WARNING**

- *Do not touch the exhaust components while the exhaust system is hot.*
- *Perform this operation in a well-ventilated area, free from fire hazard.*
- *Use adequate eye protection.*

Remove the muffler lid.

Start the engine with the transmission in neutral, and purge accumulated carbon from the spark arrester system by momentarily revving up the engine several times.

Stop the engine and allow the exhaust system cool. Install the muffler lid.



## NUTS, BOLTS, FASTENERS

Tighten bolts, nuts and fasteners at the regular intervals shown in the Maintenance Schedule (page 3-2).

Check that all chassis nuts and bolts are tightened to their correct torque values (pages 1-5 through 7). Check that all cotter pins and safety clips are in place.



## MAINTENANCE

### WHEELS/TIRES

Check the tires for cuts, embedded nails, or other damage.  
Check the tire pressure.

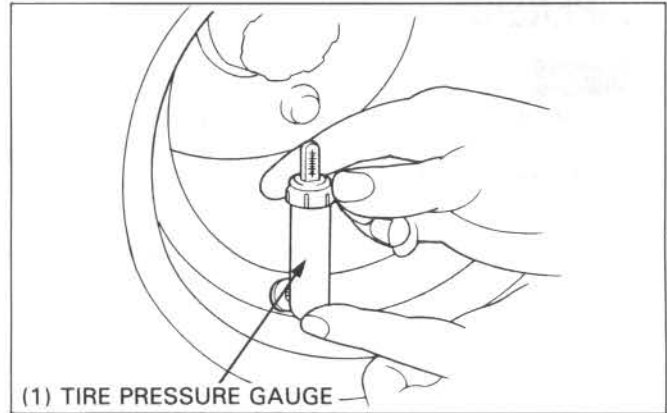
#### Recommended pressure:

Front: 2.2 psi (15 kPa, 0.15 kg/cm<sup>2</sup>)

Rear: 2.2 psi (15 kPa, 0.15 kg/cm<sup>2</sup>)

#### NOTE

- Tire pressure should be checked when the tires are COLD.



### STEERING SHAFT HOLDER BEARING

#### NOTE

- Make sure the cables do not interfere with the rotation of the handlebar.

Raise the front wheels off the ground and make sure that the handlebar rotates freely.

If the handlebar moves unevenly, binds or has vertical movement, check the steering lower stay bearing (page 12-26).

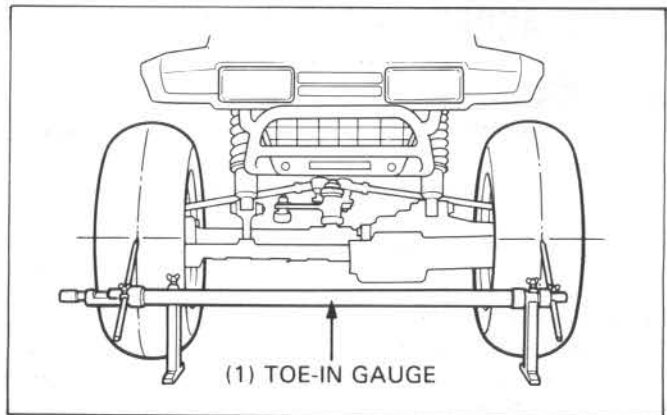


### STEERING SYSTEM

#### TOE-IN

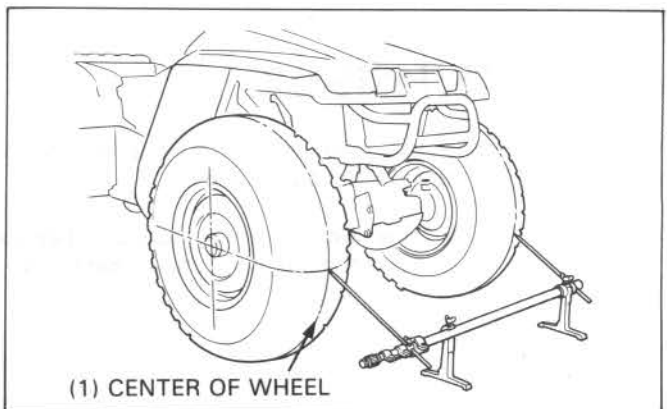
Place the vehicle on level ground with the front wheels facing straight ahead.

Mark the centers of the tires with chalk to indicate the axle center height.



Align the toe-in gauge with the marks on the tires as shown.  
Check the readings on the gauges scales.

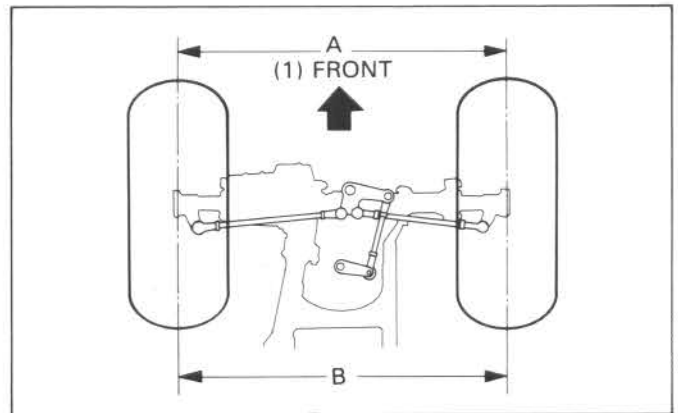
Slowly move the vehicle back until the wheels have turned 180° so the marks on the tires are aligned with the gauge height on the rear side.



Measure the toe-in on the rear part of the tires at the same points.

**TOE-IN: 0 mm (0 in)**

When the toe-in is out of specification, adjust it by changing the length of the tie-rods equally while measuring the toe-in (page 12-14).



**CASTER**

Remove the wheel cap, cotter pin and front axle nut (page 12-14).

Install a attachment onto the front axle.

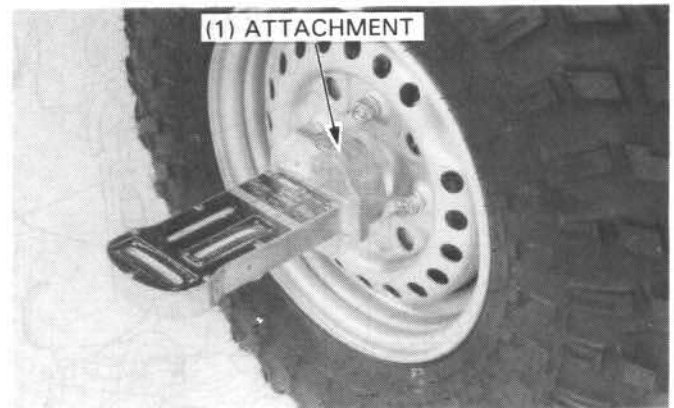
Set the camber and caster gauge to the attachment.

**Measure the camber**

**CAMBER: 0°**

**TOOLS:**

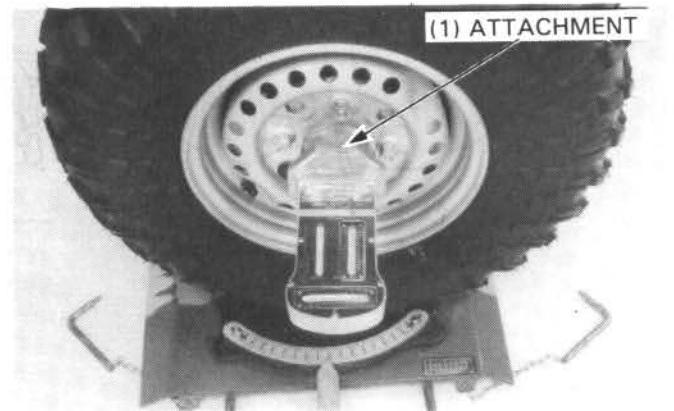
- Adapter** 07410-0010100
- Camber/caster gauge attachment** 07910-MJ30100  
(Not available in U.S.A.)



Set the turn gauge under the front wheels.  
Measure the caster.

**CASTER: 3°**

Caster is not adjustable. If it is out of specification, check the suspension and frame for damage and replace any parts necessary, then recheck alignment.



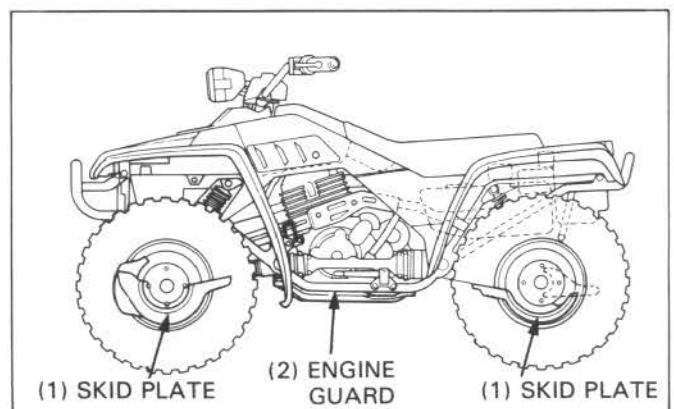
**SKID PLATE, GUARD PLATE  
(AFTER '86:)**

The engine guard and skid plates protect the engine, differential and final drive from rocks.

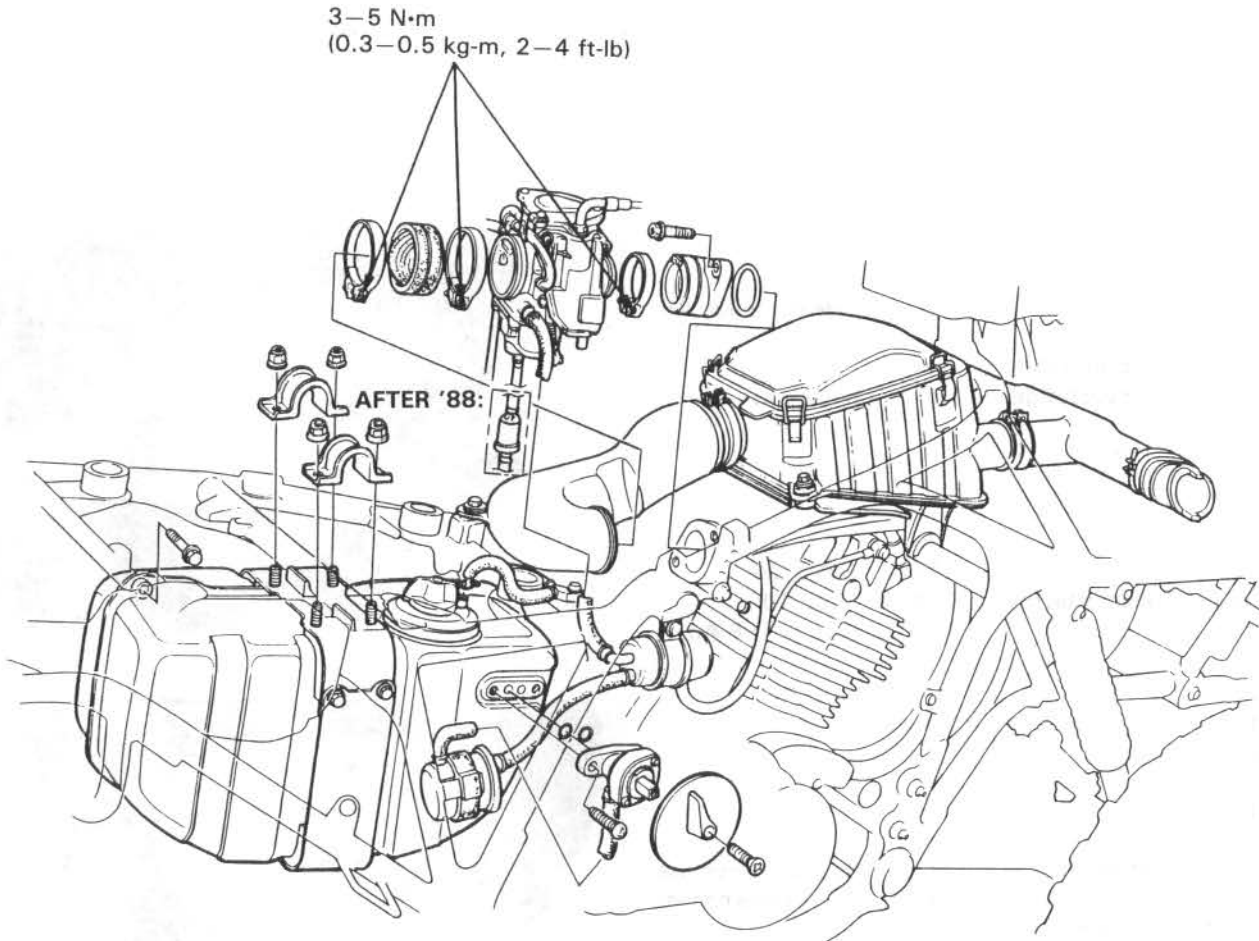
Check the guard and plates for cracks, damage or looseness at intervals shown in the Maintenance Schedule.

Replace the guard and plates if they are cracked or damaged.

If the guard and plate bolts are loose, tighten them to 18-25 N·m (1.8-2.5 kg-m, 13-18 ft-lb)







# 4. FUEL SYSTEM

|                     |     |                          |      |
|---------------------|-----|--------------------------|------|
| SERVICE INFORMATION | 4-1 | CARBURETOR DISASSEMBLY   | 4-9  |
| TROUBLESHOOTING     | 4-2 | CARBURETOR ASSEMBLY      | 4-12 |
| FUEL TANK           | 4-3 | CARBURETOR INSTALLATION  | 4-14 |
| FUEL PUMP           | 4-4 | PILOT SCREW ADJUSTMENT   | 4-16 |
| AIR CLEANER CASE    | 4-5 | HIGH ALTITUDE ADJUSTMENT | 4-16 |
| CARBURETOR REMOVAL  | 4-8 |                          |      |

## SERVICE INFORMATION

### GENERAL

#### WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the work area.

#### CAUTION

- Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new O-rings during re-assembly.
- The carburetor float chamber has a drain screw that can be loosened to drain gasoline.
- Refer to Section 20 for fuel pump inspection.

### SPECIFICATIONS

|                       |   |
|-----------------------|---|
| Fuel tank capacity    | 10.5 lit (2.8 US gal, 2.3 Imp. gal)   |
| Fuel reserve capacity | '86, '87: 2.6 lit (0.7 US gal, 0.6 Imp. gal)<br>After '87: 2.0 lit (0.5 US gal, 0.4 Imp. gal) |

#### Carburetor

|                          |                         |
|--------------------------|-------------------------|
| Identification mark      | QA 03A                  |
| Type                     | Dual valve              |
| Venturi diameter         | 31 mm (1.22 in)         |
| Float level              | 18.5 mm (0.73 in)       |
| Pilot screw opening      | 1-1/2 turns out         |
| Idle speed               | 1400 ± 100 rpm          |
| Main jet                 | #142                    |
| Slow jet                 | #35                     |
| Starter jet              | #100                    |
| Throttle lever free play | 3–8 mm (1/8–5/16 in)    |
| Jet needle               | 3rd groove from the top |

### TORQUE VALUE

|                      |                                   |
|----------------------|-----------------------------------|
| Insulator band screw | 3–5 N·m (0.3–0.5 kg-m, 2–4 ft-lb) |
|----------------------|-----------------------------------|

### TOOL

#### Common

|                   |               |
|-------------------|---------------|
| Float level gauge | 07401–0010000 |
|-------------------|---------------|



### TROUBLESHOOTING

#### Engine cranks but won't start

- No fuel in tank
- No fuel to carburetor
- Too much fuel getting to cylinder
- No spark at plug (ignition malfunction)
- Air cleaner clogged

#### Engine idles roughly, stalls, or runs poorly

- Idle speed incorrect
- Ignition malfunction
- Rich mixture
- Lean mixture
- Air cleaner dirty
- Insulator leaks

#### Lean mixture

- Carburetor fuel jet clogged
- Fuel filler cap vent hole blocked
- Fuel filter clogged
- Fuel line kinked or restricted
- Float valve faulty
- Float level too low
- Intake air leak

#### Rich mixture

- Starter valve stuck open or damage
- Float valve faulty
- Float level too high
- Carburetor air jet clogged
- Air cleaner dirty



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