



## HOW TO USE THIS MANUAL

Follow the Maintenance Schedule recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency. Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 through 3 apply to the whole motorcycle, while sections 4 through 21 describe parts of the motorcycle, grouped according to location.

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

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

If you are not familiar with this motorcycle, read the TECHNICAL FEATURES in section 22.

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

Service information for 1981 and later models is in the Addendums beginning with Section 24.

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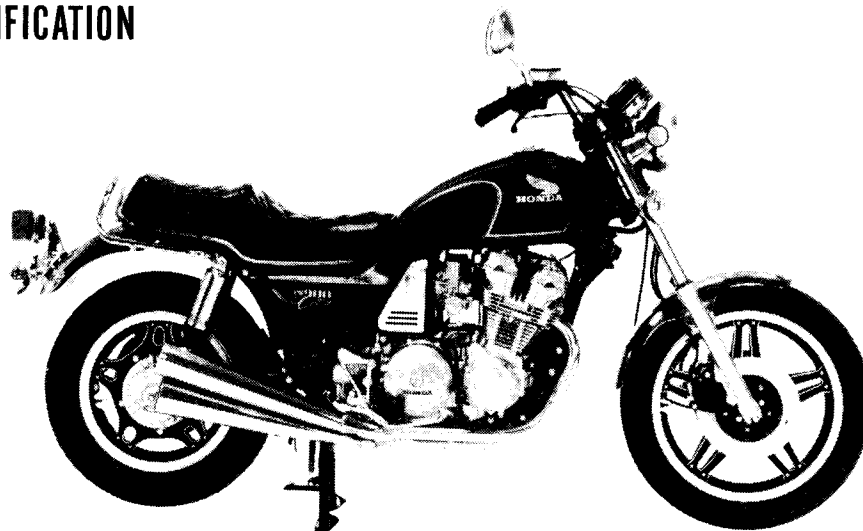
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SERVICE PUBLICATIONS OFFICE

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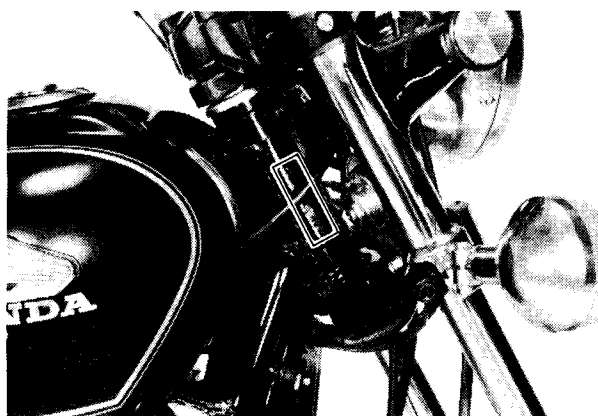


## MODEL IDENTIFICATION

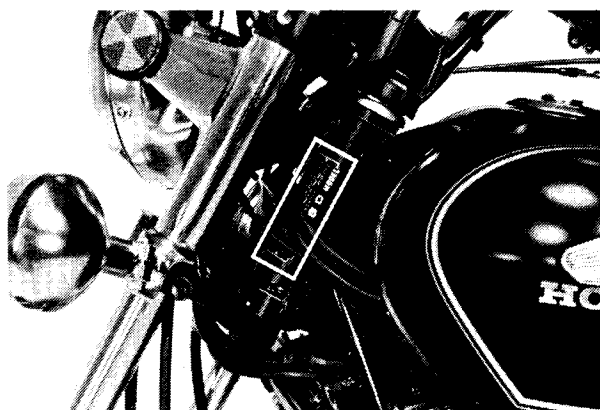


BEGINNING WITH F No. SC04-2000046

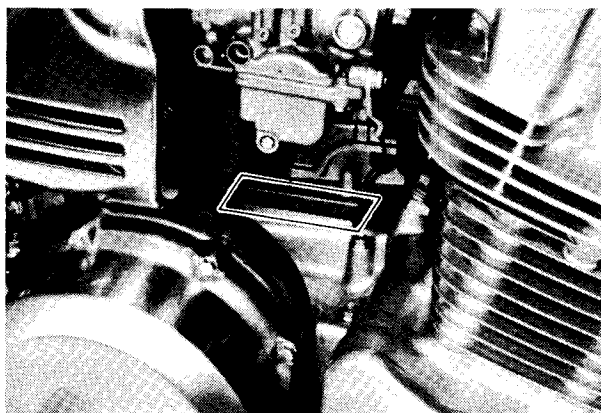
F No. SC04-2001669 [CANADA model]



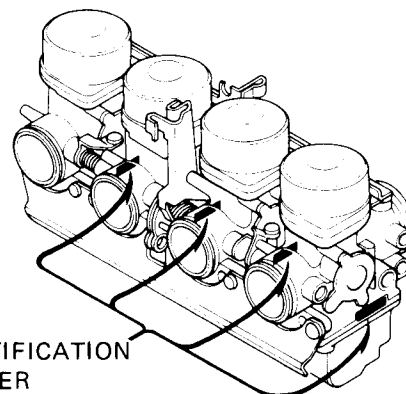
The frame serial number is stamped on the steering head right side.



The vehicle identification number (VIN) is on the steering head left side.



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



IDENTIFICATION  
NUMBER

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





**HONDA**  
**CB900C**

# 1. GENERAL INFORMATION <sup>3</sup>

|                            |     |                                    |      |
|----------------------------|-----|------------------------------------|------|
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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.*

### WARNING

*Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working 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 your eyes were exposed.*

### 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.*

## SERVICE RULES

1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalent. Parts that do not meet HONDA's design specifications may damage the motorcycle.
2. Use the special tools designed for this product.
3. Use only metric tools when servicing this motorcycle. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the motorcycle.
4. Install new gaskets, O-rings, cotter pins, lock plates, etc. when reassembling.
5. When tightening bolts or nuts, begin with larger-diameter or inner bolts first, and tighten to the specified torque diagonally, unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.



# SPECIFICATIONS

★ When a genuine Honda fairing is installed.

| ITEM       |                                |   |
|------------|--------------------------------|---|
| DIMENSIONS | Overall length                 | 2,310 mm (90.9 in)  |
|            | Overall width                  | 915 mm (36.0 in)  |
|            | Overall height                 | 1,170 mm (46.1 in)  |
|            | Wheelbase                      | 1,580 mm (62.2 in)  |
|            | Seat height                    | 780 mm (30.7 in)  |
|            | Foot peg height                | 330 mm (13.0 in)  |
|            | Ground clearance               | 150 mm ( 5.9 in)  |
|            | Dry weight                     | 259 kg (571 lb)   |
|            | Curb weight                    | 277 kg (611 lb)   |
|            |                                |   |
| FRAME      | Type                           | Double cradle   |
|            | Front suspension, travel       | Telescopic fork 160 mm (6.3 in)   |
|            | Rear suspension, travel        | Swing arm/Shock absorber, 101 mm (4.0 in)   |
|            | Gross vehicle weight rating    | 485 kg (1,070 lb)   |
|            | Vehicle capacity load          | 208 kg (460 lb)   |
|            | Front tire size                | 110/90-19-62H Universal pattern   |
|            | Rear tire size                 | 130/90-16-67H Universal pattern   |
|            | Cold tire pressures            | Up to 90 kg (200 lbs) load Front 2.25 kg/cm <sup>2</sup> (32 psi) ★ 2.8 (40 psi)<br>Rear 2.25 kg/cm <sup>2</sup> (32 psi) |
|            |                                | Up to vehicle capacity load Front 2.25 kg/cm <sup>2</sup> (32 psi) ★ 2.8 (40 psi)<br>Rear 2.8 kg/cm <sup>2</sup> (40 psi) |
|            | Front brake, lining swept area | Double disc brake 1200 cm <sup>2</sup> (186.0 sq in)  |
|            | Rear brake, lining swept area  | Single disc brake 653 cm <sup>2</sup> (101.2 sq in)   |
|            | Fuel capacity                  | 16.5 liters (4.4 US gal, 3.6 Imp gal)   |
|            | Fuel reserve capacity          | 4.5 liters (1.2 US gal, 1.0 Imp gal)  |
|            | Caster angle                   | 29°   |
|            | Trail                          | 124 mm (4.9 in)   |
|            | Front fork oil capacity        | 280 ± 2.5 cc (9.5 ± 0.008 ozs)  |
| ENGINE     | Type                           | Air cooled 4-stroke   |
|            | Cylinder arrangement           | Vertical in-line four   |
|            | Bore and stroke                | 64.5 x 69.0 mm (2.54 x 2.72 in)   |
|            | Displacement                   | 902 cm <sup>3</sup> (55.0 cu in)  |
|            | Compression ratio              | 8.8 : 1   |
|            | Valve train                    | Chain driven DOHC 4 Valves per cylinder   |
|            | Maximum horsepower             | 84 BHP/8,500 rpm  |
|            | Maximum torque                 | 7.8 kg-m (56.4 ft-lb)/7,000 rpm   |
|            | Oil capacity                   | 4.5 liters (4.8 US qt, 4.0 Imp qt) after disassembly<br>3.5 liters (3.7 US qt, 3.0 Imp qt) after draining                 |
|            | Lubrication system             | Wet sump  |
|            | Air filtration                 | Paper   |
|            | Cylinder compression           | 12.0 ± 2.0 kg/cm <sup>2</sup> (170 ± 28 psi)  |
|            | Intake valve                   | Opens 10° (BTDC) at 1 mm lift, 63° (BTDC) at 0 lift<br>Closes 35° (ABDC) at 1 mm lift, 98° (ABDC) at 0 lift               |
|            | Exhaust valve                  | Opens 40° (BBDC) at 1 mm lift, 70° (BBDC) at 0 lift<br>Closes 5° (ATDC) at 1 mm lift, 93° (ATDC) at 0 lift                |
|            | Valve clearance (Cold)         | IN: } 0.06–0.13 mm (0.002–0.005 in)<br>EX: }  |
|            | Engine weight                  | 106 kg (234 lb)   |
|            | Idle speed                     | 1,000 ± 100 rpm   |



[ ] CANADA model

| ITEM        |  |  |
|-------------|--|--|
| CARBURETION | Carburetor type                            | VB, 32 mm (1.26 in) venturi bore                                     |
|             | Identification number                      | VB43A [VB43B]  |
|             | Pilot screw initial setting                | See page 4-17  |
|             | Float level                                | 15.5 mm (0.61 in)  |
| DRIVE TRAIN | Clutch                                     | Wet, multi-plate   |
|             | Transmission                               | 5-speed constant-mesh with dual range subtransmission                |
|             | Primary reduction                          | 1.000 (28/28)/2.041 (49/24)  |
|             | Final reduction                            | 3.091 (34/11)  |
|             | Secondary reduction (subtransmission)      |  |
|             | I (High range)                             | 0.638 (30/47)  |
|             | II (Low range)                             | 0.721 (31/43)  |
|             | Third reduction                            | 1.200 (18/15)  |
|             | Gear ratio I                               | 2.375 (38/16)  |
|             | Gear ratio II                              | 1.789 (34/19)  |
|             | Gear ratio III                             | 1.391 (32/23)  |
|             | Gear ratio IV                              | 1.160 (29/25)  |
|             | Gear ratio V                               | 0.964 (27/28)  |
|             | Gear shift pattern                         | Left foot operated return system, 1-N-2-3-4-5                        |
| ELECTRICAL  | Subtransmission gear oil capacity          | 0.60 liters (0.61 US qt, 0.53 Imp qt)                                |
|             | Final drive gear oil capacity              | 0.15 liters (0.16 US qt, 0.13 Imp qt)                                |
|             | Ignition                                   | Transistorized   |
|             | Ignition timing "F—I" mark                 | 10° BTDC at idle   |
|             | Full advance                               | 38.5° BTDC at 3,200 rpm  |
|             | Starting system                            | Starting motor   |
|             | Generator                                  | Three phase A.C. generator 266 W/5,000 rpm                           |
|             | Battery capacity                           | 12 V—14 AH   |
|             | Spark plug                                 |  |
|             | ( ) : Canada model                         |  |
|             |  | For cold climate below 5°C (41°F)                                    |
|             |  | Standard   |
|             |  | NGK ND NGK ND  |
|             |  | D8EA X24ES-U D9EA X27ES-U<br>[DR8ES-L] [X24ESR-U] [DR8ES] [X27ESR-U] |
| LIGHTS      | Spark plug gap                             | 0.6—0.7 mm (0.024—0.028 in)  |
|             | Firing order                               | 1—2—4—3  |
|             | Fuse/Main fuse                             | 10 A/30 A  |
|             | Headlight (high/low beam)                  | 60/55 W H4 BULB (Phillips 12342/99 or equivalent)                    |
|             | Tail/stoplight                             | 8/27 W 3/32 cp SAE NO. 1157  |
|             | Front turn signal/running light            | 23/8 W 32/3 cp SAE NO. 1034  |
|             | Rear turn signal                           | 23 W 32 cp SAE NO. 1073  |
|             | Speedometer light                          | 3.4 W 2 cp SAE NO. 57  |
|             | Tachometer light                           | 3.4 W 2 cp SAE NO. 57  |
|             | Neutral indicator                          | 3.4 W 2 cp SAE NO. 57  |
|             | Turn signal indicator                      | 3.4 W 2 cp SAE NO. 57  |
|             | High beam indicator                        | 3.4 W 2 cp SAE NO. 57  |
|             | Rear suspension air pressure warning light | 3.4 W 2 cp SAE NO. 57  |





## TORQUE VALUES

### • ENGINE

| Item                   | Q'ty | Thread Dia (mm) | Torque kg-m (ft-lb) | Remarks   |
|------------------------|------|-----------------|---------------------|---|
| Cylinder head cover    | 8    | 6               | 0.8– 1.2 ( 6– 9)    | Apply molybdenum di-sulfide grease to threads and underside of nuts |
| Cam holder             | 24   | 6               | 1.2– 1.6 ( 9–12)    |   |
| Cylinder head          | 12   | 10              | 3.6– 4.0 (26–29)    |   |
| Cam sprocket           | 4    | 7               | 2.2– 2.6 (16–19)    |   |
| Spark plug             | 4    |                 | 1.2– 1.9 ( 9–14)    | Apply molybdenum di-sulfide grease to threads and underside of nuts |
| Crankcase              |      | 8               | 2.1– 2.5 (15–18)    |   |
| A.C. generator         | 1    | 12              | 8.0–10.0 (58–72)    |   |
| Primary shaft          | 1    | 12              | 8.0–10.0 (58–72)    |   |
| Main shaft             | 1    | 16              | 3.8– 4.2 (28–30)    | Apply liquid sealant  |
| Connecting rod nut     | 8    |                 | 3.2 (23)            |   |
| Oil Filter center bolt | 1    |                 | 2.8– 3.2 (20–23)    |   |
| Oil pressure switch    | 1    |                 | 1.5– 2.0 (11–14)    |   |
| Neutral switch         | 1    |                 | 1.6– 2.0 (12–14)    | Apply LOCTITE® 271 to the threads                                   |
| Oil drain plug         | 1    | 14              | 3.5– 4.0 (25–29)    |   |
| Oil pipe               | 2    | 10              | 2.1– 2.5 (15–18)    |   |
| Spark advancer         | 1    | 8               | 3.3– 3.7 (24–27)    |   |
| Starting clutch        | 3    | 8               | 2.6– 3.0 (19–22)    | <div>NEW</div>  |
| Subtransmission        | 9    | 8               | 3.0– 3.4 (22–25)    |   |
| Oil level check bolt   | 1    | 12              | 2.0– 2.5 (14–18)    |   |
| Oil drain bolt         | 1    | 8               | 1.6– 2.0 (12–14)    | <div>NEW</div>  |

### • CHASSIS

| Item                      | Q'ty | Thread Dia (mm) | Torque kg-m (ft-lb) | Remarks   |
|---------------------------|------|-----------------|---------------------|---|
| Steering stem nut         | 1    | 24              | 8.0–12.0 (58–87)    | Apply oil to threads and tighten to 2.0 (14) when installing a genuine Honda fairing. |
| Steering top thread       | 1    | 26              | 1.4– 1.6 (10–12)    |   |
| Handlebar holder          | 4    | 8               | 1.8– 2.5 (13–18)    |   |
| Front fork top bridge     | 2    | 7               | 0.9– 1.3 ( 7– 9)    |   |
| Front fork bolt           | 2    | 31              | 1.5– 3.0 (11–22)    |   |
| Steering stem             | 2    | 10              | 4.5– 5.5 (33–40)    |   |
| Front axle holder         | 4    | 10              | 3.0– 4.0 (22–29)    |   |
| Front axle nut            | 1    | 12              | 5.5– 6.5 (40–47)    |   |
| Front fork socket bolt    | 2    | 8               | 1.5– 2.5 (11–18)    |   |
| Front fork drain bolt     | 2    | 6               | 0.6– 0.9 (4.3–7)    |   |
| Front fork hose joint (R) | 1    | 10              | 1.5– 2.0 (11–14)    |   |
| Front fork hose joint (L) | 1    | 8               | 0.4– 0.7 (2.9–5.1)  |   |



| Item   | Q'ty | Thread Dia (mm) | Torque kg-m (ft-lb) | Remarks |
|--|------|-----------------|---------------------|---------|
| Front fork hose connector                        | 1    | 8               | 0.4— 0.7 (2.9—5.1)  | UBS     |
| Front fork air valve                             | 1    | 8               | 0.4— 0.7 (2.9—5.1)  |         |
| Front/rear brake disc                            | 5    | 8               | 2.7— 3.3 (20—24)    |         |
| Brake caliper carrier                            | 2    | 10              | 3.0— 4.0 (22—29)    |         |
| Rear axle nut                                    | 1    | 18              | 8.0—10.0 (58—72)    |         |
| Rear axle holding bolt                           | 1    | 8               | 2.4— 2.9 (17—21)    |         |
| Rear brake pedal holder                          | 2    | 10              | 3.5— 4.5 (25—33)    |         |
| Rear brake pedal                                 | 1    | 8               | 1.8— 2.5 (13—18)    |         |
| Rear brake torque link                           | 1    | 8               | 1.9— 2.3 (14—17)    |         |
| Rear shock absorber                              | 3    | 10              | 3.0— 4.0 (22—29)    |         |
| Rear shock absorber pin bolt                     | 1    | 14              | 4.0— 5.0 (29—36)    |         |
| Engine hanger bolt                               | 5    | 10              | 3.5— 4.5 (25—33)    |         |
| Rear shock absorber rod lock nut                 | 2    | 11              | 3.5— 6.0 (25—43)    |         |
| Rear shock absorber air valve (3-way joint)      | 1    | 8               | 0.4— 0.7 (2.9—5.1)  |         |
| Rear shock absorber hose connector (3-way joint) | 2    | 8               | 0.8— 1.2 (5.8—9)    |         |
| Rear shock absorber hose joint                   | 2    | 8               | 0.4— 0.7 (2.9—5.1)  |         |
| Rear shock absorber hose joint (3-way)           | 2    | 10              | 1.5— 2.0 (11—14)    |         |
| Rear shock absorber air sensor                   | 1    | 10              | 0.8— 1.2 (5.8—9)    |         |
| 3-Way joint                                      | 1    | 14              | 1.9— 2.3 (14—17)    |         |
| Swing arm pivot bolt                             |      |                 |                     |         |
| (Right)  | 1    | 35              | 5.0— 7.0 (36—51)    | UBS     |
| (Left)   | 1    | 35              | 1.6— 2.0 (12—14)    |         |
| Swing arm pivot nut                              | 1    | 35              | 5.0— 7.0 (36—51)    |         |
| Final gear case                                  | 3    | 10              | 3.5— 4.5 (25—33)    |         |
| Final gear case cover                            | 2    | 10              | 3.5— 4.5 (25—33)    |         |
|  | 6    | 8               | 2.3— 2.8 (17—20)    |         |
| Final gear case drain bolt                       | 1    | 6               | 1.0— 1.4 ( 7—10)    |         |
| Filler cap bolt                                  | 1    | 30              | 1.0— 1.4 ( 7—10)    |         |
| Pinion nut                                       | 1    | 16              | 4.0— 5.0 (29—36)    |         |

**8 GENERAL INFORMATION**

Torque specifications listed above are for important fasteners. Others should be tightened to standard torque values below.

**• STANDARD TORQUE VALUES**

| Item               | Torque Values kg-m (ft-lb) | Item                      | Torque Values kg-m (ft-lb) |
|--------------------|----------------------------|---------------------------|----------------------------|
| 5 mm bolt and nut  | 0.4 -0.6 ( 3- 4)           | 5 mm screw                | 0.3 -0.5 ( 3- 4)           |
| 6 mm bolt and nut  | 0.8 -1.2 ( 6- 9)           | 6 mm screw                | 0.7 -1.1 ( 5- 8)           |
| 8 mm bolt and nut  | 1.8 -2.5 (13-18)           | 6 mm flange bolt and nut  | 1.0 -1.4 ( 7-10)           |
| 10 mm bolt and nut | 3.0 -4.0 (22-29)           | 8 mm flange bolt and nut  | 2.0 -3.0 (14-22)           |
| 12 mm bolt and nut | 5.0 -6.0 (36-43)           | 10 mm flange bolt and nut | 3.0 -4.0 (22-29)           |





## TOOLS

### • SPECIAL TOOLS

| Tool Name                        | Tool No.      | Q'ty | Ref. page           |
|----------------------------------|---------------|------|---------------------|
| Vacuum gauge set                 | 07404-0020000 | 1    | 3-10                |
| Oil pressure gauge               | 07506-3000000 | 1    | 2- 5                |
| Oil pressure gauge attachment    | 07510-4220100 | 1    | 2- 4                |
| Primary gear holder              | 07924-4250000 | 1    | 8- 5, 8- 6          |
| Rotor puller                     | 07933-4250000 | 1    | 18- 6               |
| Bearing race remover             | 07953-4250001 | 1    | 15-24               |
| Carburetor adjusting wrench      | 07908-4220100 | 1    | 3-11                |
| Carburetor pilot screw wrench    | 07908-4220201 | 1    | 3-17                |
| Snap ring pliers                 | 07914-3230001 | 1    | 17- 8, 17-15        |
| Steering stem socket             | 07916-3710100 | 1    | 14-25               |
| 6 mm hollow set wrench           | 07917-3230000 | 1    | 14-16, 14-19        |
| Bearing race remover             | 07946-3710500 | 1    | 14-24               |
| Steering stem driver             | 07946-3710600 | 1    | 14-23               |
| Bearing driver attachment        | 07946-3710700 | 1    | 14-24               |
| Piston base                      | 07958-3000000 | 2    | 7- 8                |
| Valve lifter holder              | 07964-4220001 | 1    | 3- 7                |
| Valve guide reamer 5.5 mm        | 07984-2000000 | 1    | 6-14, 6-15          |
| Piston ring compressor           | 07954-4220000 | 2    | 7- 8                |
| Valve lifter bore protector      | 07999-4220000 | 1    | 6-11                |
| Socket bit 10 mm                 | 07917-3710000 | 1    | 8- 6                |
| Clutch adjusting wrench          | 07908-3230000 | 1    | 3-18                |
| Valve seat cutter 24.5 mm        | 07780-0010100 | 1    | 6-16                |
| Valve seat cutter 27.5 mm        | 07780-0010200 | 1    |                     |
| Valve seat flat cutter 28 mm     | 07780-0012100 | 1    |                     |
| Valve seat flat cutter 30 mm     | 07780-0012200 | 1    |                     |
| Valve seat interior cutter 30 mm | 07780-0014000 | 1    |                     |
| Valve seat cutter holder 5.5 mm  | 07781-0010100 | 1    |                     |
| Retainer wrench A                | 07910-4610100 | 1    | 10- 9               |
| Retainer wrench B                | 07910-4610200 | 1    | 10-10, 10-11, 10-14 |
| Damper compressor                | 07964-4610000 | 1    | 10- 4, 10- 6        |
| Preload inspection tool          | 07998-4610000 | 1    | 10-13               |
| Subtransmission base             | 07965-4610000 | 1    | 10- 9               |
| Bearing driver                   | 07946-6340000 | 1    | 14-24               |
| Clutch center holder             | 07923-3710000 | 1    | 8- 3, 8- 8          |
| Bearing remover set              | 07936-8890100 | 1    | 15-14               |
| P.V.T. adjust wrench             | 07908-4690001 | 1    | 15-16               |
| Final retainer wrench            | 07910-3710000 | 1    | 16- 4, 16- 6, 16-12 |
| Oil seal driver attachment       | 07946-6920100 | 1    | 16- 7, 16-10        |
| Retainer wrench B                | 07910-4630100 | 1    | 16- 9, 16-11        |



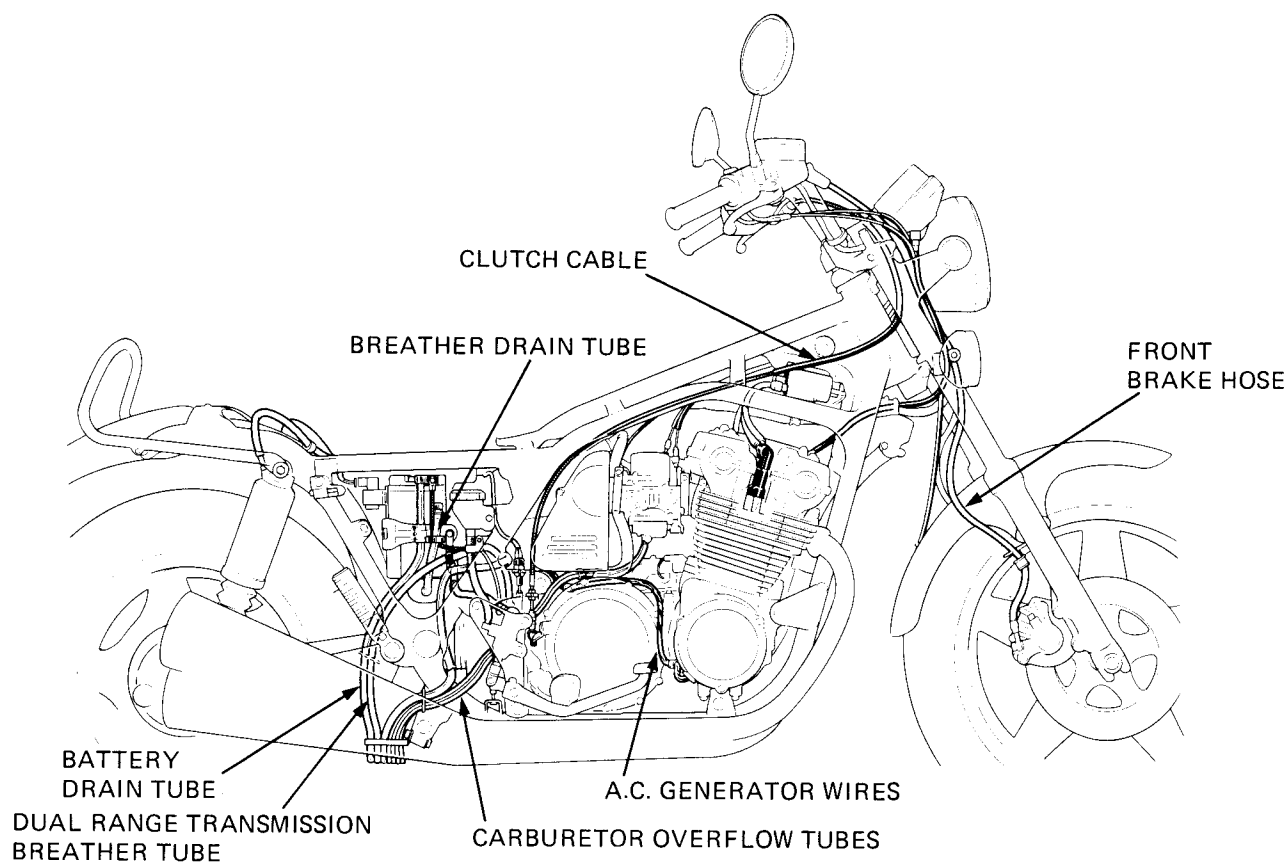
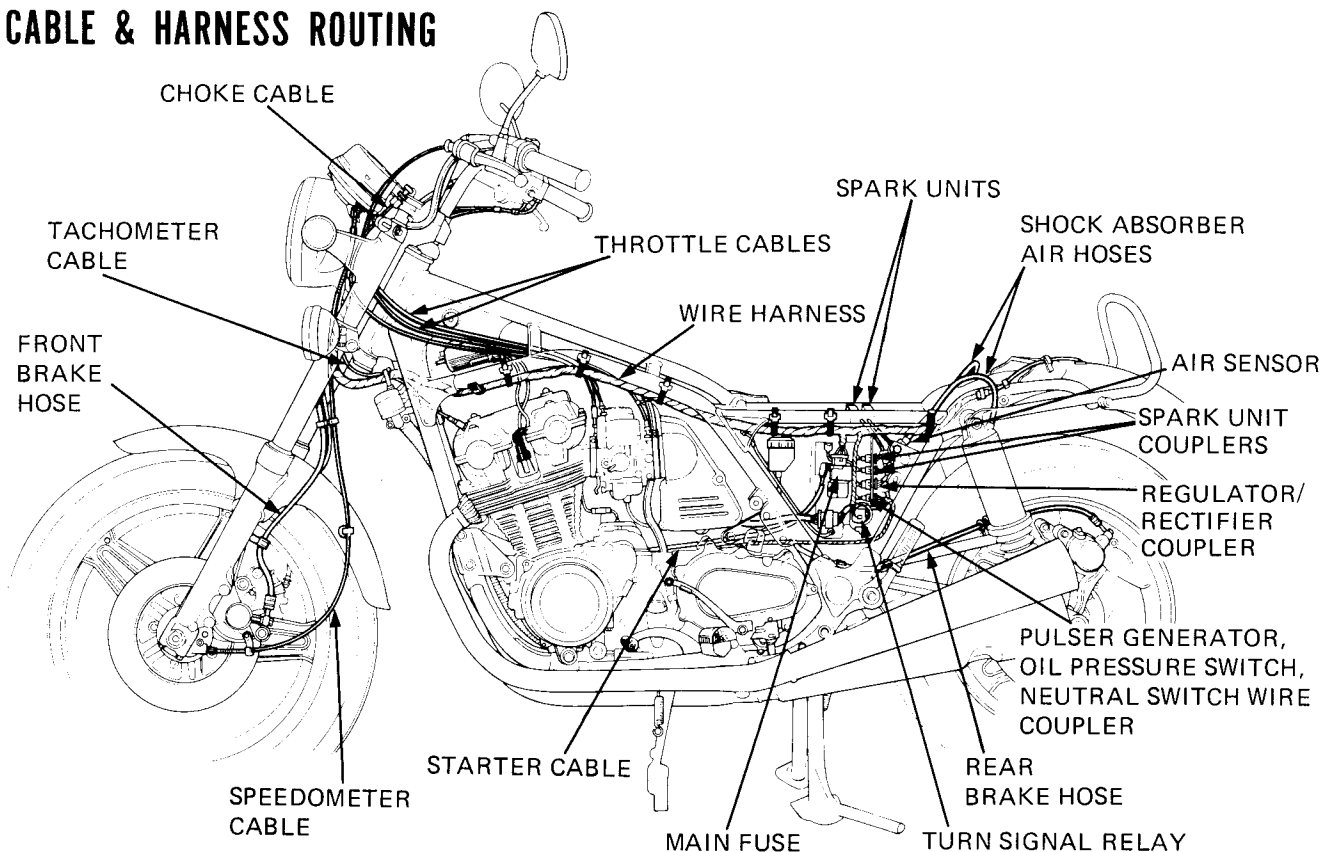
| Tool Name                         | Tool No.      | Q'ty | Ref. Page           |
|-----------------------------------|---------------|------|---------------------|
| Dis/assembly tool A               | 07965-3710100 | 1    | 16- 5               |
| Preload inspection tool           | 07924-3710000 | 1    | 16- 3, 16-11, 16-14 |
| Oil seal remover                  | 07948-4630100 | 1    | 16- 6               |
| Final assembly/disassembly base A | 07965-4630100 | 1    | 16- 3, 16- 9        |
| Disassembly tool B                | 07965-4630300 | 1    | 16- 5               |
| Gear center guide                 | 07965-4630500 | 1    | 16- 5               |
| Oil seal guide                    | 07973-4630100 | 1    | 16-10               |
| O-ring guide                      | 07973-4630200 | 1    | 16-10               |
| Pinion gear dis/assembly tool     | 07931-4630200 | 1    | 16-12               |

### • COMMON TOOLS

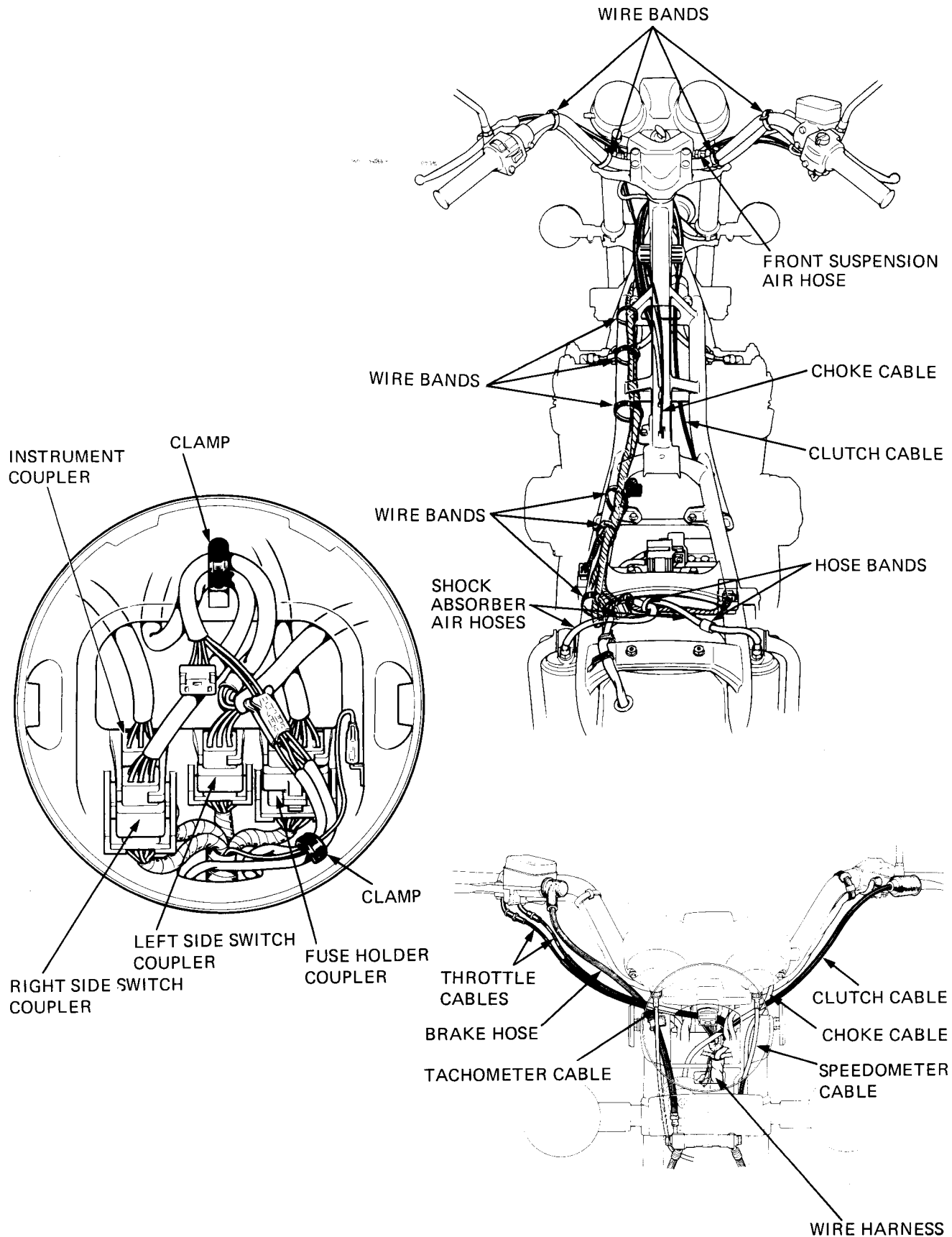
| Tool Name                          | Part No.      | Q'ty | Alternate Tool           | Part No.                 | Ref. Page                                  |
|------------------------------------|---------------|------|--------------------------|--------------------------|--|
| Float level gauge                  | 07401-0010000 | 1    |                          |                          | 4- 8                                       |
| Retainer wrench A                  | 07710-0010100 | 1    | Bearing retainer wrench  | 07910-2830000            | 5- 3                                       |
| Retainer wrench B                  | 07710-0010200 | 1    | Bearing retainer wrench  | 07920-3230101<br>3600000 | 14-11, 14-13                               |
| Retainer wrench body               | 07710-0010401 | 1    |                          |                          | 14-11, 14-13, 15- 3                        |
| Lock nut wrench<br>20 x 24 mm      | 07716-0020100 | 1    |                          |                          | 8- 3, 8- 8                                 |
| Extension bar                      | 07716-0020500 | 1    |                          |                          | 8- 3, 8- 8                                 |
| Valve guide remover<br>5.5 mm      | 07742-0010100 | 1    | Valve guide driver       | 07942-3290100            | 6-15                                       |
| Valve guide driver B               | 07742-0020200 | 1    | Valve guide driver       | 07942-3290200            | 6-15                                       |
| Bearing driver outer<br>37 x 40 mm | 07746-0010200 | 1    | Bearing driver           | 07946-4300200            | 10-11, 15-14                               |
| Bearing driver outer<br>42 x 47 mm | 07746-0010300 | 1    | Bearing driver           | 07945-3330100            | 10-12, 14-13, 15- 6                        |
| Bearing driver outer<br>52 x 55 mm | 07746-0010400 | 1    | Bearing driver           | 07946-9370100<br>3290000 | 2-11, 15- 6                                |
| Bearing driver handle<br>outer A   | 07749-0010000 | 1    | Driver handle attachment | 07949-6110000            | 10-12, 14-13, 15- 6<br>16- 6, 16- 7, 16-10 |
| Bearing driver handle<br>outer B   | 07746-0020100 | 1    | Bearing driver           | 07945-3230201            | 13-12, 13-13                               |
| Bearing driver handle<br>outer C   | 07746-0030100 | 1    |                          |                          |  |
| Bearing driver inner<br>25 mm      | 07746-0030200 | 1    | Bearing driver           | 07945-3710200            | 10-12, 12- 8                               |
| Valve spring compressor            | 07757-0010000 | 1    | Valve spring compressor  | 07957-3290001            | 6-11                                       |
| Drive pilot 15 mm                  | 07746-0040300 | 1    |                          |                          | 14-13                                      |
| Drive pilot 20 mm                  | 07746-0040400 | 1    |                          |                          | 15- 6, 16- 6                               |
| Front fork oil seal<br>Driver body | 07747-0010100 | 1    |                          |                          |  |
| Attachment (E)                     | 07747-0010600 | 1    | Fork seal driver         | 07947-3710100            | 14-19                                      |



## CABLE & HARNESS ROUTING









## 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

| FREQUENCY                  |    | WHICHEVER<br>COMES<br>FIRST<br>↓ | ODOMETER READING (NOTE 3) |                      |                        |                         |                          |                          |                          |                          | Refer to    |
|----------------------------|----|----------------------------------|---------------------------|----------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------|
|                            |    |                                  | EVERY                     | 600 mi<br>(1,000 km) | 4,000 mi<br>(6,400 km) | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) | 24,000 mi<br>(38,400 km) |             |
| EMISSION RELATED ITEMS     | *  | FUEL LINES                       |                           |                      | I                      | I                       | I                        | I                        | I                        | I                        | Page 3- 3   |
|                            | *  | THROTTLE OPERATION               |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3- 3   |
|                            | *  | CARBURETOR-CHOKE                 |                           |                      | I                      | I                       | I                        | I                        | I                        | I                        | Page 3- 4   |
|                            |    | AIR CLEANER                      | NOTE 1                    |                      | C                      | R                       | C                        | R                        | C                        | R                        | Page 3- 4   |
|                            |    | CRANKCASE BREATHER               | NOTE 2                    |                      | C                      | C                       | C                        | C                        | C                        | C                        | Page 3- 5   |
|                            |    | SPARK PLUGS                      |                           |                      | R                      | R                       | R                        | R                        | R                        | R                        | Page 3- 5   |
|                            | *  | VALVE CLEARANCE                  |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3- 6   |
|                            |    | ENGINE OIL                       | YEAR                      | R                    | R                      | R                       | R                        | R                        | R                        | R                        | Page 2- 3   |
|                            |    | ENGINE OIL FILTER                | YEAR                      | R                    | R                      | R                       | R                        | R                        | R                        | R                        | Page 2- 3   |
|                            | *  | CAM CHAIN TENSION                |                           | A                    | A                      | A                       | A                        | A                        | A                        | A                        | Page 3-10   |
|                            | *  | CARBURETOR-SYNCHRONIZE           |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-10   |
|                            | *  | CARBURETOR-IDLE SPEED            |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-11   |
| NON-EMISSION RELATED ITEMS | *  | DRIVE SHAFT JOINT                |                           |                      |                        | L                       |                          | L                        |                          | L                        | Page 2-12   |
|                            | *  | FINAL DRIVE LUBRICANT            |                           |                      |                        | I                       |                          | I                        |                          | R                        | Page 2-9,12 |
|                            |    | BATTERY                          | MONTH                     | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-14   |
|                            |    | BRAKE FLUID                      | MONTH 1<br>2 YEARS* R     | I                    | I                      | I                       | *R                       | I                        | I                        | *R                       | Page 3-14   |
|                            |    | BRAKE PAD WEAR                   |                           |                      | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-15   |
|                            |    | BRAKE SYSTEM                     |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-15   |
|                            | *  | BRAKE LIGHT SWITCH               |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-16   |
|                            | *  | HEADLIGHT AIM                    |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-16   |
|                            |    | CLUTCH                           |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-17   |
|                            |    | SIDE STAND                       |                           |                      | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-18   |
|                            | *  | SUSPENSION                       |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-19   |
|                            | *  | NUTS, BOLTS, FASTENERS           |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-20   |
|                            | ** | WHEELS                           |                           | I                    | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-20   |
|                            | ** | STEERING HEAD BEARING            |                           | I                    |                        | I                       |                          | I                        |                          | I                        | Page 3-21   |

\* SHOULD BE SERVICED BY AN AUTHORIZED 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 AN AUTHORIZED HONDA DEALER.

NOTES: 1. SERVICE MORE FREQUENTLY WHEN RIDING IN DUSTY AREAS.

2. SERVICE MORE FREQUENTLY WHEN RIDING IN RAIN OR AT FULL THROTTLE. (U.S.A. ONLY)

3. FOR HIGHER ODOMETER READINGS, REPEAT AT THE FREQUENCY INTERVAL ESTABLISHED HERE.



## EMISSION CONTROL SYSTEM

The CB900C is equipped with two Emission Control Systems.

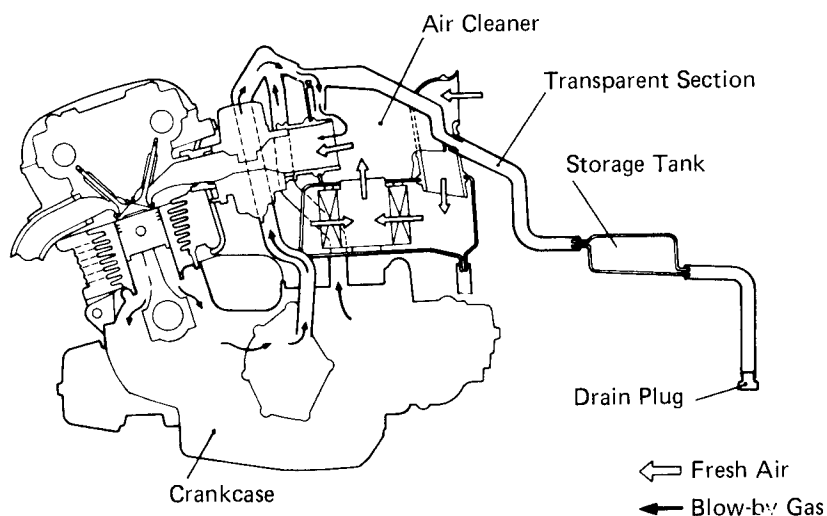
### EXHAUST EMISSION CONTROL SYSTEM

The exhaust emission control system is composed of lean carburetor settings, 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. Liquids are collected in the storage tank.



### EMISSION CONTROL INFORMATION LABEL

An Emission Control information Label is located on the frame as shown. It contains basic tune-up specifications.



Vehicle Emission Control Information label.

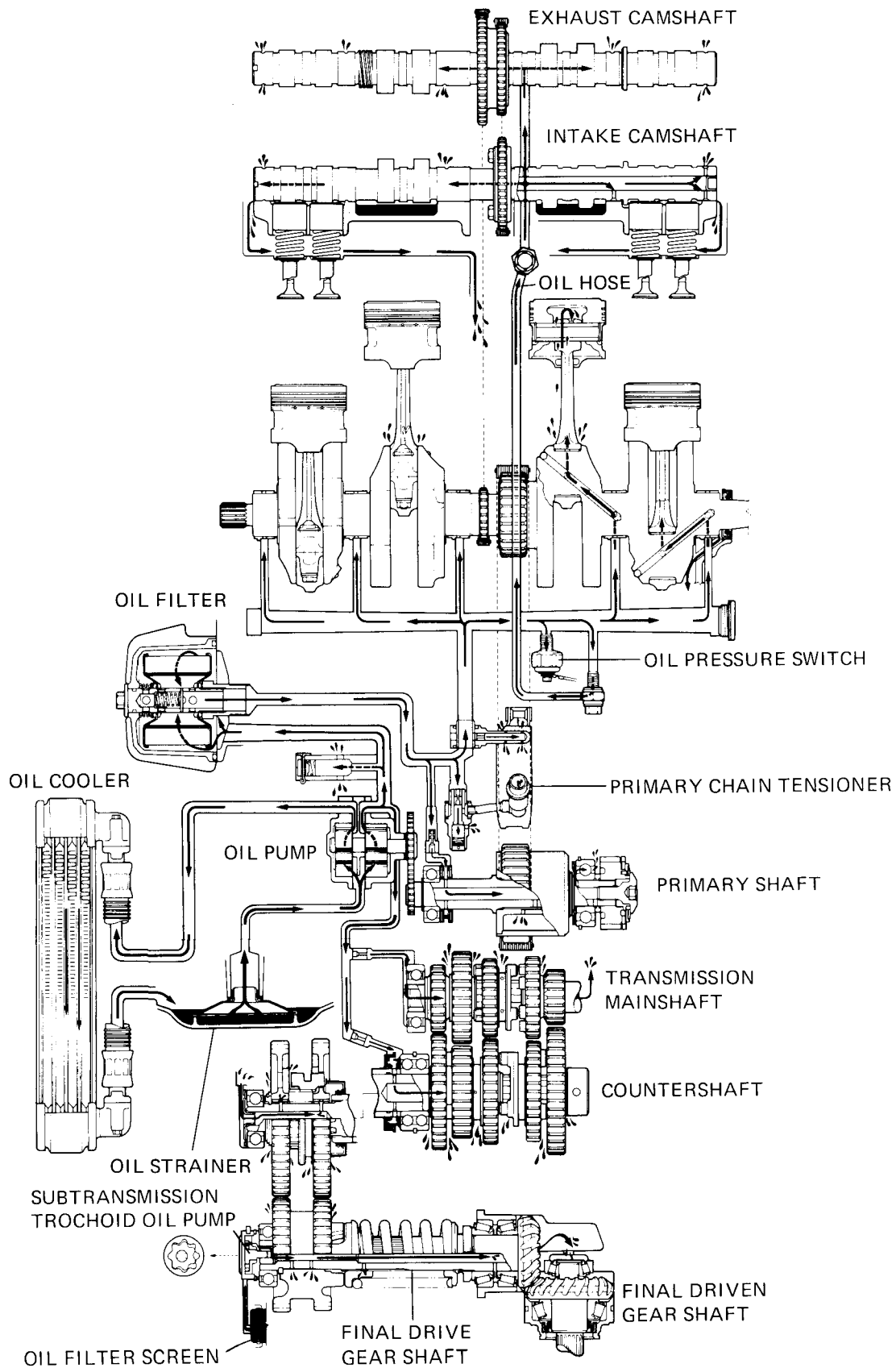




**HONDA**  
**CB900C**

15

MEMO


**ENGINE LUBRICATION  
 DIAGRAM**




|                            |      |                           |      |
|----------------------------|------|---------------------------|------|
| SERVICE INFORMATION        | 2- 1 | OIL PUMP                  | 2- 5 |
| TROUBLESHOOTING            | 2- 2 | SUBTRANSMISSION OIL       | 2- 9 |
| <ENGINE LUBRICATION>       |      | SUBTRANSMISSION OIL PUMP  | 2-10 |
| ENGINE OIL LEVEL           | 2- 3 | <CHASSIS LUBRICATION>     |      |
| ENGINE OIL & FILTER CHANGE | 2- 3 | FINAL DRIVE OIL           | 2-12 |
| OIL STRAINER CLEANING      | 2- 4 | DRIVE SHAFT COUPLING      | 2-12 |
| OIL PRESSURE CHECK         | 2- 4 | CONTROL CABLE LUBRICATION | 2-12 |
| OIL COOLER INSPECTION      | 2- 5 | LUBRICATION POINTS        | 2-13 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

Oil pressure relief valve: See Section 13 (CRANKSHAFT/PRIMARY SHAFT).

### SPECIFICATIONS

#### Engine oil

|  |   |
|--|---|
| Oil capacity                             | 3.5 lit (3.7 US qt, 3.0 Imp qt) at change<br>4.5 lit (4.7 US qt, 3.9 Imp qt) at disassembly   |
| Oil recommendation                       | <p>Use HONDA 4-STROKE OIL or equivalent.<br/>API SERVICE CLASSIFICATION: SE<br/>VISCOSITY:<br/>SAE 10W-40</p> <p>Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.</p> <div> <p><b>OIL VISCOSITIES</b></p> <p>The chart shows three horizontal bars representing the operating temperature ranges for different oil grades. The top bar is for SAE 20W-40, the middle for SAE 10W-40, and the bottom for SAE 10W-30. The x-axis has two scales: Fahrenheit (top) and Celsius (bottom). SAE 20W-40 is suitable for temperatures from -20°F to 100°F (-30°C to 40°C). SAE 10W-40 is suitable from -30°F to 100°F (-35°C to 40°C). SAE 10W-30 is suitable from -30°F to 90°F (-35°C to 35°C).</p> </div> |
| Oil pump delivery                        | Engine 41 lit (43 US qt, 36 Imp qt)/min. at 7,000 rpm<br>Cooler 18 lit (19 US qt, 16 Imp qt)/min. at 7,000 rpm  |
| Oil pressure<br>(at oil pressure switch) | 5.5 kg/cm <sup>2</sup> (78 psi) at 7,000 rpm (80°C/176°F)   |

#### Oil pump service data

|                                     | Standard                      | Service limit      |
|-------------------------------------|-------------------------------|--------------------|
| Rotor tip clearance (Engine/Cooler) | 0.15 mm (0.059 in)            | 0.20 mm (0.008 in) |
| Pump body clearance (Engine/Cooler) | 0.15-0.22 mm (0.059-0.087 in) | 0.35 mm (0.014 in) |
| Pump end clearance (Engine/Cooler)  | 0.02-0.07 mm (0.008-0.028 in) | 0.10 mm (0.004 in) |

#### Subtransmission

|                 |                         |
|-----------------|-------------------------|
| Oil capacity    | 600 cc (20.4 oz)        |
| Recommended oil | Hypoid gear oil SAE #80 |

#### Final drive gear

|                 |                        |
|-----------------|------------------------|
| Oil capacity    | 150 cc (5.1 oz)        |
| Recommended oil | Hypoid gear oil        |
|                 | Above 5°C/41°F SAE #90 |
|                 | Below 5°C/41°F SAE #80 |

**18 LUBRICATION**

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**TOOLS****Special**

Oil Pressure Gauge 07506-3000000

Oil Pressure Gauge Attachment 07510-4220100

**Common**

Driver handle A 07749-0010000 or 07949-6110000

Bearing driver outer 52 x 55 mm 07746-0010400 or 07946-9370100

**TORQUE VALUES**

|                                      |  |
|--------------------------------------|--|
| Engine oil drain plug                | 3.5-4.0 kg-m (25-29 ft-lb)                 |
| Engine oil filter bolt               | 2.8-3.2 kg-m (20-23 ft-lb)                 |
| Oil pressure switch                  | 1.5-2.0 kg-m (11-14 ft-lb) Apply Loctite ® |
| Subtransmission oil drain bolt       | 1.6-2.0 kg-m (12-14 ft-lb)                 |
| Subtransmission oil level check bolt | 3.5-4.5 kg-m (25-33 ft-lb)                 |
| Subtransmission cover                | 3.0-3.4 kg-m (22-25 ft-lb)                 |

**TROUBLESHOOTING****Oil level too low**

1. External oil leaks
2. Worn piston rings
3. Worn valve guide or seal

**Oil contamination**

1. Oil or filter not changed often enough
2. Head gasket faulty
3. Worn piston rings

**High oil pressure**

1. Pressure relief valve stuck open
2. Plugged oil filter, gallery, or metering or orifice
3. Incorrect oil being used

**No oil pressure**

1. Oil level low
2. Oil pump drive gear broken
3. Oil pump faulty
4. Internal oil leakage

**Low oil pressure**

1. Oil level low
2. Pressure relief valve stuck open
3. Plugged oil pick-up screen
4. Oil pump worn
5. External oil leaks



## <ENGINE LUBRICATION>

### ENGINE OIL LEVEL

Run the engine and allow to idle for 2-3 minutes.

Stop the engine and support the motorcycle on the center stand. Check the oil level with the filler cap dipstick after a few minutes. Do not screw in the cap when making this check.

If the level is below the lower level mark on the dipstick, fill to the upper level mark.

Check the oil pressure warning light. This light should go off when the engine starts. If it does not, check the oil pump function and/or oil circuit.

### ENGINE OIL & FILTER CHANGE

#### NOTE

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

Warm the engine to normal operating temperature.

Stop the engine.

Place the motorcycle on its center stand.

Remove the oil filler cap, drain plug and oil filter bolt and drain the oil.

Make sure that the sealing washer on the drain plug and the O-rings on the oil filter bolt and oil filter cover are in good condition.

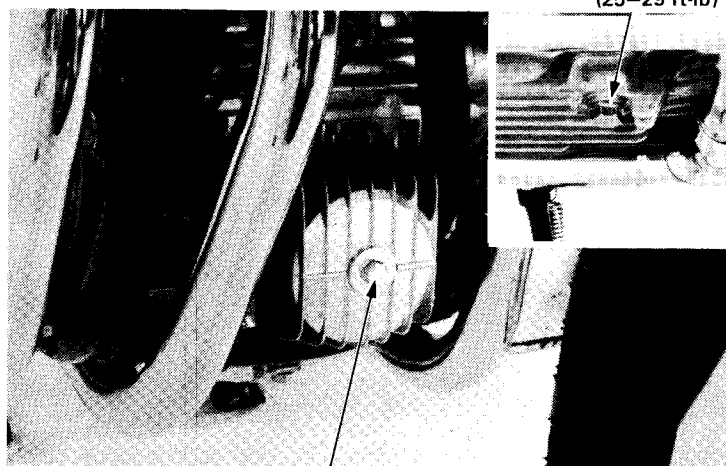
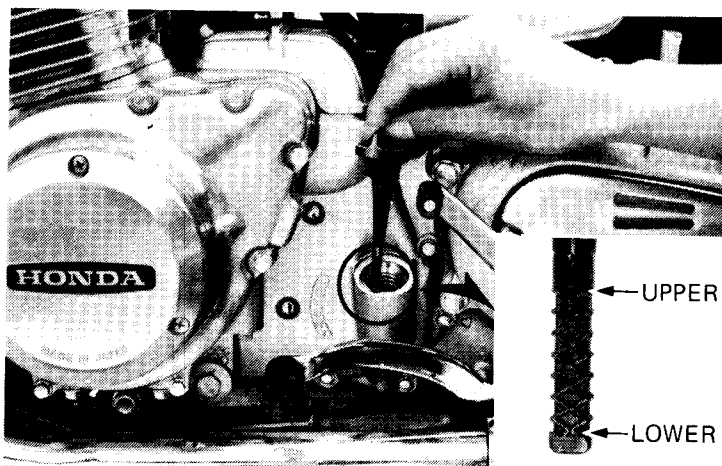
After completely draining, replace the oil filter and install the oil filter bolt and drain plug.

Fill the crankcase with 3.5 lit (3.7 US qt, 3.0 Imp qt) of the recommended oil.

Install the oil filler cap.

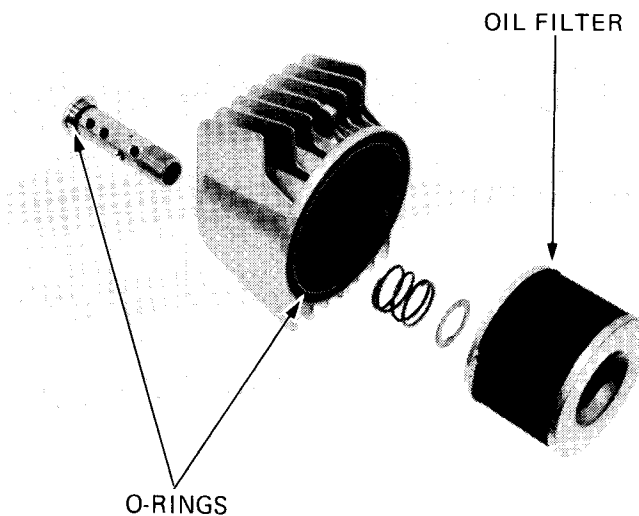
Start the engine and let it idle for 2-3 minutes. Stop the engine.

Add the recommended oil to the upper level. Make sure that there are no oil leaks.



DRAIN PLUG  
3.5-4.0 kg-m  
(25-29 ft-lb)

OIL FILTER BOLT  
2.8-3.3 kg-m (20-23 ft-lb)



O-RINGS

OIL FILTER



## OIL STRAINER CLEANING

### NOTE

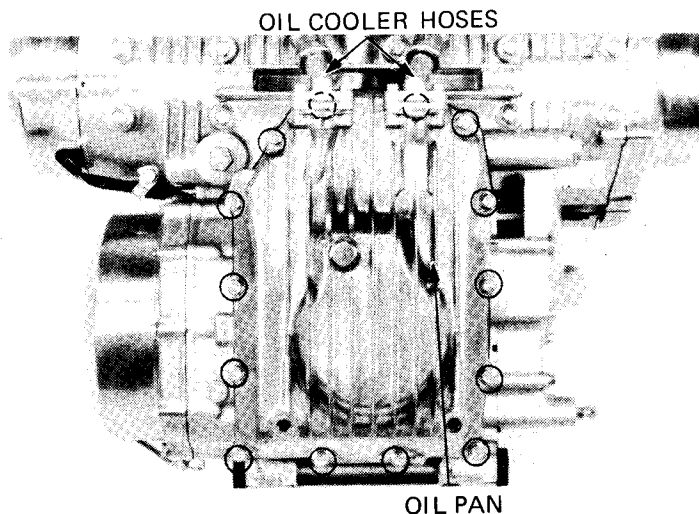
The oil strainer can be removed with the engine mounted in the frame.

Remove the oil filler cap, drain plug and oil filter bolt.

Remove the exhaust pipes.

Disconnect the oil cooler hoses.

Remove the oil pan bolts and oil pan.



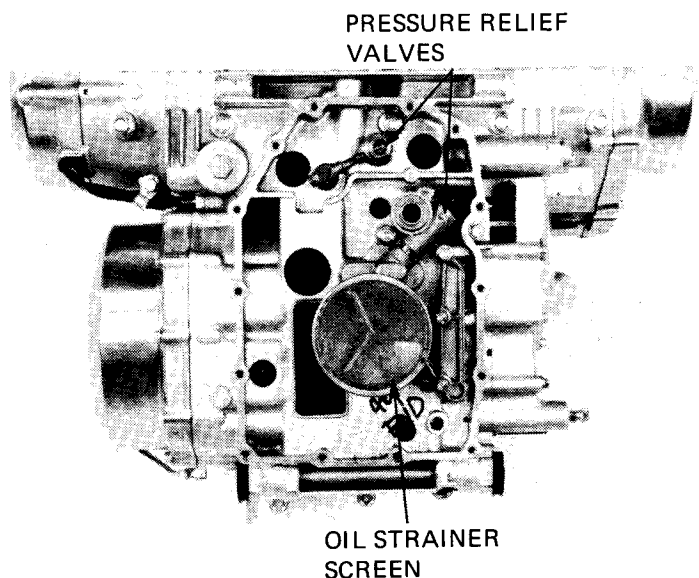
Remove and clean the oil strainer.

Check the operation of the pressure relief valves.

Install the oil strainer and oil pan.

Connect the oil hoses and install the exhaust pipes.

Fill the crankcase with recommended oil (Page 2-3).



## OIL PRESSURE CHECK

Warm the engine up to normal operating temperature (approximately 80°C/176°F).

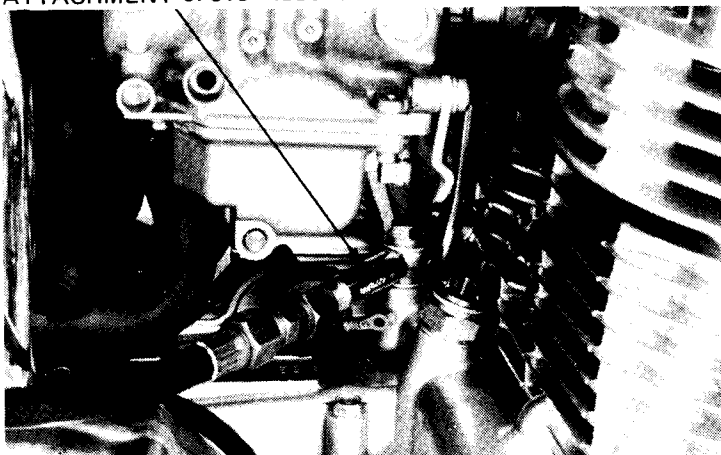
Stop the engine.

Remove the oil pressure switch.

Connect an oil pressure gauge to the pressure switch hole.

Check the oil level.

OIL PRESSURE GAUGE  
ATTACHMENT 07510-4220100





Start the engine.  
Check the oil pressure at 7,000 rpm.

### OIL PRESSURE:

5.5 kg/cm<sup>2</sup> (78 psi) at 7,000 rpm  
(80°C/176°F)

Stop the engine.

Apply Loctite ® to the pressure switch threads and install.

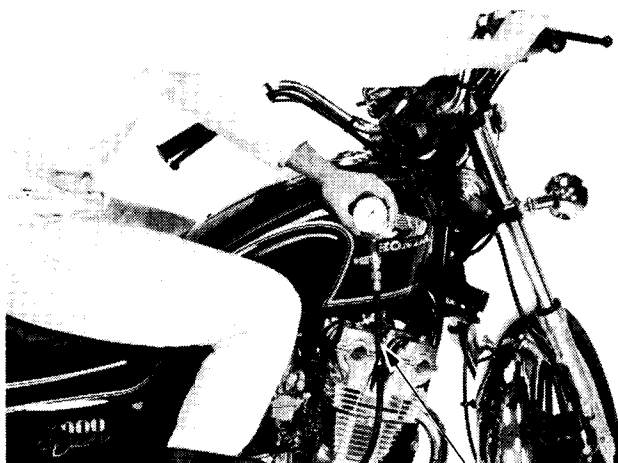
**TORQUE: 1.5–2.0 kg-m (11–14 ft-lb)**

Connect the oil pressure switch.

Start the engine.

Check that the oil pressure warning light goes out. If the oil pressure warning light stays on, stop the engine immediately and determine the cause.

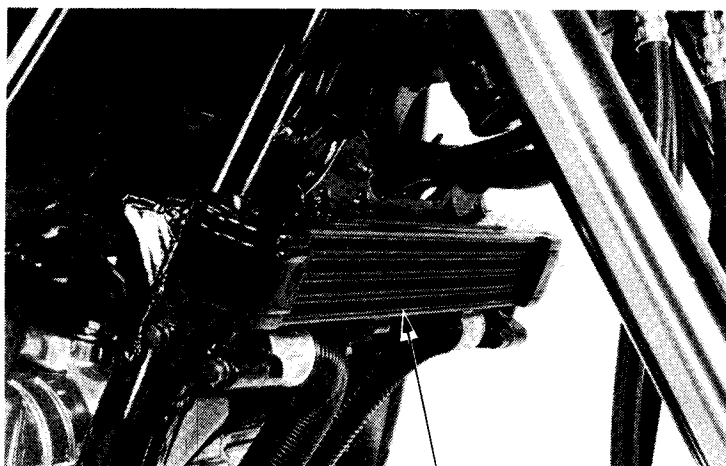
Refer to page 21-2 for warning switch.



OIL PRESSURE  
GAUGE  
07506–3000000  
(Not available in U.S.A.)

## OIL COOLER INSPECTION

Check for damage to the oil cooler core.  
Clean the core if necessary.



OIL COOLER

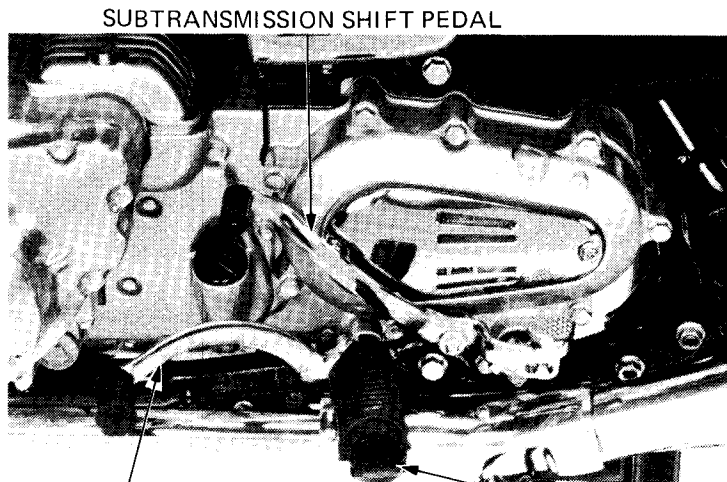
## OIL PUMP

### REMOVAL

#### NOTE

The oil pump can be removed with the engine mounted in the frame.

Drain the engine oil.  
Remove the left foot peg.  
Remove the subtransmission shift pedal.  
Remove the gearshift pedals.  
Remove the oil pump cover.

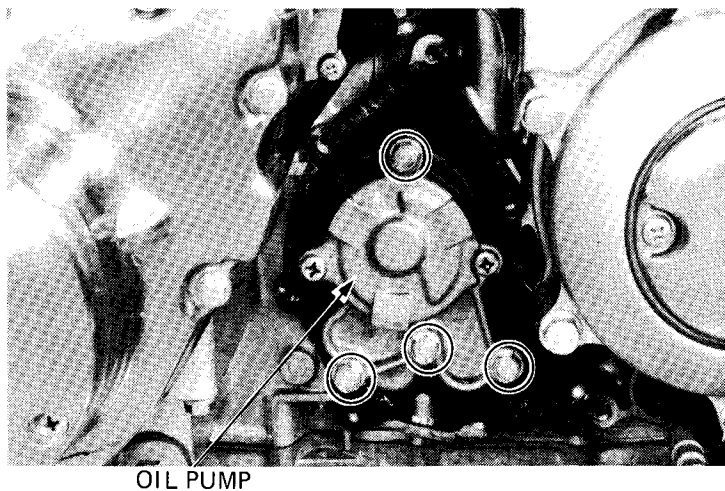


GEARSHIFT PEDAL

LEFT FOOT PEG

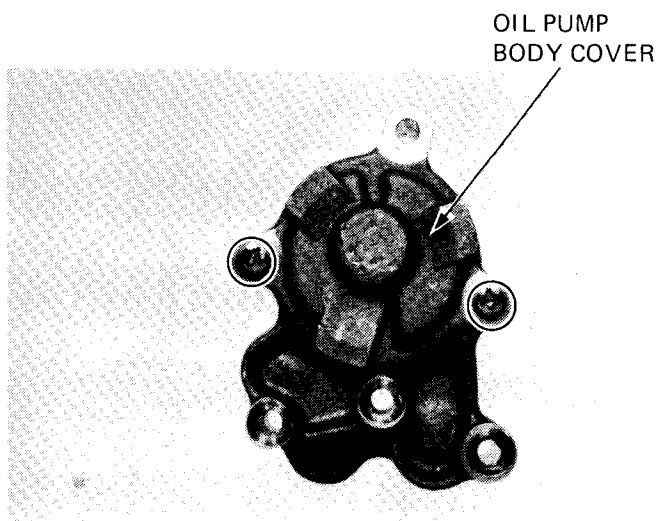


Remove the oil pump.

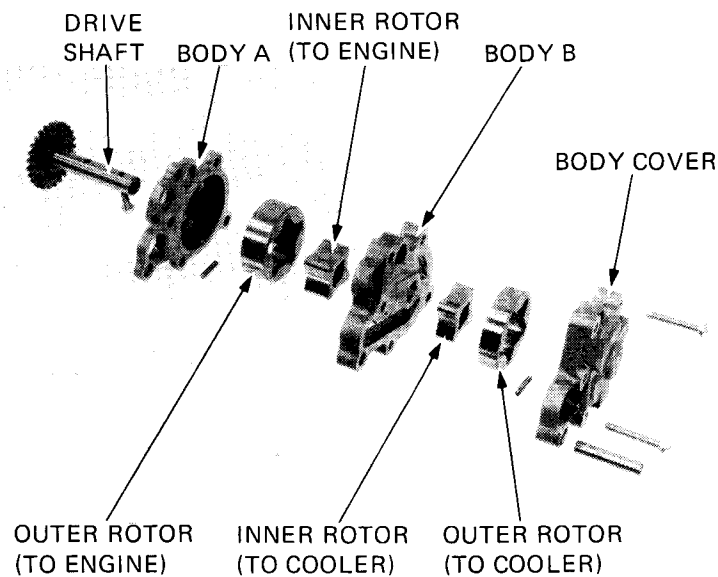


### DISASSEMBLY

Remove the oil pump body cover.



Remove the inner and outer rotors.  
Remove the drive pin and drive shaft.





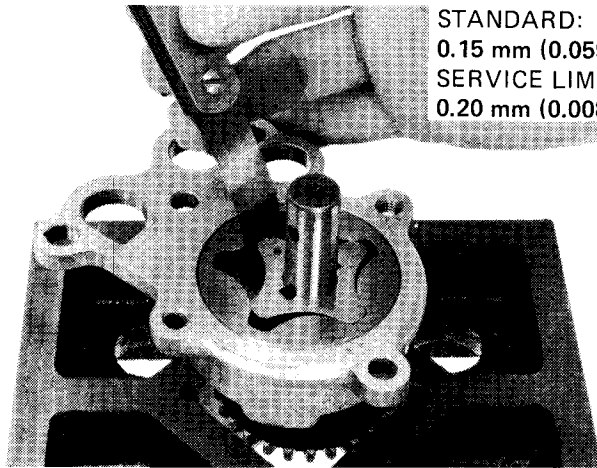


## INSPECTION

Measure the rotor tip clearance.

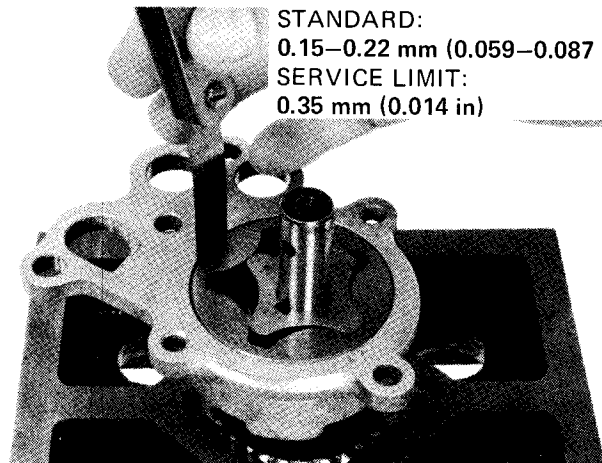
### NOTE

Specifications are the same for the engine and cooler pumps.



STANDARD:  
0.15 mm (0.059 in)  
SERVICE LIMIT:  
0.20 mm (0.008 in)

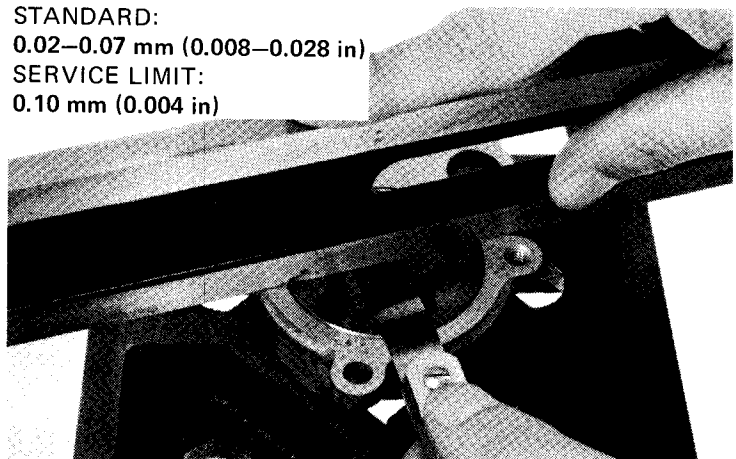
Measure the pump body clearance.



STANDARD:  
0.15–0.22 mm (0.059–0.087 in)  
SERVICE LIMIT:  
0.35 mm (0.014 in)

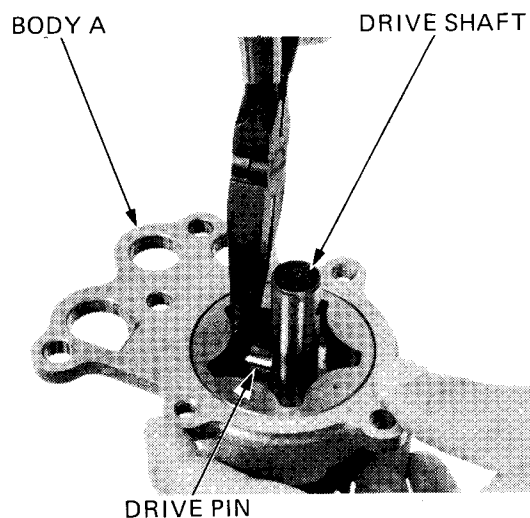
Measure the pump end clearance.

STANDARD:  
0.02–0.07 mm (0.008–0.028 in)  
SERVICE LIMIT:  
0.10 mm (0.004 in)

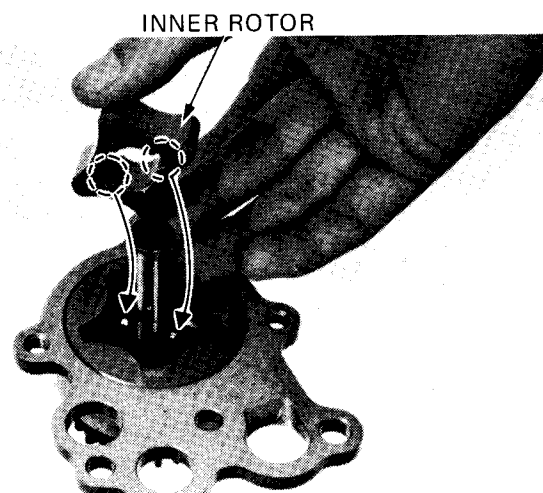


**ASSEMBLY**

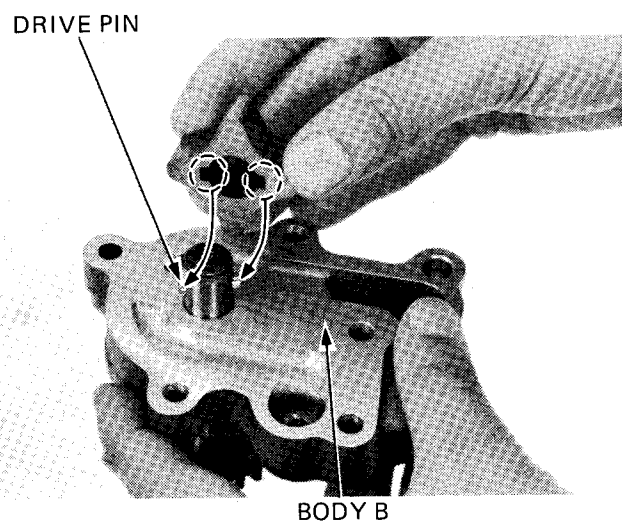
Install the engine outer rotor into body A.  
Insert the drive shaft.  
Insert the drive pin into the drive shaft.



Align the slots in the inner rotor with the drive pin.



Install body B.  
Insert the drive pin into the shaft.  
Align the slot in the inner rotor with the drive pin.  
Install the side covers.  
Tighten the screws.





## INSTALLATION

Install a new gasket.  
Engage the oil pump drive and driven gears.  
Install the dowel pin.  
Tighten the oil pump mounting bolts.

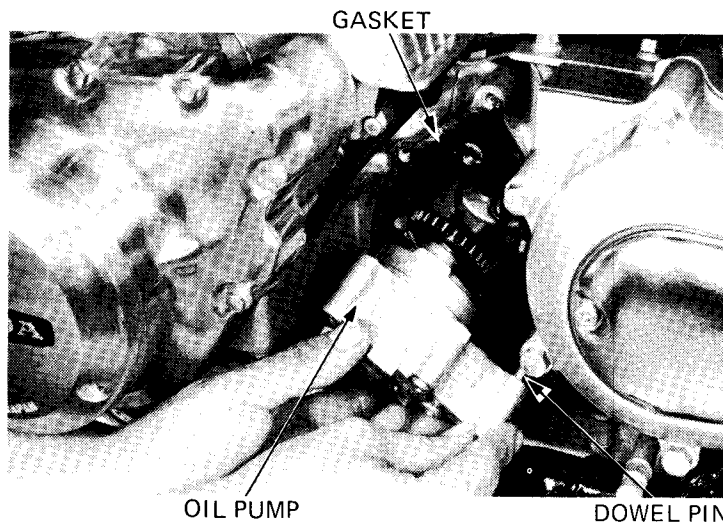
Install the oil pump cover.

### NOTE

Install the sealing washers and bolts to the "▽" mark points.

Tighten the oil pump cover bolts.

Install the gearshift pedal and left foot peg.  
Fill the engine with the recommended oil (page 2-3).



## SUBTRANSMISSION OIL

### CHECK

Place the motorcycle on its center stand.  
Shift the subtransmission into low position.  
Remove the protector cover.  
Remove the oil check bolt.  
Check that the subtransmission is filled to the lower edge of the inspection hole with oil.

If the oil level is low, check for oil leaks.  
Add the recommended oil until it reaches the lower edge of the inspection hole.

### CHANGE

Remove the oil filler cap.  
Remove the drain bolt and drain the oil.

Install the drain bolt.

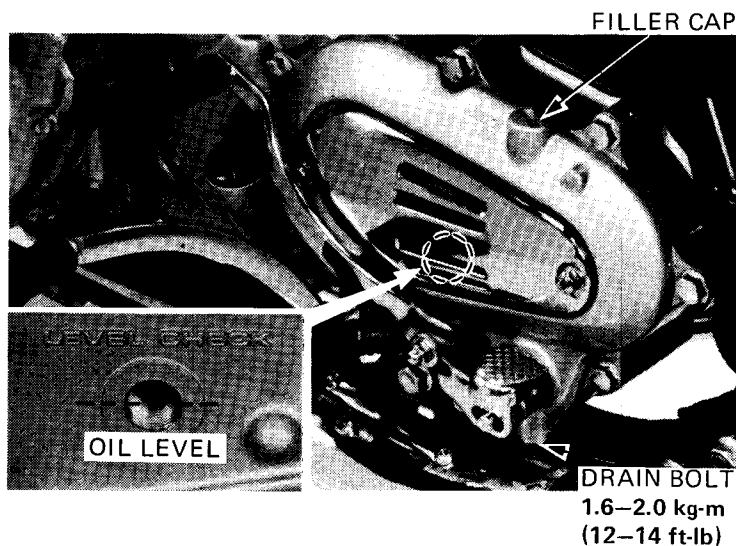
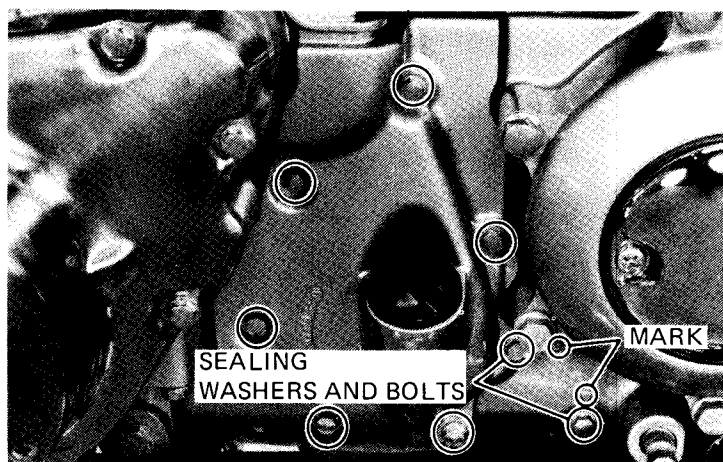
**TORQUE: 1.6–2.0 kg-m (12–14 ft-lb)**

Fill the subtransmission with the recommended oil up to the lower edge of the inspection hole.

**OIL CAPACITY: 600 cc (20.4 oz)**

**RECOMMENDED OIL:**

**HYPOID GEAR OIL SAE #80**





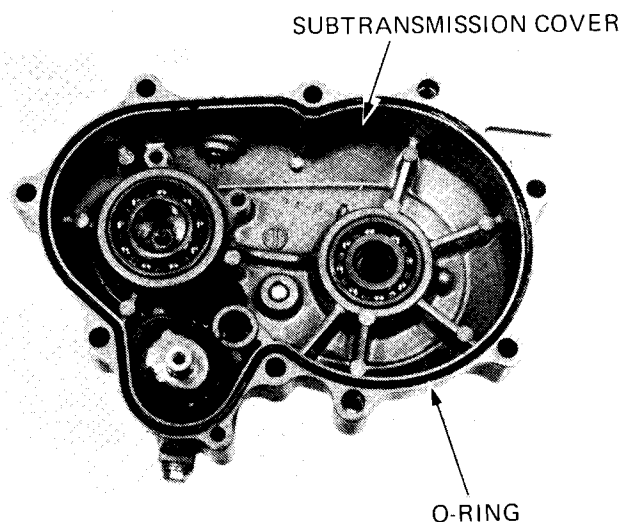
## SUBTRANSMISSION OIL PUMP

### REMOVAL

Drain the subtransmission oil (Page 2-9).  
 Remove the subtransmission cover (Page 10-3).

Remove the shift drum.

Remove the O-ring.

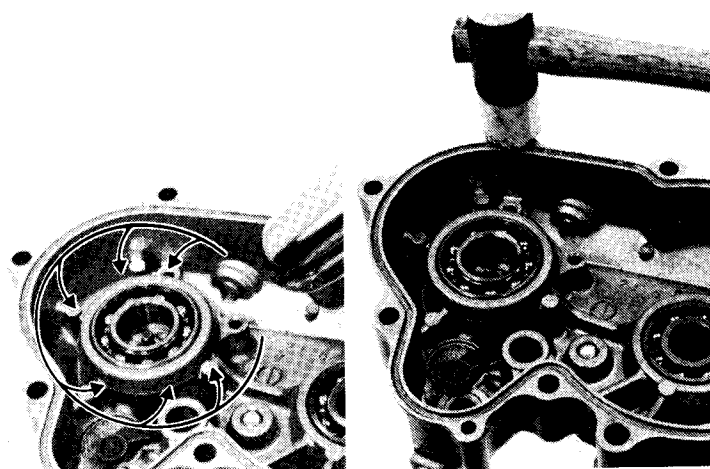


Heat the case around the bearing evenly with a 1 kw dryer for 3 minutes.

Remove the bearing, tapping the case lightly with a plastic hammer.

#### **WARNING**

*Be sure to wear gloves when removing the heated bearing.*



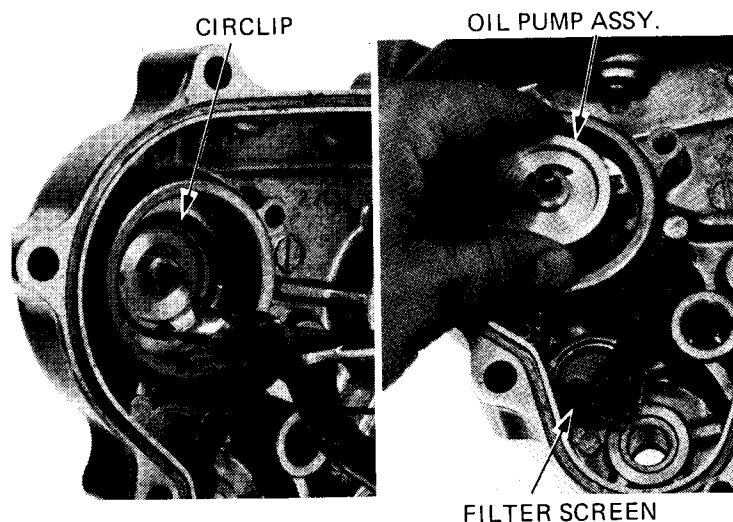
Remove the circlip.

Remove the oil pump Assy.

Clean the filter screen with compressed air.

#### **CAUTION:**

*Do not remove the filter screen.*



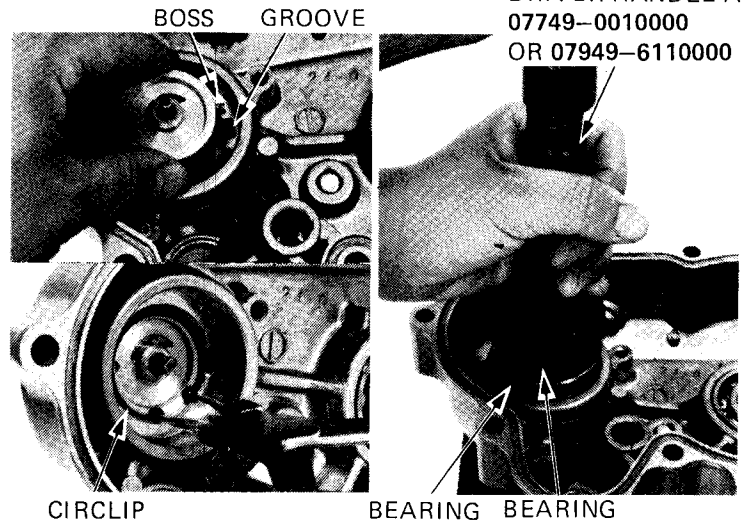


## INSTALLATION

Clean the oil pump assy., bearing and cover thoroughly.

Install the oil pump assy, aligning the oil pump boss with the cover groove.

Install the circlip and drive the bearing into the cover.



DRIVER HANDLE A  
07749-0010000  
OR 07949-6110000

BEARING BEARING  
DRIVER 52 x 55 mm  
07946-9370100

Lubricate the oil pump and bearing with hypoid gear oil, SAE #80.

Install the shift drum.

Turn the rear wheel or drive gear by hand so that the slot in the drive gear shaft collar is vertical.

Install the case cover with the oil pump drive shaft boss aligned with the collar slot and new O-ring.

### CAUTION:

*Check the location of the shift drum and shift fork if difficulty is encountered in installing the cover (See page 10-7, 10-8). Do not strike the cover with excessive force.*

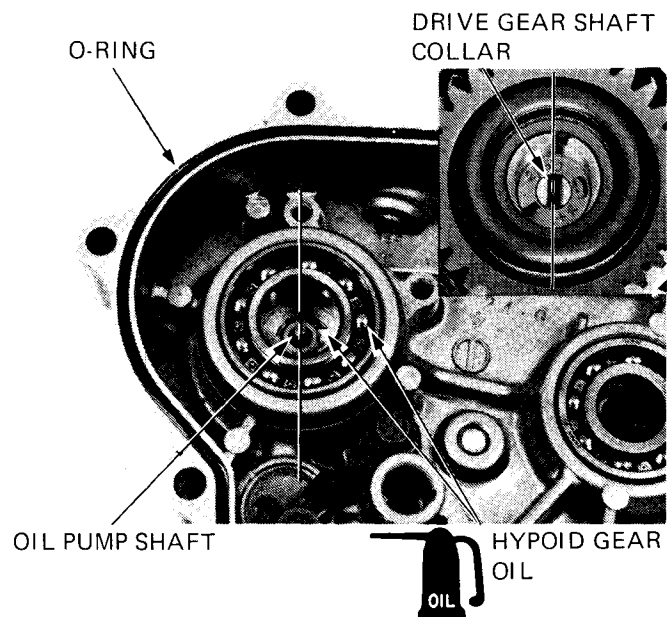
Tighten the cover bolts.

**TORQUE: 3.0-3.4 kg-m (22-25 ft-lb)**

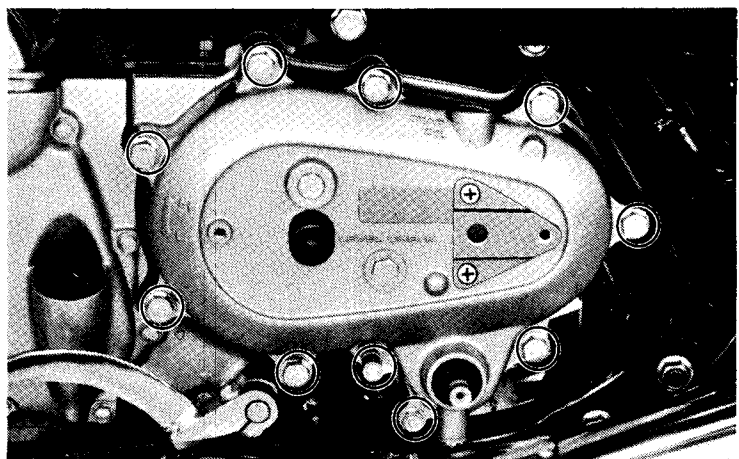
Install the exhaust pipe heat shield.

Fill the case with the recommended oil (page 2-9).

Install the removed parts (page 10-8).



HYPOID GEAR OIL





## <CHASSIS LUBRICATION>

### FINAL DRIVE GEAR OIL

#### CHECK

Place the motorcycle on its center stand.

Remove the oil filler cap.

Check that the final gear case is filled up to the lower edge of the oil filler cap hole.

Check for leaks, if the level is low. Pour fresh oil through the oil filler hole until it reaches the lower edge.

#### CHANGE

Remove the oil filler cap.

Remove the drain bolt to drain all oil from the final gear case.

Install the drain bolt securely.

Fill the gear case with the recommended oil up to the correct level.

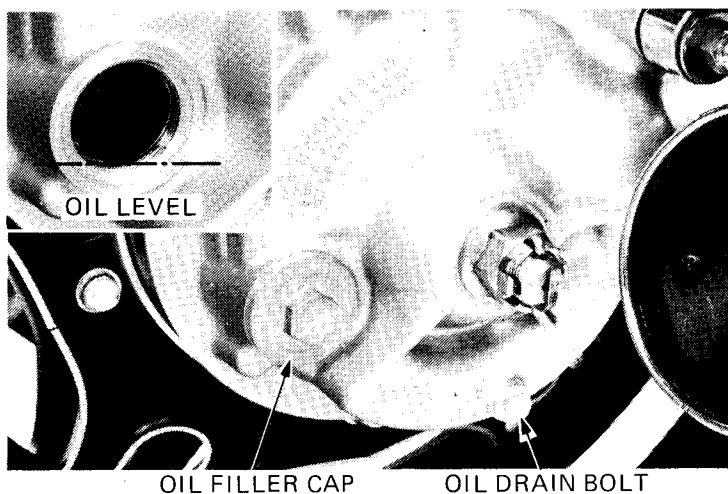
**OIL CAPACITY:** 150 cc (5.1 oz)

**RECOMMENDED OIL:** HYPOID GEAR OIL

API, GL-5      SAE #90 (Above 5°C/41°F)  
SAE #80 (Below 5°C/41°F)

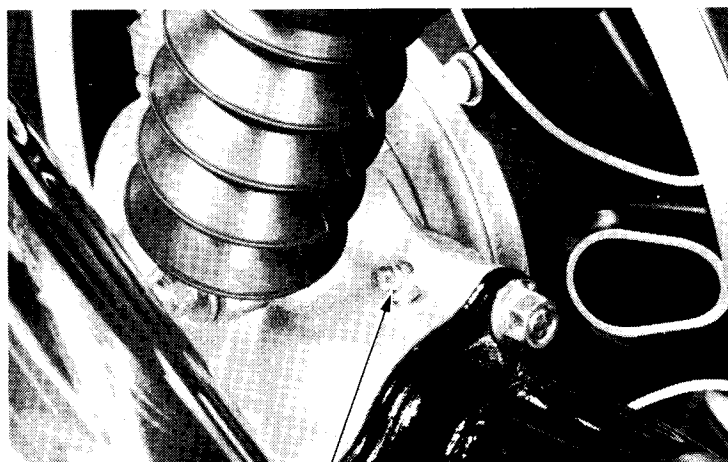
### DRIVE SHAFT COUPLING

Pump LITHIUM-BASED multipurpose grease through the drive shaft joint grease fitting.



OIL FILLER CAP

OIL DRAIN BOLT

GREASE  
FITTING

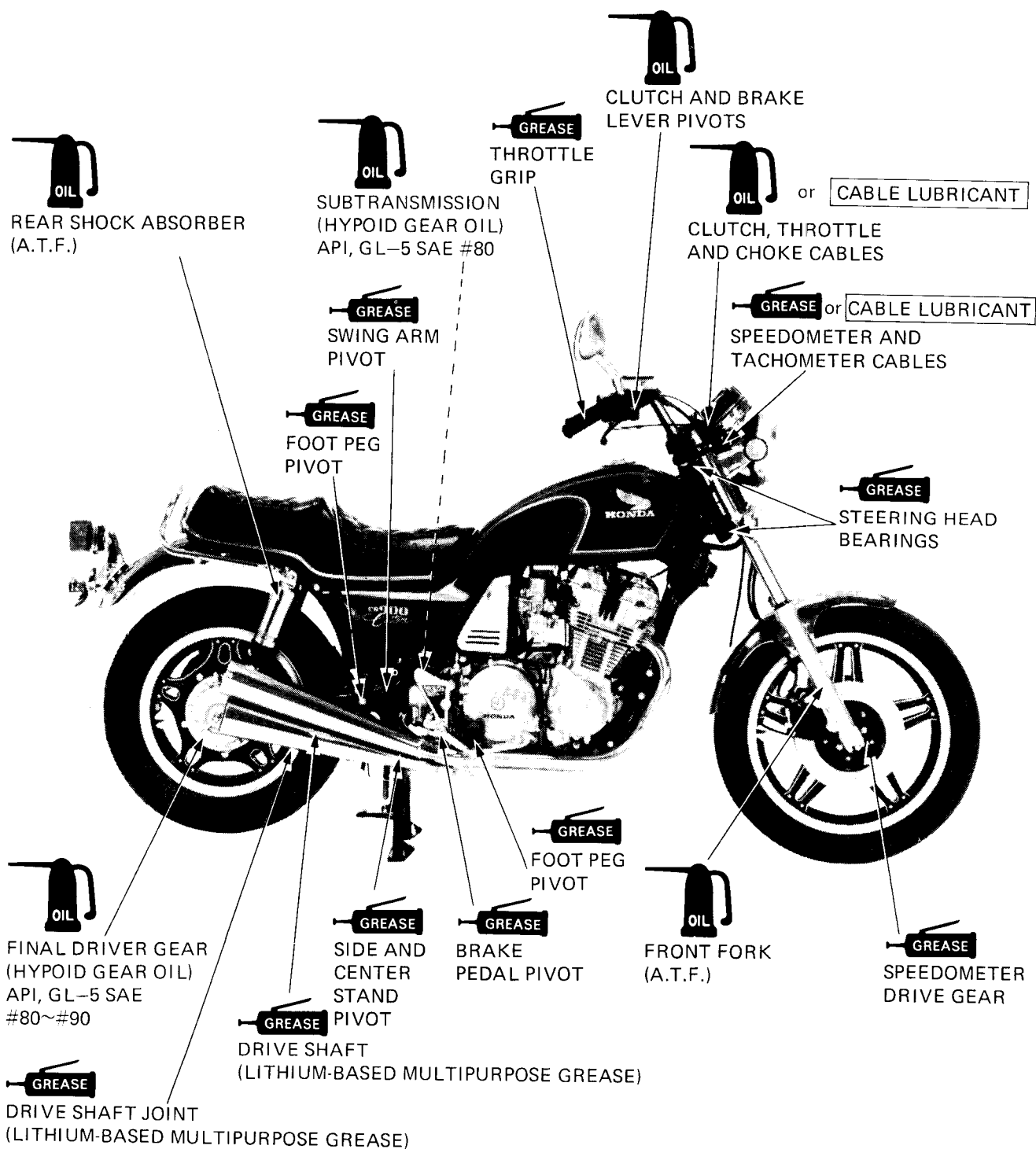
### CONTROL CABLE LUBRICATION

Periodically, disconnect the throttle and clutch cables at their upper ends.

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



## LUBRICATION POINTS





## MEMO





|                            |      |                        |      |
|----------------------------|------|------------------------|------|
| SERVICE INFORMATION        | 3- 1 | <CHASSIS>              |      |
| <ENGINE>                   |      | BATTERY                | 3-14 |
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| THROTTLE OPERATION         | 3- 3 | BRAKE PAD WEAR         | 3-15 |
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## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Engine oil See page 2- 3
- Engine oil filter See page 2- 3
- Subtransmission oil See page 2- 9
- Final drive gear oil See page 2-12

### TOOLS

#### Special

|                             |               |                                  |
|-----------------------------|---------------|----------------------------------|
| Valve lifter holder         | 07964-4220001 |                                  |
| Vacuum gauge                | 07404-0020000 | or M937B-021-XXXXX (U.S.A. only) |
| Carburetor adjusting wrench | 07908-4220100 |                                  |
| Clutch adjusting wrench     | 07908-3230000 |                                  |

### SPECIFICATIONS

#### <Engine>

Spark plug: Recommended spark plug [ ] Canada model

| For cold climate<br>below 5°C (41°F) |         | Standard   |         |
|--------------------------------------|---------|------------|---------|
| ND                                   | NGK     | ND         | NGK     |
| X24ES-U                              | D8EA    | X27ES-U    | D9EA    |
| [X24ESR-U]                           | [DR8EA] | [X27ESR-U] | [DR9EA] |

Plug gap 0.6-0.7 mm (0.02-0.03 in)

**32 INSPECTION AND ADJUSTMENT**

## Ignition timing

At idle : 10° BTDC  
Advance start : 1,700 rpm  
Full advance : 38°30' BTDC at 3,200 rpm

## Valve clearance:

Cold (Below 35°C/95°F) Intake/Exhaust : 0.06–0.13 mm (0.002–0.005 in)

Idle speed : 1,000 ± 100 rpm

Carburetor synchronization : Vacuum difference of each cylinder  
60 mm Hg (2.4 in Hg) or less

Cylinder compression : 12 ± 2 kg/cm<sup>2</sup> (170 ± 28 psi)

Throttle grip free play : 2–6 mm (1/8–1/4 in)

## &lt;CHASSIS&gt;

Clutch lever free play : 10–20 mm (3/8–3/4 in)

## Tire

| Tire size                                       |  | Front                       | Rear            |
|---|--|-----------------------------|-----------------|
|   |  | 110/90 – 19 62H             | 130/90 – 16 67H |
| Cold tire pressures<br>kg/cm <sup>2</sup> (psi) | Up to 90 kg (200 lbs)<br>load                    | 2.25 (32)<br>[2.8 (40 psi)] | 2.25 (32)       |
|   | 90 kg (200 lbs) load to<br>vehicle capacity load | 2.25 (32)<br>[2.8 (40 psi)] | 2.8 (40)        |
| Tire brand                                      | BRIDGESTONE                                      | S703                        | G504            |
|   | DUNLOP   | F11                         | K127            |

[ ] When a genuine Honda fairing is installed

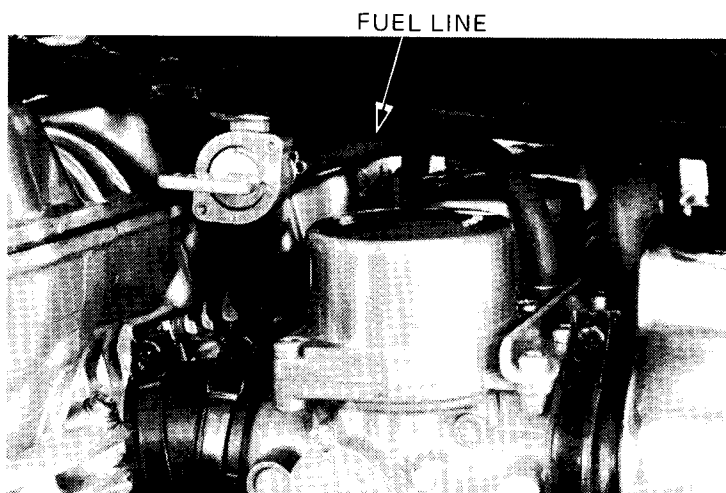
Suspension air pressure : Front 0.8–1.1 kg/cm<sup>2</sup> (11–16 psi)  
Rear 2.0–4.5 kg/cm<sup>2</sup> (28–64 psi)



## <ENGINE>

### FUEL LINES

Replace any parts which show deterioration, damage or leakage.



### THROTTLE OPERATION

#### NOTE

The accelerator pump may flood the carburetors during this inspection.

Check for smooth throttle grip full opening and automatic full closing in all steering positions. Check the throttle cables and replace them if they are deteriorated, kinked or damaged.

Lubricate the throttle cables (page 2-13) if throttle operation is not smooth.

Measure throttle grip free play at the throttle grip flange.

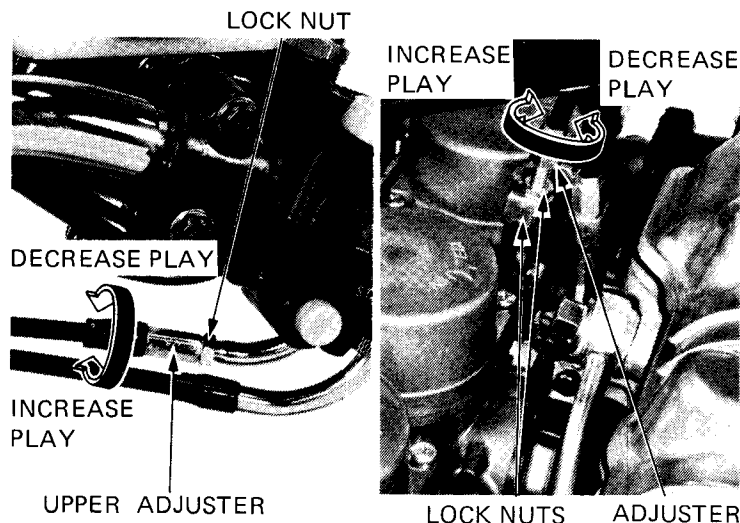
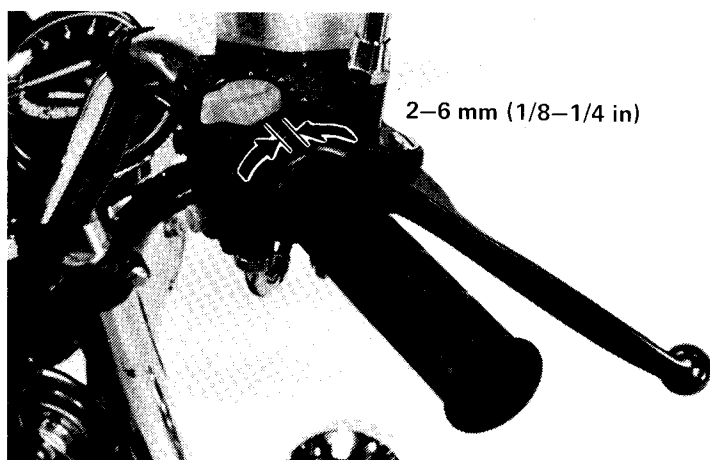
**FREE PLAY: 2–6 mm (1/8–1/4 in)**

Adjustment can be made at either end of the throttle cable. Minor adjustments are made at the upper end and major adjustments are made at the lower end, after removing the fuel tank.

Adjust by loosening the lock nut and turning the adjuster.

Tighten the lock nut.

Recheck throttle operation.





## CARBURETOR CHOKE

Remove the fuel tank.

Operate the choke knob and check for smooth operation.

Pull the choke knob up all the way to fully closed. Make sure that the choke valve is fully closed at the carburetors by moving the lever. Adjust by loosening the choke cable clamp and moving the choke cable casing.

Tighten the clamp, holding the choke lever fully closed.

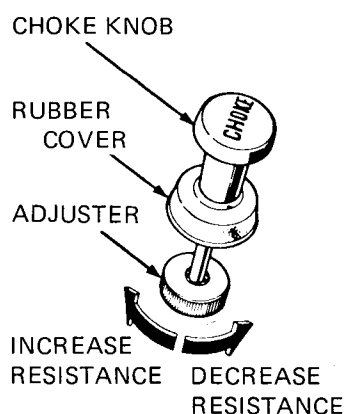
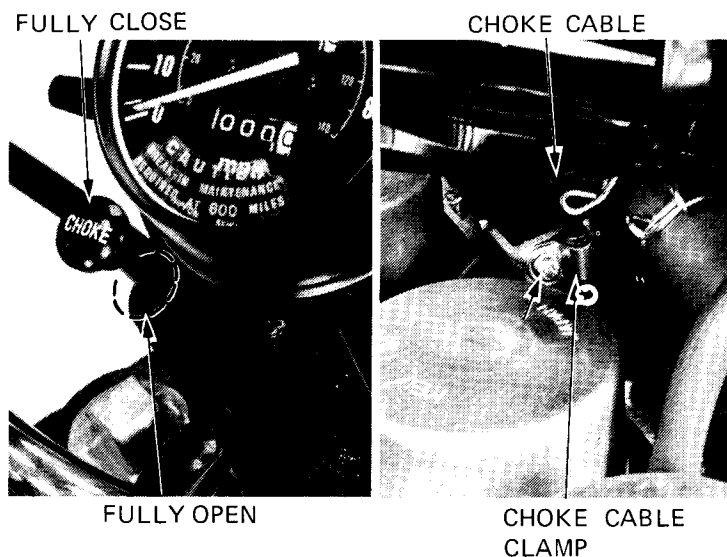
Push the choke knob down all the way to fully open.

Make sure the choke valve is fully open by checking for free play in the cable between the lever and cable casing.

Install the fuel tank.

Adjust the choke operating friction by turning the adjuster.

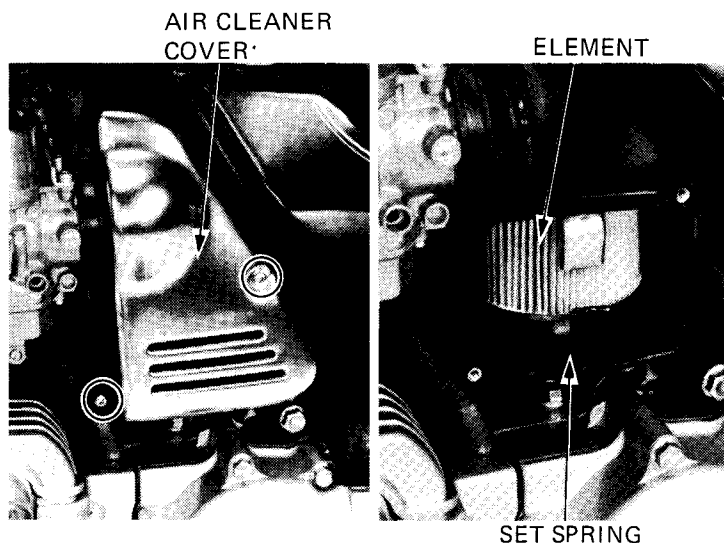
The choke knob must move smoothly and stay where positioned.



## AIR CLEANER

Remove the two air cleaner cover screws and cover.

Pull out the air cleaner element set spring and remove the element.

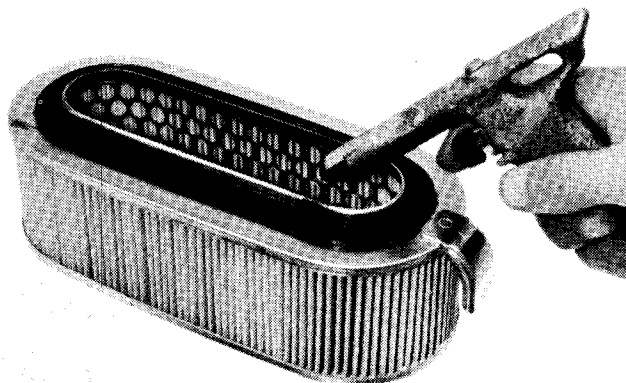




Clean the element by tapping it lightly to loosen dust. Blow away the remaining dust by applying compressed air from inside the element.

Replace the element if it is excessively dirty, torn or damaged.

Install the element, element set spring and air cleaner cover.



## CRANKCASE BREATHER

Remove the plug from the drain tube to drain deposits.

Install the drain plug.

### NOTE

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

## SPARK PLUGS

### RECOMMENDED SPARK PLUG

|                                      |     |                       |
|--------------------------------------|-----|-----------------------|
| Standard                             | ND  | X27ES-U<br>[X27ESR-U] |
|                                      | NGK | D9EA<br>[DR9EA]       |
| For cold climate<br>below 5°C (41°F) | ND  | X24ES-U<br>[X24ESR-U] |
|                                      | NGK | D8EA<br>[DR8EA]       |

[ ] Canada model

Clean any dirt from around the spark plug base.

Disconnect the spark plug caps.

Remove and discard the spark plugs.

Measure the new spark plug gaps using a wire-type feeler gauge.

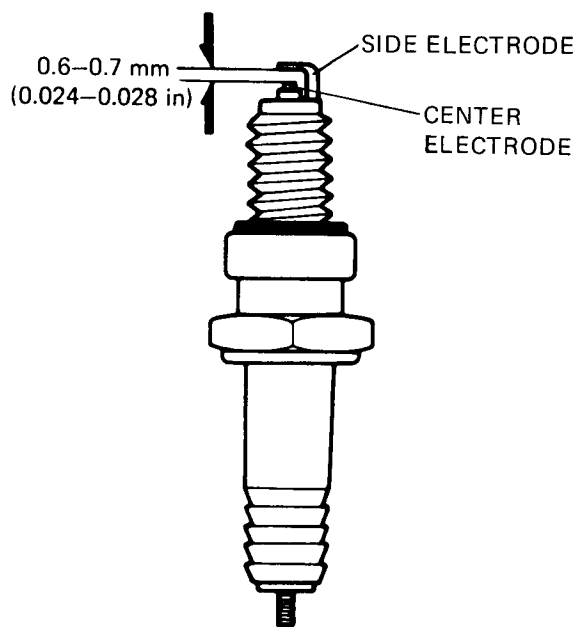
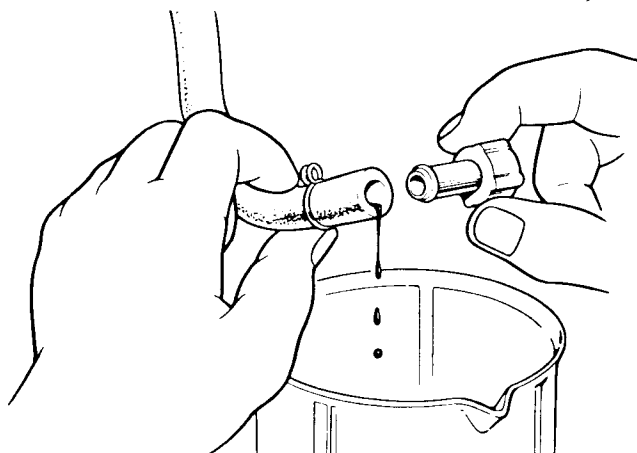
**SPARK PLUG GAP: 0.6–0.7 mm  
(0.024–0.028 in)**

Adjust by bending the side electrode carefully.

With the plug washer attached, thread the spark plugs in by hand to prevent cross-threading.

Tighten the spark plugs another 1/2 turn with a spark plug wrench to compress the plug washer.

Connect the spark plug caps.





## VALVE CLEARANCE

### NOTE

- Inspect and adjust valve clearance while the engine is cold. (Below 35°C, 95°F).
- Lean the motorcycle right and left to drain residual oil from the cylinder head.

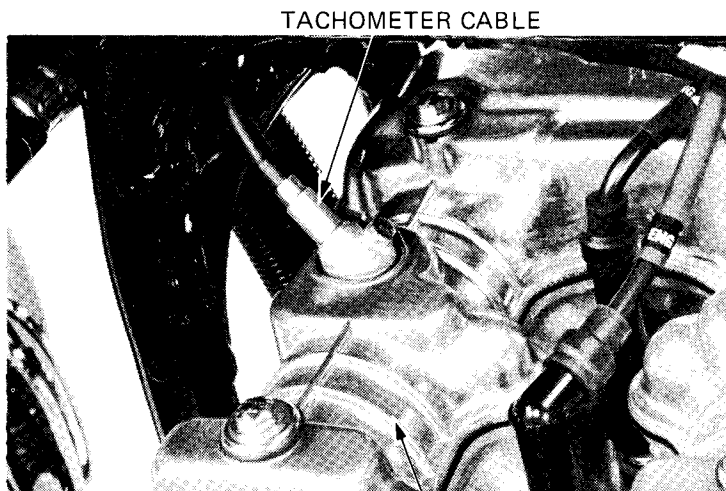
Remove the right and left side covers and seat. Turn the fuel valve OFF and remove the fuel tube and fuel tank.

Remove the tachometer cable.

Remove the spark plug caps.

Remove the cylinder head cover bolts and cylinder head cover.

Remove the A.C. generator cover.



TACHOMETER CABLE

CYLINDER  
HEAD COVER

### INSPECTION

Measure intake and exhaust valve clearances by inserting a feeler gauge between the camshaft and valve lifter shim.

#### VALVE CLEARANCE:

0.06–0.13 mm (0.002–0.005 in)

Rotate the crankshaft clockwise (from the right side) and align the index mark on the exhaust camshaft right end with the front cylinder head mating surface.

Check and record the valve clearance: of the No. 1 EX. and No. 3 EX.

Rotate the camshaft 90° clockwise (via the crankshaft 180°) and check the:

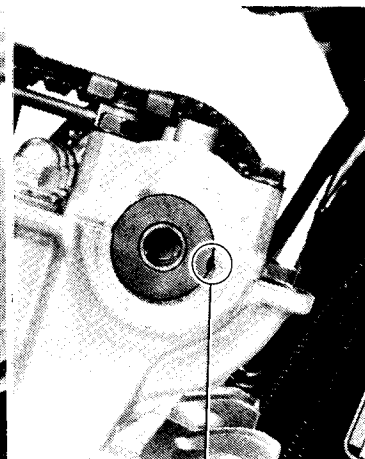
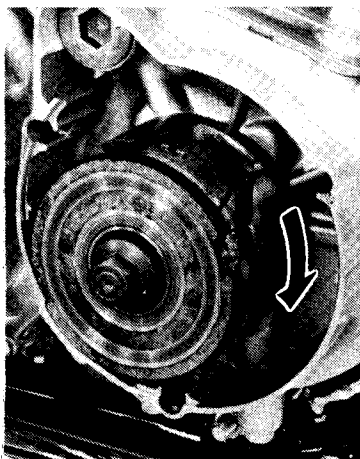
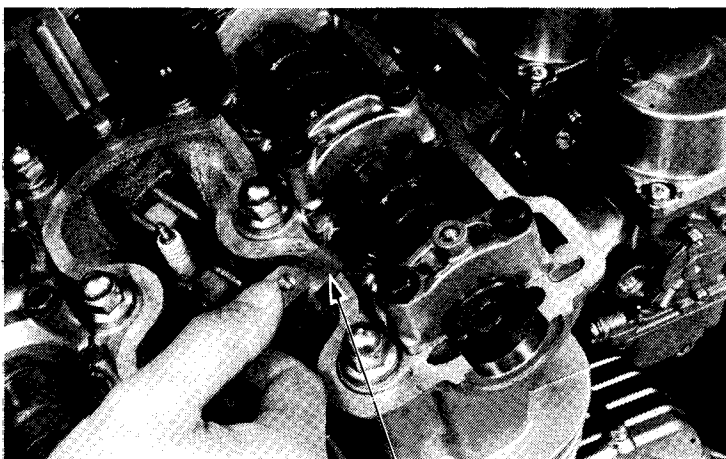
No. 1 IN. and No. 3 IN.

Rotate the camshaft 90° clockwise and check the:

No. 2 EX. and No. 4 EX.

Rotate the camshaft 90° clockwise and check the:

No. 2 IN. and No. 4 IN.

INDEX  
MARK

FEELER GAUGE



## ADJUSTMENT

### NOTE

- Adjustment shims are available in 0.05 mm increments, from 2.30 to 3.50 mm.
- The No. 2 EX. shim must be removed from the front.

Select a replacement shim to achieve the specified valve clearance, using the following procedures.

Rotate the valve lifter until the notch is facing the spark plug.

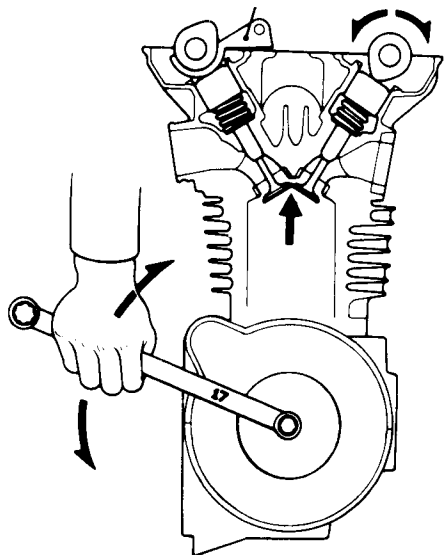
Rotate the crankshaft so that the valve being adjusted is at maximum lift.

Insert the Valve Lifter Holder tool between the camshaft and two adjacent lifters.

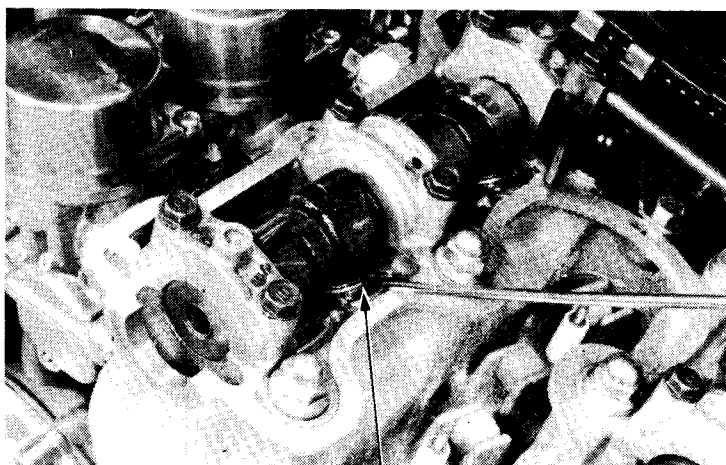
### CAUTION:

*When the valve lifter holder is depressing a pair of valves, make sure the opposite pair of valves does not open. Rotating the crankshaft too far or in the wrong direction may cause the intake and exhaust valves to strike and damage each other.*

VALVE LIFTER HOLDER  
07964-4220001



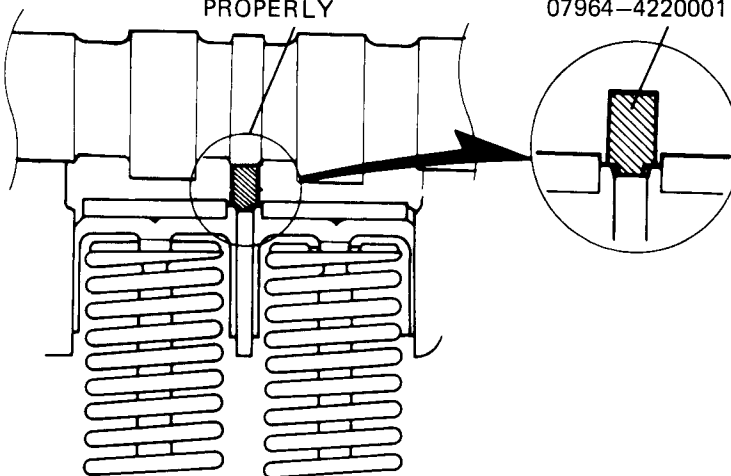
Rotate the crankshaft one turn so the cam lobes turn away from the valve lifter holder.



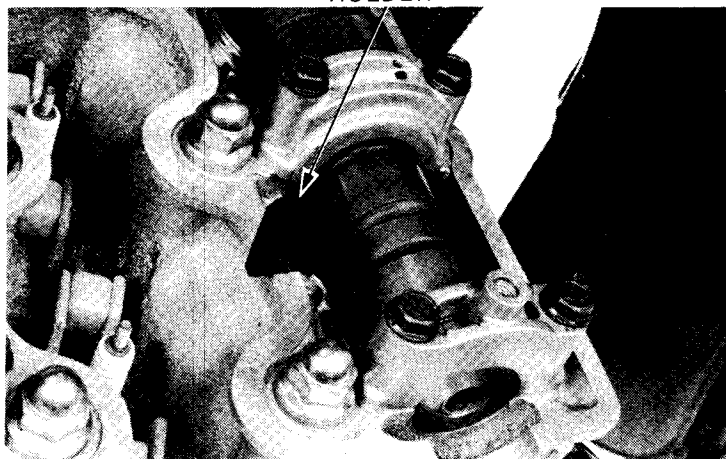
NOTCH

INSTALL THE SPECIAL TOOL  
PROPERLY

VALVE LIFTER HOLDER  
07964-4220001



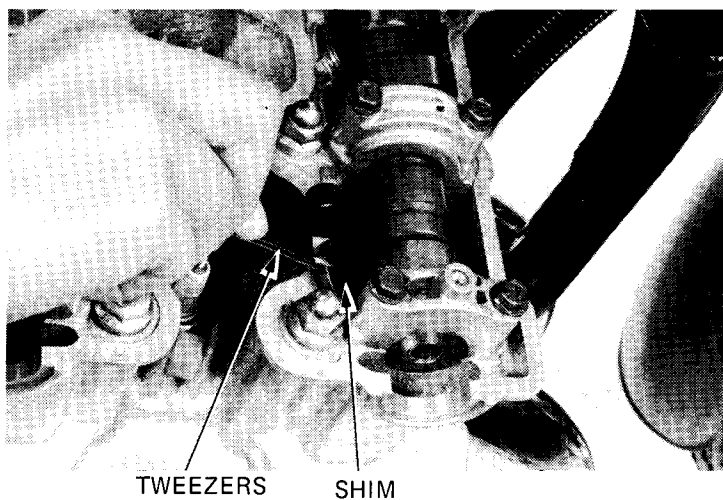
VALVE LIFTER  
HOLDER





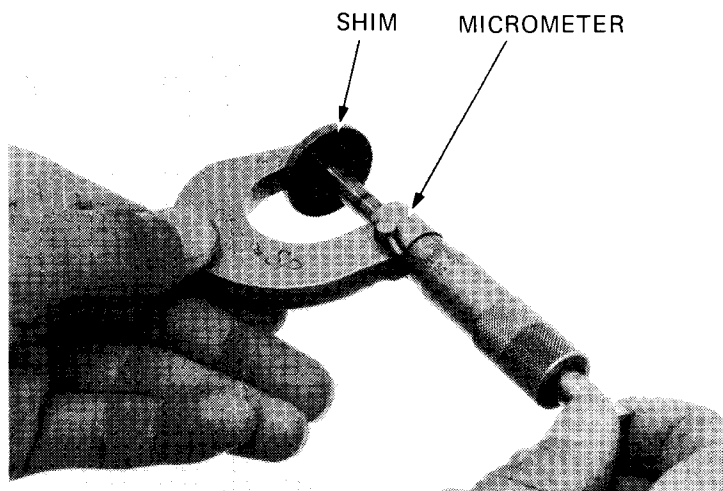
## 38 INSPECTION AND ADJUSTMENT

Remove the shim with tweezers.



Measure the thickness of the removed shim with a micrometer.

Select a replacement shim using the chart on Page 3-9.



Insert the replacement shim.

### CAUTION:

*Make sure the opposite pair of valves does not open. The valves could be bent or damaged if the crankshaft is rotated incorrectly.*

Rotate the crankshaft in the proper direction until the valves are at maximum lift.

Remove the special tool "Valve Lifter Holder".

Rotate the crankshaft 2-3 revolutions to fully seat the replacement shim.

Recheck the valve clearance.





EXAMPLE: 1. Measure valve clearance = 0.16 mm 3. Refer to chart. (See shaded columns)  
2. Measure present shim size = 2.50 mm 4. Replacement shim size = 2.55 mm

| VALVE SHIM SELECTION CHART |            |                      |      |      |      |      |      |      |      |      |      |      | STANDARD VALVE CLEARANCE = 0.06-0.13 mm (0.002-0.005 in) |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|------------|----------------------|------|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
| VALVE CLEARANCE<br>mm      | SHIM<br>mm | PRESENT SHIM SIZE mm |      |      |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                            |            | 2.30                 | 2.35 | 2.40 | 2.45 | 2.50 | 2.55 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85   | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |
| 0.01-0.05                  |            |                      |      |      |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.06-0.13                  |            |                      |      |      |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.14-0.16                  |            | 2.35                 | 2.40 | 2.45 | 2.50 | 2.55 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90   | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |
| 0.17-0.21                  |            | 2.40                 | 2.45 | 2.50 | 2.55 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95   | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |
| 0.22-0.26                  |            | 2.45                 | 2.50 | 2.55 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00   | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |
| 0.27-0.31                  |            | 2.50                 | 2.55 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05   | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |
| 0.32-0.36                  |            | 2.55                 | 2.60 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10   | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |
| 0.37-0.41                  |            | 2.60                 | 2.65 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15   | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |
| 0.42-0.46                  |            | 2.65                 | 2.70 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20   | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |      |
| 0.47-0.51                  |            | 2.70                 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25   | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |      |      |
| 0.52-0.56                  |            | 2.75                 | 2.80 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30   | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |      |      |      |
| 0.57-0.61                  |            | 2.80                 | 2.85 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35   | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |      |      |      |      |
| 0.62-0.66                  |            | 2.85                 | 2.90 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40   | 3.45 | 3.50 |      |      |      |      |      |      |      |      |      |      |      |
| 0.67-0.71                  |            | 2.90                 | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45   | 3.50 |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.72-0.76                  |            | 2.95                 | 3.00 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50   |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.77-0.81                  |            | 3.00                 | 3.05 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.82-0.86                  |            | 3.05                 | 3.10 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.87-0.91                  |            | 3.10                 | 3.15 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.92-0.96                  |            | 3.15                 | 3.20 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0.97-1.01                  |            | 3.20                 | 3.25 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.02-1.06                  |            | 3.25                 | 3.30 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.07-1.11                  |            | 3.30                 | 3.35 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.12-1.16                  |            | 3.35                 | 3.40 | 3.45 | 3.50 |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.17-1.21                  |            | 3.40                 | 3.45 | 3.50 |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.22-1.26                  |            | 3.45                 | 3.50 |      |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1.27-1.31                  |            | 3.50                 |      |      |      |      |      |      |      |      |      |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |

EX

↓

EX

↓

NO CHANGE REQUIRED

SPECIFIED CLEARANCE

REPLACE WITH THIS SHIM

NOTE

1. Measure the valve clearance while the engine is cold.

2. For shim replacement, see page 3-7.

3. Measure old and new shims with a micrometer.

4. The chart is for reference purpose only. After installing new shims, recheck the valve clearance and adjust if necessary. Before rechecking, rotate the camshafts several times to seat the shims in the lifters.

5. If the shim thickness required exceeds 3.5 mm, there is carbon build-up on the valve seat. Remove the carbon and reface the seat.

### NOTE

1. Measure the valve clearance while the engine is cold.
2. For shim replacement, see page 3-7.
3. Measure old and new shims with a micrometer.
4. The chart is for reference purpose only. After installing new shims, recheck the valve clearance and adjust if necessary. Before rechecking, rotate the camshafts several times to seat the shims in the lifters.
5. If the shim thickness required exceeds 3.5 mm, there is carbon build-up on the valve seat. Remove the carbon and reface the seat.



## CAM CHAIN TENSIONER

### • DYNAMIC

Start the engine and allow it to idle.

Loosen and tighten the cam chain tensioner lock nut and bolt at the front of the cylinder head.

Loosen and tighten both top and bottom lock nuts on the rear cam chain tensioner.

When the tensioner front lock bolt and rear lock nuts are loosened, the tensioners will provide the correct tension.

### • STATIC

#### NOTE

Adjust cam chain tension while the engine is cold.

Remove the A.C. generator cover.

Loosen the front cam chain tensioner lock nut and bolt.

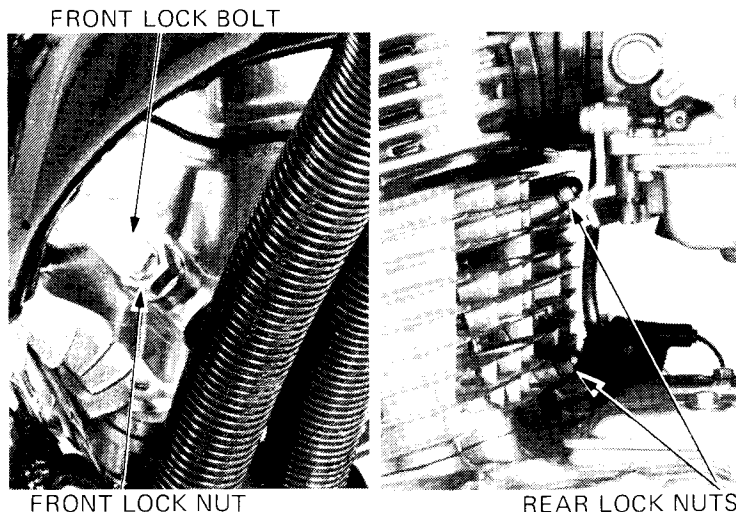
Tighten the bolt while rotating the crankshaft clockwise.

Tighten the lock nut.

Loosen both top and bottom lock nuts on the rear cam chain tensioner.

Tighten the lock nuts while rotating the crankshaft clockwise.

When the tensioner front lock bolt and rear lock nuts are loosened, the tensioners will provide the correct tension.



FRONT LOCK NUT

REAR LOCK NUTS



## CARBURETOR SYNCHRONIZATION

#### NOTE

Synchronize the carburetors with the engine at normal operating temperature, transmission in neutral and motorcycle on the center stand.

Remove both side covers and seat.

Turn the fuel valve OFF and remove the fuel line and fuel tank.

Prepare a longer fuel line and connect it between the fuel tank and carburetor.

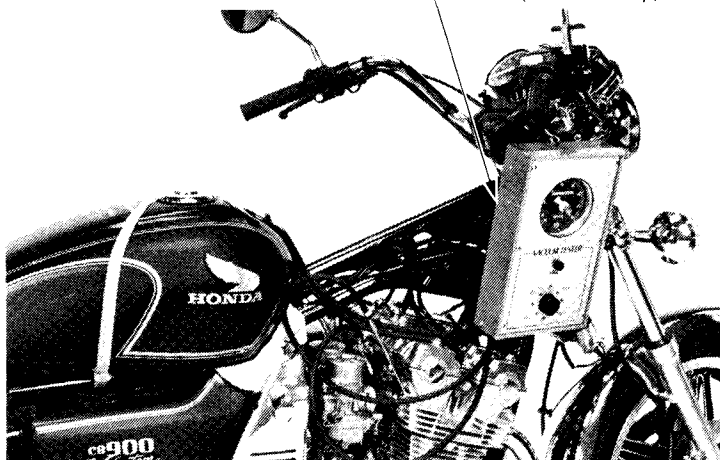
Position the fuel tank higher than normal.

Remove the cylinder head port plugs and install the vacuum gauge adapters.

Connect the vacuum gauges.

#### VACUUM GAUGE

07404-0020000 or M937B-021-XXXXX  
(U.S.A. only)





## ADJUSTMENT

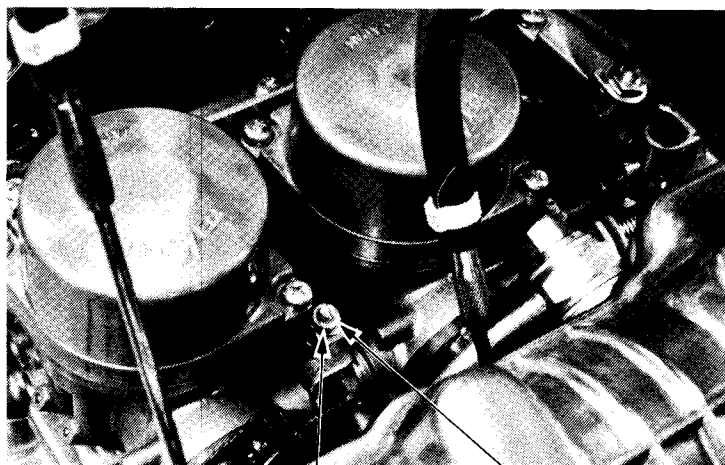
### NOTE

The No.2 carburetor cannot be adjusted; it is the base carburetor.

Start the engine and adjust the idle speed.

**IDLE SPEED:  $1,000 \pm 100$  rpm**

Check that the difference in vacuum readings is 60 mm Hg (2.4 in Hg) or less.



LOCK NUT

ADJUSTING SCREW

Adjust by loosening the lock nuts and turning the adjusting screws with the carburetor adjusting wrench.

Hold the adjusting screws and tighten the lock nuts.

Recheck the idle speed and synchronization.

Remove the gauge and install the plugs.

Install the fuel tank, fuel tube, seat and both side covers.



CARBURETOR  
ADJUSTING WRENCH  
07908-4220100

## CARBURETOR IDLE SPEED

### NOTE

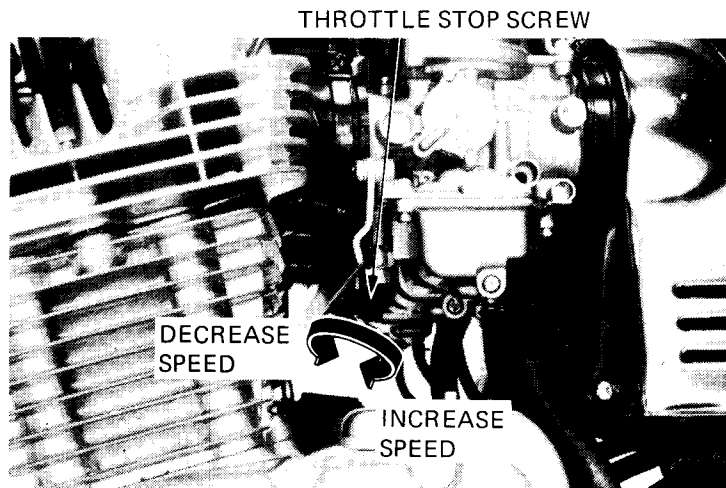
Inspect and adjust idle speed after all other engine adjustments are within specifications.

The engine must be warm for accurate idle adjustment. Ten minutes of stop-and-go riding is sufficient.

Warm up the engine, shift to NEUTRAL, and place the motorcycle on its center stand.

Turn the throttle stop screw as required to obtain the specified idle speed.

**IDLE SPEED:  $1,000 \pm 100$  rpm**



THROTTLE STOP SCREW

DECREASE  
SPEED

INCREASE  
SPEED



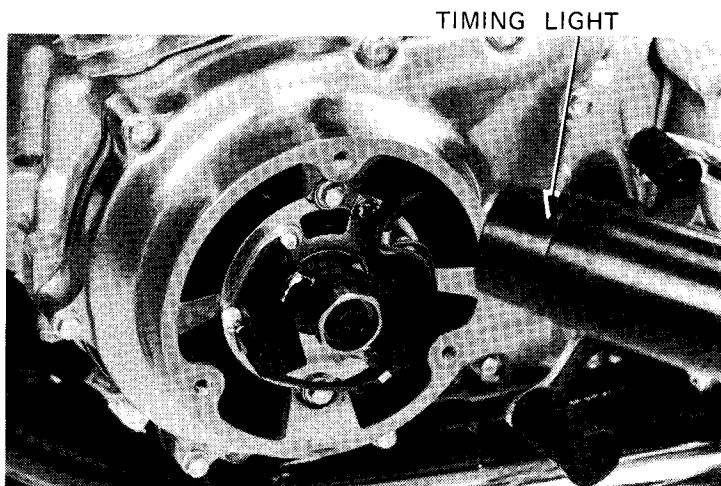
## IGNITION TIMING

### • DYNAMIC

Remove the pulser generator cover.  
Connect a stroboscopic timing light to the No. 1 cylinder's high tension wire.  
Start the engine and let it idle.

**IDLE SPEED:  $1,000 \pm 100$  rpm**

Aim the timing light at the timing mark.  
The "1.4 F-I" mark should align with the index mark.



## ADJUSTMENT

Adjust by loosening the two pulser base plate screws and rotating the plate.  
Tighten the screws and recheck the timing.



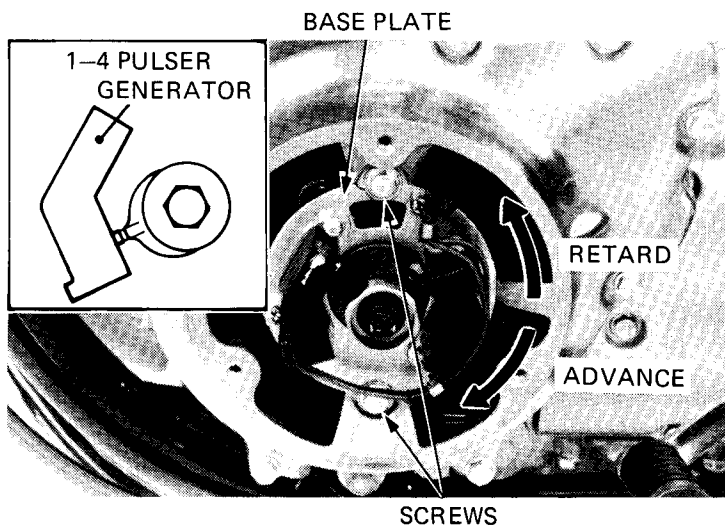
### • STATIC

Remove the pulser generator cover.  
Rotate the crankshaft counterclockwise and align the "1.4 S-F" mark with the index mark.

#### NOTE

Either No. 1 or No. 4 piston must be near T.D.C. of the compression stroke at this time.

The timing is correct if the narrow projection of "1-4" pulser generator aligns with the rotor tooth.





## SPARK ADVANCER

Remove the pulser generator cover.  
Connect a timing light to the No. 1 high tension wire.  
Start the engine.  
Bring engine speed to 3,100 rpm or above and check that the index mark is between the full advance marks.

### CAUTION:

*Do not allow engine speed to exceed 8,500 rpm or engine damage may result.*

Replace the advancer assembly if it is not functioning properly.  
Install the pulser generator cover.



## CYLINDER COMPRESSION

Warm up the engine.  
Stop the engine and remove the fuel tank.  
Disconnect the spark plug caps and remove the spark plugs.  
Insert the compression gauge.  
Open the choke and throttle valves fully.  
Crank the engine with the starter motor.

### NOTE

Crank the engine until the gauge reading stops rising. The maximum reading is usually reached within 4-7 seconds.

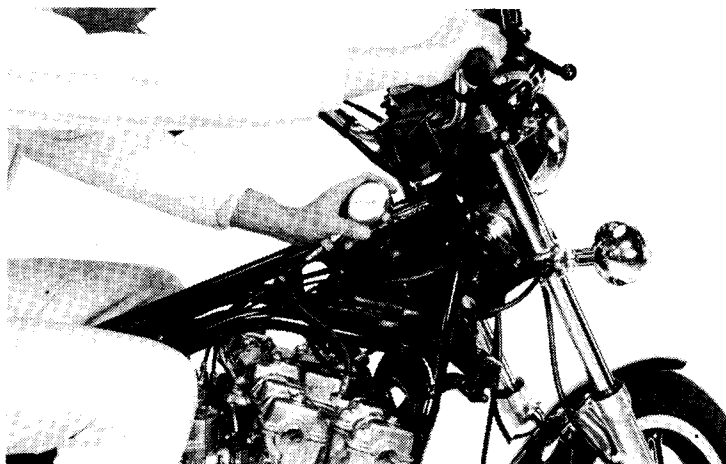
### COMPRESSION PRESSURE:

$12 \pm 2 \text{ kg/cm}^2$  ( $170 \pm 28 \text{ psi}$ )

If compression is low, check the following:

- Leaky valves
- Improper valve clearance
- Leaking cylinder head gasket
- Worn piston/ring/cylinder

If compression is high, it indicates that carbon deposits have accumulated on the combustion chamber or the piston crown.





## <CHASSIS>

### BATTERY

Remove the right and left side covers.  
Remove the seat.  
Disconnect the ground cable at the battery terminal.  
Disconnect the positive cable at the starter relay.  
Remove the battery holder plate bolt.  
Remove the battery.  
Inspect the battery fluid level.  
When the fluid level nears the lower level, refill with distilled water to the upper level.

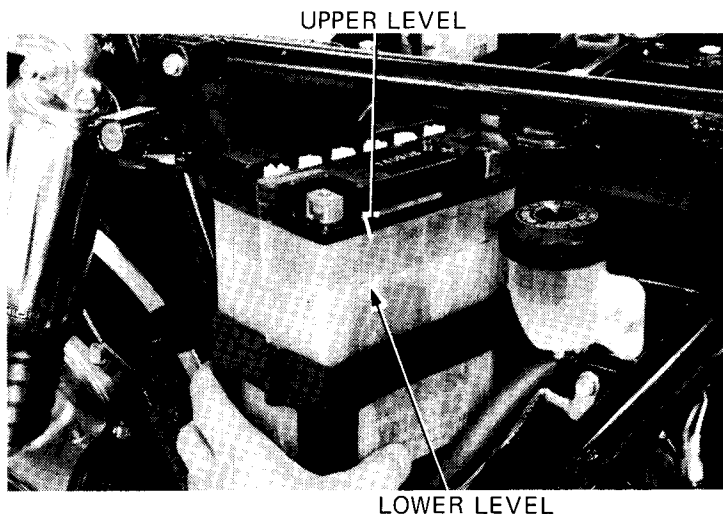
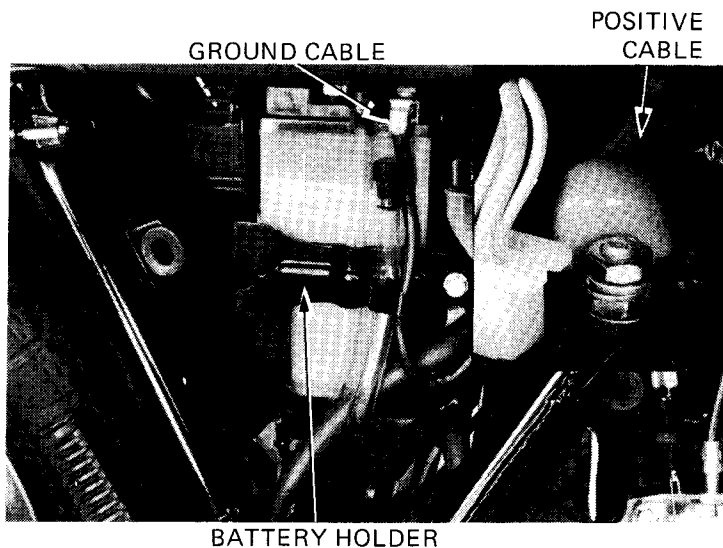
#### NOTE

Add only distilled water. Tap water will shorten the service life of the battery.

#### 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.*

Replace the battery, if sulfation forms or sediments accumulate on the bottom.



## BRAKE FLUID

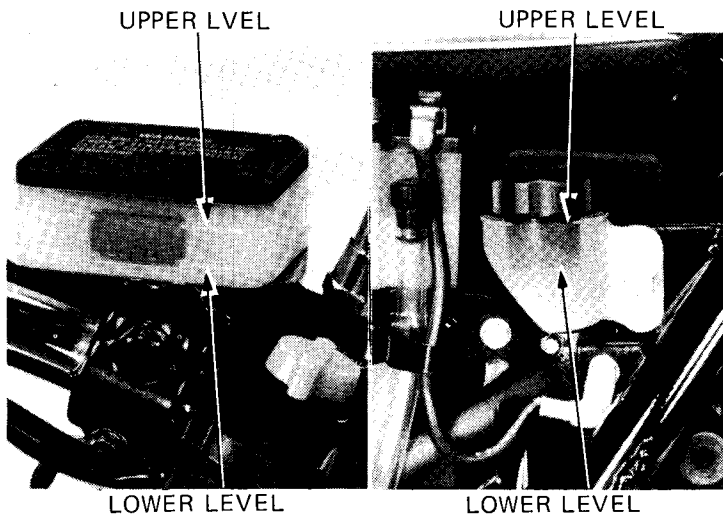
Check the front and rear brake fluid reservoir level.

If the level nears the lower level mark, fill the reservoir with SAE J1703 or DOT-3 BRAKE FLUID to the upper level mark.

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

#### CAUTION:

- Do not remove the cover until the handlebar has been turned so that the reservoir is level.
- Avoid operating the brake lever with the cap removed.  
*Brake fluid will squirt out if the lever is pulled.*





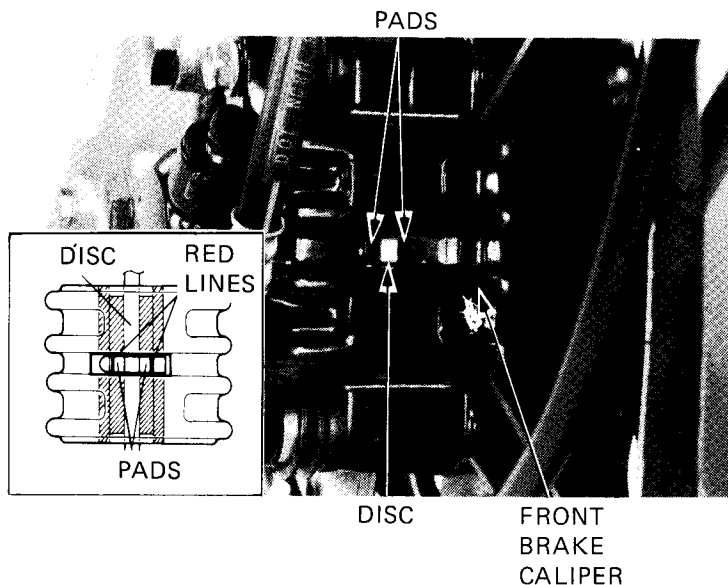
## BRAKE PAD WEAR

Remove the cap from the caliper and check for brake pad wear.

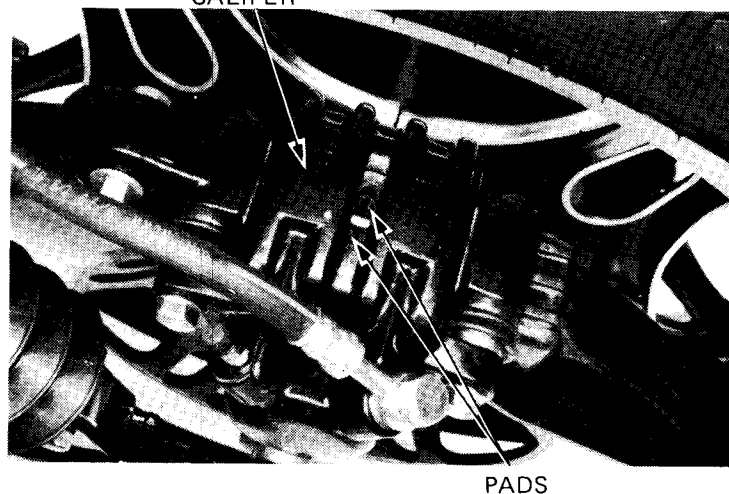
Replace the brake pads if the red line on the top of the pads reaches the edge of the brake disc (Refer to Section 17).

### CAUTION:

*Always replace the brake pads in pairs to assure even disc pressure.*



REAR BRAKE CALIPER



## BRAKE SYSTEM

Check that there is no deterioration, damage or leaks in brake lines or fittings.

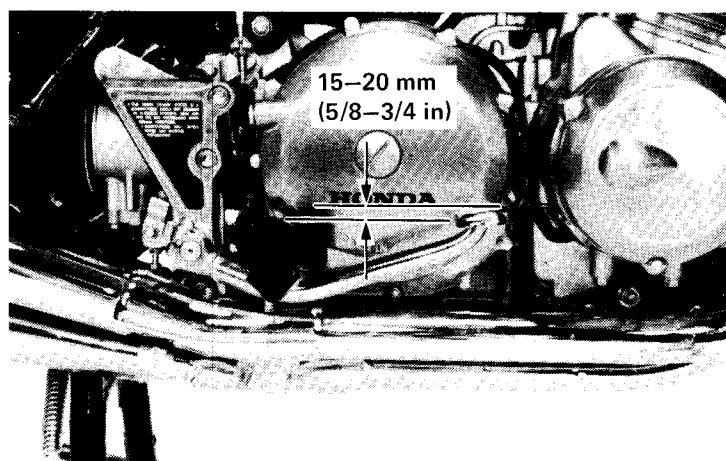
### REAR BRAKE PEDAL HEIGHT

Adjust the pedal height so that the distance between the pedal and upper face of the footpeg is correct.

### CAUTION:

*Improper brake pedal height adjustment can cause brake drag.*

**PEDAL HEIGHT: 15–20 mm (5/8–3/4 in)**





Adjust as follows;

Loosen the stopper bolt lock nut.

Screw in the stopper bolt.

Loosen the adjusting bolt lock nut.

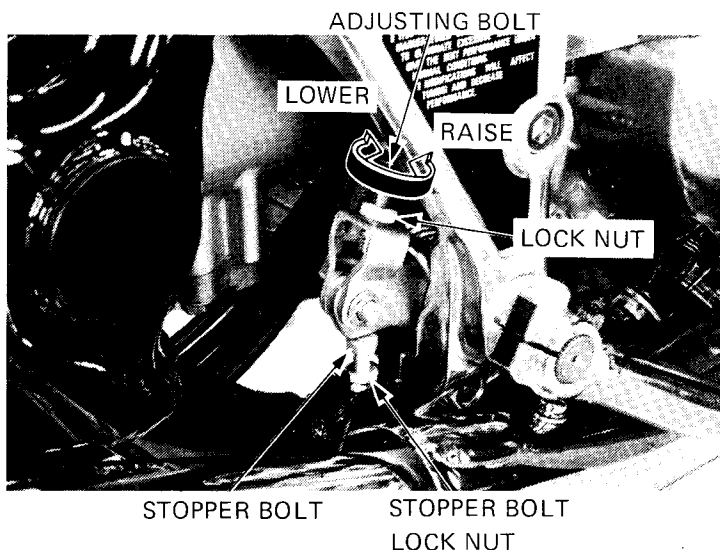
Turn the adjusting bolt until the correct pedal height is obtained.

Tighten the lock nut securely.

Screw out the stopper bolt until it touches the brake pivot arm, then turn the stopper bolt clockwise 1/2–1 turn.

Tighten the stopper bolt lock nut.

After adjusting pedal height, adjust the brake light switch.



## BRAKE LIGHT SWITCH

Adjust the brake light switch so that the brake light will light when the brake pedal is depressed and the brake begins engagement.

### NOTE

- Do not turn the switch body.
- The front brake light switch does not require adjustment.

Adjust by turning the switch adjusting nut as shown.



## HEADLIGHT AIM

Adjust vertically by loosening both headlight case mounting bolts.

Adjust horizontally by turning the adjusting screw on the headlight rim.

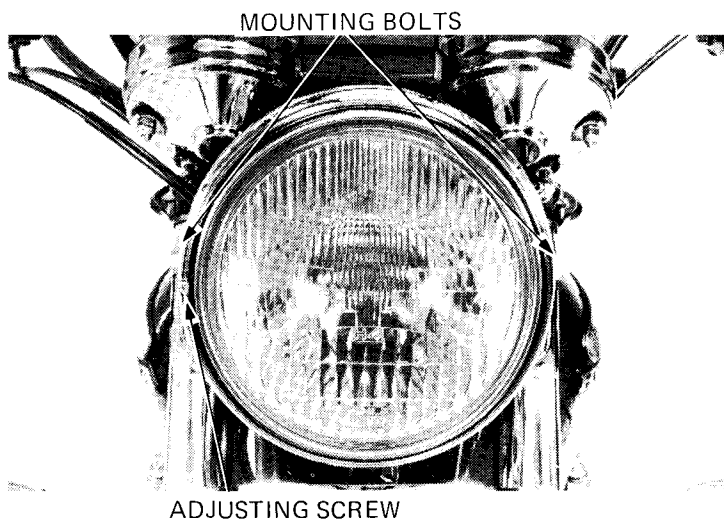
Turn the adjusting screw clockwise to direct the beam toward the right side of the rider.

### NOTE

Adjust the headlight beam as specified by local laws and regulations.

### WARNING

*An improperly adjusted headlight may blind oncoming drivers, or it may fail to light the road for a safe distance.*



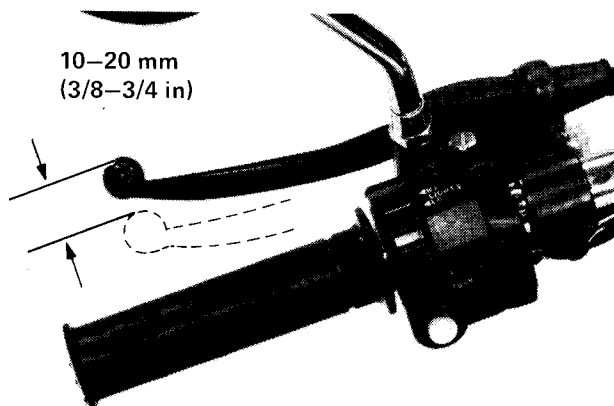




## CLUTCH

Inspect the clutch lever free play at the end of the lever.

**FREE PLAY: 10–20 mm (3/8–3/4 in)**



## ADJUSTMENT

Loosen the upper adjusting bolt's lock nut and turn the adjusting bolt until the correct free play is obtained.

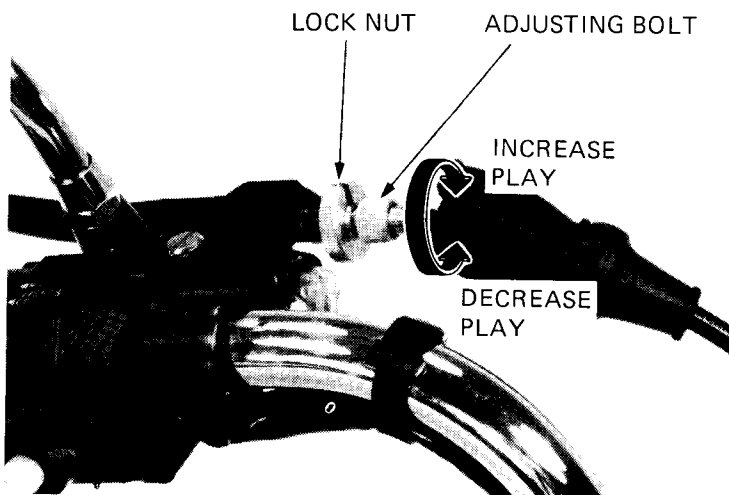
Tighten the lock nut.

### NOTE

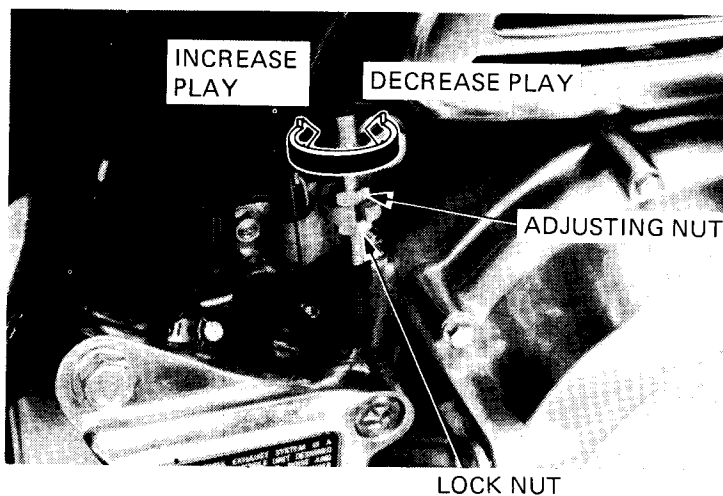
Do not expose the adjusting bolt threads more than 8 mm (5/16 in).

If adjustment cannot be made with the clutch lever adjusting bolt, screw the adjusting bolt all the way in and back out 1 turn.

Adjustment must be made at the clutch housing.



Loosen the lower clutch cable adjusting lock nut and turn the adjusting nut all the way out to obtain maximum free play.





Remove the clutch lifter cap, loosen the clutch lifter lock nut. Then turn the adjusting screw clockwise until a slight resistance is felt. From this position, turn the clutch adjusting screw counterclockwise 1–1½ turn, and tighten the lock nut.

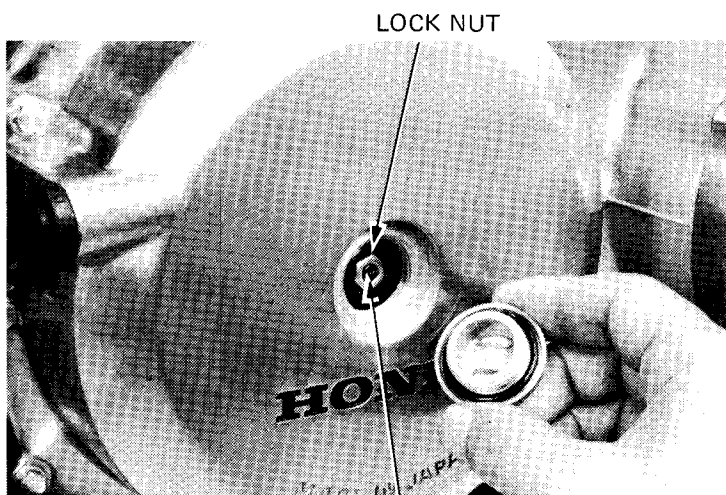
Install the lifter cap.

Turn the clutch cable lower adjusting nut so that there is 10–20 mm (3/8–3/4 in) of free play at the end of the clutch lever. Tighten the lock nut.

Any minor adjustment necessary can be obtained with the adjusting bolt and lock nut at the clutch lever.

After adjustment, be sure all lock nuts are tightened securely.

Check to see that the clutch is not slipping and is properly disengaging.

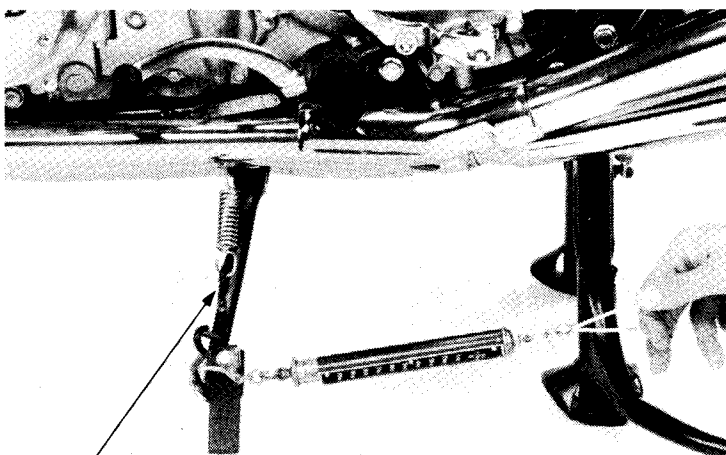


LOCK NUT  
ADJUSTING SCREW  
CLUTCH ADJUSTING WRENCH  
07908–3230000

## SIDE STAND

Check the rubber pad for deterioration or wear. Replace if any wear exceeds to the wear line as shown.

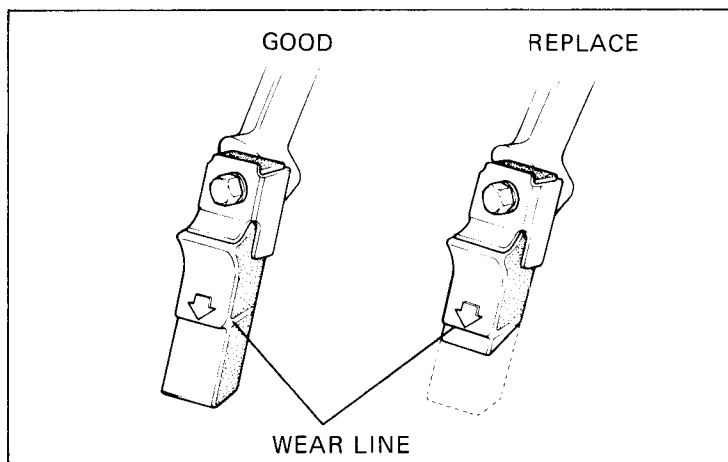
Check the side stand spring for damage and loss of tension, and the side stand assembly for freedom of movement and bending.



SIDE STAND

### NOTE

When replacing, use a rubber pad with the mark "OVER 260 lbs ONLY". Spring tension is correct if the measurements fall within 1.5–2.5 kg (3.3–5.5 lb) when pulling the side stand lower end with a spring scale.





## SUSPENSION

### WARNING

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

### FRONT

Check the action of the front forks by compressing them several times.

Check the entire fork assembly for leaks or damage.

Replace damaged components which cannot be repaired.

Tighten all nuts and bolts.



Place the vehicle on its center stand.

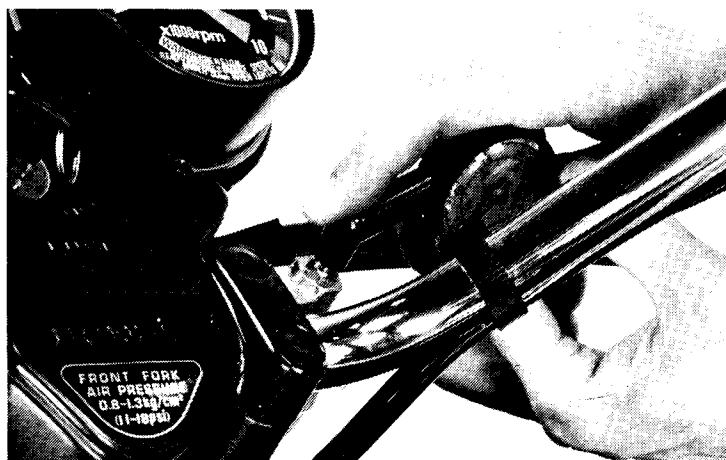
Remove the valve cap and measure the front fork air pressure.

### FRONT FORK AIR PRESSURE:

0.8–1.1 kg/cm<sup>2</sup> (11–16 psi)

### NOTE

Check the front fork air pressure when the front forks are cold.



### REAR

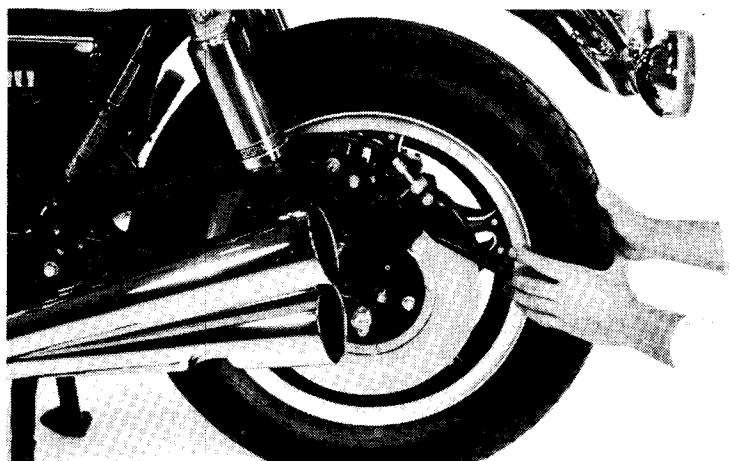
Place the motorcycle on its center stand.

Move the rear wheel sideways with force to see if the swing arm bearings are worn.

Replace if excessively worn (page 15-13).

Check the shock absorbers for leaks or damage.

Tighten all rear suspension nuts and bolts.





## 50 INSPECTION AND ADJUSTMENT

Remove the left side cover.  
Remove the valve cap and measure the rear shock absorber air pressure.

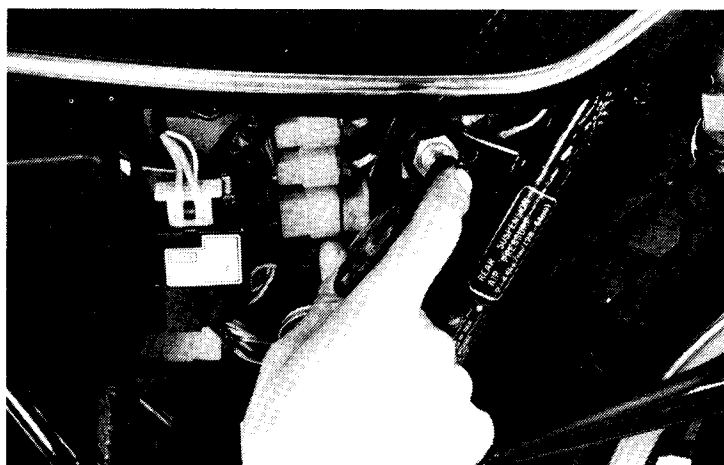
### REAR SHOCK ABSORBER AIR

#### PRESSURE:

2.0–4.5 kg/cm<sup>2</sup> (28–64 psi)

#### NOTE

Check the air pressure when the rear shock absorbers are cold.



## NUTS, BOLTS, FASTENERS

Check that all chassis nuts and bolts are tightened to correct torque values.  
Check all cotter pins and safety clips.

## WHEELS

#### NOTE

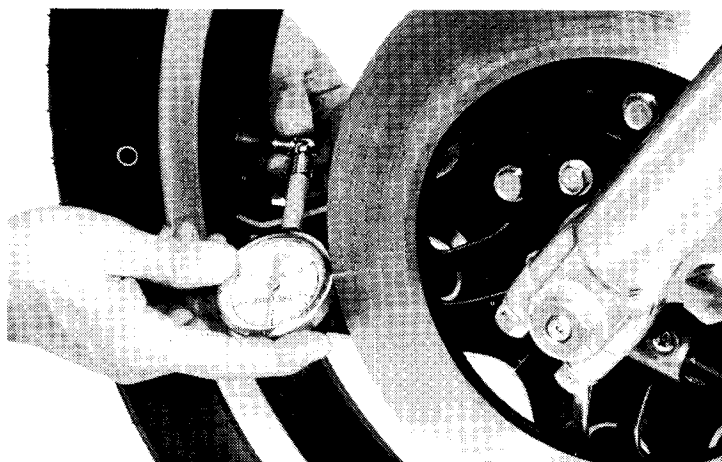
Tire pressure should be checked when tires are **COLD**.

Check the tires for cuts, imbedded nails, or other sharp objects.

### RECOMMENDED TIRE PRESSURE AND TIRE SIZE:

|  |                                   | Front                   | Rear             |
|--|-----------------------------------|-------------------------|------------------|
| Tire size  |                                   | 110/90-19<br>62H        | 130/90-16<br>67H |
| Cold tire pressures<br>kg/cm <sup>2</sup><br>(psi) | Up to 90 kg<br>(200 lbs)<br>load  | 2.25 (32)<br>[2.8 (40)] | 2.25 (32)        |
|  | Up to vehicle<br>capacity<br>load | 2.25 (32)<br>[2.8 (40)] | 2.8 (40)         |
| Tire brand   | BRIDGE-STONE                      | S703                    | G504             |
|  | DUNLOP                            | F11                     | K127             |

[     ] When a genuine Honda fairing is installed.



Check the front and rear wheels for trueness.

Measure the tread depth at the center of the tires.

Replace the tires if the tread depth reaches the following limit.

#### Minimum tread depth:

Front: 1.5 mm (1/16 in)

Rear: 2.0 mm (3/32 in)



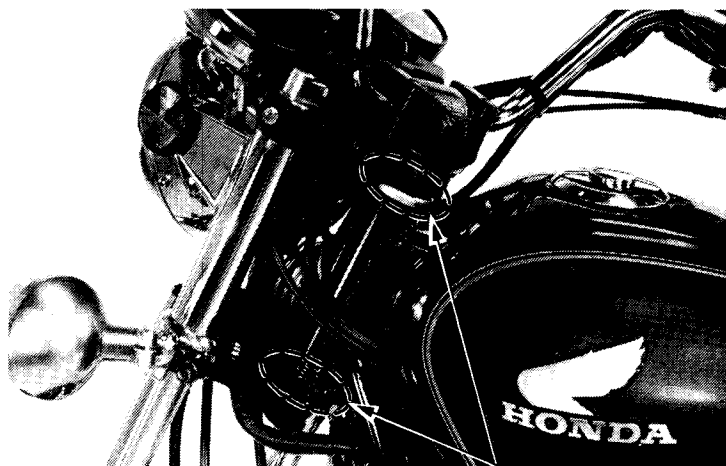
## STEERING HEAD BEARINGS

### NOTE

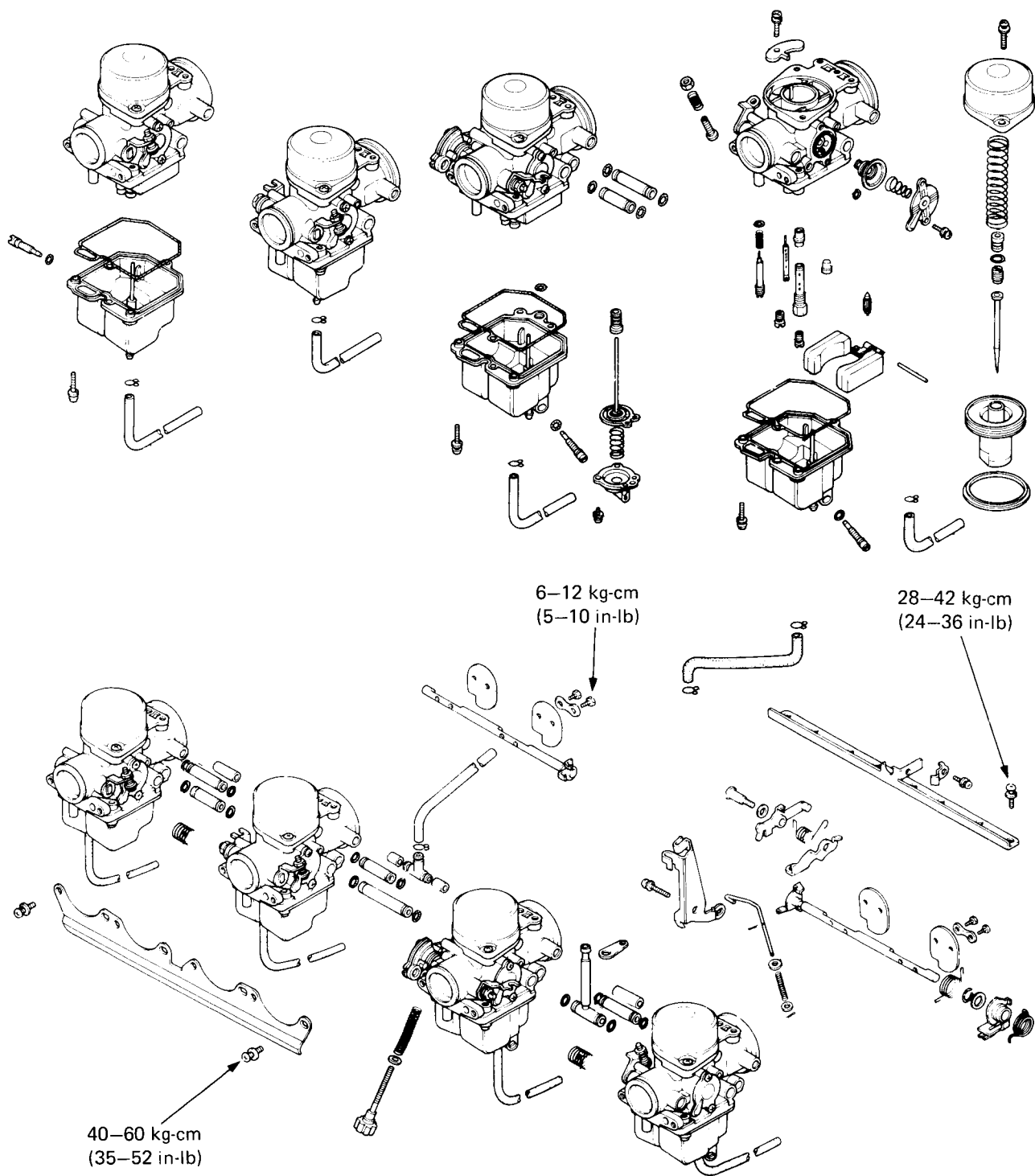
Check that the control cables do not interfere with handlebar rotation.

Raise the front wheel off the ground.  
Check that the handlebar rotates freely.

If the handlebar moves unevenly, binds, or has vertical movement, adjust the steering head bearing by turning the steering head adjusting nut (page 14-25).



HEAD BEARINGS





|                                 |      |                             |      |
|---------------------------------|------|-----------------------------|------|
| SERVICE INFORMATION             | 4- 1 | CARBURETOR SEPARATION       | 4- 8 |
| TROUBLESHOOTING                 | 4- 2 | LINKAGE                     | 4-11 |
| CARBURETOR REMOVAL              | 4- 3 | CARBURETOR ASSEMBLY         | 4-12 |
| VACUUM CYLINDER DISASSEMBLY     | 4- 3 | FAST IDLE ADJUSTMENT        | 4-16 |
| PILOT SCREW                     | 4- 4 | ACCELERATOR PUMP ADJUSTMENT | 4-16 |
| FLOAT AND JETS                  | 4- 5 | CARBURETOR INSTALLATION     | 4-16 |
| AIR CUTOFF VALVE DISASSEMBLY    | 4- 6 | PILOT SCREW ADJUSTMENT      | 4-17 |
| ACCELERATOR PUMP<br>DISASSEMBLY | 4- 7 | LIMITER CAP INSTALLATION    | 4-18 |
| COMPONENT ASSEMBLY              | 4- 7 | FUEL TANK                   | 4-19 |
| FLOAT LEVEL                     | 4- 8 | AIR CLEANER                 | 4-19 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or open flames.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly.
- The float bowls have drain plugs that can be loosened to drain residual gasoline.

### TOOLS

#### Common

Float gauge 07401-0010000

#### Special

Carburetor Throttle Wrench 07908-4220100

Carburetor Pilot Screw Wrench 07908-4220200

### TORQUE VALUES

|               |                           |
|---------------|---------------------------|
| Front bracket | 40-60 kg-cm (35-52 in-lb) |
| Rear bracket  | 28-42 kg-cm (24-36 in-lb) |
| Choke valve   | 6-12 kg-cm ( 5-10 in-lb)  |

### SPECIFICATIONS

[ ] Canada model

|                             |                                  |
|-----------------------------|----------------------------------|
| Venturi dia.                | 32 mm (1.3 in)                   |
| Identification No.          | VB43A [VB43B]                    |
| Float level                 | 15.5 mm (0.61 in)                |
| Main jet                    | Pri. : 68      2nd. : 105        |
| Idle speed                  | 1,000 ± 100 rpm                  |
| Throttle grip free play     | 2-6 mm (1/8-1/4 in)              |
| Fast idle                   | 1,000-2,500 rpm (after break-in) |
| Pilot screw initial opening | See page 4-17                    |



## TROUBLESHOOTING

### Engine cranks but won't start

1. No fuel in tank
2. No fuel to carburetor
3. Engine flooded with fuel
4. No spark at plug (ignition malfunction)
5. Air cleaner clogged
6. Intake air leak
7. Improper choke operation
8. Improper throttle operation

### Hard starting or stalling after starting

1. Improper choke operation
2. Ignition malfunction
3. Fast idle speed incorrect
4. Carburetor malfunction
5. Fuel contaminated
6. Intake air leak
7. Idle speed incorrect

### Rough idle

1. Ignition malfunction
2. Idle speed incorrect
3. Incorrect carburetor synchronization
4. Carburetor malfunction
5. Fuel contaminated

### Misfiring during acceleration

1. Ignition malfunction
2. Faulty air-cutoff valve

### Backfiring

1. Ignition malfunction
2. Carburetor malfunction
3. Faulty air-cutoff valve

### Poor performance (driveability) and poor fuel economy

1. Fuel system clogged
2. Ignition malfunction

### Lean mixture

1. Clogged fuel jets
2. Piston stuck closed
3. Faulty float valve
4. Float level low
5. Fuel cap vent blocked
6. Fuel strainer screen clogged
7. Restricted fuel line
8. Air vent tube clogged
9. Intake air leak

### Rich mixture

1. Clogged air jets
2. Faulty float valve
3. Float valve too high
4. Choke stuck closed
5. Air-cutoff valve sticking closed
6. Dirty air cleaner





## CARBURETOR REMOVAL

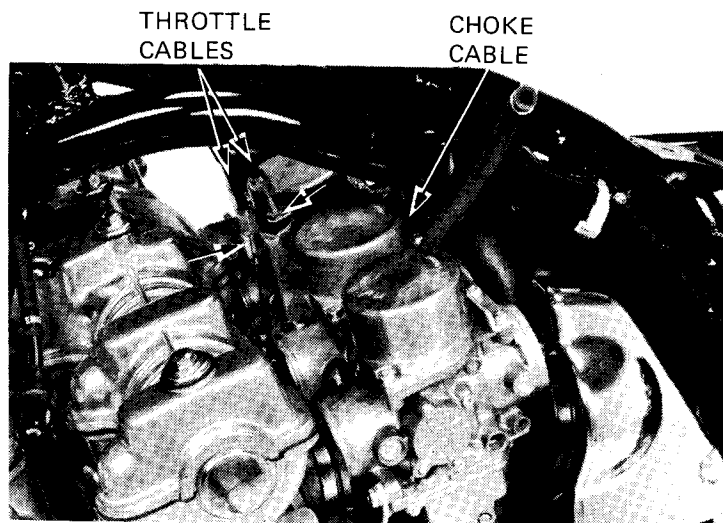
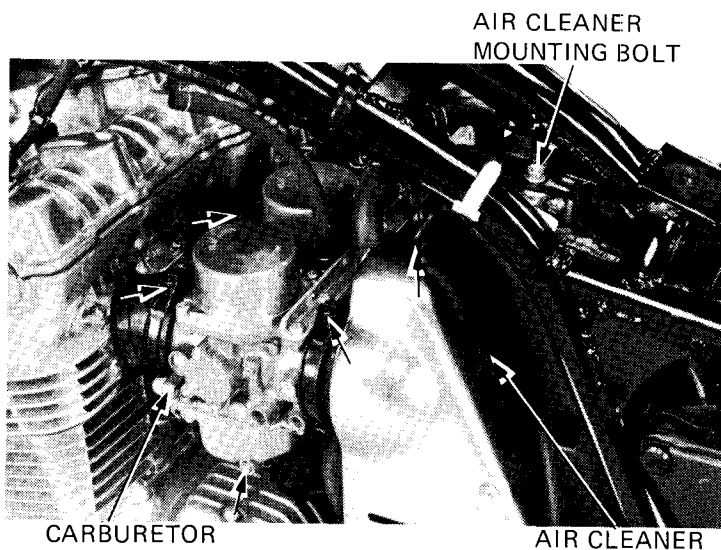
Remove the left and right frame side covers.  
Remove the seat.  
Turn the fuel valve "OFF" and disconnect the fuel line.

Remove the fuel tank (page 4-19).

Loosen the air cleaner mounting bolt.

Loosen the air cleaner connecting bands.  
Move the air cleaner to the rear.  
Loosen the carburetor insulator bands.  
Drain residual fuel into a container by loosening each drain screw.

Remove the carburetor assembly.  
Disconnect the throttle and choke cables.



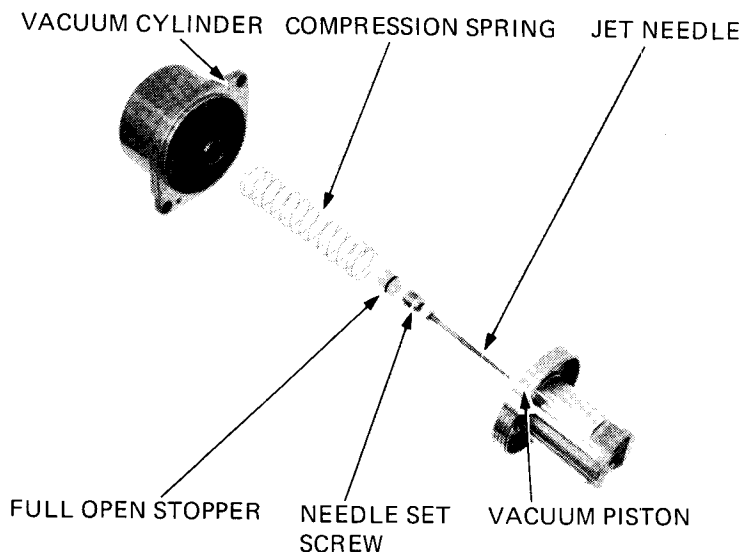
## VACUUM CYLINDER DISASSEMBLY

Remove the vacuum cylinders from the carburetor bodies.  
Carefully lift the vacuum piston out with the needle and compression spring.

Inspect the vacuum piston and cylinder for wear, nicks, scratches or other damage. Make sure that the piston and jet needle move up and down freely in the cylinder.

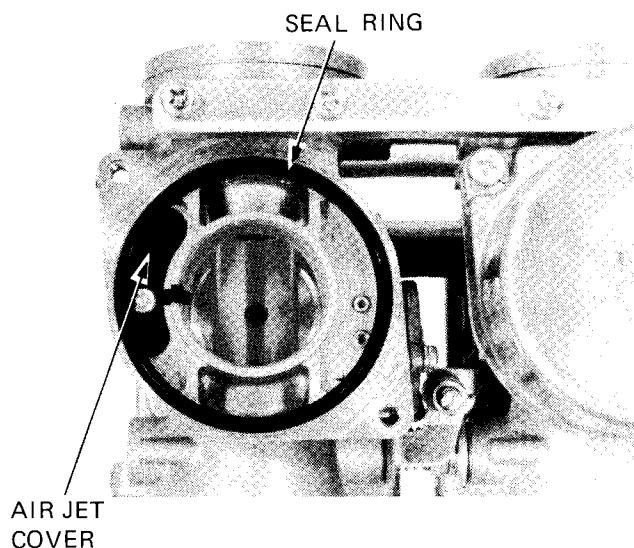
Remove the full open stopper.  
Remove the needle set screw.  
Separate the jet needle from the piston.

Inspect the needle and seat for deposits, bending, grooves, or other damage.

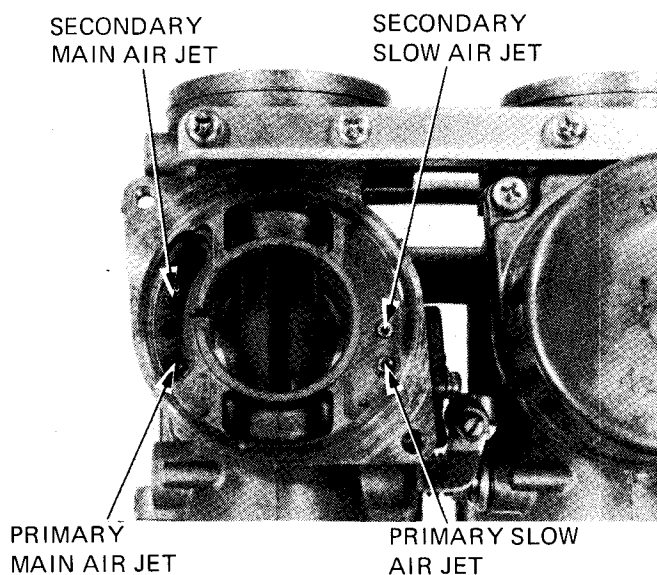




Carefully lift the seal ring off the carburetor body.  
Remove the air jet cover.



Blow open the primary main air jet, secondary main air jet and slow air jet with compressed air.



## PILOT SCREW

### REMOVAL

#### NOTE

The pilot screws are factory pre-set and should not be removed unless the carburetor is overhauled.

Remove the float chambers. (USA only).

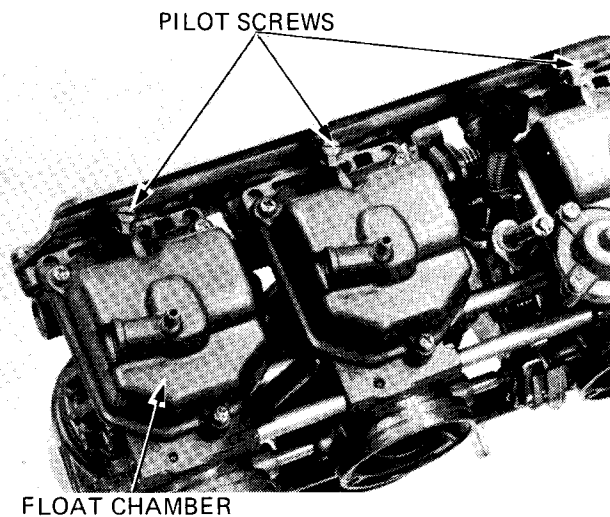
Turn the pilot screw in and carefully count the number of turns before it seats lightly. Make a note of this to use as a reference when reinstalling the pilot screw.

#### CAUTION:

*Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.*

Remove the pilot screw.

Inspect the pilot screw and replace if worn or damaged.



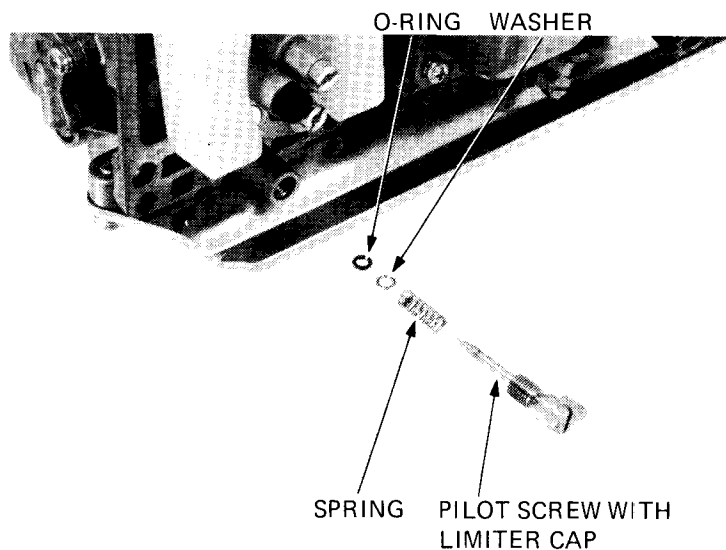


## INSTALLATION

Install the pilot screw and return it to its original position as noted during removal. Perform pilot screw adjustment if a new pilot screw is installed (page 4-17).

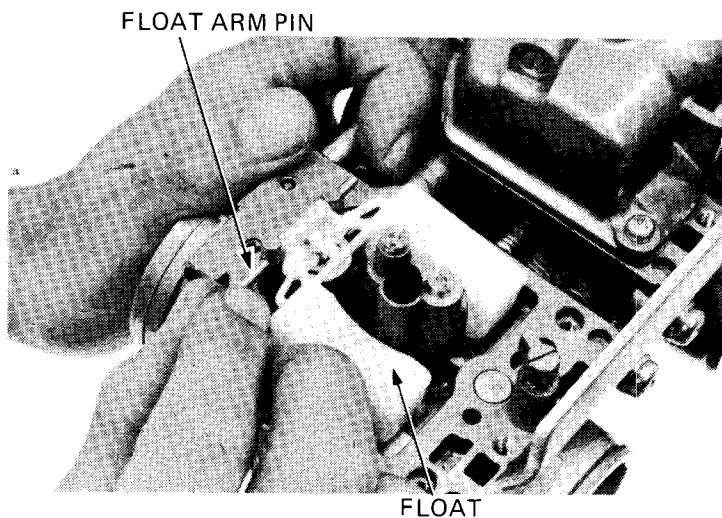
### NOTE

Do not install limiter caps on new pilot screws until after adjustment has been made.

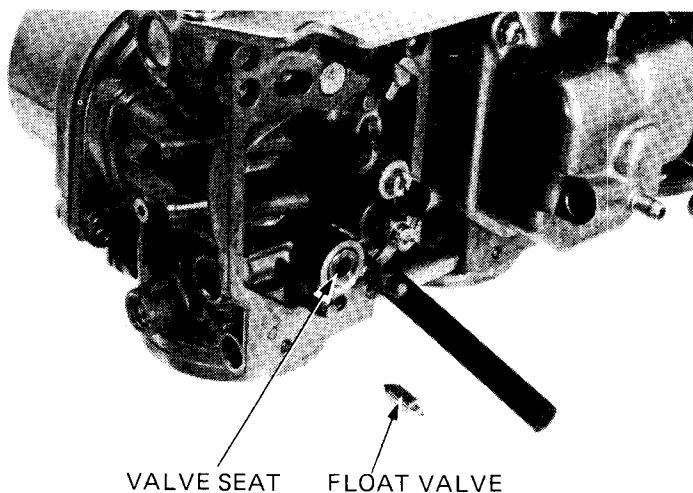


## FLOAT AND JETS

Press out and remove the float arm pin. Remove the float and float valve.

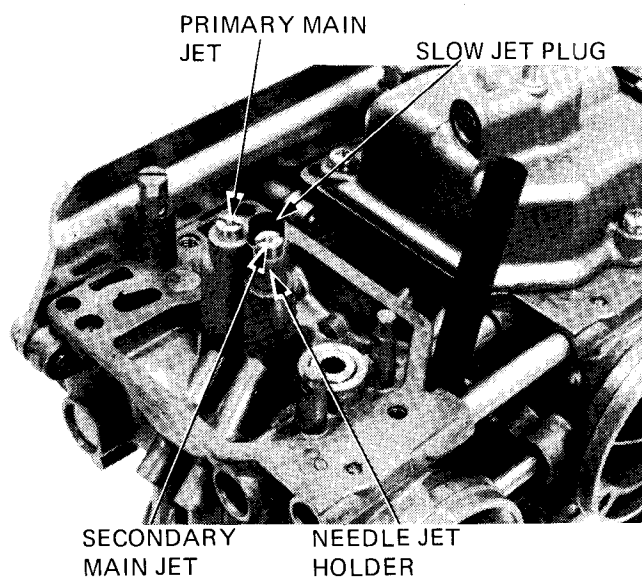


Inspect the float valve and seat for grooves, nicks or deposits. Inspect the float valve operation.





Remove the secondary main jet.  
Remove the primary main jet.  
Remove the slow jet plug.

**NOTE**

The slow air jet cannot be removed.  
It is a press fit.

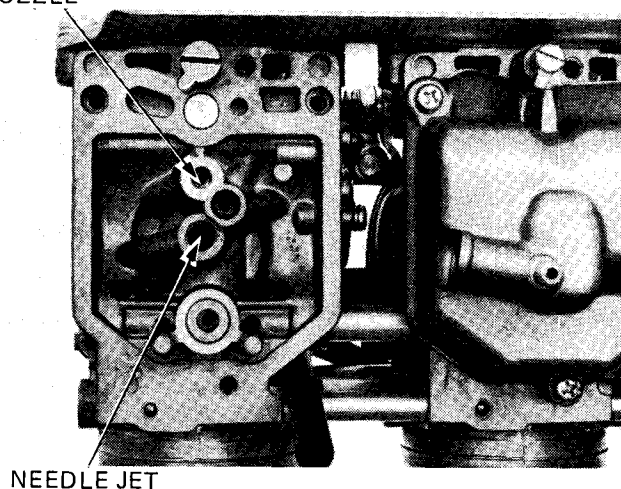
Remove the primary nozzle.

Remove the needle jet holder.  
Tilt the carburetor to remove the needle jet.  
Blow all jets and body passages with compressed air.

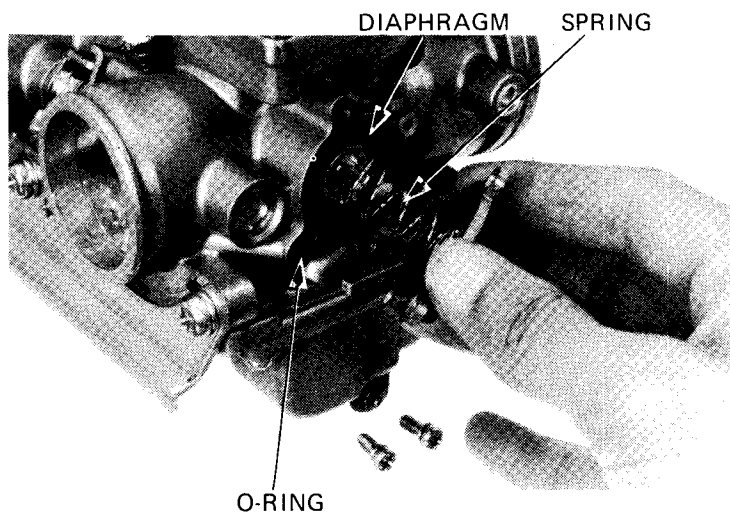
**NOTE**

If the needle jet is difficult to remove,  
carefully press the needle jet from the  
cylinder side with a non-metallic object  
to prevent damage to the needle jet.

PRIMARY  
NOZZLE

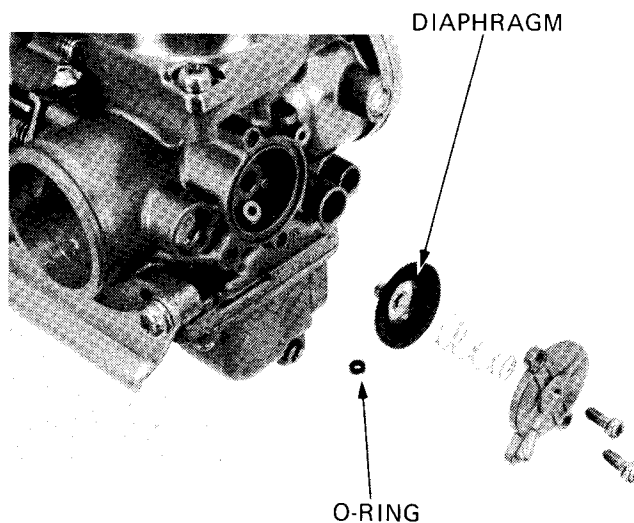
**AIR-CUTOFF VALVE DISASSEMBLY**

Remove the air-cutoff valve cover and spring.  
Remove the diaphragm and O-ring.



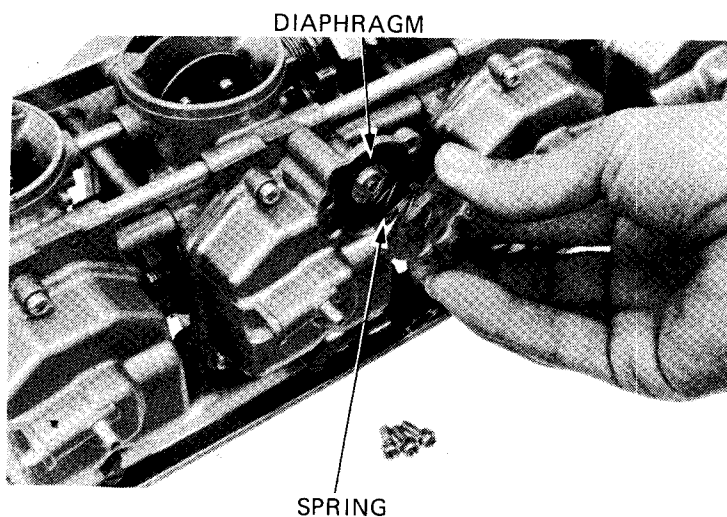


Inspect the diaphragm and valve for cracks and brittleness.



## ACCELERATOR PUMP DISASSEMBLY

Remove the accelerator pump cover and spring.



Remove the diaphragm.  
Inspect the diaphragm for cracks and brittleness.

### NOTE

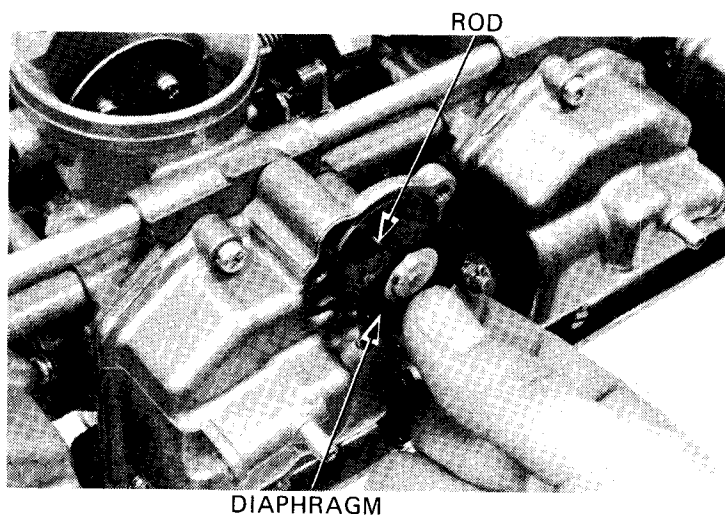
Be sure the rod is not bent.

## COMPONENT ASSEMBLY

To assemble the accelerator pump, air-cutoff valve, float chamber and vacuum cylinder, reverse the disassembly procedure.

### NOTE

When installing the air-cutoff valve O-ring, make sure the flat surface is toward the body.





## FLOAT LEVEL

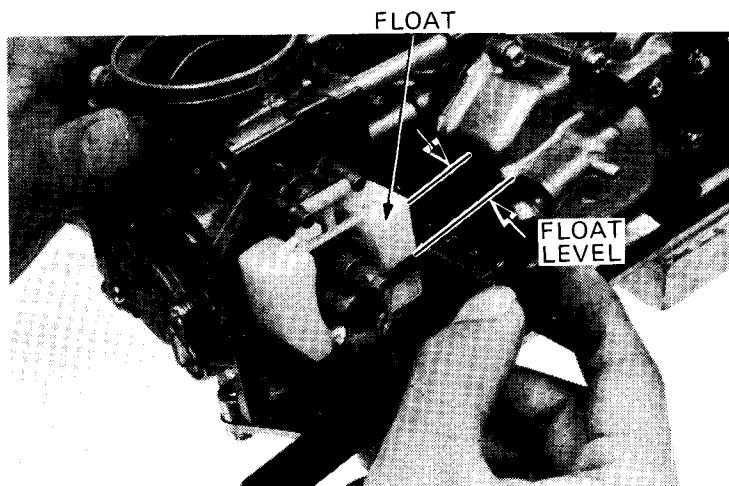
Remove the float chamber.

Measure the float level with the float tip just contacting the float valve and the carburetor inclined  $15^{\circ}$ ~ $45^{\circ}$  from vertical.

### FLOAT LEVEL:

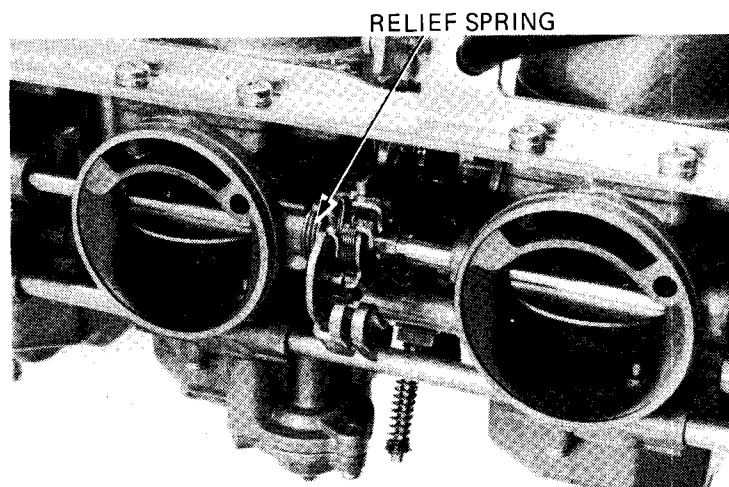
$15.5 \pm 1 \text{ mm } (0.61 \pm 0.04 \text{ in})$

Replace the float, if the float level is not within the specification.



## CARBURETOR SEPARATION

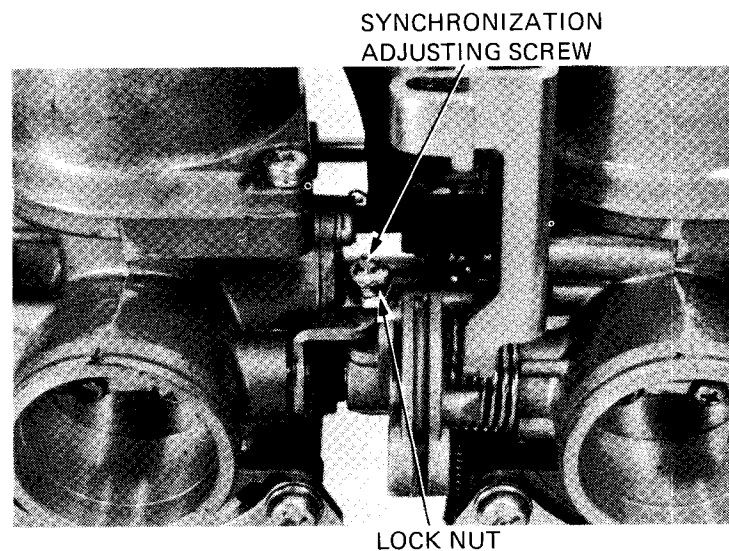
Unhook the choke relief spring from the choke shaft arm of the No. 2 and No. 3 carburetors.



Loosen the synchronization adjusting screw lock nuts and adjusting screws until there is no tension.

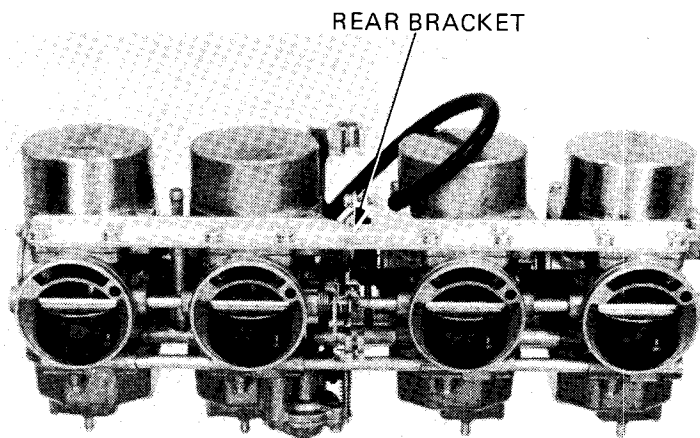
### NOTE

Turn the synchronization screws in until they seat and note the number of turns to ensure original positioning.

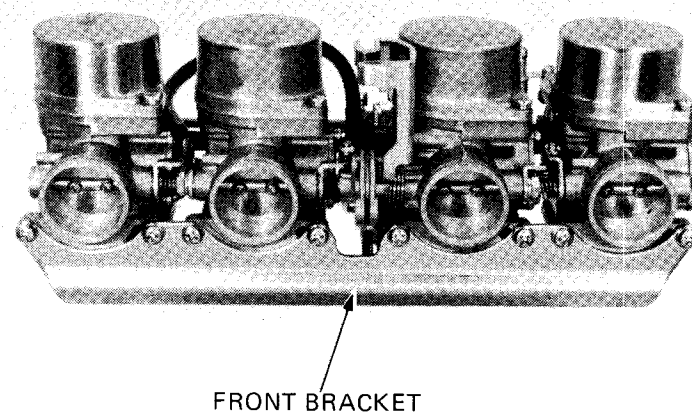




Remove the rear bracket.



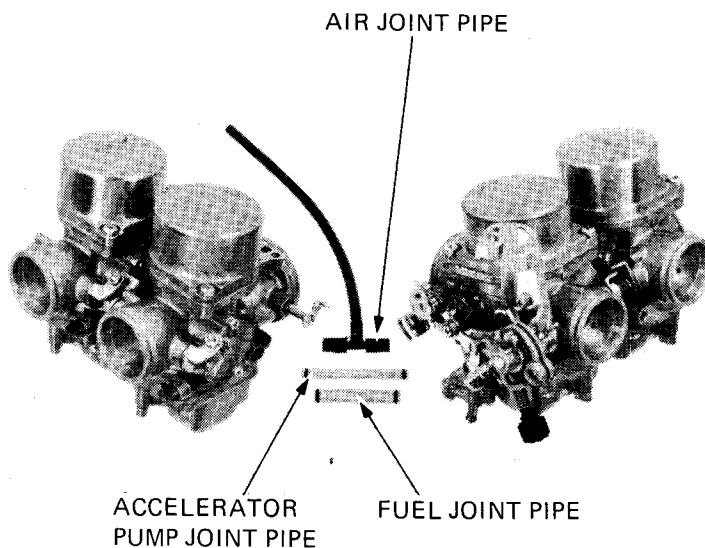
Remove the front bracket.



Carefully separate the carburetors into No. 1,2 and No. 3,4.

**CAUTION:**

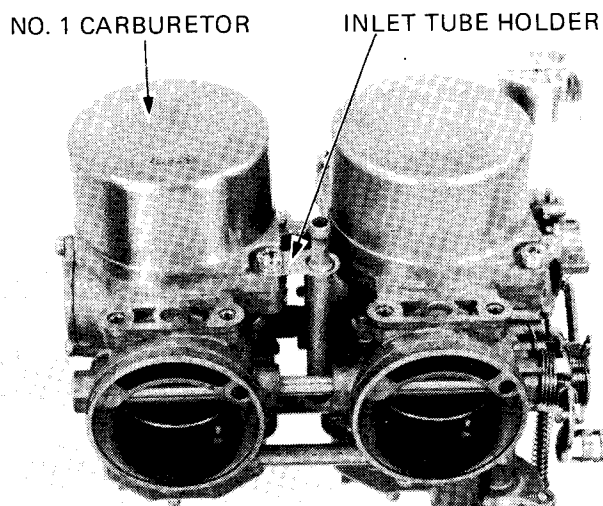
*Separate the carburetors horizontally to prevent damage to the joint pipes and choke linkage.*





## 62 FUEL SYSTEM

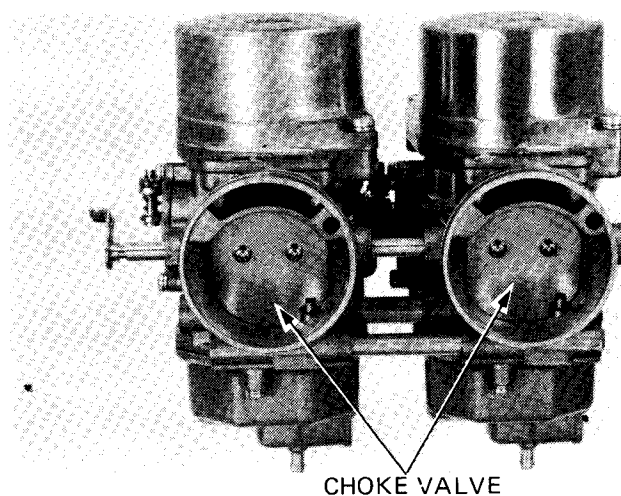
Remove the fuel inlet tube holder from the No. 1 carburetor.



File the staked ends of the choke valve screws. Remove the choke valves and discard the screws.

### NOTE

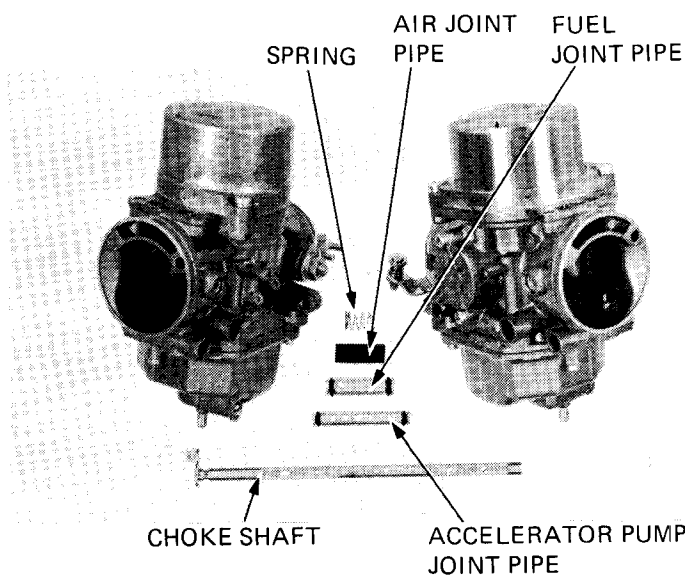
Do not allow the cut ends to enter the carburetors.



Carefully separate the individual carburetors.

### CAUTION:

Separate the carburetors horizontally to prevent damage to the joint pipes and choke linkage.







## LINKAGE

### DISASSEMBLY

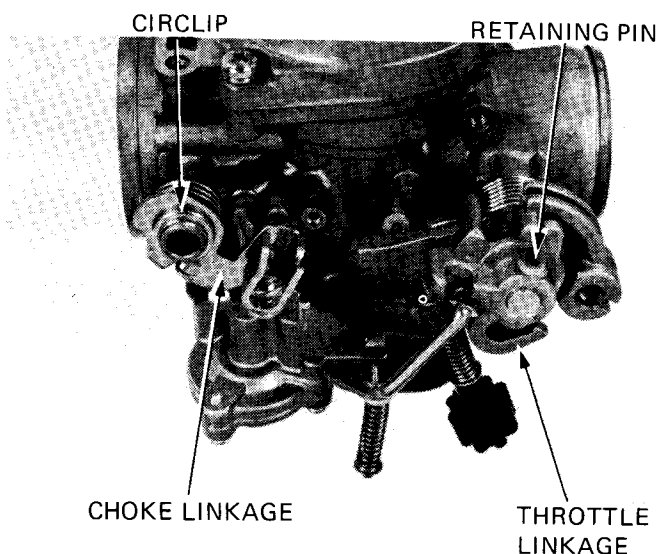
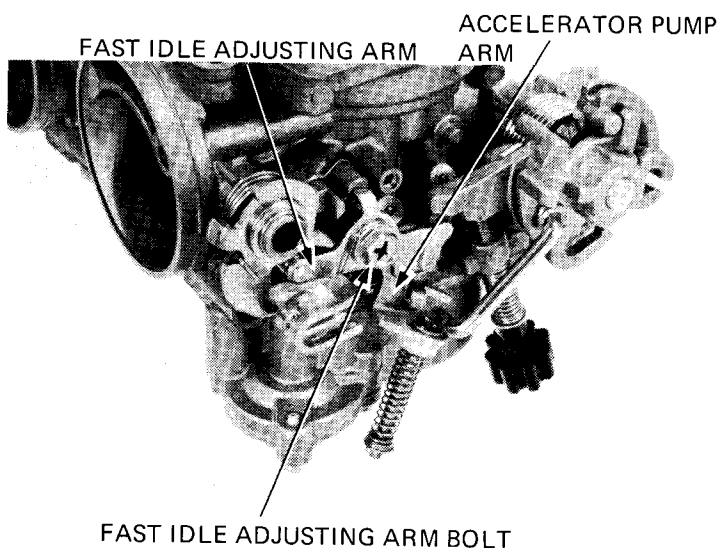
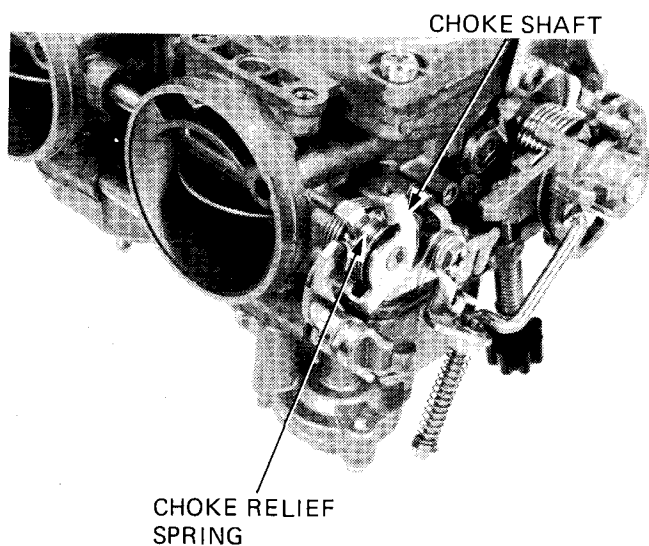
Note the spring positions.  
Remove the choke valves.  
Remove the choke relief spring from the choke link and pull the choke shaft out.

#### CAUTION:

*Do not reuse the choke shaft, or choke valves and screws.*

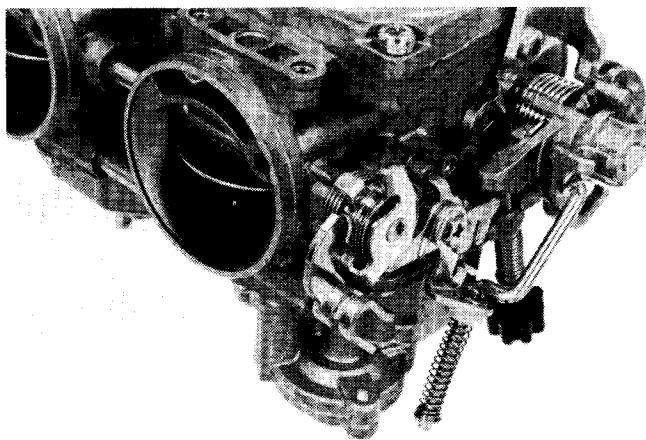
Remove the fast idle adjusting arm bolt.  
Remove the fast idle adjusting arm and springs  
Remove the accelerator pump arm.

Drive out the retaining pin.  
Remove the throttle linkage.  
Remove the circlip.  
Remove the choke linkage.



**ASSEMBLY**

To assemble the carburetor linkage, reverse the disassembly procedure.

**CARBURETOR ASSEMBLY****NOTE**

Assemble one pair of carburetors at a time.

Install new O-rings on the fuel joint pipes.

**NOTE**

Apply a thin coating of oil to the O-rings.

Install the fuel joint, accelerator pump joint and air vent pipes.

Loosen the synchronization adjusting screw until there is no tension when assembling carburetors.

Insert the No. 3 carburetor throttle link between the plain washers.

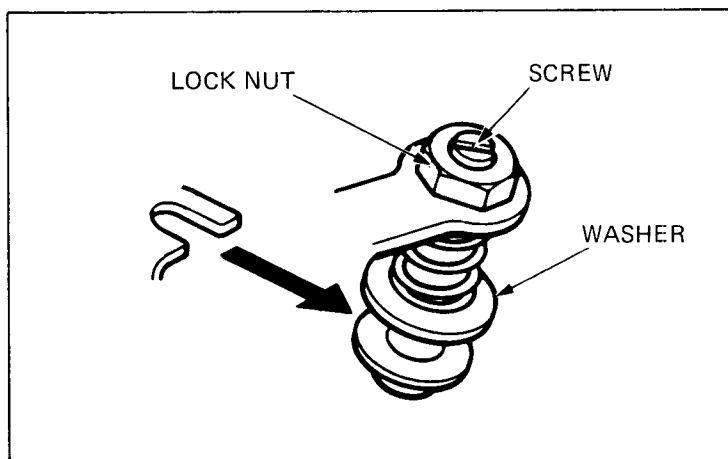
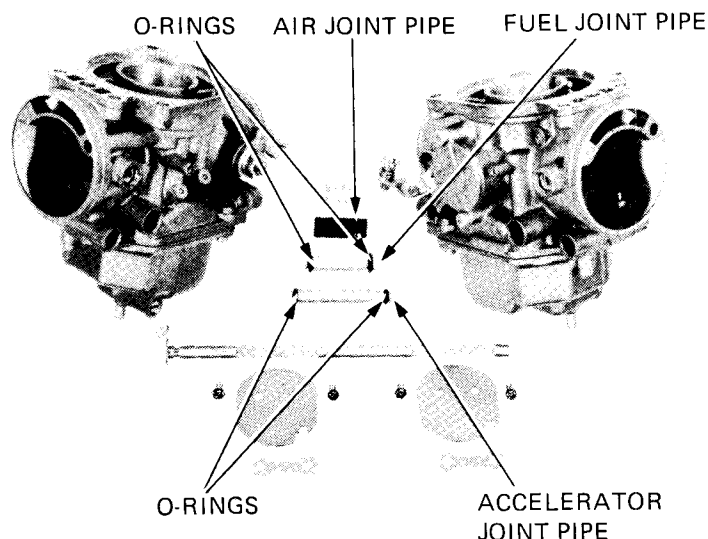
Assemble the No. 3 and No. 4 carburetors, pressing them together carefully.

**NOTE**

The large washer should be positioned on the spring side.

Assemble the No. 1 and No. 2 carburetors in the same procedure above.

Insert new choke shafts and assemble the carburetor linkage.

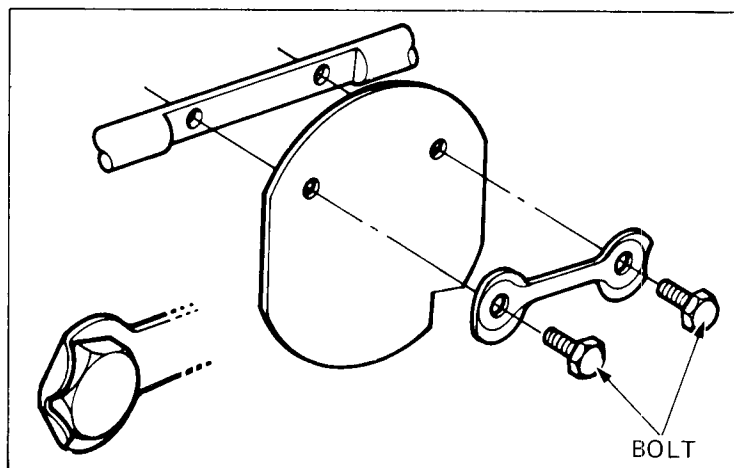




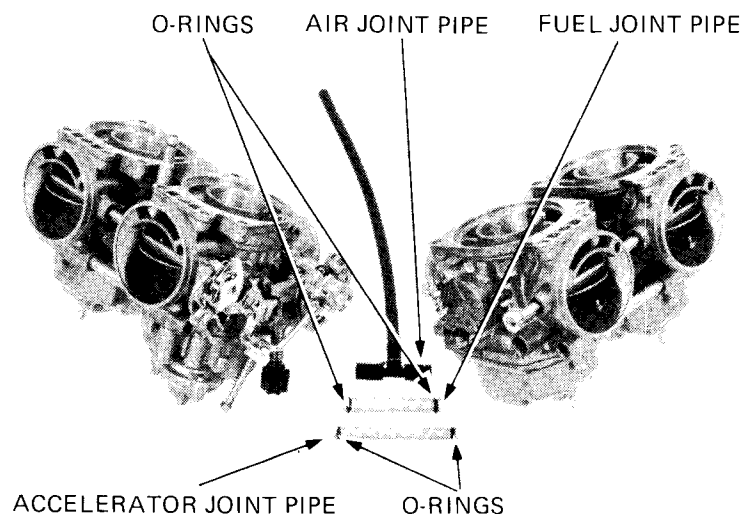
Tighten the choke valve bolts.

**TORQUE: 6–12 kg-cm**  
(5–11 in-lb)

Fold the tabs of the lock washer up.  
Check the throttle and choke operation.



Apply a thin coating of oil to new O-rings and put them on the fuel joint pipes.  
Loosen the synchronization adjusting screw until there is no tension.  
Assemble each pair of carburetors.



Install the front bracket loosely.

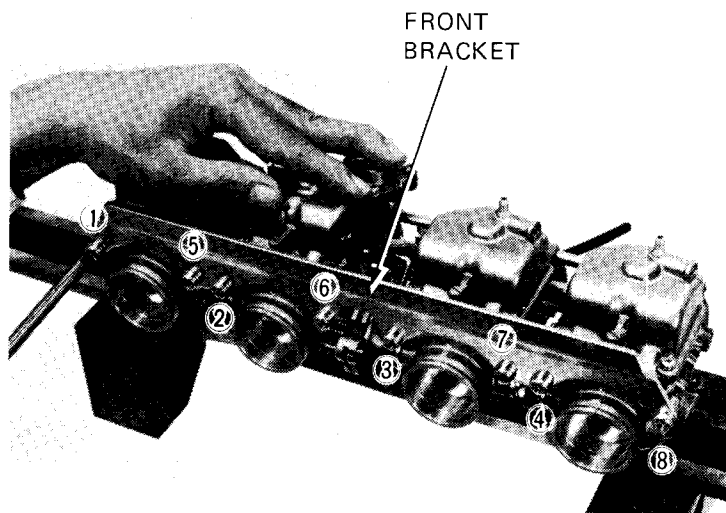
Place the carburetors on a flat surface with the float chamber up.

Press the carburetors together carefully and evenly tighten the screws in the sequence shown in two or more steps to prevent carburetor misalignment.

**TORQUE: 0.28–0.42 kg-m (2–3 ft-lb)**

#### NOTE

Check for smooth choke shaft operation. If it is not smooth, recheck the carburetor alignment.



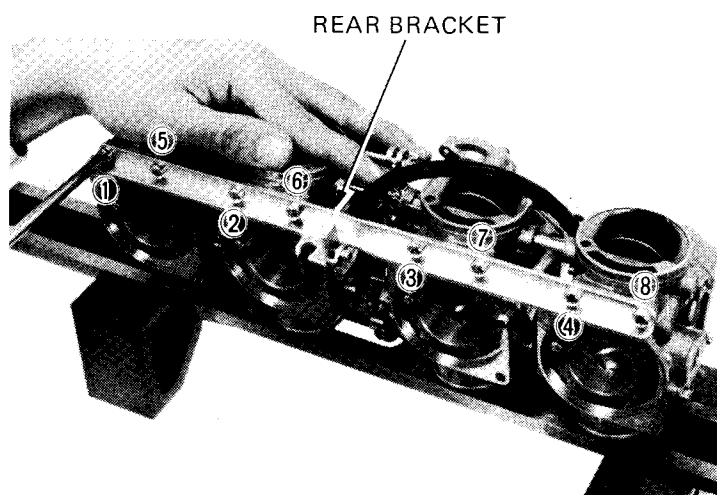


66 FUEL SYSTEM

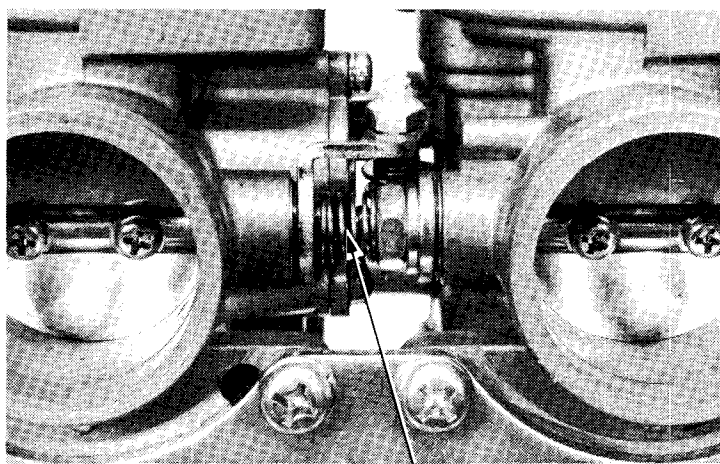
Install the rear bracket using the same procedure as for the front bracket.

**TORQUE: 0.28–0.42 kg-m (2–3 ft-lb)**

Install the throttle cable holder.

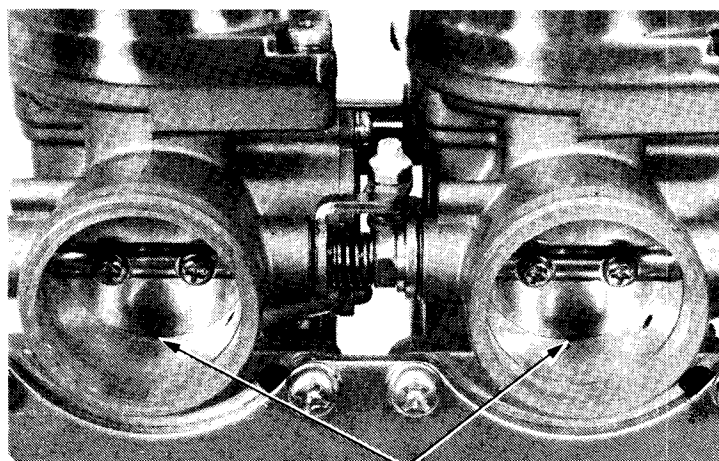


Install the thrust springs between the No. 1 and 2, and No. 3 and 4 carburetor throttle links.



Turn each synchronization adjusting screw to its original position as noted during disassembly.

Make the distance between each by-pass hole and throttle valve equal.

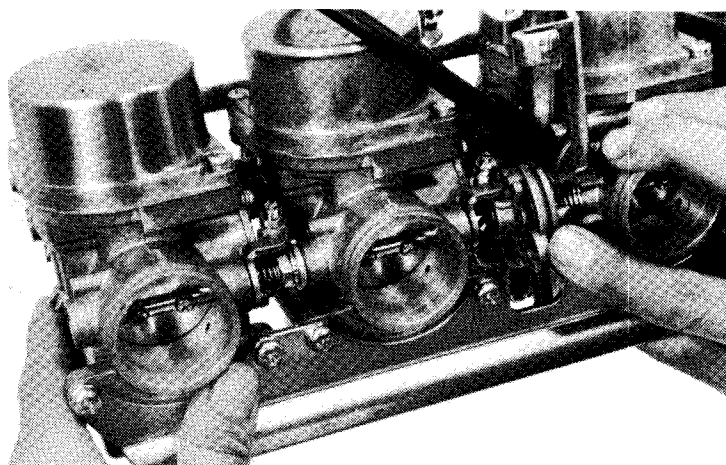


BY-PASS HOLE

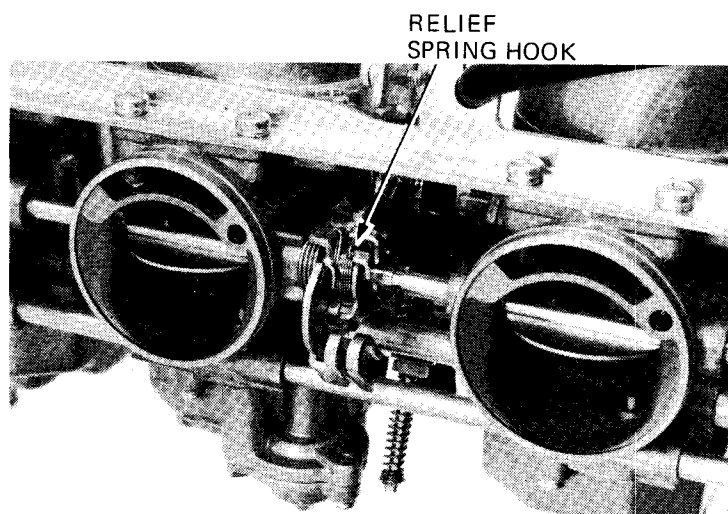


Inspect throttle operation as described below:

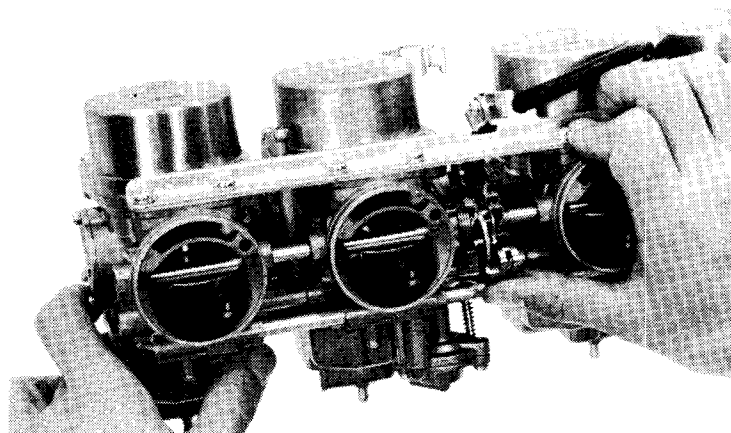
- Open the throttle slightly by pressing the throttle linkage. Then release the throttle.
- Make sure that it returns smoothly.
- Make sure that there is no drag when opening and closing the throttle.



Hook the choke relief spring to the choke shaft arm of the No. 3, 4 carburetors. Install the choke valves, but do not tighten the bolts.



Make sure that choke valve operation is smooth by moving the choke linkage. Close the choke valve by turning the choke linkage. Release the choke linkage and make sure that it returns smoothly.





## FAST IDLE ADJUSTMENT

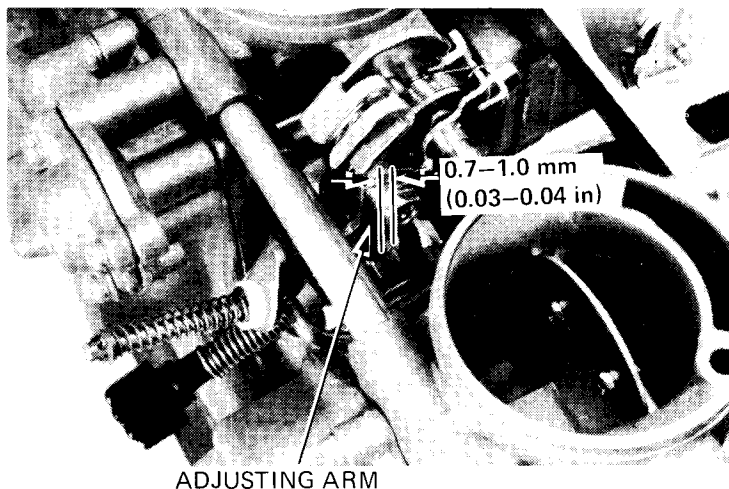
**FAST IDLE:** 1,000–2,500 rpm

Close the throttle valve and open the choke valve.

Measure the clearance between the throttle link and fast idle adjusting arm pin

**CLEARANCE:** 0.7–1.0 mm (0.03–0.04 in)

Adjust by opening and closing the fork end of the fast idle adjusting arm.

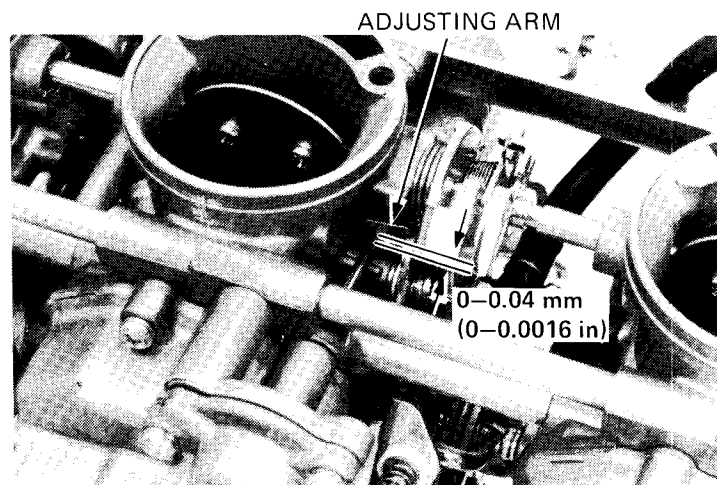


## ACCELERATOR PUMP ADJUSTMENT

Measure the clearance between the accelerator pump rod and adjusting arm with the throttle valve closed.

**CLEARANCE:** 0–0.04 mm (0–0.0016 in)

Adjust by bending the adjusting arm.



## CARBURETOR INSTALLATION

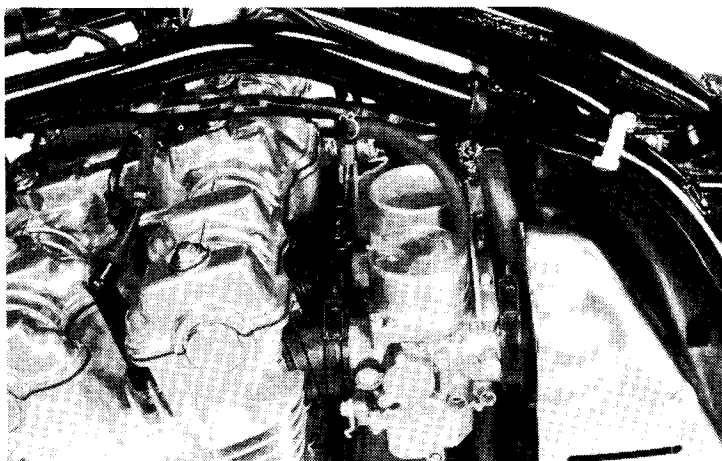
The installation sequence is essentially the reverse of removal.

### NOTE

Route the throttle and choke cables properly (Page 1–9 to 1–10).

Perform the following inspections and adjustments.

- Throttle operation (Page 3–3)
- Carburetor choke (Page 3–4)
- Carburetor idle speed (Page 3–11)





## PILOT SCREW ADJUSTMENT

### IDLE DROP PROCEDURE

#### NOTE

- The pilot screws are factory pre-set and no adjustment is necessary unless the pilot screw is replaced (See removal).
- Use a tachometer with graduations of 50 rpm or smaller that will accurately indicate a 50 rpm change.

1. Turn each pilot screw clockwise until it seats lightly and back it out to the specification given. This is an initial setting prior to the final pilot screw adjustment.

**INITIAL OPENING: 2 turns out**

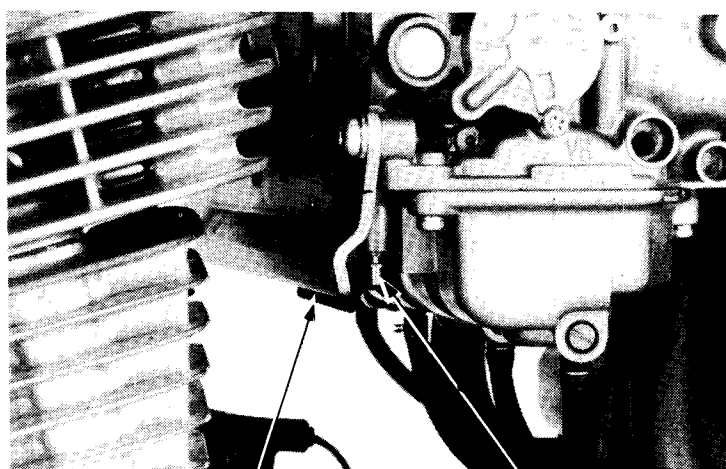
#### CAUTION:

*Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.*

2. Warm up the engine to operating temperature. Stop and go driving for 10 minutes is sufficient.
3. Attach a tachometer.
4. Adjust the idle speed with the throttle stop screw.

**IDLE SPEED: 1,000 rpm**

5. Turn each pilot screw 1/2 turn out from the initial setting.
6. If the engine speed increases by 50 rpm or more, turn each pilot screw out by a continual 1/2 turn until it drops by 50 rpm or less.
7. Adjust the idle speed with the throttle stop screw.
8. Turn the No. 1 carburetor pilot screw in until the engine speed drops 50 rpm.
9. Turn the No. 1 carburetor pilot screw 1 turn out from the position obtained in step 8.
10. Adjust the idle speed with the throttle stop screw.
11. Perform steps 8, 9 and 10 for the No. 2, 3 and 4 carburetor pilot screws.



THROTTLE STOP SCREW

PILOT SCREW



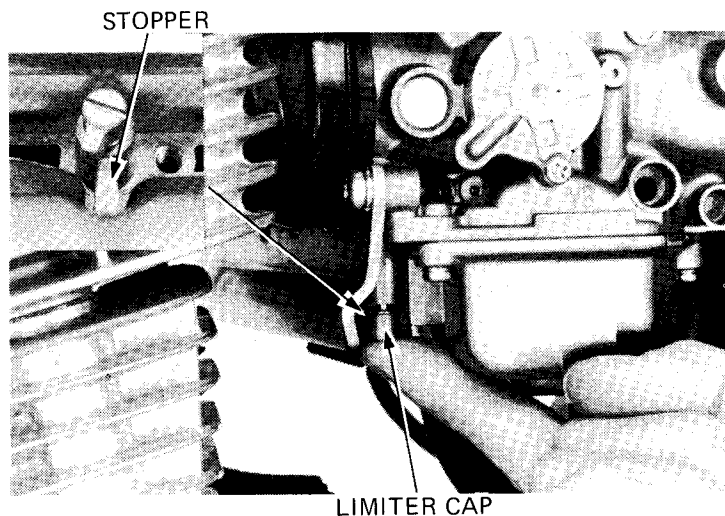
## LIMITER CAP INSTALLATION

If the pilot screw is replaced, a new limiter cap must be installed after pilot screw adjustment is completed.

After adjustment, cement the limiter cap over the pilot screw, using LOCTITE ® 601 or equivalent. The limiter cap should be placed against its stop, preventing further adjustment that would enrich the fuel mixture (limiter cap position permits clockwise rotation and prevents counterclockwise rotation).

### NOTE

Do not turn the pilot screw when installing the limiter cap.







## FUEL TANK

### WARNING

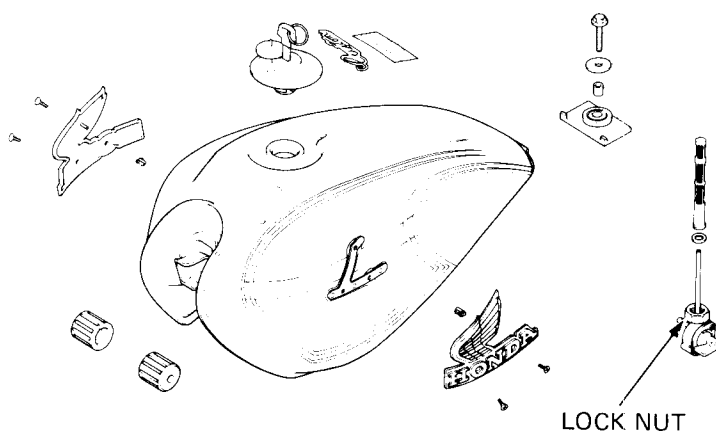
*Do not allow flames or sparks near gasoline. Wipe up spilled gasoline at once.*

Check the vent hole of the filler cap for blockage.  
Check that fuel is flowing out of the fuel valve freely.  
If fuel flow is restricted, clean the fuel strainer.

### NOTE

Do not overtighten the fuel valve lock nut.

Make sure there are no fuel leaks.



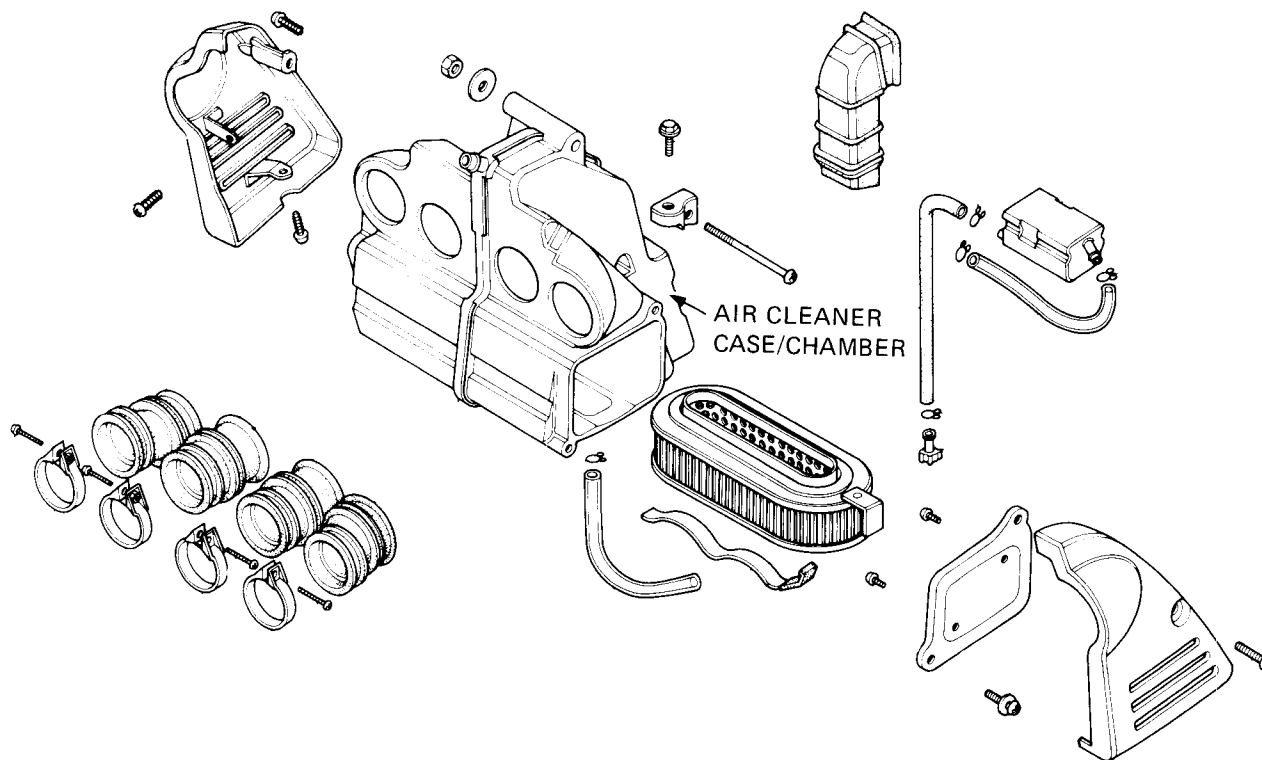
## AIR CLEANER

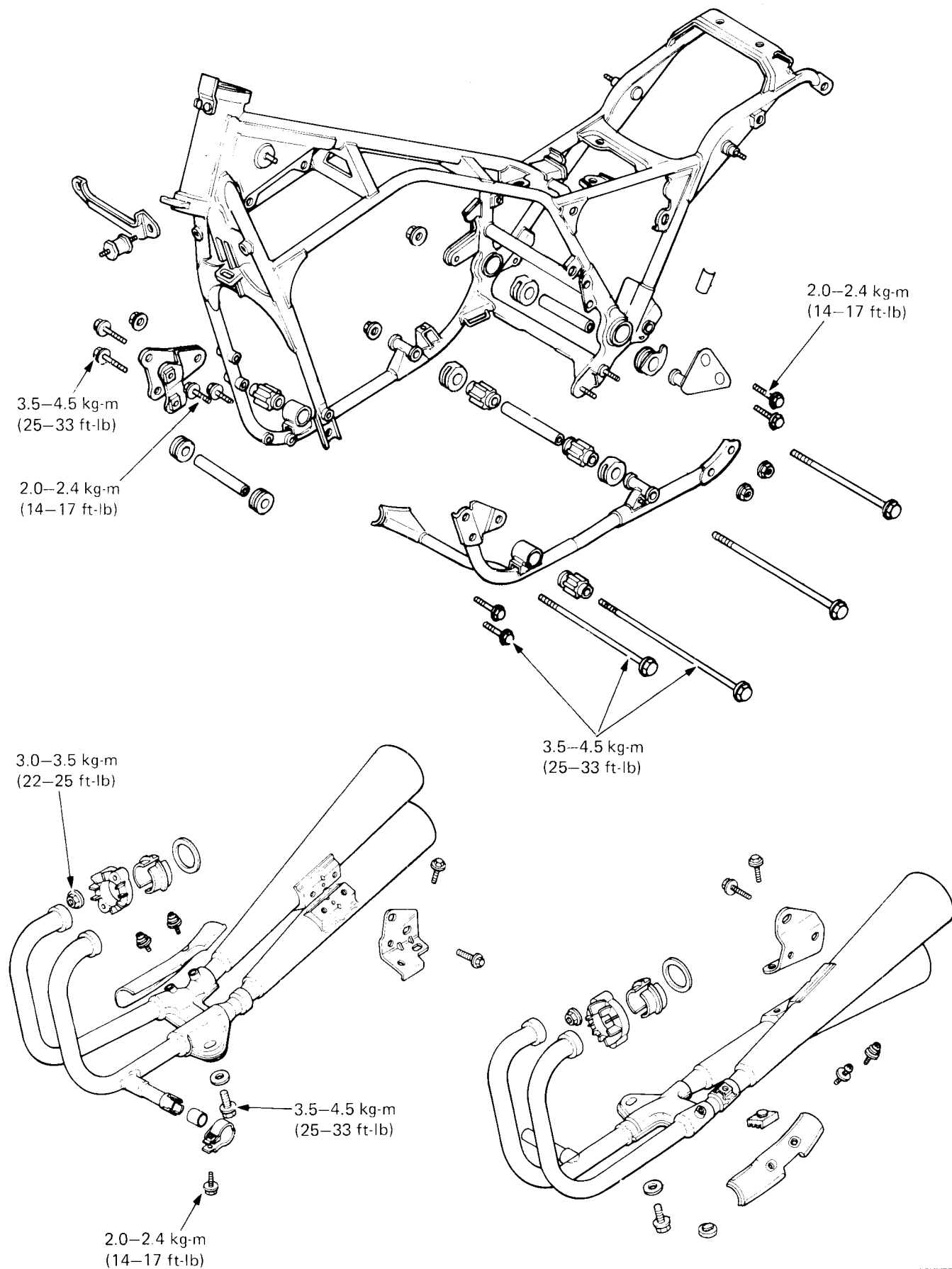
### CASE/CHAMBER

Check the air cleaner case for deterioration.

### CRANKCASE VENTILATION SYSTEM

Check that the breather tube is not restricted.







|                     |     |
|---------------------|-----|
| SERVICE INFORMATION | 5-1 |
| ENGINE REMOVAL      | 5-2 |
| ENGINE INSTALLATION | 5-6 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The following parts or components can be serviced with the engine installed in the frame:
  - Clutch
  - Gear shift linkage
  - Camshaft
  - A.C. generator
  - Starter motor
  - Carburetor

### SPECIFICATIONS

|                   |  |
|-------------------|--|
| Engine dry weight | 106 kg (234 lb)                        |
| Oil capacity      | 4.5 lit (4.7 US qt) at engine assembly |
|                   | 3.5 lit (3.7 US qt) at change          |

### TORQUE VALUES

|                                  |   |
|----------------------------------|---|
| Engine hanger bolt               |   |
| 8 mm bolt                        | 2.0-2.4 kg-m (14-17 ft-lb)                      |
| 10 mm bolt                       | 3.5-4.5 kg-m (25-33 ft-lb)                      |
| Rear axle nut                    | 8.0-10.0 kg-m (58-72 ft-lb)                     |
| Final gear case                  | 3.5-4.5 kg-m (25-33 ft-lb) Apply oil to threads |
| Exhaust pipe joint nut           | 3.0-3.5 kg-m (22-25 ft-lb)                      |
| Muffler hanger setting bolt      | 3.5-4.5 kg-m (25-33 ft-lb)                      |
| Exhaust pipe mounting under bolt | 3.5-4.5 kg-m (25-33 ft-lb)                      |
| Exhaust pipe joint band bolt     | 2.0-2.4 kg-m (14-17 ft-lb)                      |

} Tightening sequence  
See page 5-7

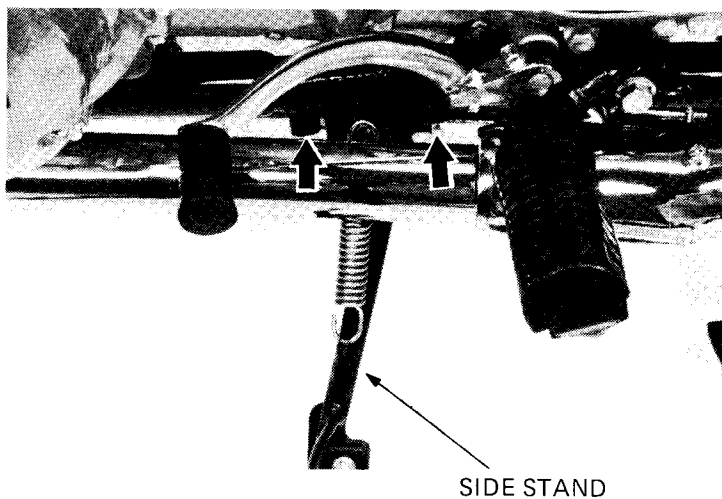


## ENGINE REMOVAL

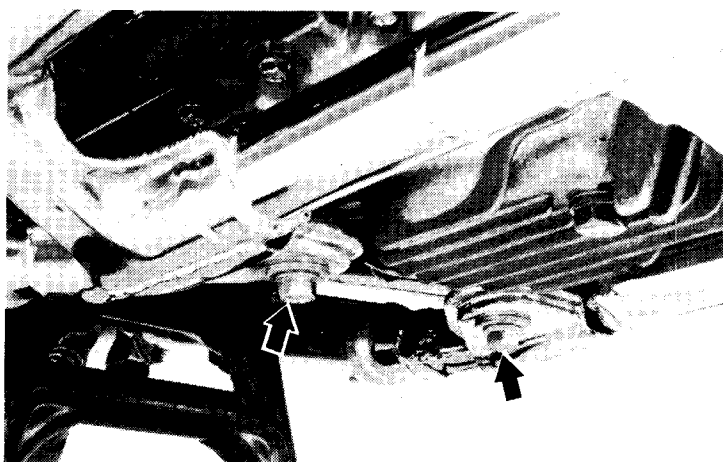
Place the motorcycle on its center stand.  
Drain the engine oil.

Remove the seat and fuel tank.  
Remove the left and right side covers.

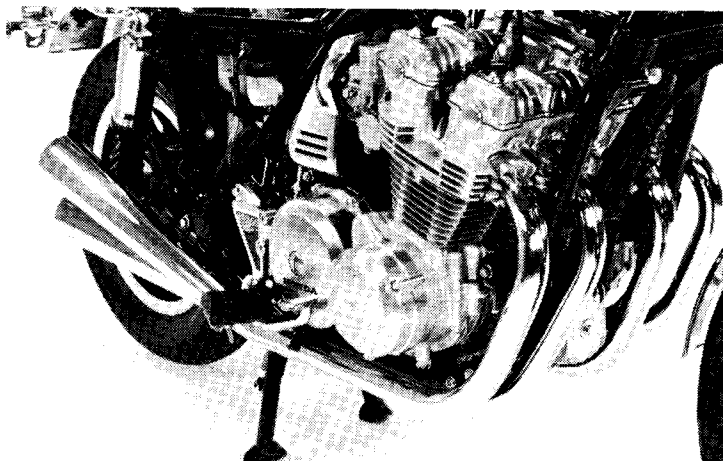
Remove the side stand.



Remove the exhaust pipe center mounting bolts.  
Loosen the exhaust pipe joint clamp bolt.

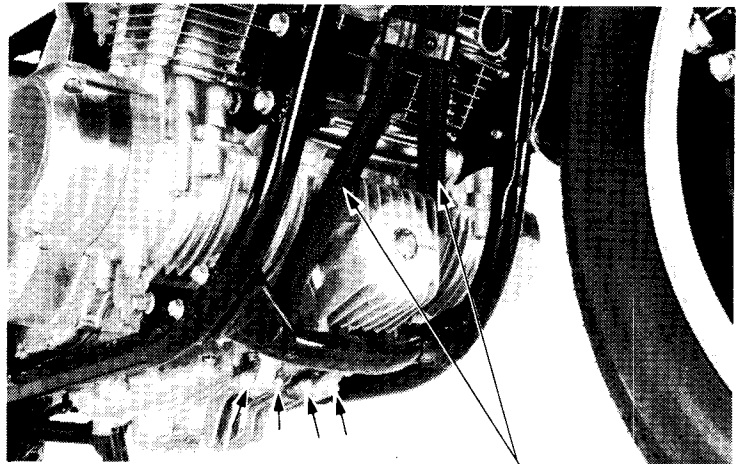


Remove the exhaust pipes.



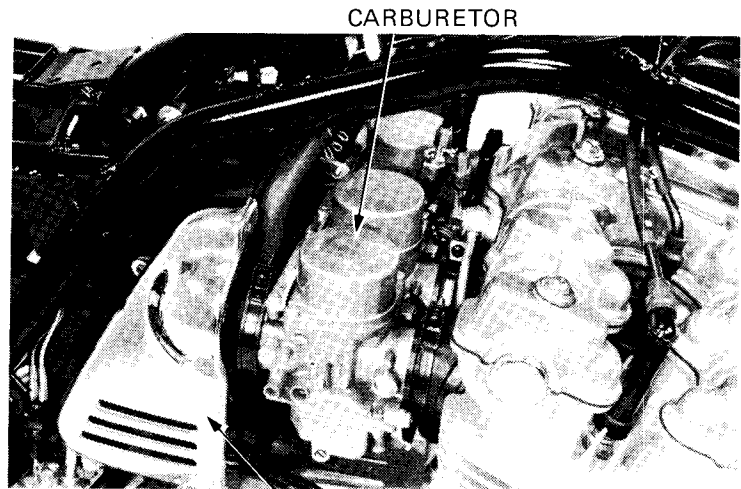


Disconnect the oil cooler hoses from the engine.



OIL COOLER HOSES

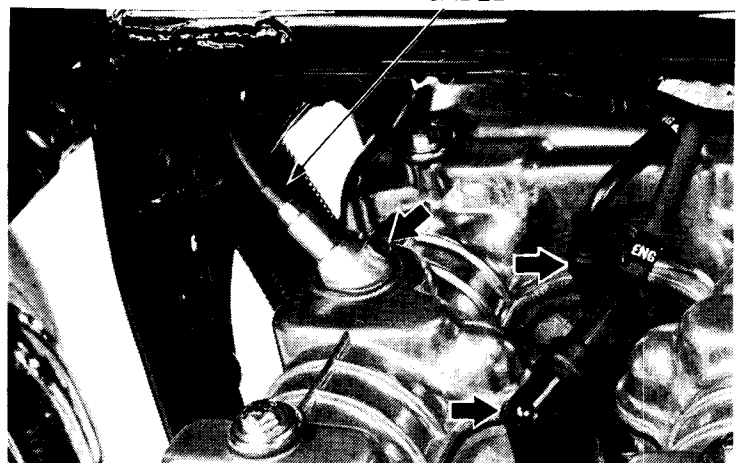
Remove the air cleaner and carburetor.



CARBURETOR

AIR CLEANER

Disconnect the tachometer cable and spark plug caps.

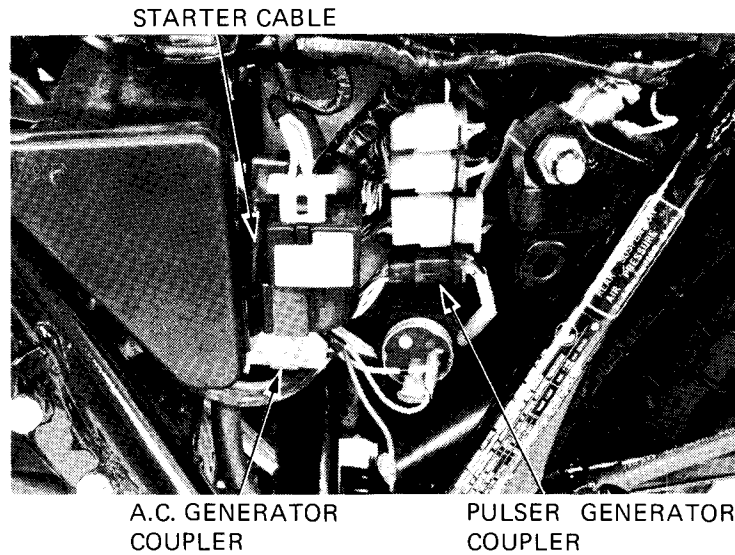


TACHOMETER  
CABLE

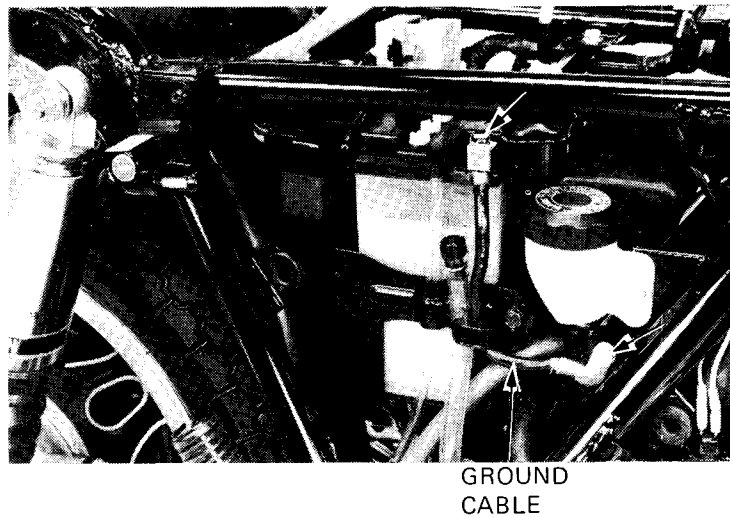


**76 ENGINE REMOVAL/INSTALLATION**

Disconnect the starter motor cable.  
Disconnect the A.C. generator and pulser  
generator couplers.

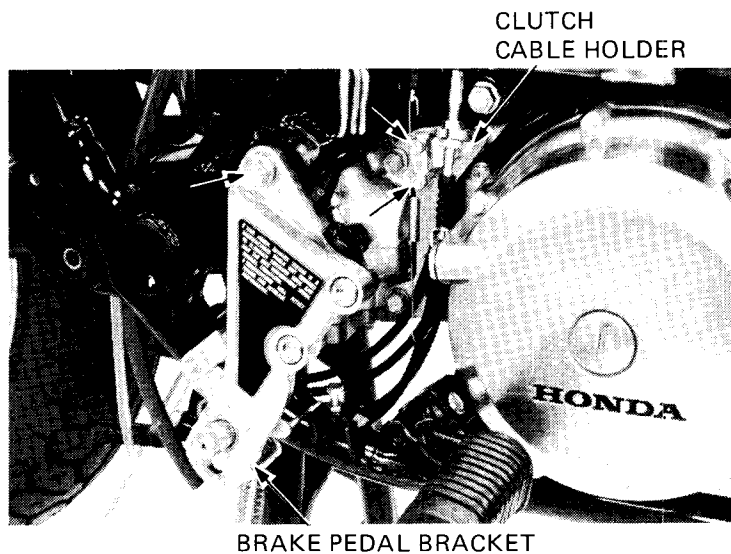


Disconnect the battery ground cable.



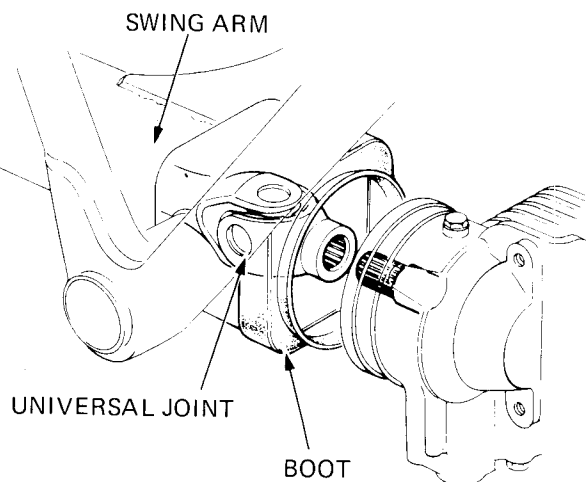
Remove the brake pedal.  
Remove the brake pedal bracket lower mount-  
ing bolt and loosen the upper bolt.

Disconnect the clutch cable.  
Remove the clutch cable holder.

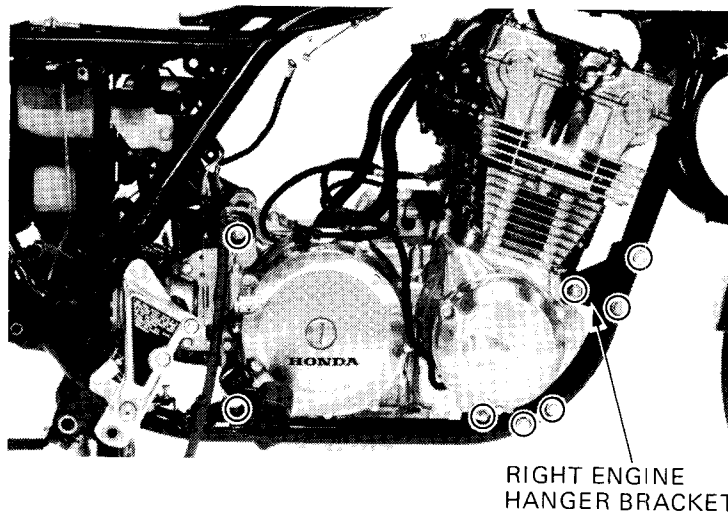




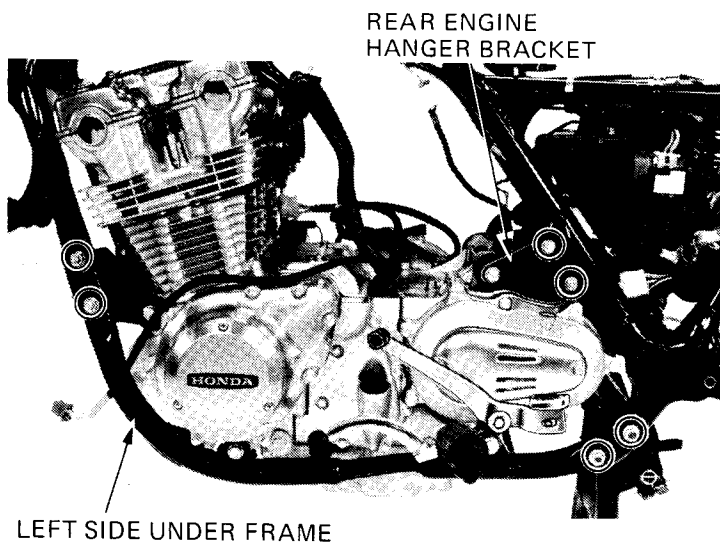
Remove the rear wheel (page 15-2).  
Remove the final drive gear (page 16-3).  
Pull the swing arm boot back and disengage  
the drive shaft from the engine.



Place a jack under the engine.  
Remove the engine mounting bolts and right  
engine hanger bracket.



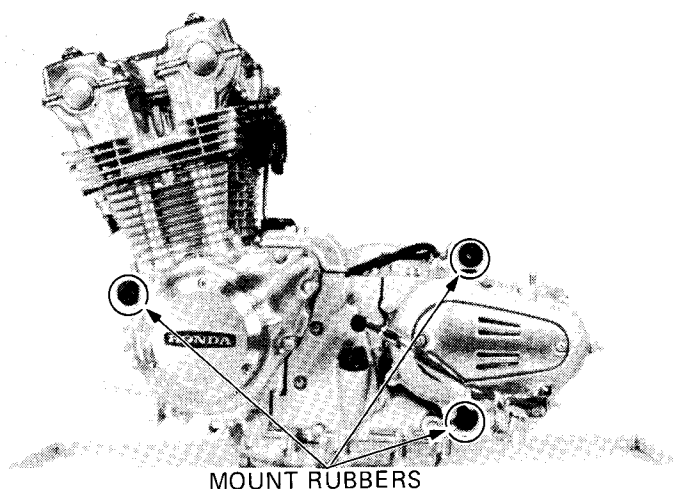
Remove the rear engine hanger bracket.  
Remove the left side under frame.  
Remove the engine from the left side.





### ENGINE INSTALLATION

Check the engine mount rubbers for damage.  
Replace if necessary.  
Install the engine mount rubbers.

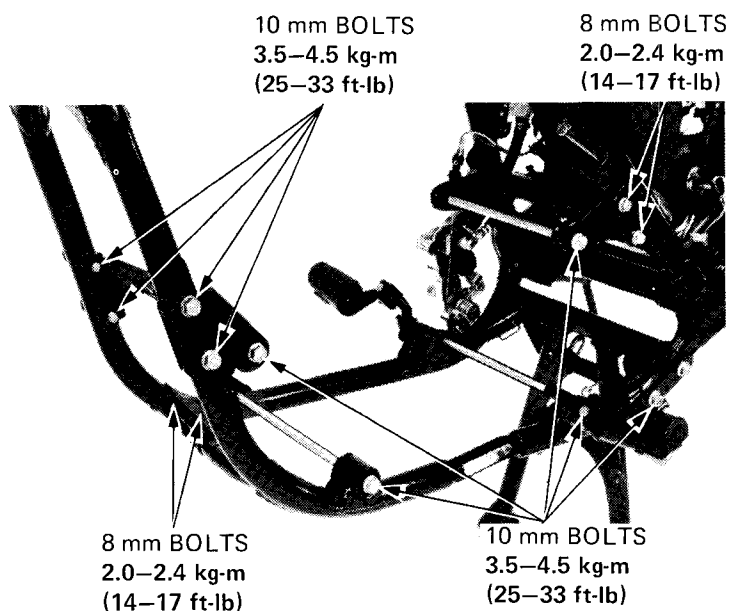


MOUNT RUBBERS

Install the engine in the reverse order of removal.

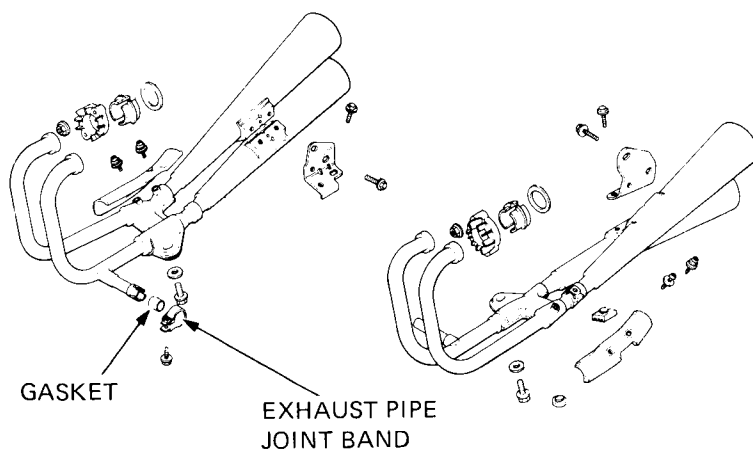
#### NOTE

- Route the wires and cables properly (Page 1-9).
- Fill the crankcase to the proper level with the recommended oil (Page 2-1).
- Perform the following inspection and adjustments:  
Throttle operation (Page 3-3).  
Clutch (Page 3-17).



### EXHAUST PIPE INSTALLATION

Install a new exhaust pipe joint gasket.  
Assemble the left and right exhaust pipes.  
Tighten the exhaust pipe band loosely.



GASKET

EXHAUST PIPE  
JOINT BAND





Install the exhaust pipes.

Temporarily install all bolts and nuts, then tighten them as follows:

1. Tighten the exhaust pipe joint nuts.

**TORQUE: 3.0–3.5 kg-m (22–25 ft-lb)**

2. Tighten the exhaust pipe mounting under bolts.

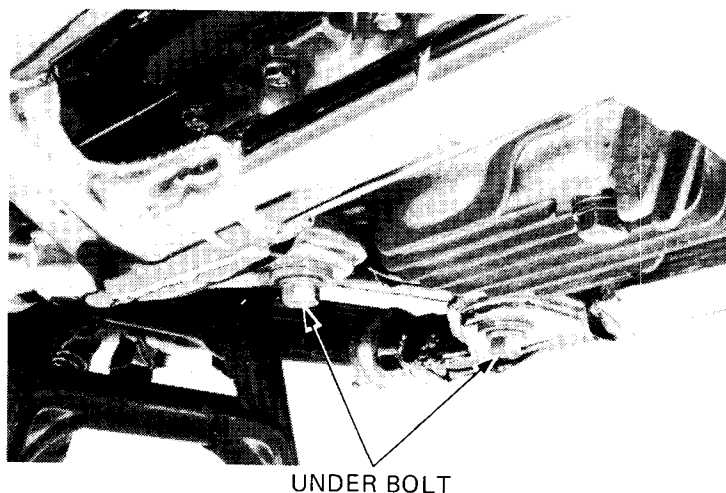
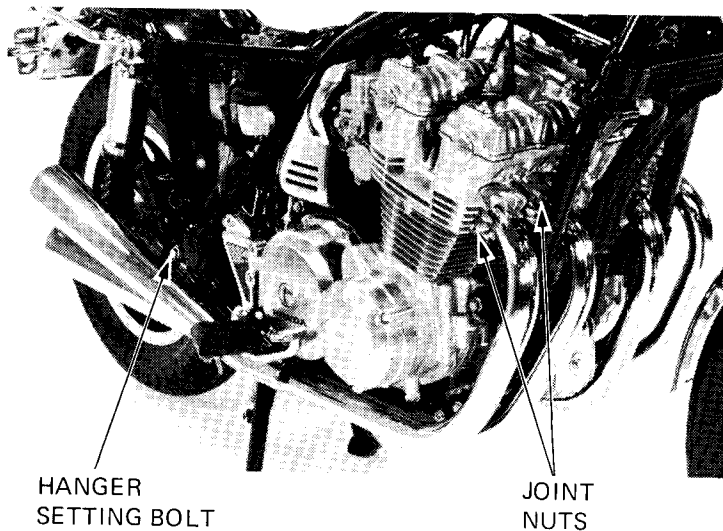
**TORQUE: 3.5–4.5 kg-m (25–33 ft-lb)**

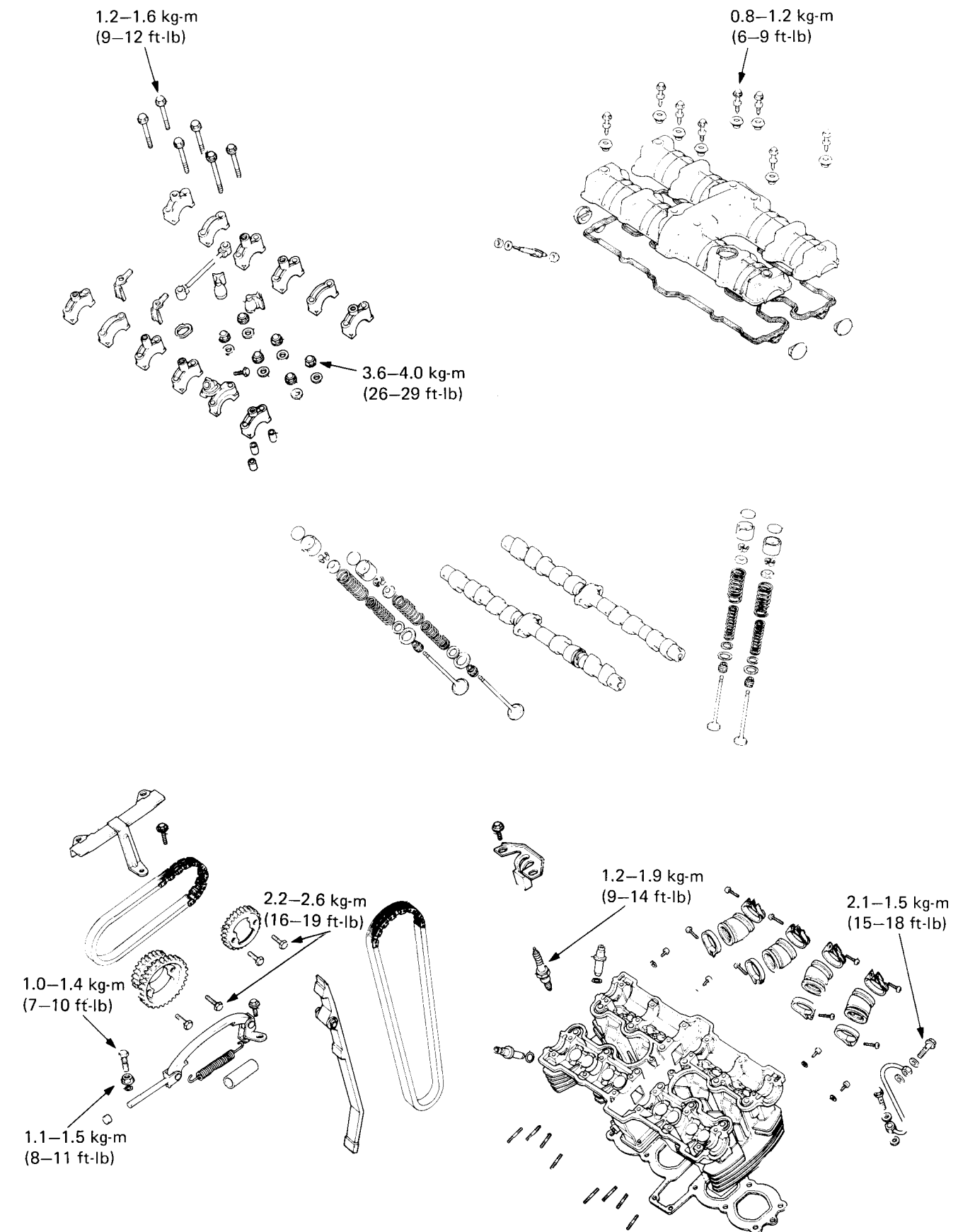
3. Tighten the rear muffler hanger setting bolts.

**TORQUE: 3.5–4.5 kg-m (25–33 ft-lb)**

4. Tighten the exhaust pipe joint band bolt.

**TORQUE: 2.0–2.4 kg-m (14–17 ft-lb)**







**HONDA**  
**CB900C**


# 6. CYLINDER HEAD/VALVE

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|                           |      |                                    |      |
|---------------------------|------|------------------------------------|------|
| SERVICE INFORMATION       | 6- 1 | VALVE GUIDE REPLACEMENT            | 6-15 |
| TROUBLESHOOTING           | 6- 2 | VALVE SEAT INSPECTION/<br>REFACING | 6-16 |
| CAMSHAFT REMOVAL          | 6- 3 | CYLINDER HEAD ASSEMBLY             | 6-17 |
| CYLINDER HEAD REMOVAL     | 6- 9 | CYLINDER HEAD INSTALLATION         | 6-18 |
| CYLINDER HEAD DISASSEMBLY | 6-11 | CAMSHAFT INSTALLATION              | 6-20 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The engine must be removed from the frame to remove the cylinder head.
- Camshaft lubricating oil is fed through an oil line. Be sure the hole in the oil line is not clogged.
- During assembly, apply molybdenum disulfide to the camshaft bearings to provide initial lubrication. Pour clean engine oil into the oil pockets in the cylinder head to lubricate the camshafts.
- Marks A thru L on the camshaft holders indicate installation. A to E are for the EX. side and F to L are for the IN. side from left to right respectively. When installing, be sure the mark  faces forward.

### TOOLS

#### Special

|                             |               |
|-----------------------------|---------------|
| Valve guide reamer          | 07984-2000000 |
| Valve lifter hole protector | 07999-4220000 |

#### Common

|                              |               |                    |
|------------------------------|---------------|--------------------|
| Valve guide remover (5.5 mm) | 07742-0010100 | } or 07942-3290100 |
| Valve guide driver           | 07742-0020200 |                    |
| Valve spring compressor      | 07757-0010000 |                    |

### TORQUE VALUES

|                              |                            |
|------------------------------|----------------------------|
| Cam chain tensioner bolt     | 1.0-1.4 kg-m ( 7-10 ft-lb) |
| Cam chain tensioner lock nut | 1.1-1.5 kg-m ( 8-11 ft-lb) |
| Cylinder head cover          | 0.8-1.2 kg-m ( 6- 9 ft-lb) |
| Camshaft holder              | 1.2-1.6 kg-m ( 9-12 ft-lb) |
| Cylinder head                | 3.6-4.0 kg-m (26-29 ft-lb) |
| Cam sprocket                 | 2.2-2.6 kg-m (16-19 ft-lb) |
| Spark plug                   | 1.2-1.9 kg-m ( 9-14 ft-lb) |
| Oil pipe                     | 2.1-2.5 kg-m (15-18 ft-lb) |

### SPECIFICATIONS

|                      |                |                              | STANDARD                                 | SERVICE LIMIT      |
|----------------------|----------------|------------------------------|--|--------------------|
| Compression pressure |                |                              | 12 ± 2 kg/cm <sup>2</sup> (171 ± 28 psi) | —                  |
| Camshaft             | Cam height     | IN.                          | 37.420-37.580 mm (1.4732-1.4795 in)      | 37.3 mm (1.47 in)  |
|                      |                | EX.                          | 37.920-38.080 mm (1.4929-1.4992 in)      | 37.8 mm (1.49 in)  |
|                      | Oil clearance  | A and F                      | 0.040- 0.082 mm (0.0016-0.0032 in)       | 0.13 mm (0.005 in) |
|                      |                | Tachometer gear holder and G | 0.062- 0.109 mm (0.0024-0.0043 in)       | 0.16 mm (0.006 in) |
|                      |                | B and H                      | 0.085- 0.139 mm (0.0033-0.0055 in)       | 0.19 mm (0.008 in) |
|                      |                | C and J                      | 0.085- 0.139 mm (0.0033-0.0055 in)       | 0.19 mm (0.008 in) |
|                      |                | D and K                      | 0.062- 0.109 mm (0.0024-0.0043 in)       | 0.16 mm (0.006 in) |
|                      |                | E and L                      | 0.040- 0.082 mm (0.0016-0.0032 in)       | 0.13 mm (0.005 in) |
|                      |                | Run out                      | —  | 0.1 mm (0.004 in)  |
|                      | Side clearance |                              | 0.05 - 0.25 mm (0.002 -0.10 in)          | 0.4 mm (0.02 in)   |



|                       |                                   |           | STANDARD  | SERVICE LIMIT                          |
|-----------------------|-----------------------------------|-----------|---|--|
| Valve lifter          | Valve lifter O.D.                 |           | 27.972–27.993 mm (1.1013–1.1021 in)                 | 27.96 mm (1.101 in)                    |
|                       | Valve lifter bore I.D.            |           | 28.010–28.026 mm (1.1028–1.1034 in)                 | 28.035 mm (1.1037 in)                  |
|                       | Lifter to cylinder head clearance |           | —   | 0.07 mm (0.003 in)                     |
| Valve spring          | Free length                       | IN. Outer | 43.9 mm (1.73 in)                                   | 42.5 mm (1.67 in)                      |
|                       |                                   | IN. Inner | 40.7 mm (1.60 in)                                   | 39.8 mm (1.57 in)                      |
|                       |                                   | EX. Outer | 43.9 mm (1.73 in)                                   | 42.5 mm (1.67 in)                      |
|                       |                                   | EX. Inner | 40.7 mm (1.60 in)                                   | 39.8 mm (1.57 in)                      |
|                       | Preload/length                    | IN. Outer | 12.6–14.6 kg/37.5 mm<br>(27.78–32.19 lbs/1.48 in)   | 12.0 kg/37.5 mm<br>(26.46 lbs/1.48 in) |
|                       |                                   | IN. Inner | 6.39–7.81 kg/34.5 mm<br>(14.087–17.218 lbs/1.36 in) | 6.0 kg/34.5 mm<br>(13.23 lbs/1.36 in)  |
|                       |                                   | EX. Outer | 12.6–14.6 kg/37.5 mm<br>(27.78–32.19 lbs/1.48 in)   | 12.0 kg/37.5 mm<br>(26.46 lbs/1.48 in) |
|                       |                                   | EX. Inner | 6.39–7.81 kg/34.5 mm<br>(14.087–17.318 lbs/1.36 in) | 6.0 kg/34.5 mm<br>(13.23 lbs/2.36 in)  |
| Valve guide and valve | Valve stem O.D.                   | IN.       | 5.475–5.490 mm (0.2156–0.2161 in)                   | 5.47 mm (0.215 in)                     |
|                       |                                   | EX.       | 5.455–5.470 mm (0.2148–0.2154 in)                   | 5.45 mm (0.215 in)                     |
|                       | Valve guide I.D.                  | IN.       | 5.500–5.515 mm (0.2165–0.2171 in)                   | 5.54 mm (0.218 in)                     |
|                       |                                   | EX.       | 5.500–5.515 mm (0.2165–0.2171 in)                   | 5.54 mm (0.218 in)                     |
|                       | Stem-to-guide clearance           | IN.       | 0.010–0.040 mm (0.0004–0.0016 in)                   | 0.07 mm (0.003 in)                     |
|                       |                                   | EX.       | 0.030–0.060 mm (0.0012–0.0024 in)                   | 0.09 mm (0.004 in)                     |
|                       | Valve seat width                  |           | 1.0 mm (0.004 in)                                   | 1.5 mm (0.06 in)                       |
| Cylinder head         | Warpage                           |           | —   | 0.10 mm (0.004 in)                     |
| Cam chain             | Length                            |           | 175.70–175.92 mm (6.917–6.926 in)                   | 177.3 mm (6.97 in)                     |

## TROUBLESHOOTING

Engine top-end problems are usually performance-related and can be diagnosed by a compression test, or are engine noises which can be traced to the top-end with a sounding rod or stethoscope.

### Low Compression or Uneven compression

- Valves
  - Incorrect valve adjustment
  - Burned or bent valves
  - Incorrect valve timing
  - Broken valve spring
- Cylinder head
  - Leaking or damaged head gasket
  - Warped or cracked cylinder head
- Cylinder and piston (Refer to Section 7)

### Compression too High

- Excessive carbon build-up on piston head or combustion chamber

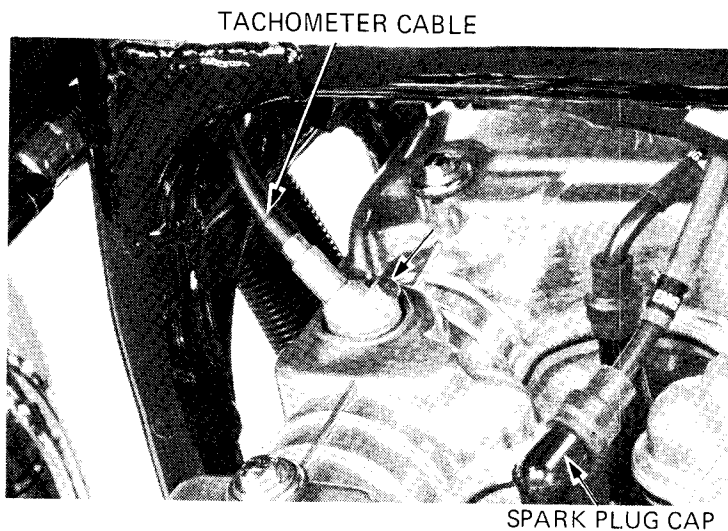
### Excessive Noise

- Incorrect valve adjustment
- Sticking valve or broken valve spring
- Damaged or worn camshaft
- Loose or worn cam chain
- Worn or damaged cam chain tensioner
- Worn cam sprocket teeth

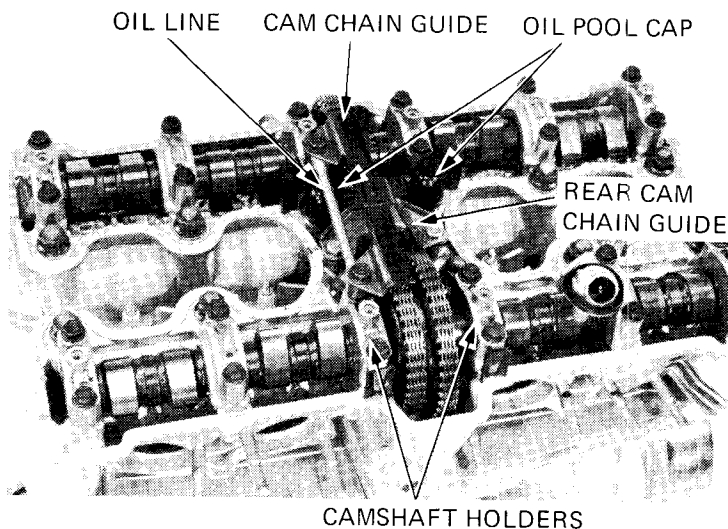


## CAMSHAFT REMOVAL

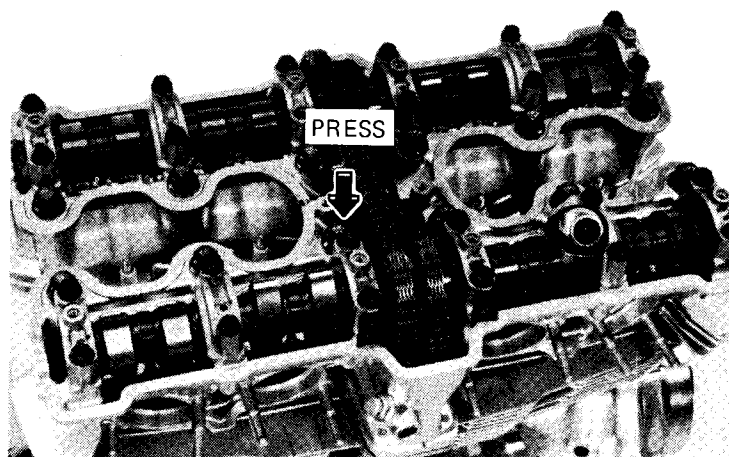
Place the motorcycle on its center stand.  
Remove the seat and the fuel lines and fuel tank.  
Disconnect the tachometer cable, and remove the spark plug caps.



Remove the cylinder head cover bolts and the cylinder head cover.  
Remove the oil line and cam chain guide.  
Remove the B, C, H and J camshaft holders.  
Remove the oil pool caps and REAR cam chain guide attaching plate.  
Remove the dowel pins.



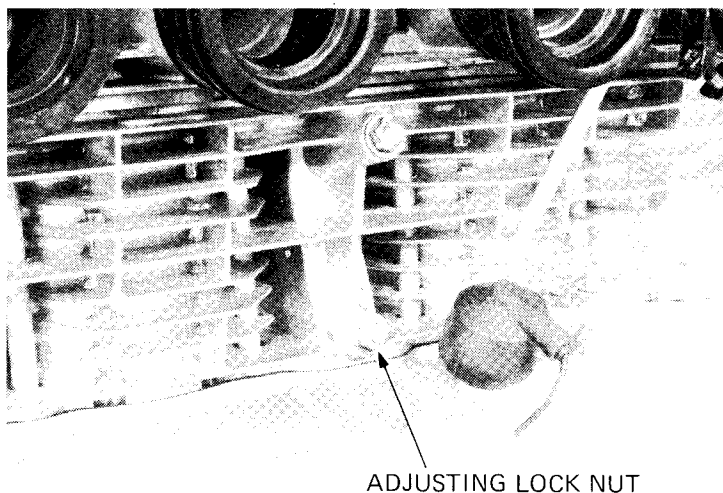
Loosen the front cam chain tensioner lock nut and bolt.  
Press the cam chain tensioner down to reduce chain tension.  
Tighten the lock bolt and nut.



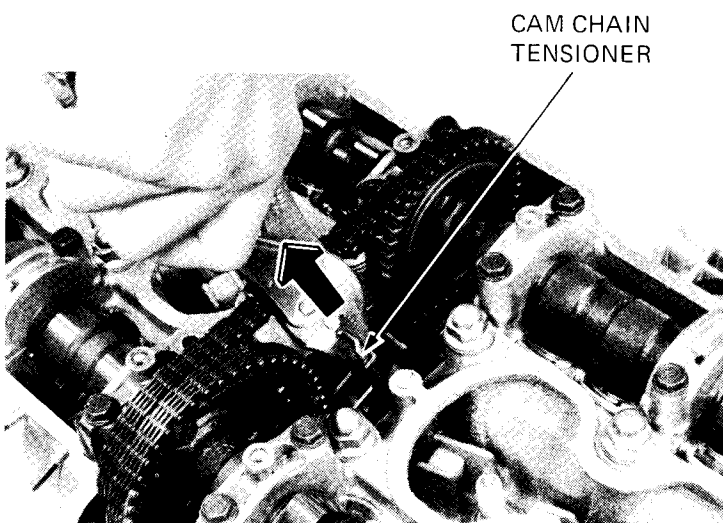


84 CYLINDER HEAD/VALVE

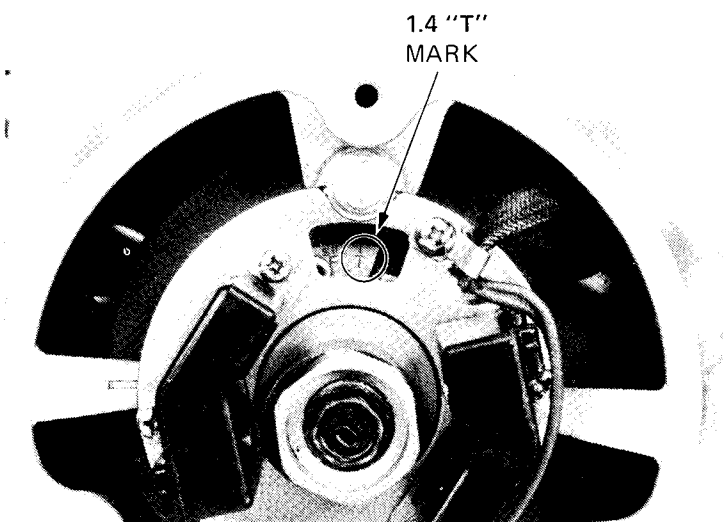
Loosen the lower rear chain tensioner adjusting lock nut.



Pull the rear cam chain tensioner up to reduce chain tension and tighten the adjusting lock nut.



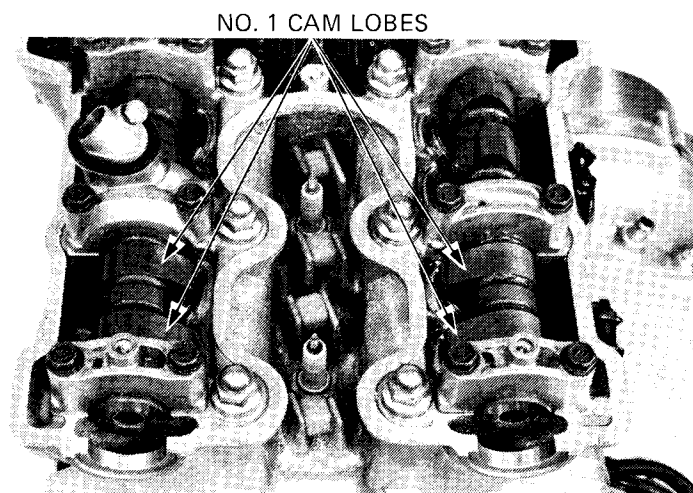
Remove the pulser generator cover.  
Turn the crankshaft counterclockwise until the "1.4T" mark aligns with the index mark.



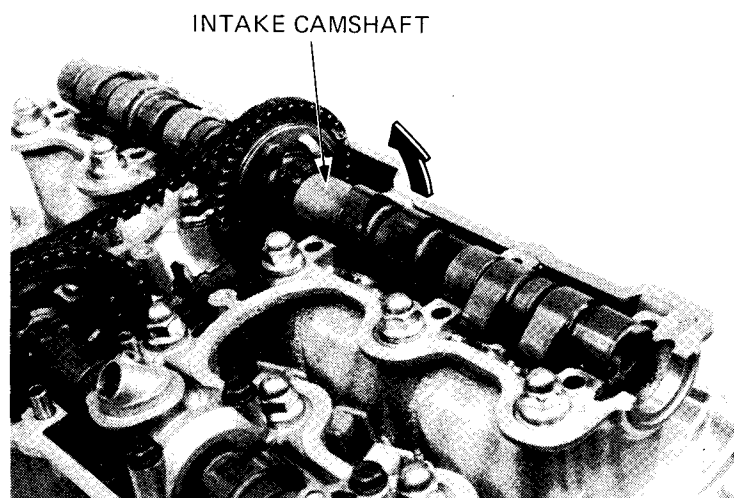


Make sure the 1 or 4 cylinder intake and exhaust cam lobes face the spark plug.

Remove the G and K camshaft holders.  
Remove the F and L holders.  
Remove the dowel pins.



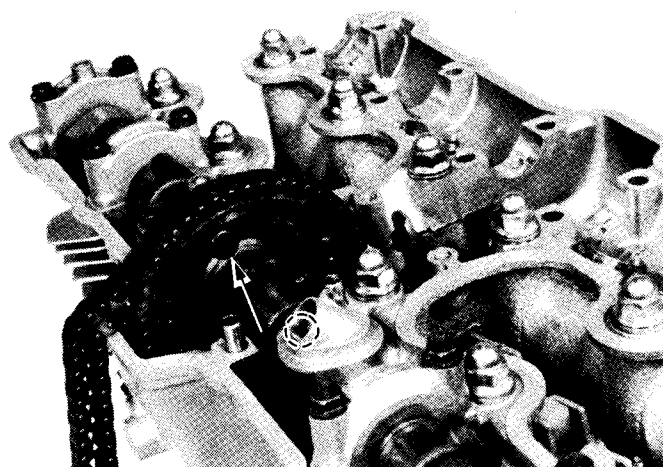
Remove the intake camshaft.



Loosen the exhaust cam sprocket bolt.  
Turn the crankshaft counterclockwise until cam lift is minimal and the other cam sprocket bolt can be removed.

Remove the D and tachometer gear camshaft holders.  
Remove the A and E holders.

Remove the exhaust camshaft.  
Remove the dowel pins.



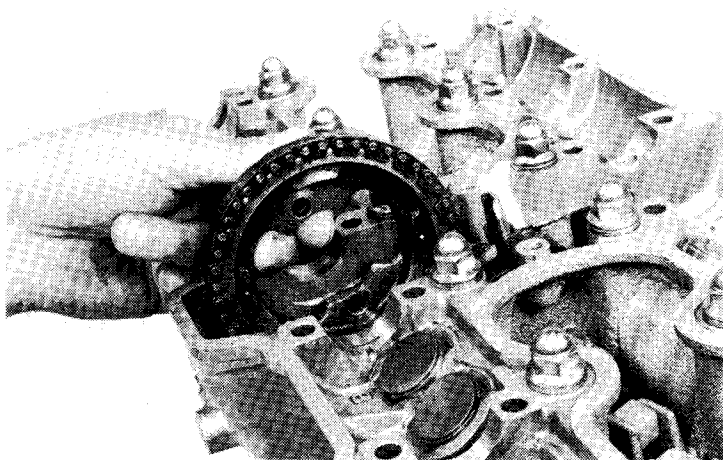
**NOTE**

Suspend the cam chain with a piece of wire to keep it from falling into the engine.

Remove the cam sprocket and exhaust cam drive chain.

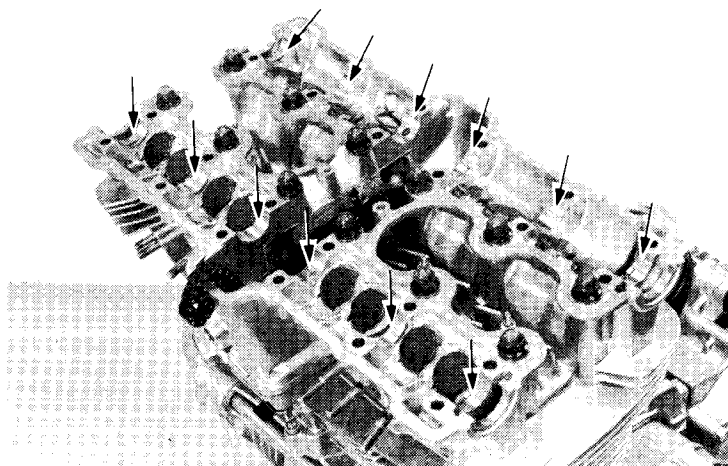
**NOTE**

After removing the camshaft, the valve clearance adjusting shims and valve lifters can be removed.

**CAM BEARING SURFACE INSPECTION**

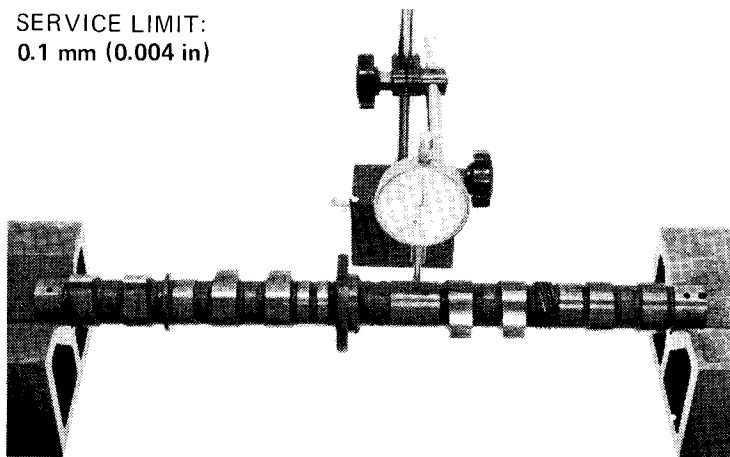
Inspect the cam bearing surfaces for scoring, scratches, or evidence of insufficient lubrication.

Inspect the bearing surface of the camshaft holders.

**CAMSHAFT RUNOUT**

Check camshaft runout with a dial indicator. Support both ends of the camshaft with V-blocks.

**SERVICE LIMIT:**  
**0.1 mm (0.004 in)**



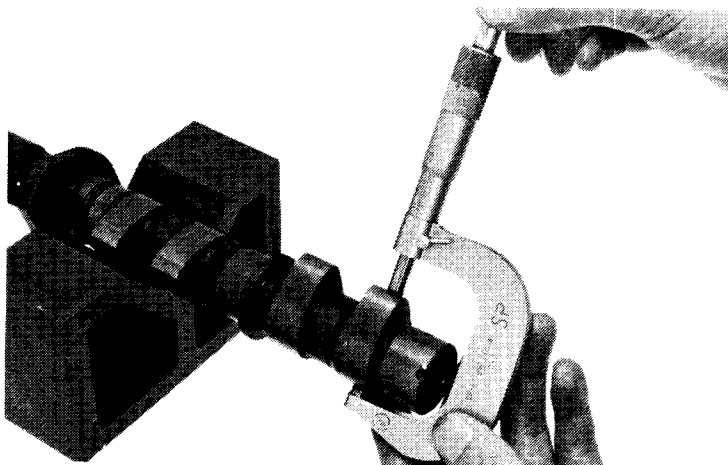




## CAM INSPECTION

Using a micrometer, measure each cam lobe. Check for wear or damage.

**SERVICE LIMITS:** IN: 37.3 mm (1.47 in)  
EX: 37.8 mm (1.49 in)



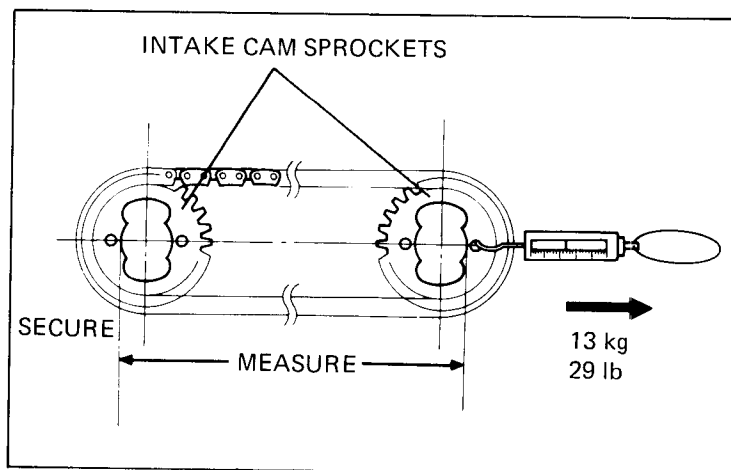
## CAM CHAIN LENGTH MEASUREMENT

Place the cam chain over the intake camshaft sprockets. Secure one sprocket and apply 13 kg (29 lb) of tension with a spring scale. Measure the distance between the points as shown.

**SERVICE LIMIT:** 177.3 mm (6.98 in)

## CAM CHAIN GUIDE INSPECTION

Inspect the upper cam chain guide for damage or excessive wear.

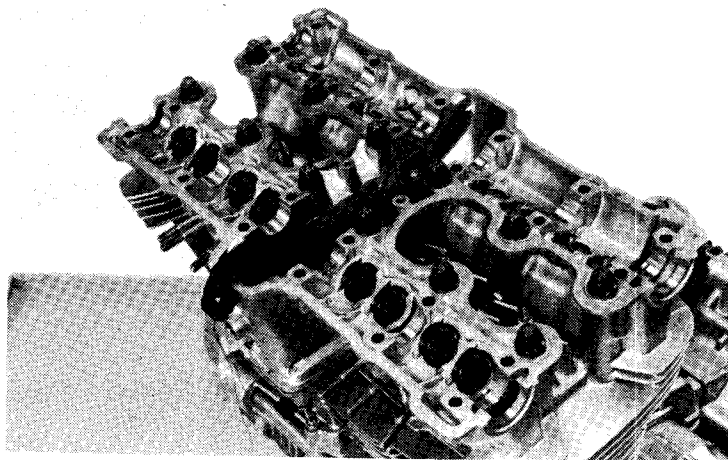


## CAMSHAFT OIL CLEARANCE

Remove the adjusting shims and the valve lifters.

### NOTE

Mark each part to ensure correct re-assembly.



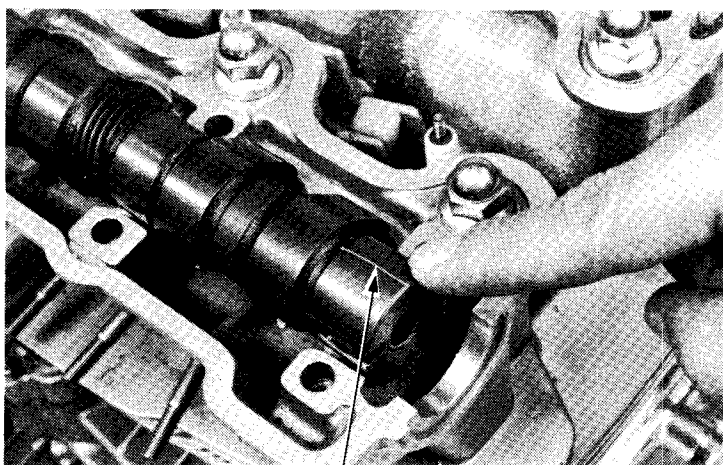


88 CYLINDER HEAD/VALVE

Lay a strip of plastigauge lengthwise on top of each camshaft journal.

NOTE

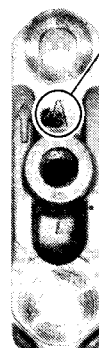
Wipe any oil from the journals before using plastigauge.



PLASTIGAUGE

Check the camshaft holder identification letter before installing.

IDENTIFICATION  
LETTER

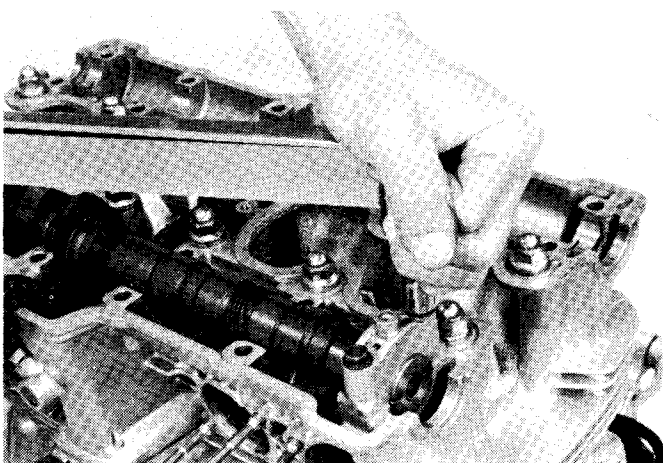


Install the camshaft holders and tighten in a crisscross pattern.

NOTE

Do not rotate the camshaft when using plastigauge.

TORQUE: 1.2–1.6 kg-m (9–12 ft-lb)





Remove the camshaft holders and measure the width of each plastigauge. The widest thickness determines the oil clearance.

**SERVICE LIMITS:**

A, E, F and L:

0.13 mm (0.005 in)

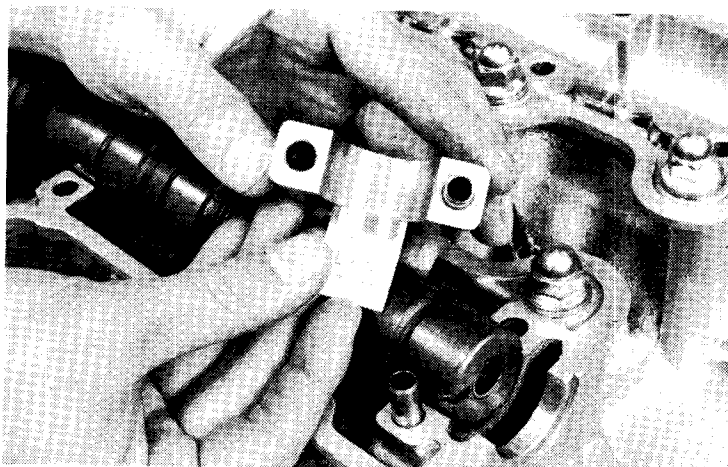
Gear holder, D, G and K:

0.16 mm (0.006 in)

B, C, H and J:

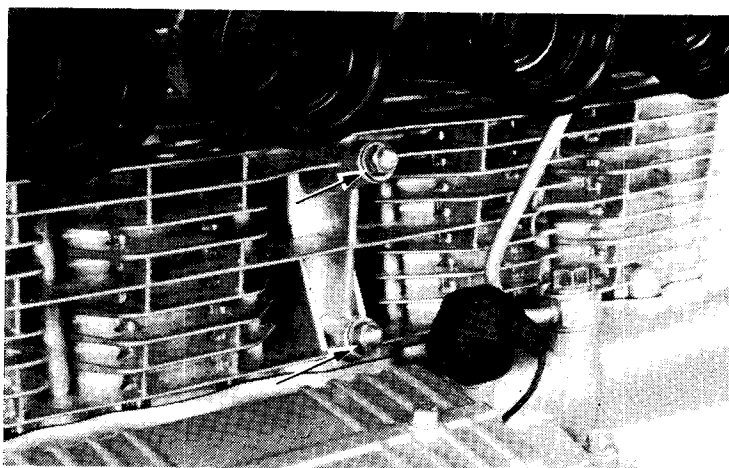
0.19 mm (0.008 in)

When the service limits are exceeded, replace the camshaft and recheck the oil clearance. Replace the cylinder head and camshaft holders if the clearance still exceeds service limits.

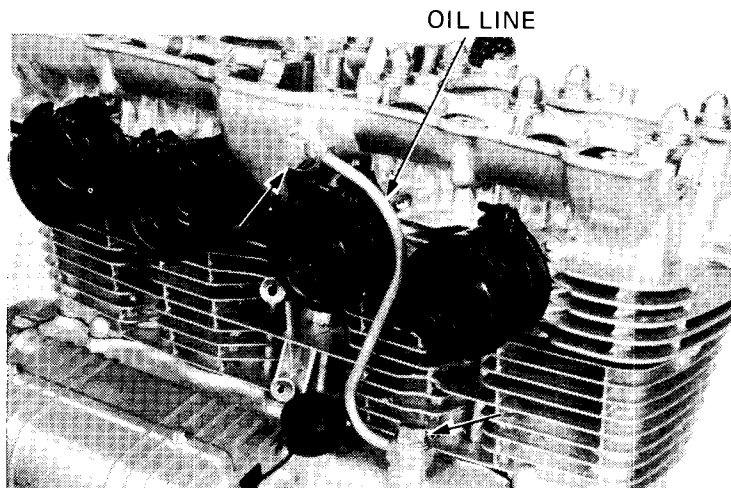


## CYLINDER HEAD REMOVAL

Remove the two rear cam chain tensioner lock nuts.



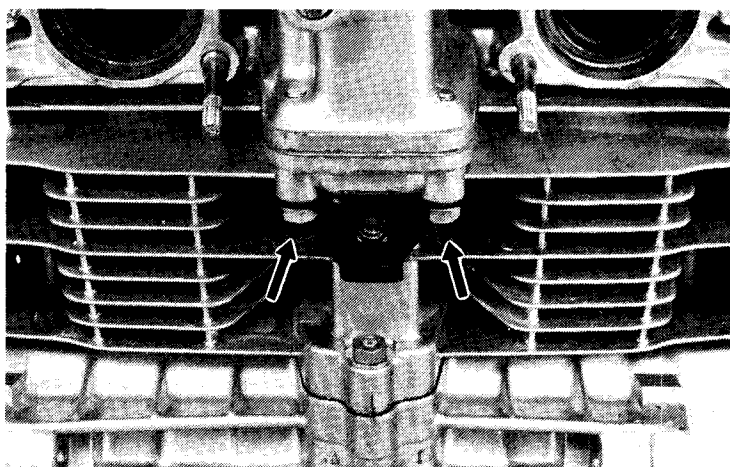
Remove the oil line.





90 CYLINDER HEAD/VALVE

Remove the two bolts at the front cam chain housing.

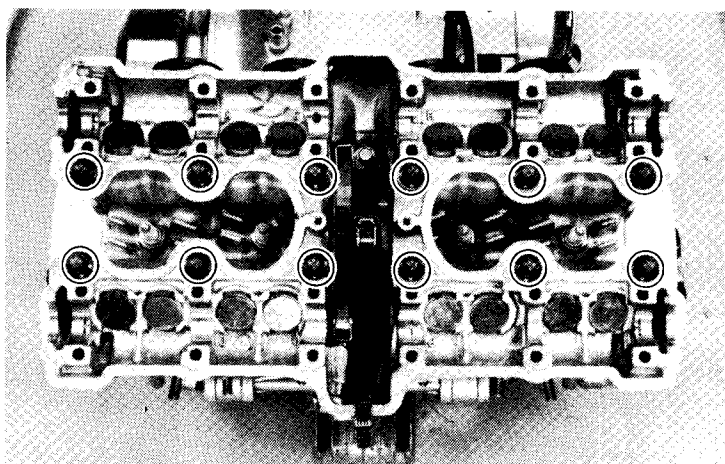


Remove the 12 cap nuts.

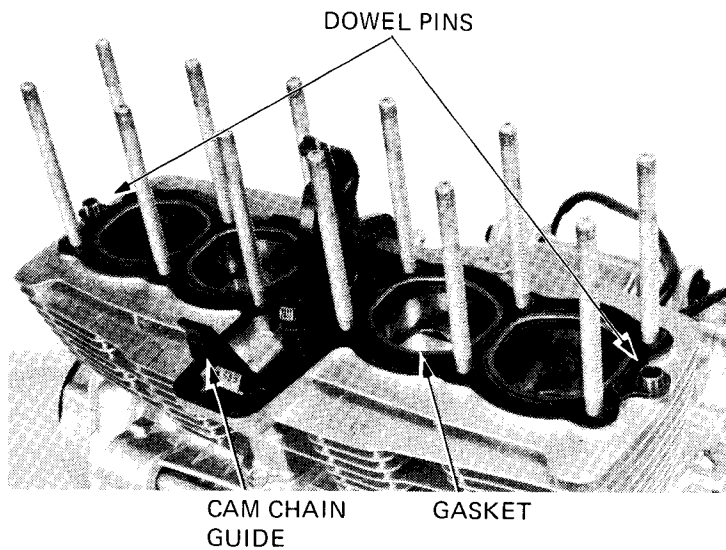
**NOTE**

Remove the nuts in 2-3 steps in a criss-cross pattern to prevent warpage.

Remove the cylinder head.



Remove the cylinder head gasket, dowel pins, and cam chain guide.



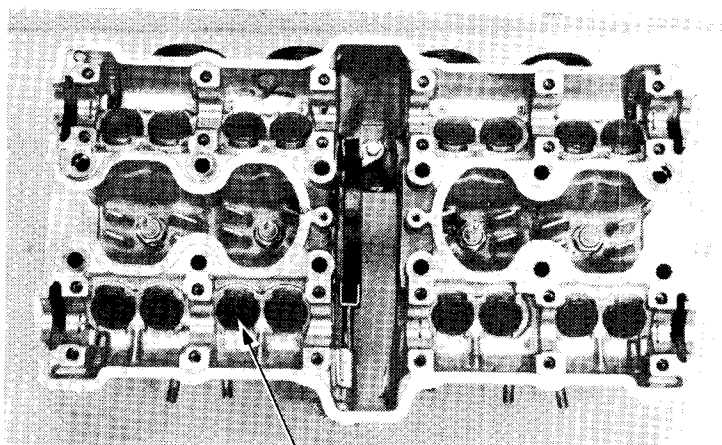


## CYLINDER HEAD DISASSEMBLY

Remove the valve clearance adjusting shims.  
Remove the valve lifters.

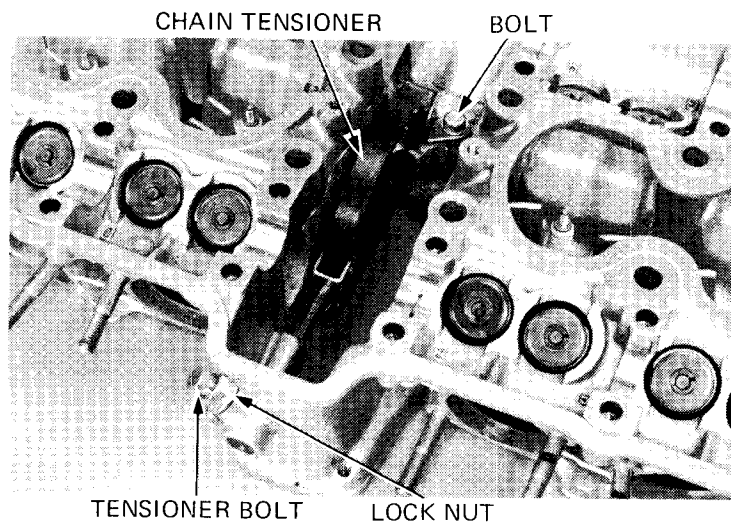
### NOTE

Mark all disassembled parts to ensure correct reassembly.



SHIM AND LIFTER

Loosen the cam chain tensioner lock nut and bolts.  
Remove the bolt in the cylinder head.  
Pull the chain tensioner back and remove.



Remove the valve spring cotters, retainers, springs and valves.

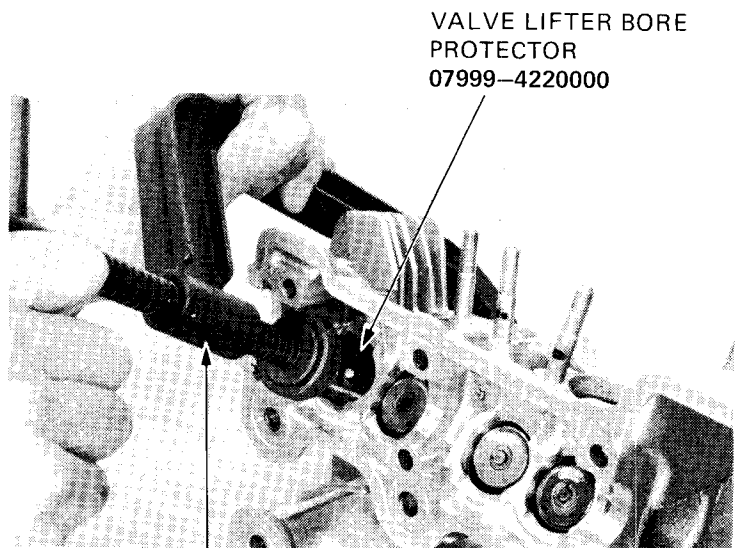
### CAUTION:

- Use the Valve lifter bore protector tool to prevent bore surface damage during valve disassembly.
- To prevent loss of tension, do not compress the valve springs more than necessary to remove the keepers.

### NOTE

Mark all disassembled parts to ensure correct reassembly.

Remove the valve stem seals.



SPRING COMPRESSOR  
07757-0010000

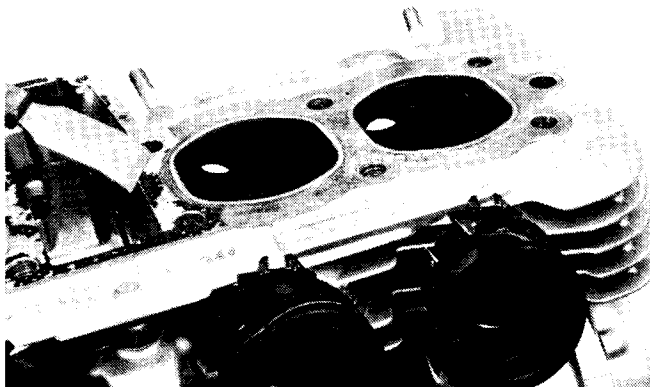


Remove carbon deposits from the combustion chamber.

Clean off the head gasket surfaces.

**NOTE**

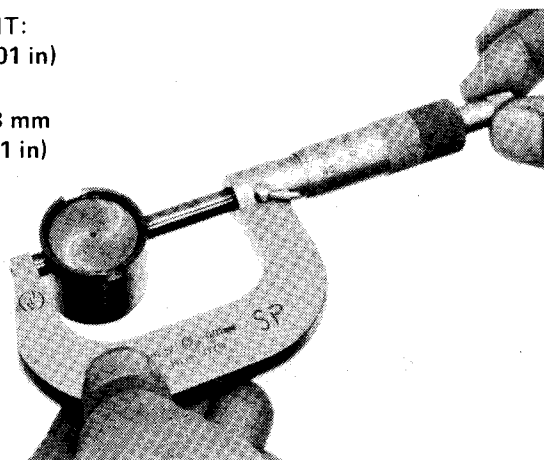
- Avoid damaging the gasket surfaces.
- Gasket material will come off easier if soaked in solvent.

**VALVE LIFTER O.D.**

Measure valve lifter O.D.

**SERVICE LIMIT:**  
27.96 mm (1.101 in)

**STANDARD:**  
27.972–27.993 mm  
(1.1013–1.1021 in)

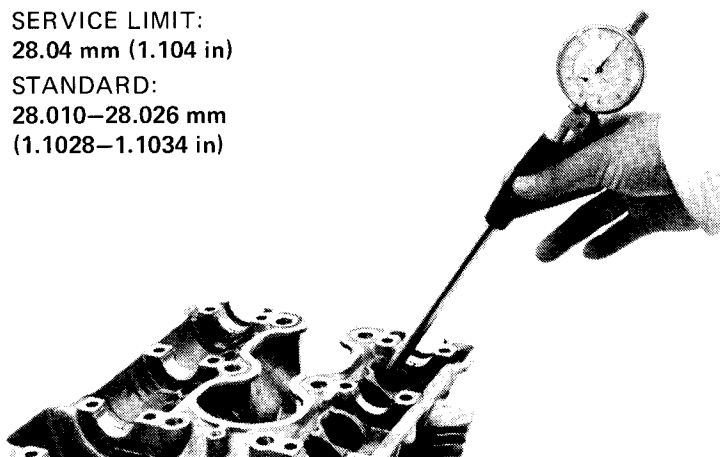
**VALVE LIFTER BORE**

Measure valve lifter bore I.D.

Inspect the valve lifter for scoring, scratches, or evidence of insufficient lubrication.

**SERVICE LIMIT:**  
28.04 mm (1.104 in)

**STANDARD:**  
28.010–28.026 mm  
(1.1028–1.1034 in)

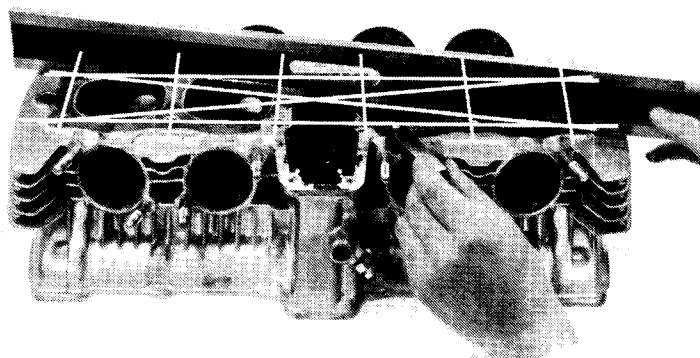




Check the spark plug hole and valve areas for cracks.

Check the cylinder head for warpage with a straight edge and a feeler gauge.

**SERVICE LIMIT:**  
0.10 mm (0.004 in)



### VALVE SPRING FREE LENGTH INSPECTION

Measure the length of the inner and outer valve springs.

**SERVICE LIMITS:**

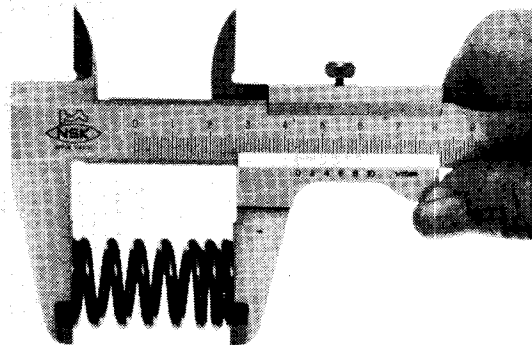
Inner: IN/EX 39.8 mm (1.57 in)

Outer: IN/EX 42.5 mm (1.67 in)

**STANDARDS:**

Inner: IN/EX 40.7 mm (1.60 in)

Outer: IN/EX 43.9 mm (1.73 in)



### VALVE STEM-TO-GUIDE CLEARANCE

Inspect each valve for bending, burning, scratches or abnormal stem wear.

Check valve movement in the guide.

Measure and record each valve stem O.D.

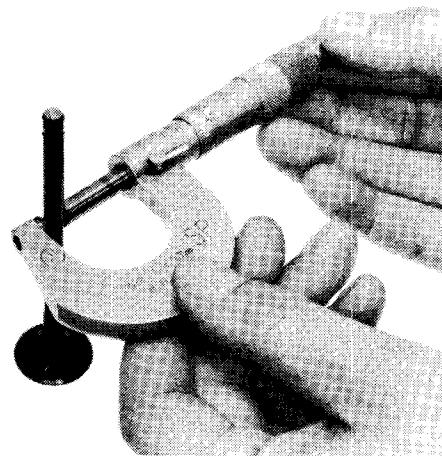
**SERVICE LIMITS:** IN: 5.47 mm (0.215 in)

EX: 5.45 mm (0.214 in)

**STANDARDS:**

IN: 5.475–5.490 mm (0.2156–0.2161 in)

EX: 5.455–5.470 mm (0.2148–0.2154 in)





## NOTE

Ream the guides to remove any carbon build-up before checking clearance.

Measure and record each valve guide. I.D. using a ball gauge or inside micrometer.

**SERVICE LIMIT: IN. 5.54 mm (0.218 in)**

**EX. 5.54 mm (0.218 in)**

**STANDARD: IN/EX 5.500–5.515 mm  
(0.2165–0.2171 in)**

Subtract each valve stem O.D. from the corresponding guide I.D. to obtain the stem to guide clearance.

**SERVICE LIMITS: IN. 0.07 mm (0.003 in)**

**EX. 0.09 mm (0.004 in)**

## STANDARDS:

**IN: 0.010–0.040 mm (0.0004–0.0016 in)**

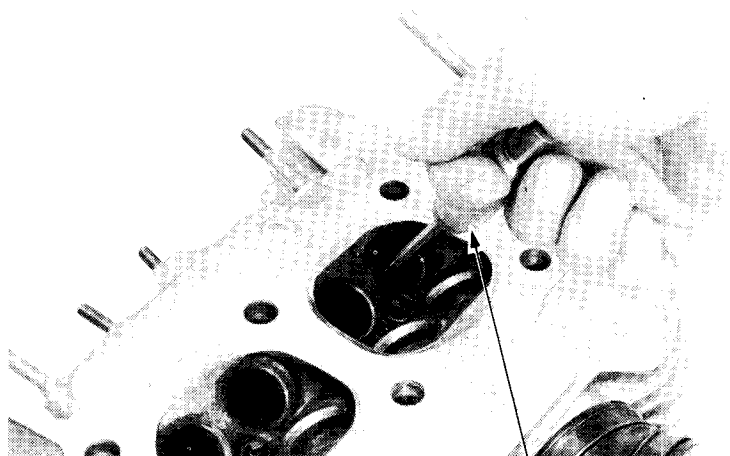
**EX: 0.030–0.060 mm (0.0012–0.0024 in)**

If the stem-to-guide clearance exceeds the service limits, determine if a new guide with standard dimensions would bring the clearance within tolerance. If so, replace any guides as necessary and ream to fit.

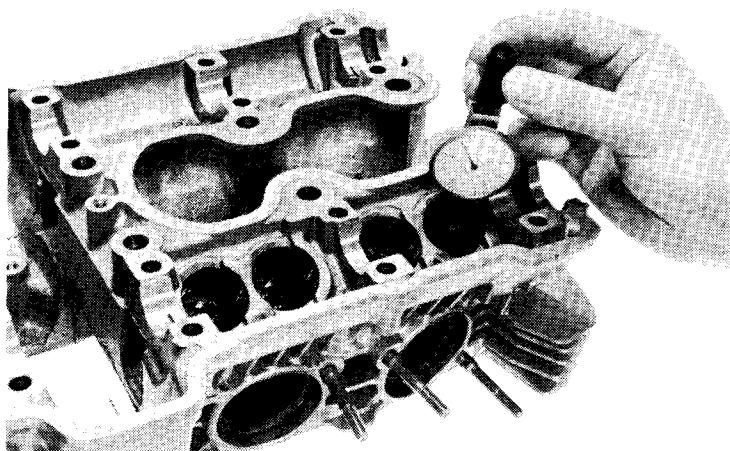
If the stem-to-guide clearance exceeds the service limits with new guides, replace the valves.

## NOTE

Reface the valve seats whenever the valve guides are replaced (page 6–16).



VALVE GUIDE REAMER  
07984–2000000 (5.5 mm)

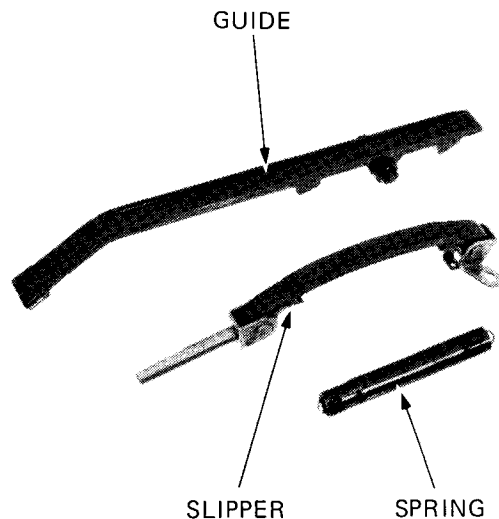


### CAM CHAIN GUIDE AND CAM CHAIN TENSIONER INSPECTION

Inspect the cam chain guide for damage or excessive wear.

Inspect the cam chain tensioner slipper for damage or excessive wear.

Inspect the spring for tension.







## VALVE GUIDE REPLACEMENT

Support the cylinder head and drive out the guide from the valve port.

### NOTE

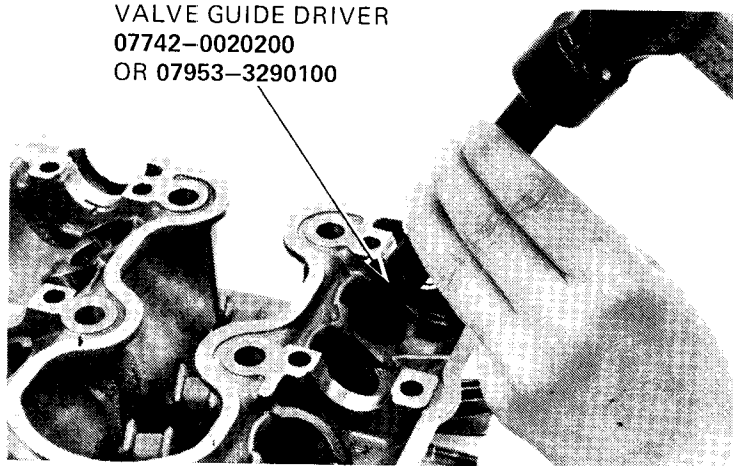
When driving out the valve guide, do not damage the head.

VALVE GUIDE REMOVER  
07742-0010100  
OR 07942-3290100



Install an oversize valve guide from the top of the head.

VALVE GUIDE DRIVER  
07742-0020200  
OR 07953-3290100



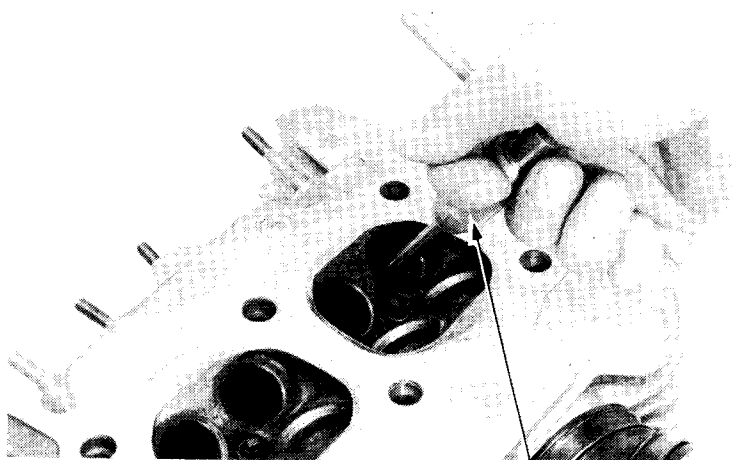
Ream the new valve guide after installation.

### NOTE

- Use cutting oil on the reamer during this operation.
- Rotate the reamer when inserting and removing it.

Reface the valve seat (page 6-16).

Clean the cylinder head thoroughly to remove any metal particles.



VALVE GUIDE REAMER  
07984-2000000 (5.5 mm)



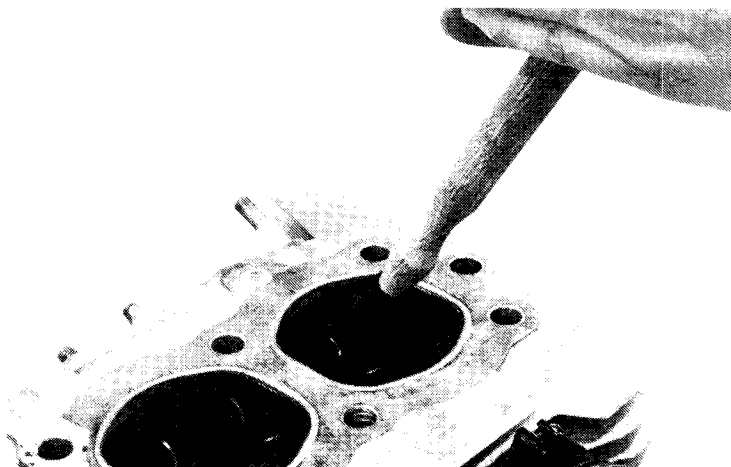
## VALVE SEAT INSPECTION/ REFACING

Clean all intake and exhaust valves thoroughly to remove carbon deposits.

Apply a light coating of valve lapping compound to each valve face. Lap each valve and seat using a rubber hose or other hand-lapping tool.

### NOTE

Take care not to allow the compound to enter between the valve stem and guide. After lapping, wash out the compound completely and apply a coat of engine oil to the valve face and seat.



Remove the valve and inspect the face.

### CAUTION:

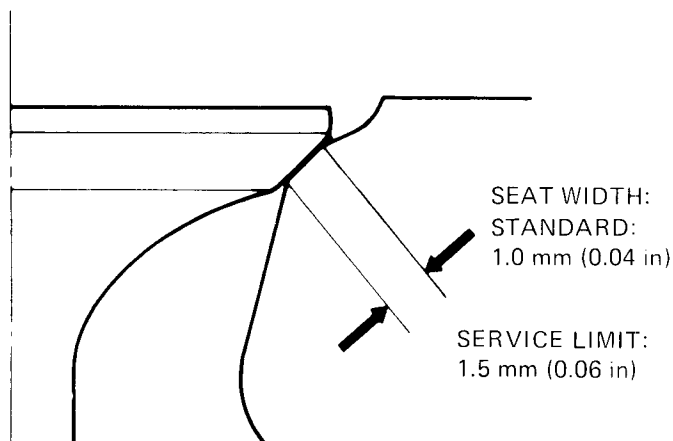
*The valves cannot be ground. If the valve face is rough, worn unevenly, or contacts the seat improperly, the valve must be replaced.*

Inspect the valve seat.

If the seat is too wide, too narrow, or has low spots, the seat must be ground.

### NOTE

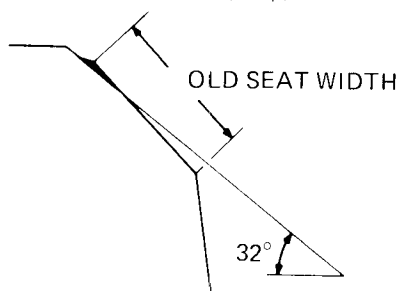
Follow the refacer manufacturer's operating instructions.



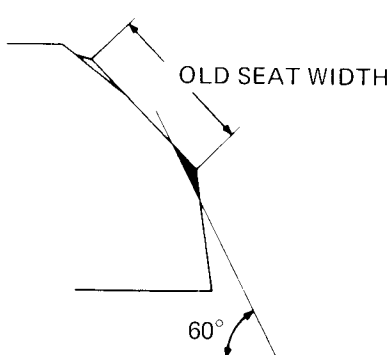
After cutting the seat, apply lapping compound to valve face, and lap the valve using light pressure.

After lapping, wash any residual compound off the cylinder head and valve.

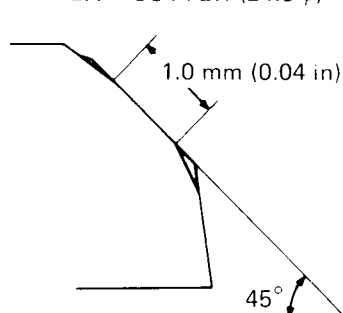
IN: CUTTER (30  $\phi$ )  
EX: CUTTER (28  $\phi$ )



IN, EX: CUTTER (30  $\phi$ )



IN: CUTTER (27.5  $\phi$ )  
EX: CUTTER (24.5  $\phi$ )



HOLDER NO. 07781-0010100



## CYLINDER HEAD ASSEMBLY

Lubricate each valve stem with molybdenum disulfide grease and insert the valve into the valve guide.

### NOTE

- Install new valve stem seals when assembling.
- To avoid damage to the stem seal, turn the valve slowly when inserting.

Install the valve springs and retainers. The valve springs with the tightly wound coils should face the cylinder head.

Install the valve cotters.

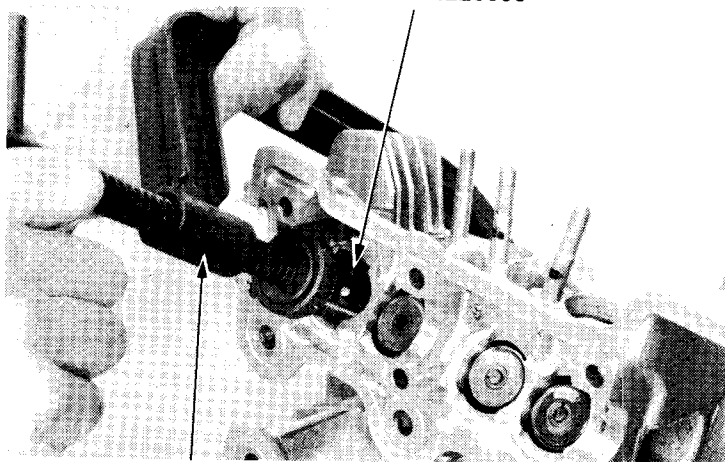
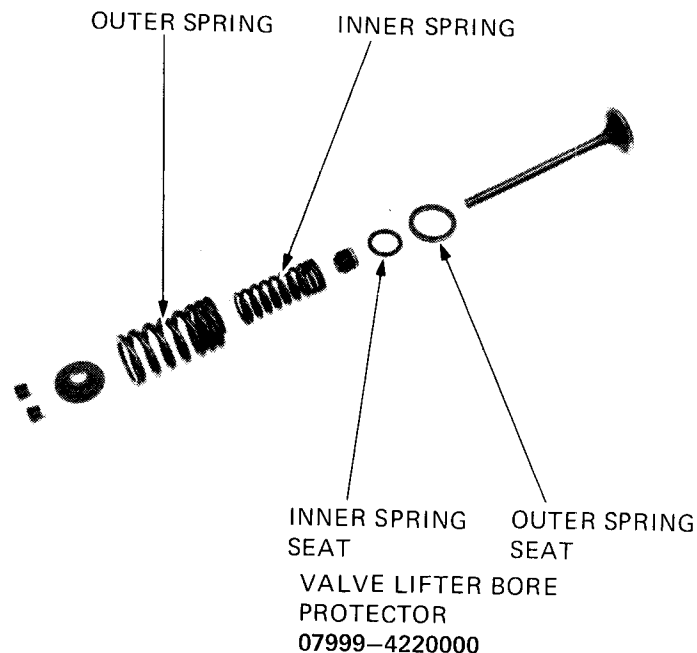
### CAUTION:

*To prevent loss of tension, do not compress the valve spring more than necessary to install the valve cotters.*

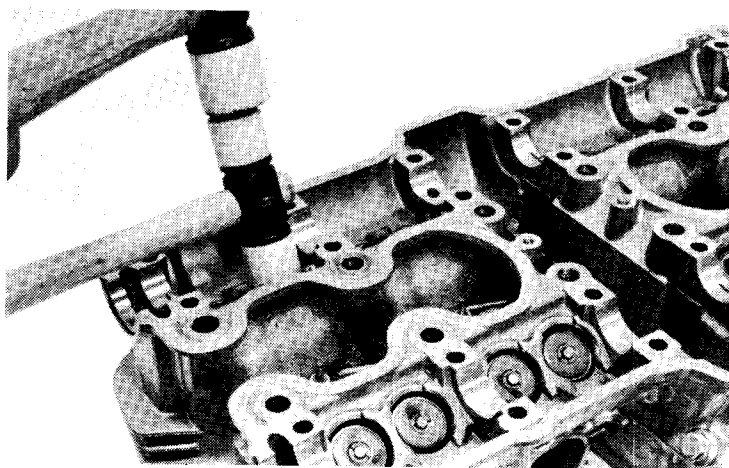
Tap the valve stems gently with a soft hammer to firmly seat the valve cotters.

### NOTE

Support the cylinder head above the work bench surface to prevent possible valve damage.

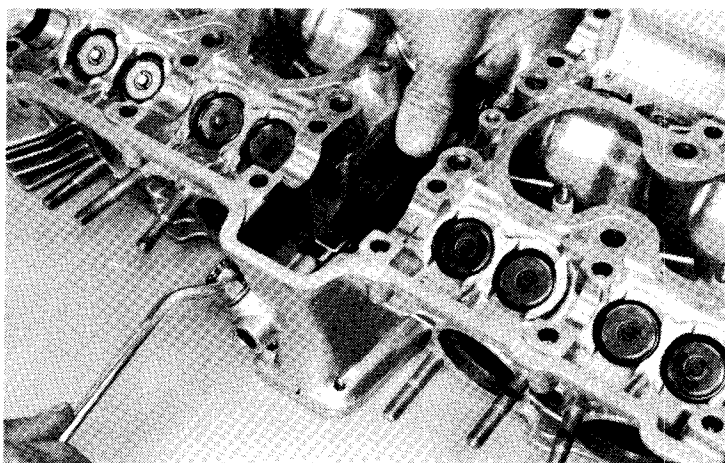


SPRING COMPRESSOR  
07757-0010000





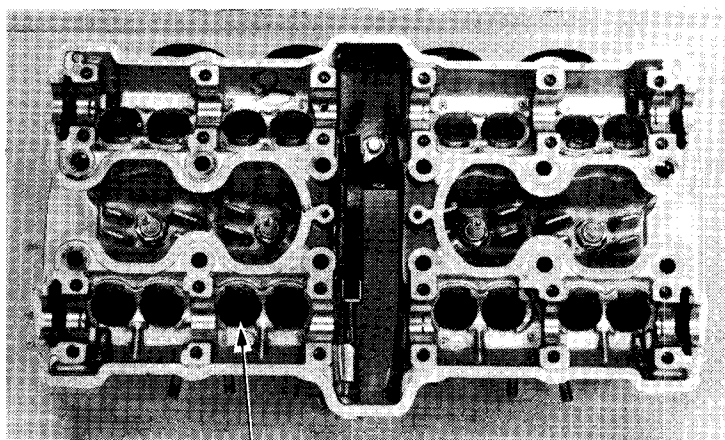
Install the front cam chain tensioner.  
Push the chain tensioner down and tighten the lock bolt and nut.



Install the valve lifters and adjustment shims.

**NOTE**

Make sure that the valve lifters and shims are in their original positions.



SHIM AND LIFTER

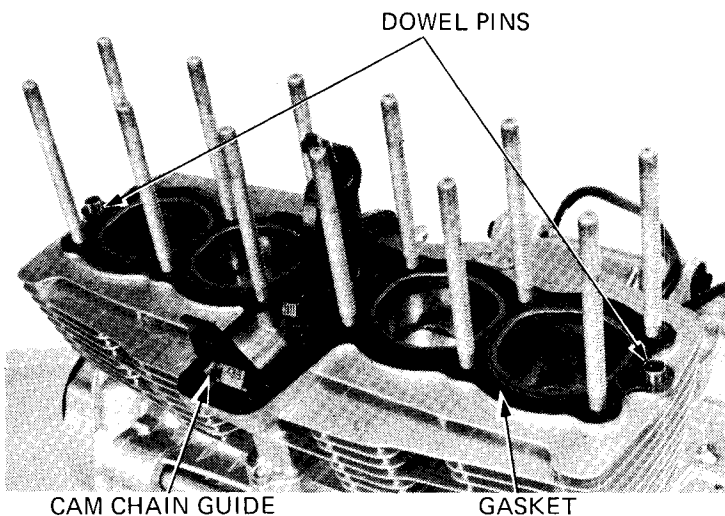
**CYLINDER HEAD INSTALLATION**

Clean the cylinder head surfaces of any gasket material.

Install the dowel pins.

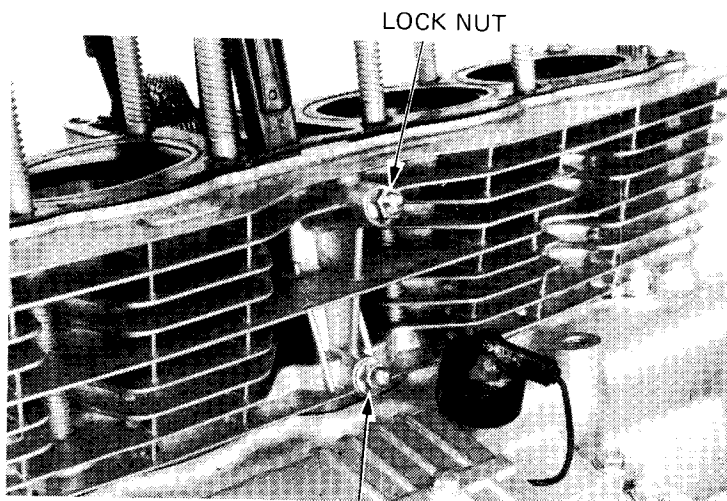
Install the cam chain guide.

Install a new cylinder head gasket with the 5 mm wide side of the bore grommet up.





Install the two cam chain tensioner lock nuts loosely.



ADJUSTING LOCK NUT

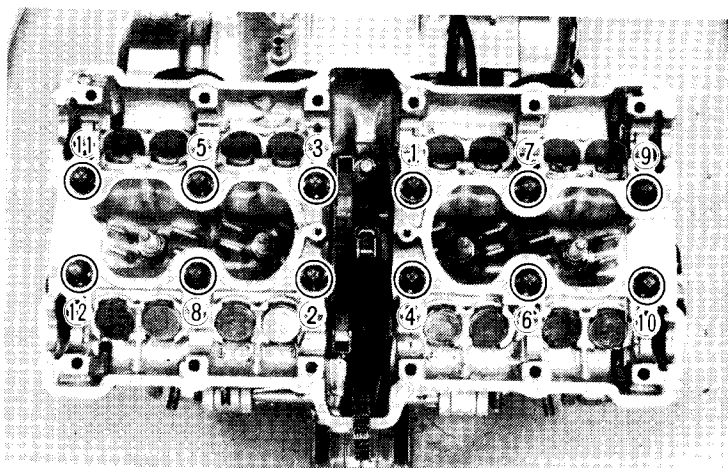
Install the cylinder head assembly.  
Tighten the cap nuts in the sequence shown.

### TORQUE:

10 mm cap nut: 3.6–4.0 kg-m  
(26–29 ft-lb)

### NOTE

Apply molybdenum disulfide grease to the threads of the cylinder bolts.



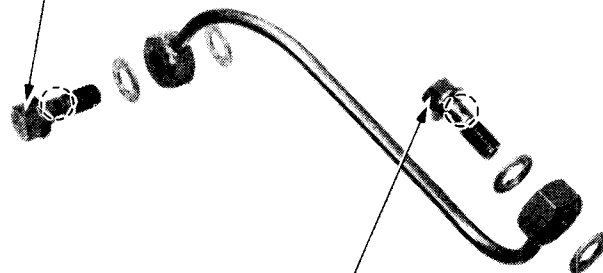
Install the oil cooler hose setting plate.  
Tighten the two oil line bolts.

### NOTE

Use the bolt with the big hole to tighten the upper oil line.

TORQUE: 2.1–2.5 kg-m (15–18 ft-lb)

UPPER (CYLINDER HEAD) SIDE

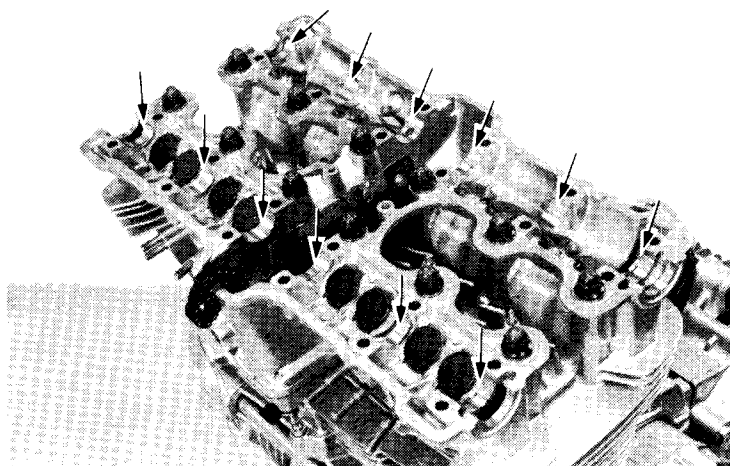


LOWER (CRANKCASE) SIDE



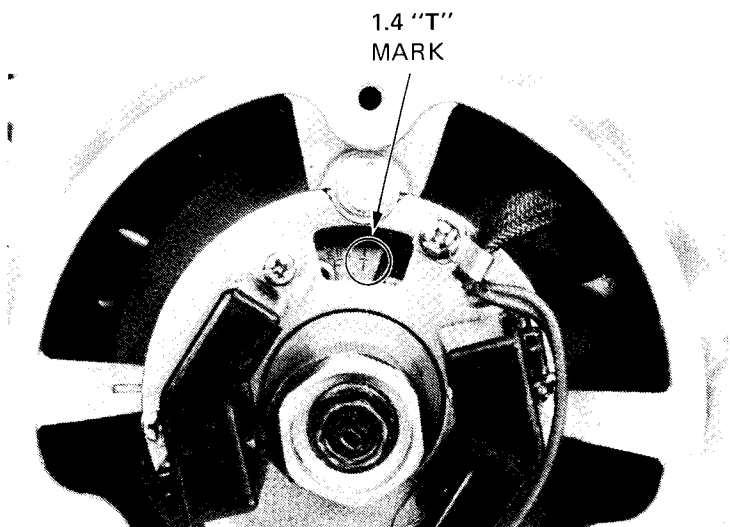
## CAMSHAFT INSTALLATION

Lubricate the camshaft bearings with molybdenum disulfide grease.



Turn the crankshaft counterclockwise until the "1.4T" and index marks align.

Pull the cam chain tensioner up to provide maximum cam chain slack.

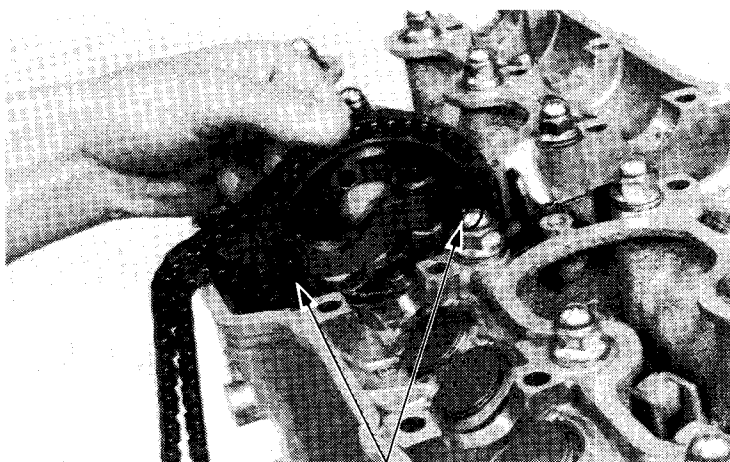


Place the intake cam chain over the exhaust camshaft sprocket, aligning the sprocket punch marks with the cylinder head surface.

Place the exhaust camshaft through the exhaust camshaft sprocket and exhaust cam chain. Position the No. 1 cam lobes towards the spark plug. Place the exhaust cam chain over the sprocket. Install the A and E camshaft holders loosely. Install a camshaft sprocket bolt, but do not tighten yet.

### NOTE

Install camshaft holders with directional arrows pointing towards the front of the engine.



PUNCH MARKS



Loosely install the D camshaft holder and the tachometer drive gear/camshaft holder. Position the camshaft so its flange fits into the D holder slot.

Turn the crankshaft counterclockwise 360° and install the other camshaft sprocket bolt and tighten to the specified torque. Turn the crankshaft another 360° and tighten the sprocket bolt which was installed earlier.

**TORQUE: 1.8–2.0 kg-m (13–15 ft-lb)**

Tighten the camshaft holder bolts in a criss-cross pattern.

**TORQUE: 1.2–1.6 kg-m (9–12 ft-lb)**

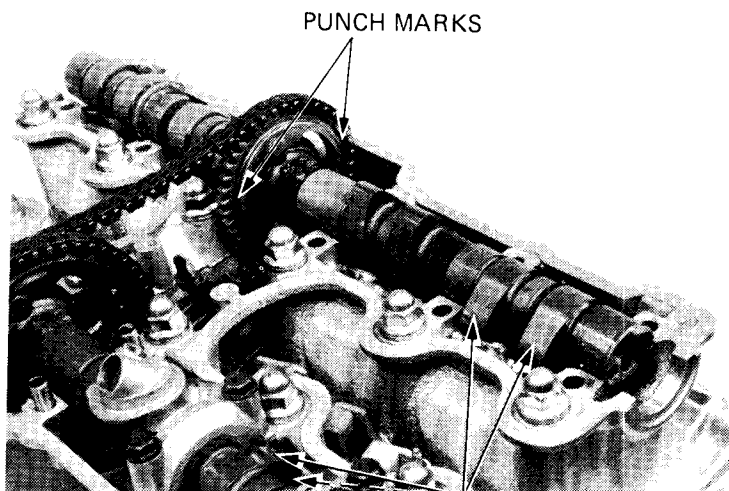
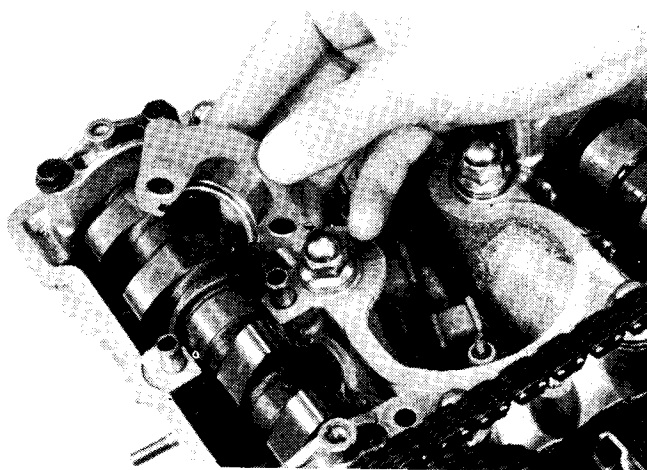
Adjust the front cam chain with the lock nut on the rear of the engine (page 3-11).

Make sure that the "1,4T" and index marks are aligned as shown on page 6-20 and the No. 1 cam lobes face toward the spark plug. Recheck the position of the exhaust camshaft sprocket; the punch marks must align with the cylinder head surface. Place the intake cam chain over the intake camshaft and sprocket, aligning the sprocket punch marks with the cylinder head surface.

Install the intake camshaft, positioning the cam lobes for the No. 1 cylinder toward the spark plugs. Install a camshaft sprocket bolt, but do not tighten yet.

#### NOTE

If the sprocket was not removed from the camshaft during disassembly, then reinstall as an assembled set.



NO.1 CAM LOBES

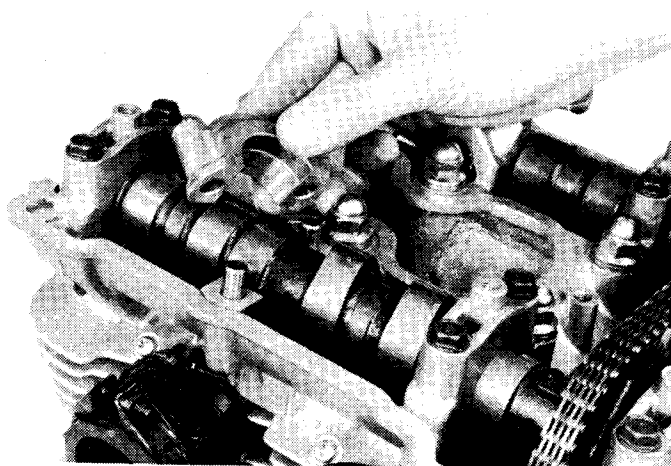
Loosely install the F and L camshaft holders. Install the G and K holders loosely, positioning the camshaft so its flange fits into the slot in the K holder.

Install and tighten the camshaft sprocket bolts, following the same procedures described for exhaust camshaft installation.

Tighten the camshaft holder bolts in a criss-cross pattern.

Adjust the intake cam chain tensioner with the lock nut on the front of the engine (page 3-10).

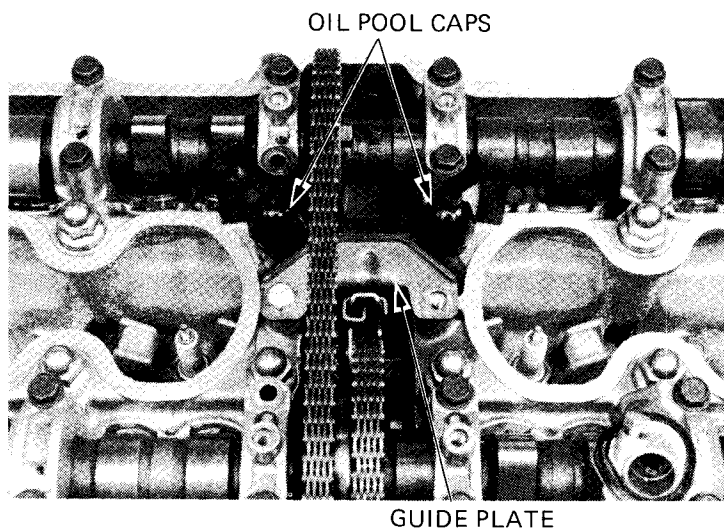
Recheck the crankshaft and camshaft sprocket alignment.



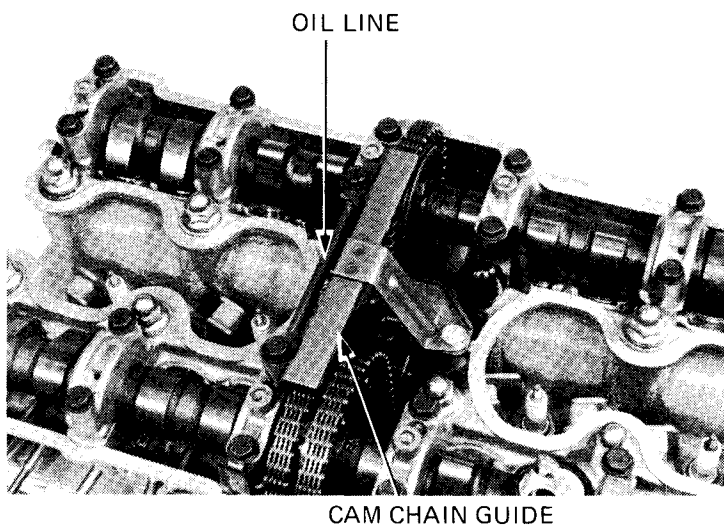


## 102 CYLINDER HEAD/VALVE

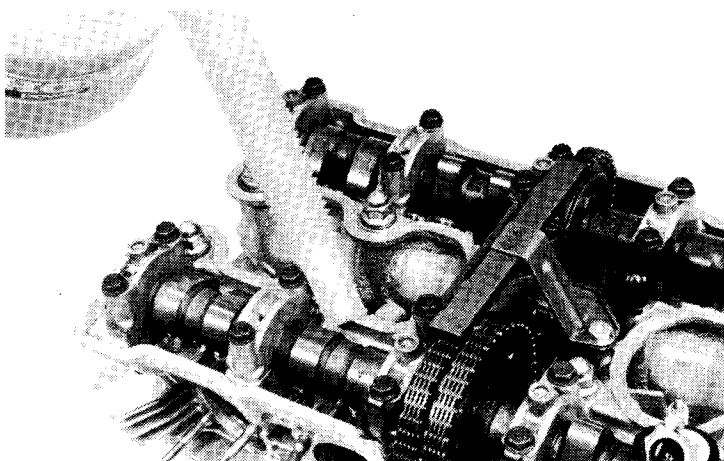
Install the exhaust cam chain guide attaching plate and oil pool caps.



Install the oil line and cam chain guide with the B, C, H and J holders. Tighten in a crisscross pattern.



Fill the oil pockets in the head with oil so that the cam lobes are submerged. Adjust the valve clearance (page 3-6).





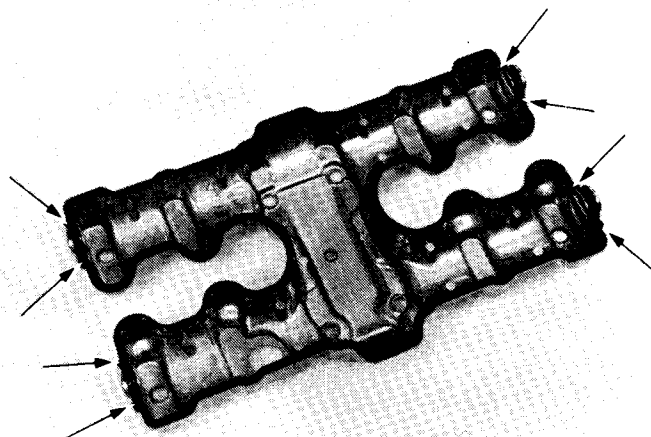


Inspect the cylinder head cover gasket for damage or deterioration.

Apply a sealant on the cylinder gasket at eight places as shown.

### NOTE

Clean the gasket before applying sealant.



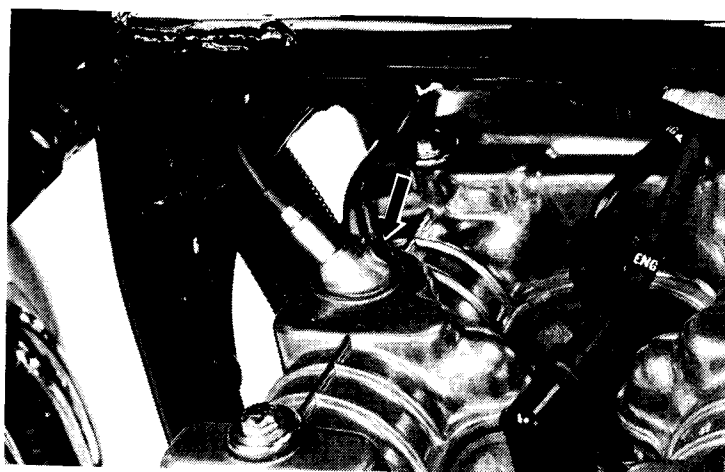
Install the cylinder head cover.

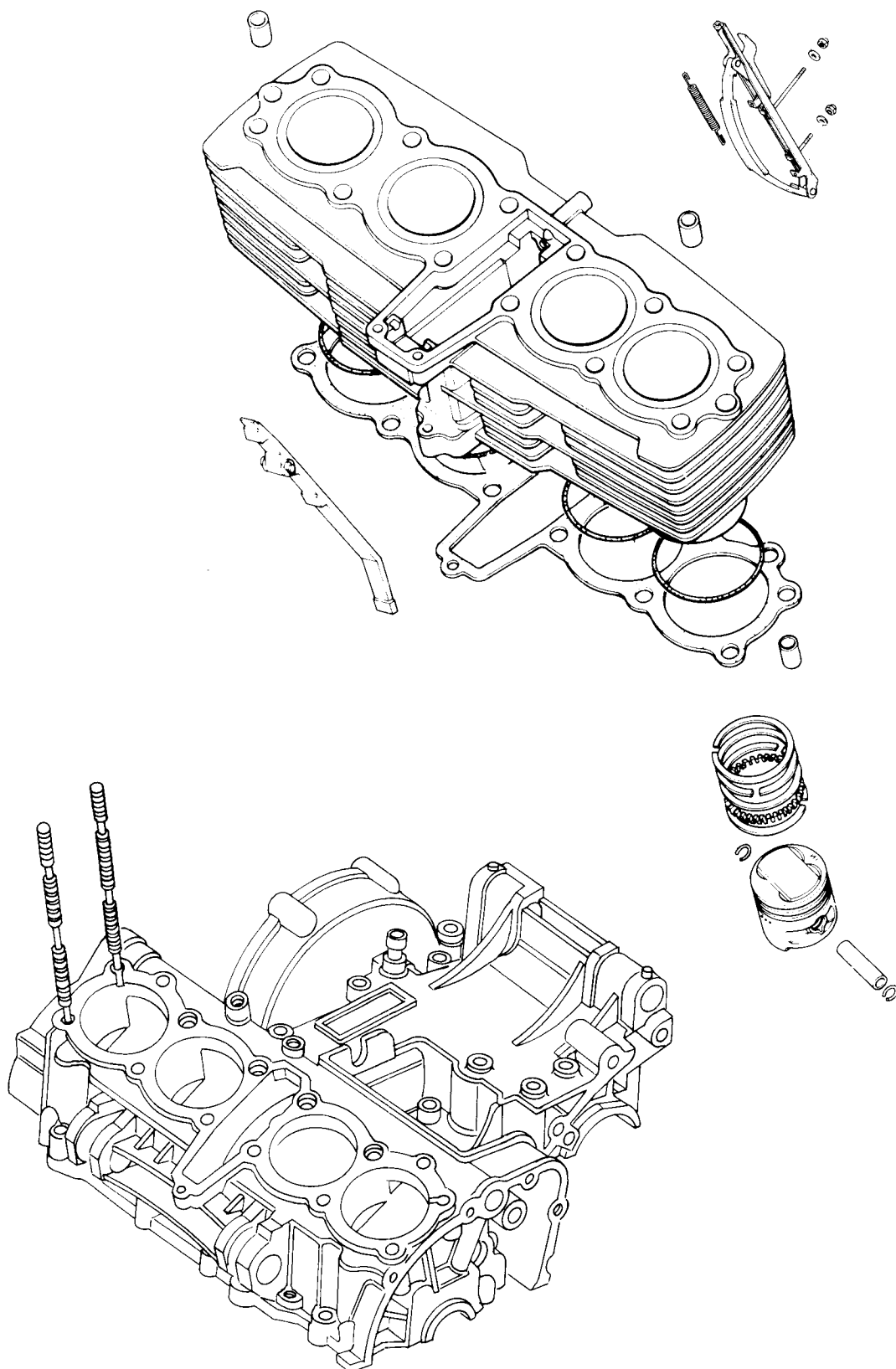
Connect the tachometer cable.

Install the spark plug caps.

Install the pulser generator cover.

Adjust cam chain tension (page 3-10).







|                     |     |                       |     |
|---------------------|-----|-----------------------|-----|
| SERVICE INFORMATION | 7-1 | PISTON REMOVAL        | 7-3 |
| TROUBLESHOOTING     | 7-1 | PISTON INSTALLATION   | 7-7 |
| CYLINDER REMOVAL    | 7-2 | CYLINDER INSTALLATION | 7-7 |

## SERVICE INFORMATION

### GENERAL INSTRUCTION

- The engine must be removed to perform cylinder/piston maintenance and inspection.

### TOOLS

#### Special

|                                     |               |
|-------------------------------------|---------------|
| Piston Base (2 required)            | 07958-3000000 |
| Piston Ring Compressor (2 required) | 07954-4220000 |

### SPECIFICATIONS

|                                     |  |                 | STANDARD                            | SERVICE LIMIT         |
|-------------------------------------|--|-----------------|-------------------------------------|-----------------------|
| Cylinder                            | I.D.                                   |                 | 64.500-64.510 mm (2.5393-2.5397 in) | 64.60 mm (2.543 in)   |
|                                     | Warpage                                |                 | —                                   | 0.10 mm (0.004 in)    |
| Piston, piston rings and piston pin | Piston ring-to-ring groove clearance   | TOP             | 0.015-0.045 mm (0.0006-0.0018 in)   | 0.09 mm (0.004 in)    |
|                                     |  | SECOND          | 0.015-0.045 mm (0.0006-0.0018 in)   | 0.09 mm (0.004 in)    |
|                                     | Ring end gap                           | TOP             | 0.15-0.30 mm (0.006-0.012 in)       | 0.5 mm (0.02 in)      |
|                                     |  | SECOND          | 0.15-0.30 mm (0.006-0.012 in)       | 0.5 mm (0.02 in)      |
|                                     |  | OIL (SIDE RAIL) | 0.30-0.90 mm (0.012-0.035 in)       | 1.1 mm (0.04 in)      |
|                                     | Piston O.D.                            |                 | 64.46-64.49 mm (2.538-2.539 in)     | 64.40 mm (2.535 in)   |
|                                     | Piston pin bore                        |                 | 15.002-15.008 mm (0.5906-0.5909 in) | 15.05 mm (0.593 in)   |
|                                     | Connecting rod small end I.D.          |                 | 15.016-15.034 mm (0.5912-0.5919 in) | 15.076 mm (0.5935 in) |
|                                     | Piston pin O.D.                        |                 | 14.994-15.000 mm (0.5903-0.5906 in) | 14.98 mm (0.590 in)   |
|                                     | Piston-to-piston pin clearance         |                 | 0.002-0.014 mm (0.0001-0.0006 in)   | 0.04 mm (0.002 in)    |
|                                     | Cylinder-to-piston clearance           |                 | 0.01-0.05 mm (0.0004-0.002 in)      | 0.10 mm (0.004 in)    |
|                                     | Piston pin-to-connecting rod clearance |                 | 0.016-0.040 mm (0.0006-0.0016 in)   | 0.060 mm (0.0024 in)  |

## TROUBLESHOOTING

### Compression low

- Worn cylinder or piston rings

### Excessive smoke

- Worn cylinder or piston
- Improper installation of piston rings
- Scored or scratched piston or cylinder wall

### Overheating

- Excessive carbon build-up on the piston or combustion chamber wall.

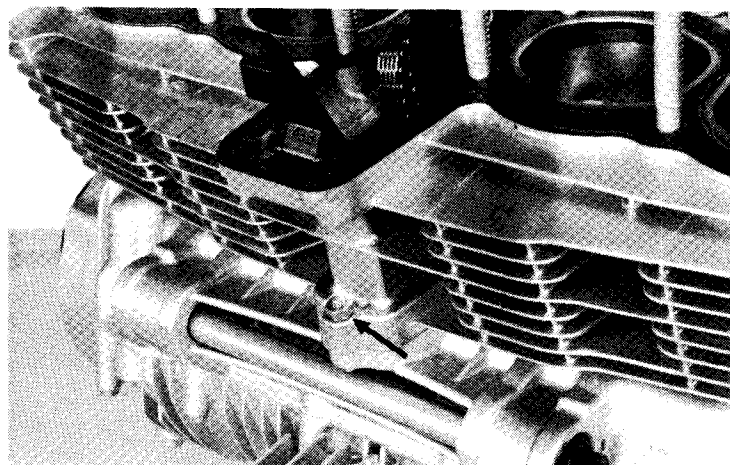
### Knocking or abnormal noise

- Worn piston and cylinder
- Excessive carbon build-up

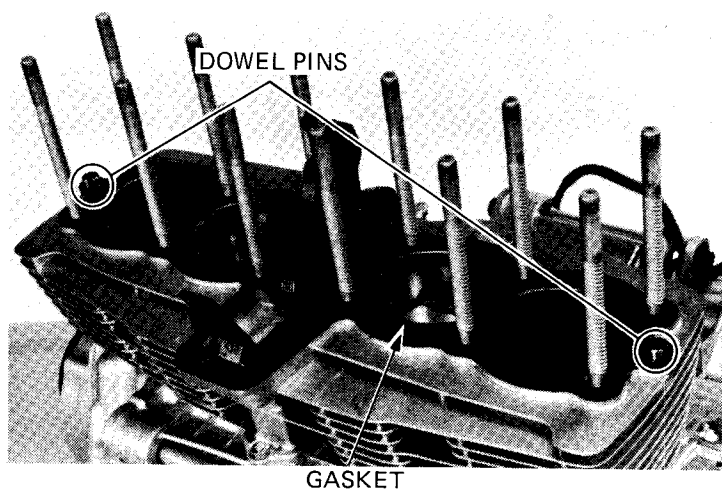


## CYLINDER REMOVAL

Remove the cylinder head (Section 6).  
Remove the bolt at the lower front cylinder base.  
Remove the cylinder.  
Remove the cam chain tensioner from the cylinder.



Remove the cylinder gasket and dowel pins.

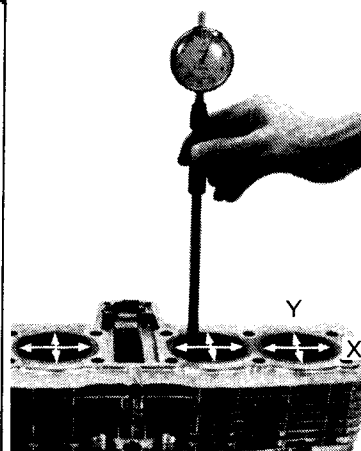
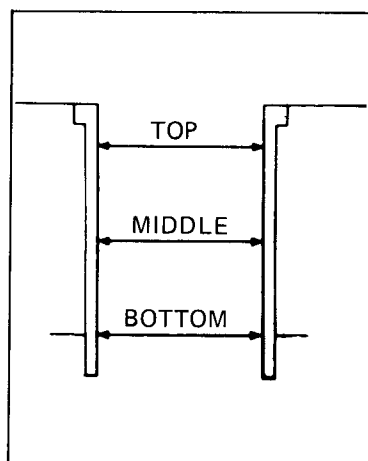


## CYLINDER INSPECTION

Inspect the cylinder bores for wear or damage.  
Measure the cylinder I. D. at three levels in X and Y axis.

**STANDARD:** 64.50–64.51 mm  
(2.539–2.540 in)

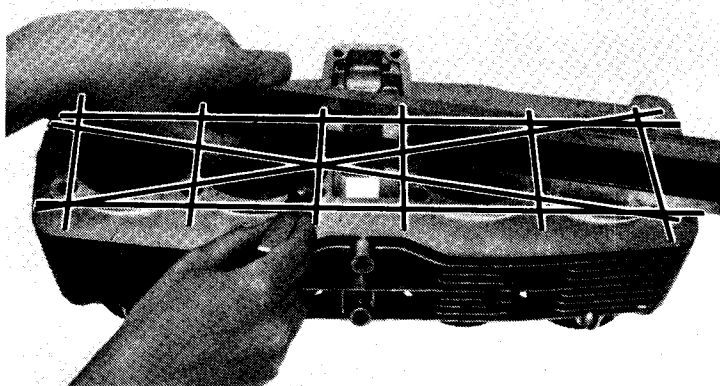
**SERVICE LIMIT:** 64.60 mm (2.543 in)





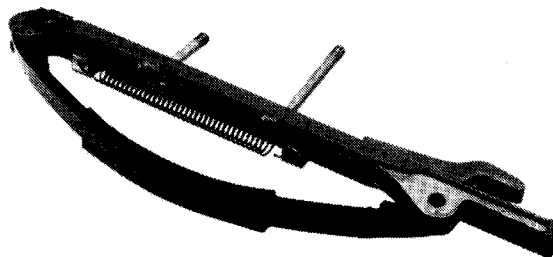
Inspect the top of the cylinder for warpage.  
Check in an X pattern as shown.

SERVICE LIMIT:  
0.10 mm (0.004 in)



## CAM CHAIN TENSIONER INSPECTION

Inspect the slipper of the cam chain tensioner  
for damage or excessive wear.  
Inspect the tension spring for weakness.



## PISTON REMOVAL

Remove each piston pin clip with needle nose  
pliers.

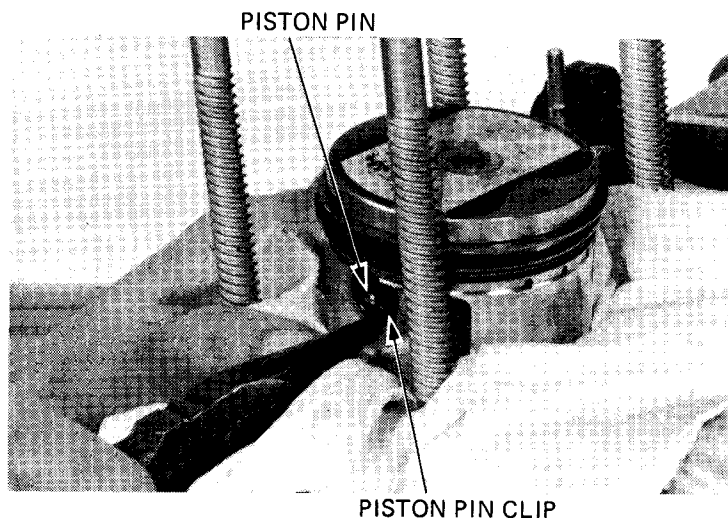
### NOTE

Do not allow clips to fall into the  
crankcase.

Press the piston pin out.

### NOTE

Mark the pistons to indicate the  
cylinder positions.





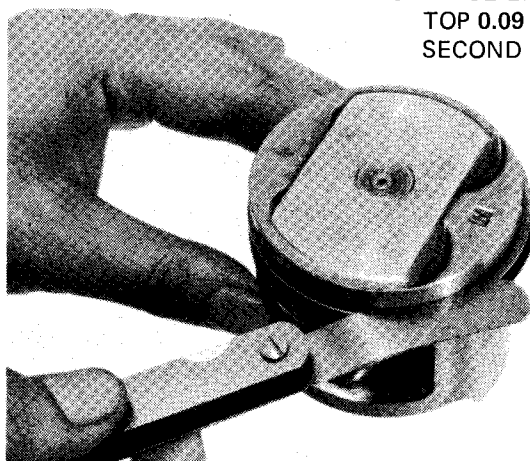
# **PISTON/PISTON RING INSPEC- TION**

Inspect the piston ring-to-groove clearance.

## **NOTE**

Mark the rings so that they can be returned to their original locations.

Inspect the pistons for damage and cracks; ring grooves for wear.



**SERVICE LIMIT:**  
**TOP 0.09 mm (0.004 in)**  
**SECOND 0.09 mm (0.004 in)**

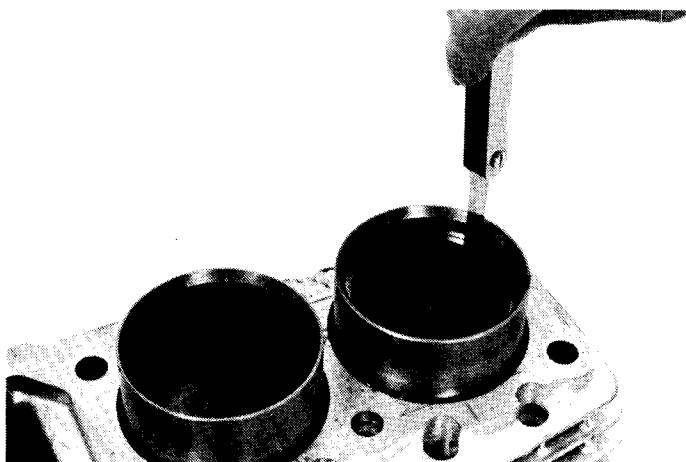
Insert each piston ring into the cylinder, and inspect the end gap.

## **SERVICE LIMITS:**

**TOP:** 0.5 mm (0.02 in)  
**SECOND:** 0.5 mm (0.02 in)  
**OIL (Side rail):** 1.1 mm (0.04 in)

## **STANDARD END GAPS:**

**TOP:** 0.15–0.30 mm  
 (0.006–0.012 in)  
**SECOND:** 0.15–0.30 mm  
 (0.006–0.012 in)  
**OIL (Side rail):** 0.3–0.9 mm  
 (0.012–0.035 in)



Measure the piston O. D. at the skirt.

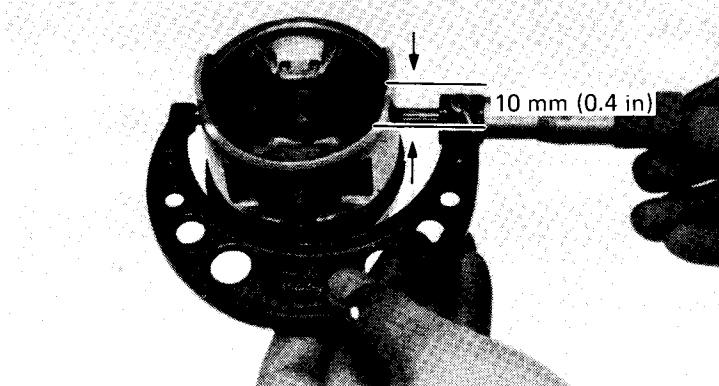
## **NOTE**

Measurements should be taken 10 mm (0.4 in) from the bottom.

Calculate the cylinder-to-piston clearance.

**SERVICE LIMIT: 0.10 mm (0.004 in)**

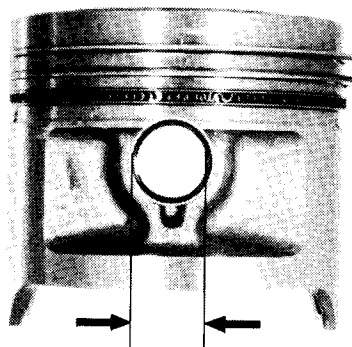
**SERVICE LIMIT:**  
**64.40 mm (2.535 in)**  
**STANDARD: 64.46–64.49 mm (2.538–2.539 in)**





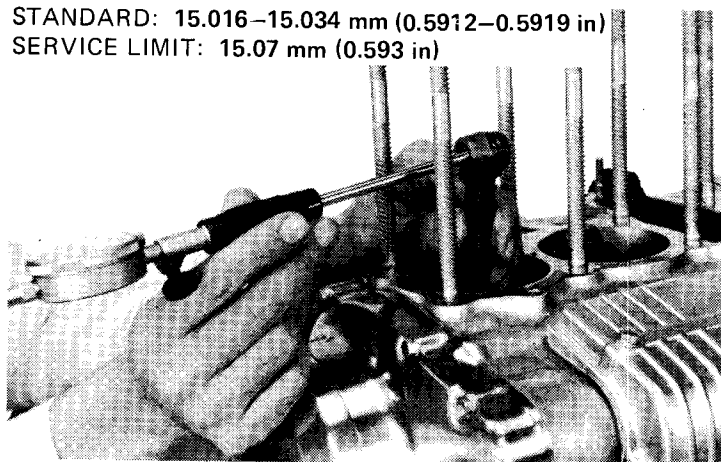
Measure the piston pin hole I. D.

STANDARD: 15.008 mm (0.5906–0.5909 in)  
SERVICE LIMIT: 15.05 mm (0.593 in)



Measure the connecting rod small end I. D.  
(See Section 12 for replacement procedure)

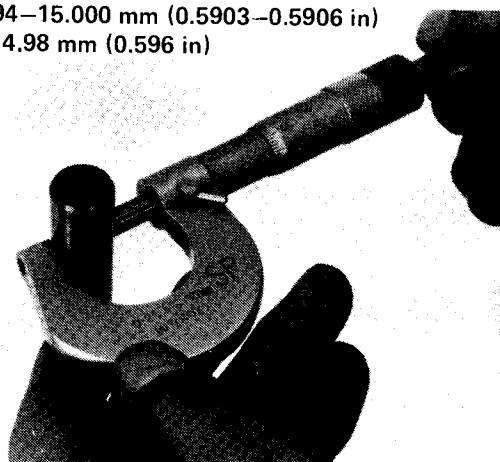
STANDARD: 15.016–15.034 mm (0.5912–0.5919 in)  
SERVICE LIMIT: 15.07 mm (0.593 in)



Measure the piston pin O. D.

STANDARD: 14.994–15.000 mm (0.5903–0.5906 in)  
SERVICE LIMIT: 14.98 mm (0.596 in)

Determine the piston-to-piston pin clearance.  
SERVICE LIMIT: 0.04 mm (0.002 in)



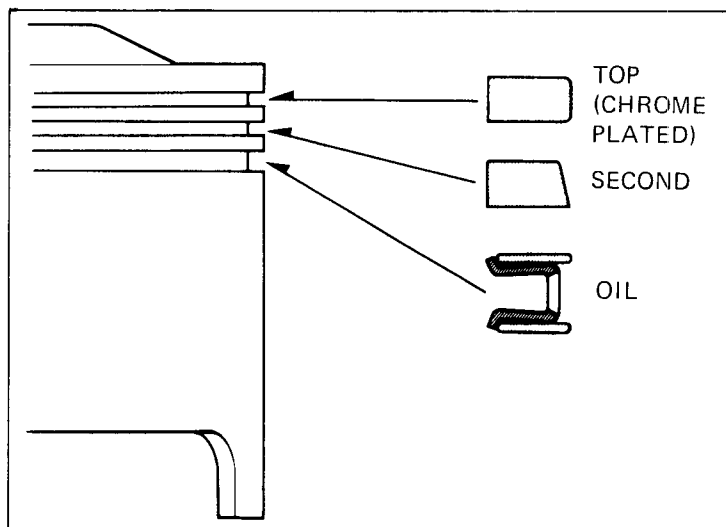


## PISTON RING INSTALLATION

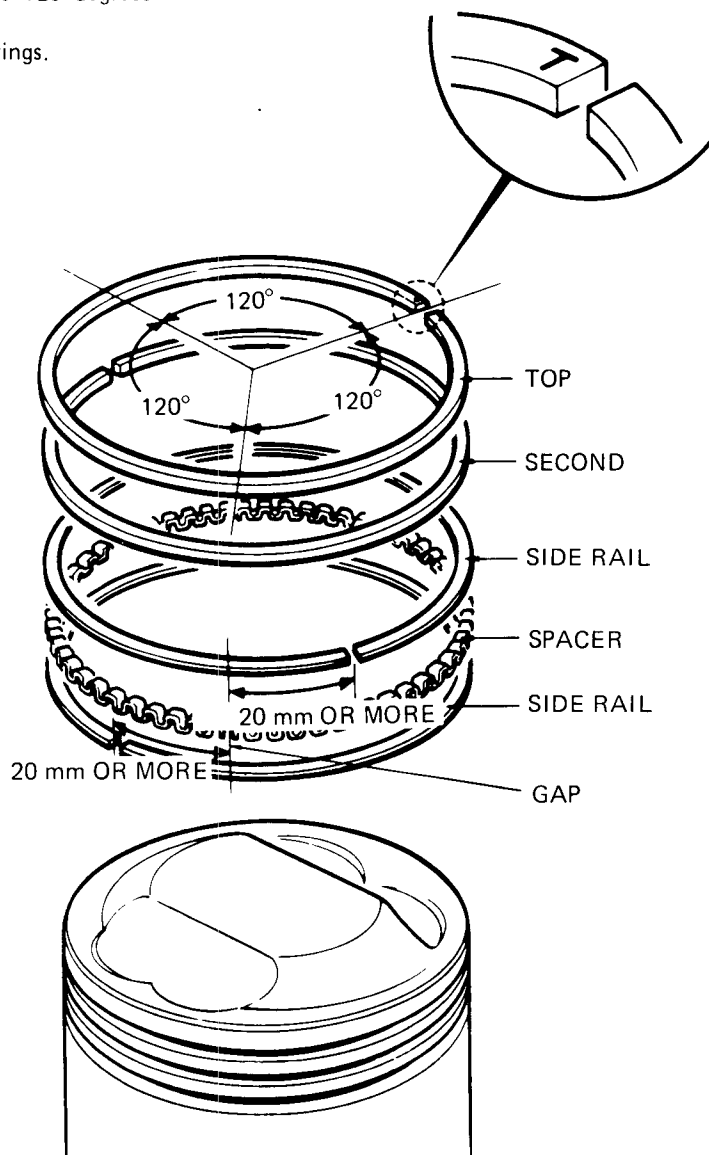
Install the piston rings.

### NOTE

- All rings should be installed with the markings facing up.
- After installation, the rings should rotate freely.



Space the piston ring end gaps 120 degrees apart.  
Do not align the gaps in the oil rings.





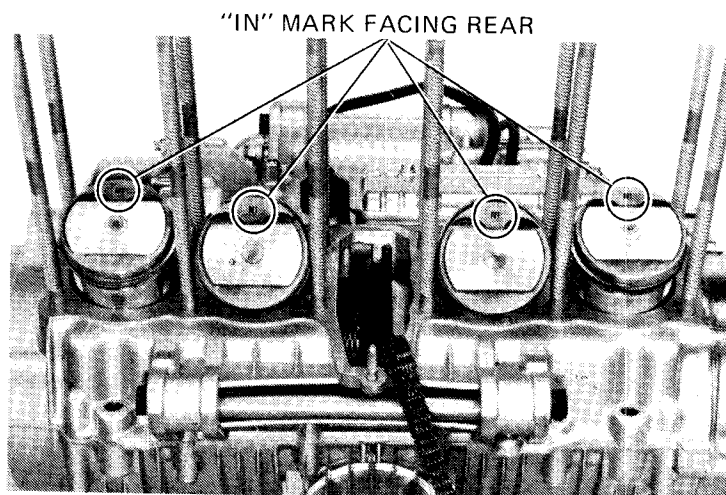


## PISTON INSTALLATION

Apply molybdenum disulfide grease to the connecting rod small ends.  
Install the pistons, piston pins and clips.

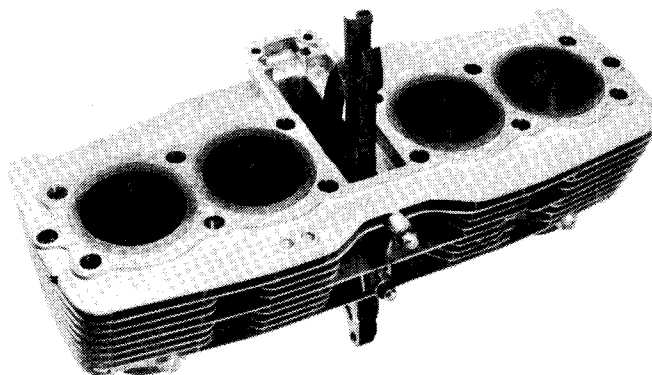
### NOTE

- Position the mark "IN" on the piston to the intake side.
- Install the pistons in their original positions.
- Do not allow piston pin clips to fall into the crankcase.

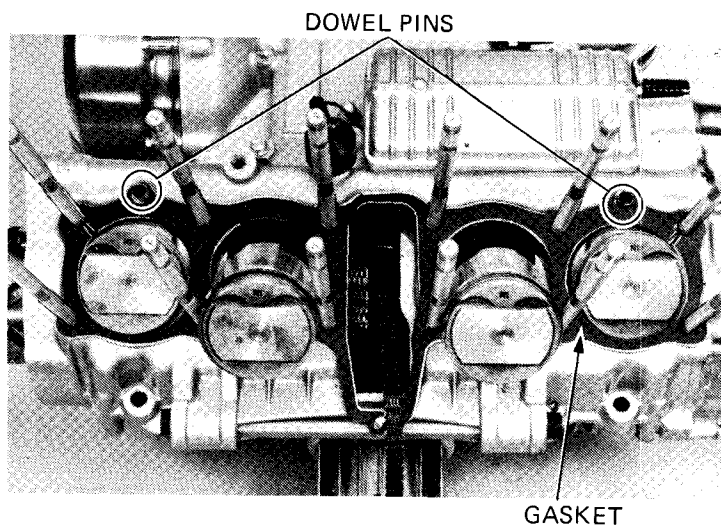


## CYLINDER INSTALLATION

Install the cam chain tensioner.



Install the dowel pins and gasket.



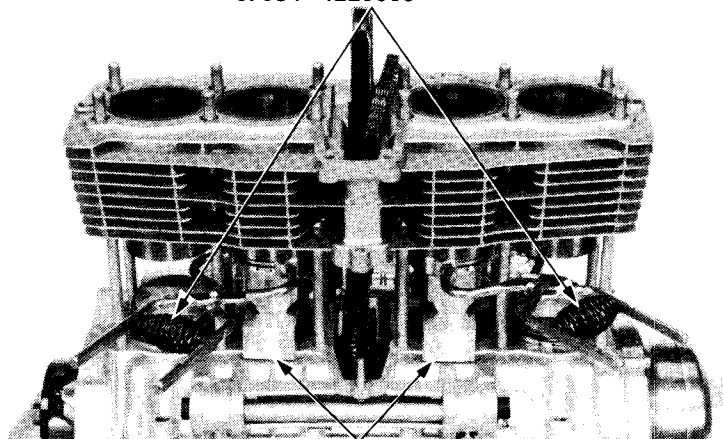


Install the cylinder.

**NOTE**

Before using the special tools, position the No. 2 and No. 3 pistons at T. D. C. (Top Dead Center).

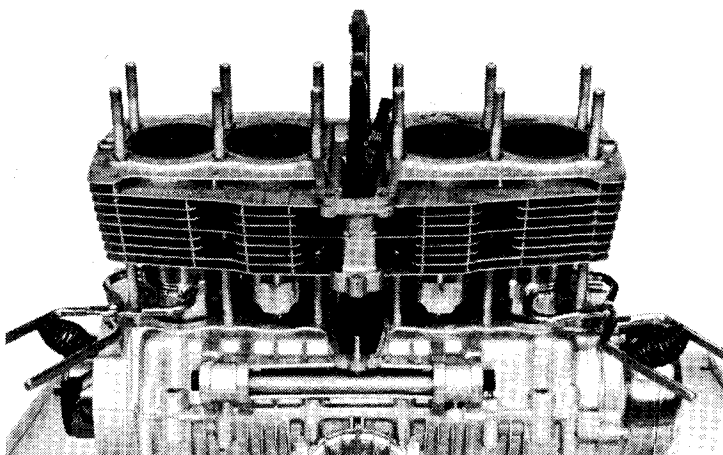
PISTON RING COMPRESSOR  
07954-4220000



PISTON BASE  
07958-3000000

Tighten the cylinder base nut securely after installation.

Install a new cylinder head gasket. Install the dowel pins and cam chain guide.  
Install the cylinder head (section 6).

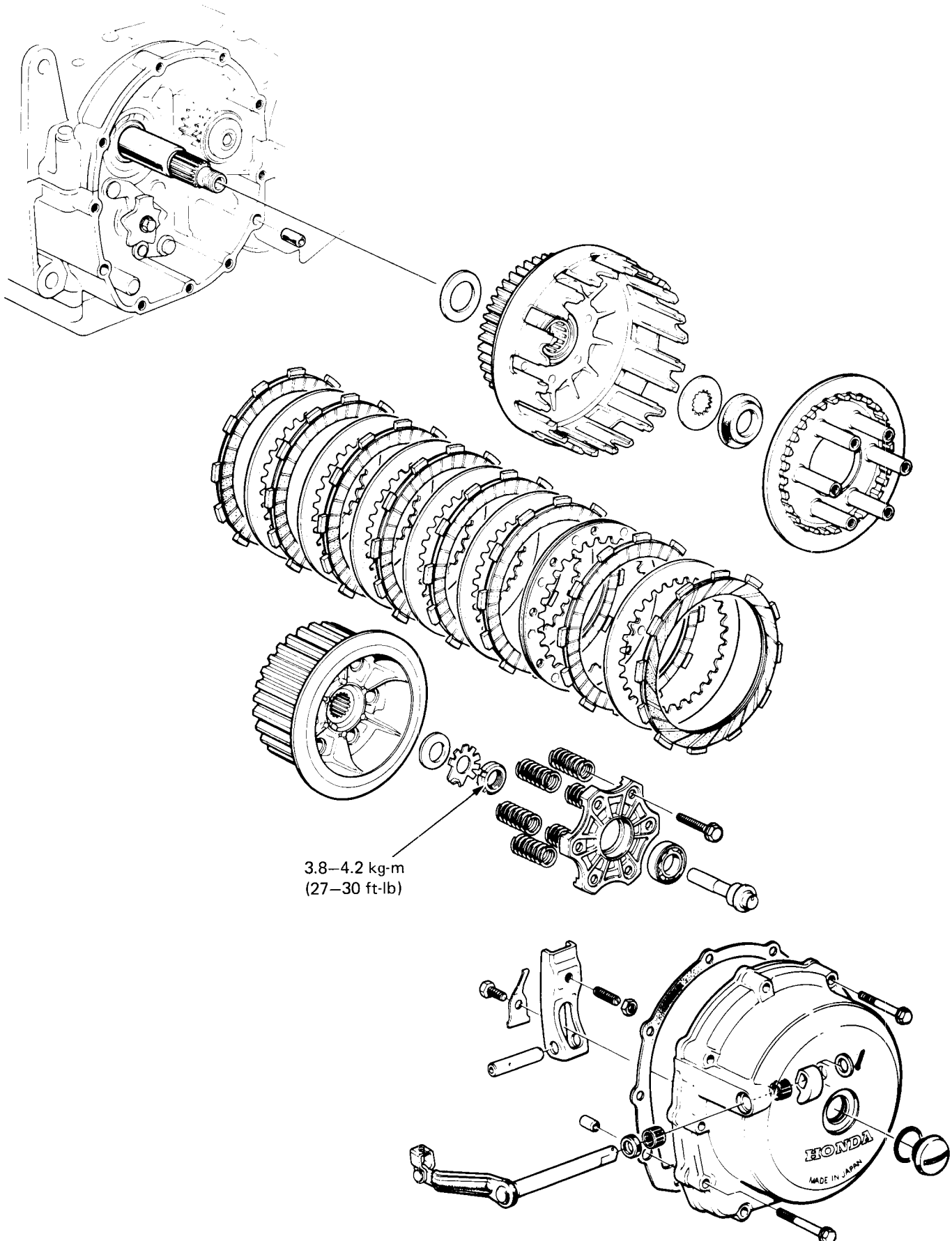




**HONDA**  
**CB900C**

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MEMO



3.8-4.2 kg-m  
(27-30 ft-lb)



|                      |     |                            |      |
|----------------------|-----|----------------------------|------|
| SERVICE INFORMATION  | 8-1 | CLUTCH INSTALLATION        | 8-6  |
| TROUBLESHOOTING      | 8-2 | CLUTCH COVER INSTALLATION  | 8-8  |
| CLUTCH COVER REMOVAL | 8-3 | STARTER CLUTCH DISASSEMBLY | 8-10 |
| CLUTCH REMOVAL       | 8-3 | STARTER CLUTCH ASSEMBLY    | 8-12 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- This section covers removal and installation of the clutch and starter clutch.
- Clutch maintenance can be done with the engine in the frame.

### TOOLS

#### Special

Primary Gear Holder

07924-4250000

Clutch Center Holder

07923-3710000

10 mm Socket Bit

07916-3710000

or Commercially available in U.S.A.

#### Common

Lock Nut Wrench 20 x 24 mm  
Handle

07716-0020100

07716-0020500

or Commercially available in U.S.A.

### TORQUE VALUES

|                              |                             |
|------------------------------|-----------------------------|
| Clutch lock nut              | 3.8- 4.2 kg-m (27-30 ft-lb) |
| Primary drive gear lock bolt | 8.0-10.0 kg-m (60-72 ft-lb) |
| Starter clutch locking bolt  | 2.6- 3.0 kg-m (19-22 ft-lb) |
| Spark advancer bolt          | 3.3- 3.7 kg-m (24-27 ft-lb) |

### SPECIFICATIONS

|                 |                                | STANDARD  | SERVICE LIMIT                       |
|-----------------|--------------------------------|---|-------------------------------------|
| Clutch          | Lever free play (at lever end) | 10-20 mm (3/8-3/4 in)                           | —                                   |
|                 | Spring free length             | 35.3 mm (1.39 in)                               | 33.9 mm (1.33 in)                   |
|                 | Spring preload/length          | 18.3-20.1 kg/25 mm<br>(40.34-43.31 lbs/0.98 in) | 16.8 kg/25 mm<br>(37.0 lbs/0.98 in) |
|                 | Disc thickness                 | A   | 3.72-3.88 mm (0.146-0.153 in)       |
|                 |                                | B   | 3.72-3.88 mm (0.146-0.153 in)       |
|                 | Plate warpage                  | —   | 0.30 mm (0.012 in)                  |
| Starter clutch  | Drive gear O.D.                | 42.275-42.300 mm (1.6644-1.6654 in)             | 42.255 mm (1.6636 in)               |
| Ignition timing | Refer to Section 3.            |   |                                     |



## TROUBLESHOOTING

### Clutch

Faulty clutch operation can usually be corrected by adjusting the free play.

#### Clutch slips

1. No free play
2. Discs worn
3. Springs weak

#### Clutch will not disengage

1. Too much free play
2. Plates warped

#### Motorcycle creeps with clutch disengaged

1. Too much free play
2. Plates warped

#### Excessive lever pressure

1. Clutch cable kinked, damaged or dirty
2. Lifter mechanism damaged

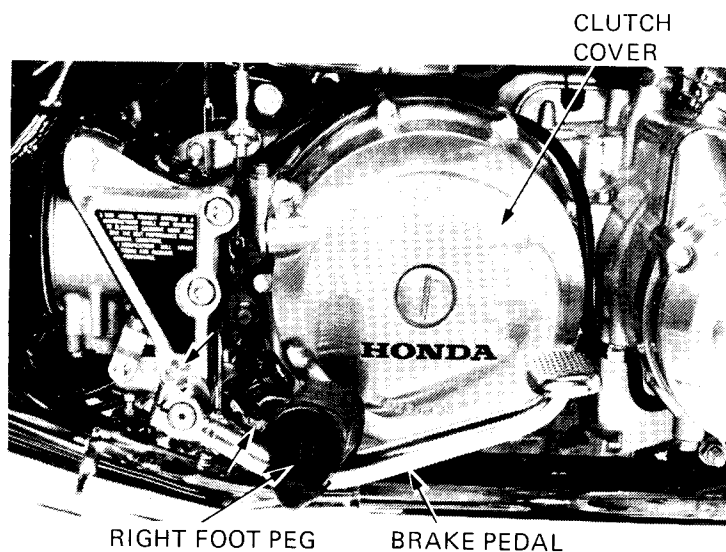
#### Clutch operation feels rough

1. Outer drum slots rough



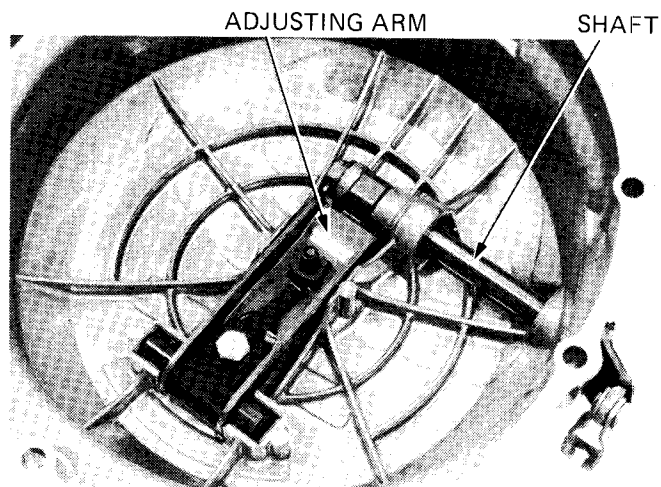
## CLUTCH COVER REMOVAL

Drain the engine oil thoroughly.  
Disconnect the clutch cable at the lower adjuster.  
Remove the rear brake pedal and right foot peg.  
Remove the clutch cover.  
Remove the gasket and dowel pins.



## CLUTCH LIFTER REMOVAL

Remove the clutch lifter shaft and adjusting arm.



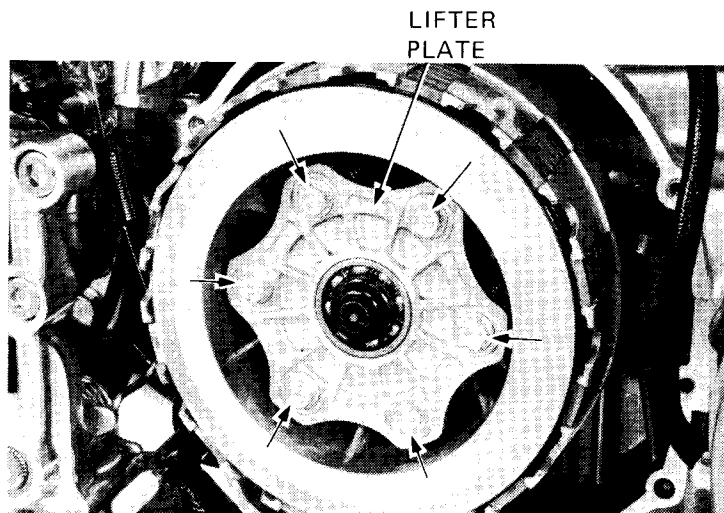
## CLUTCH REMOVAL

Remove the bolts and lifter plate with the clutch lifter guide and release bearing.

### NOTE

Loosen the bolts in a crisscross pattern in 2-3 steps.

Remove the clutch springs.



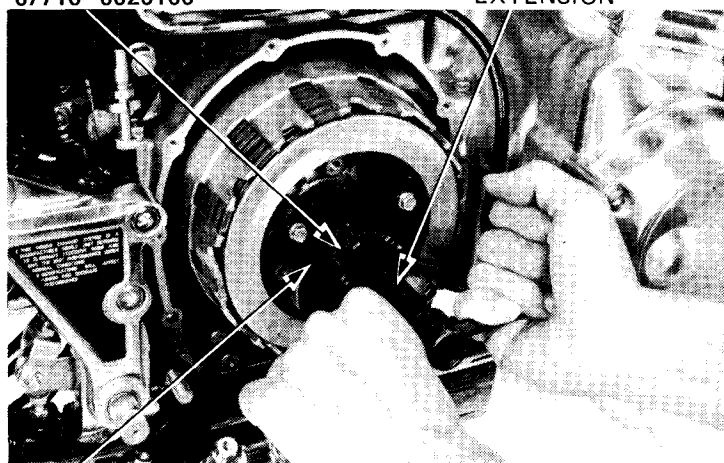


Straighten the lock washer tab.

Install the clutch holder on the clutch center with three, 6 mm bolts.

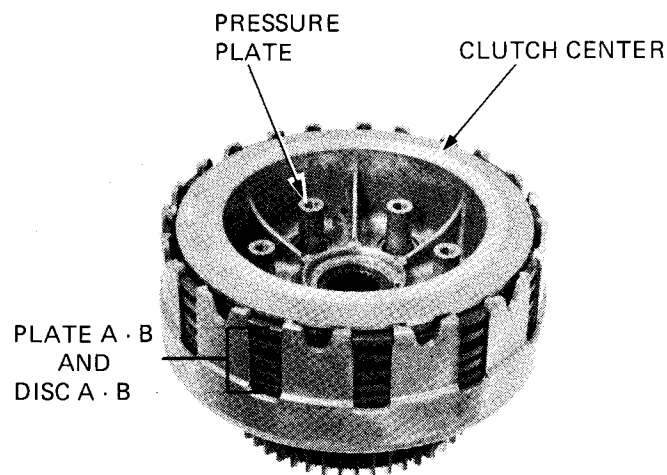
Remove the lock nut, lock washer and washer. The clutch can now be removed as a unit.

LOCK NUT WRENCH 20 x 24 mm  
07716-0020100



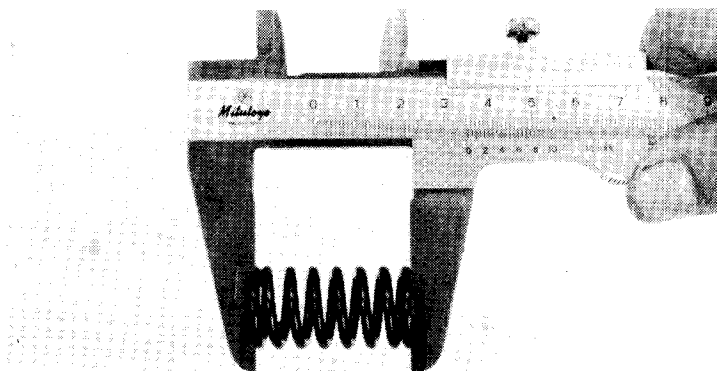
CLUTCH CENTER HOLDER  
07923-3710000

Remove the clutch assembly.



### CLUTCH SPRING INSPECTION

Check spring free length.



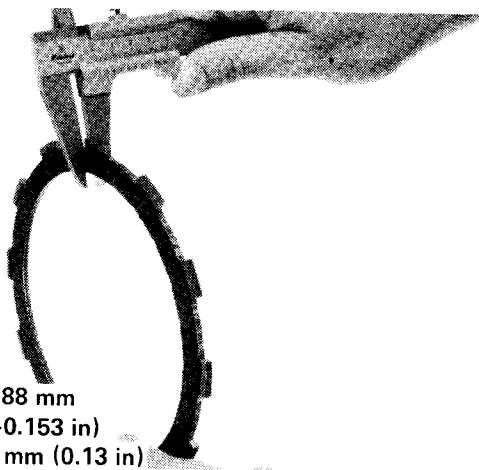
STANDARD: 35.3 mm (1.39 in)  
SERVICE LIMIT: 33.9 mm (1.33 in)





### CLUTCH DISC INSPECTION

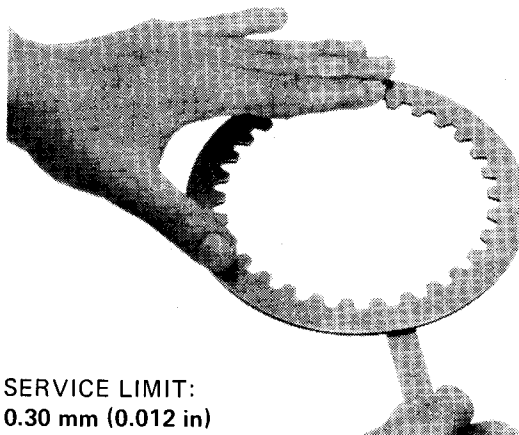
Replace the clutch discs if they show signs of scoring or discoloration.  
Measure disc thickness.



STANDARD: 3.72–3.88 mm  
(0.146–0.153 in)  
SERVICE LIMIT: 3.4 mm (0.13 in)

### PLATE INSPECTION

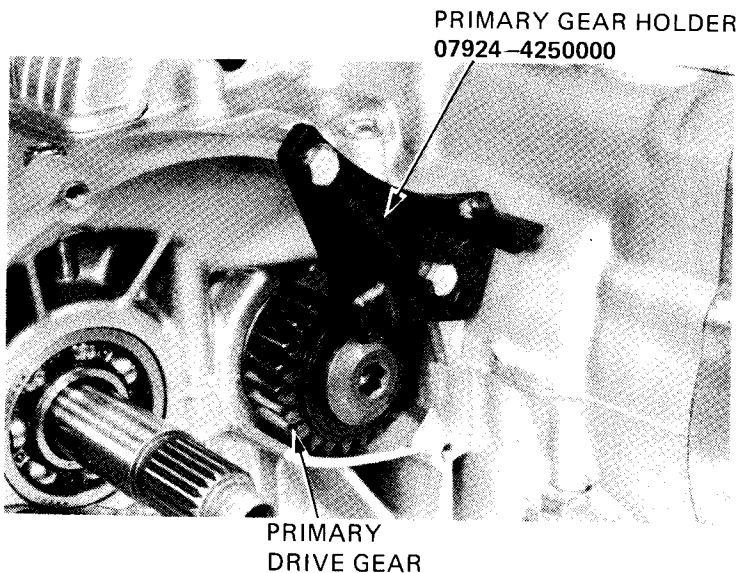
Check for plate warpage on a surface plate, using a feeler gauge.



SERVICE LIMIT:  
0.30 mm (0.012 in)

### PRIMARY DRIVE GEAR REMOVAL

Hold the primary drive gear with the primary gear holder as shown.  
Loosen the lock bolt.



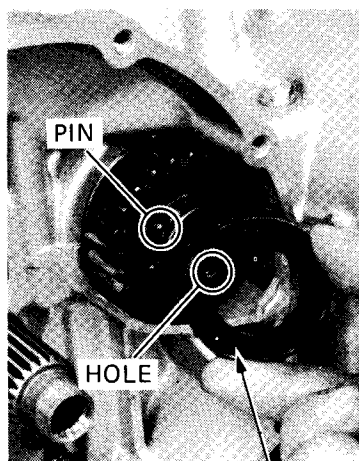


## CLUTCH INSTALLATION

Install the primary drive gear.

### NOTE

- Position the drive gear with the large gear facing out.
- Position the collar and lock washer as shown.



COLLAR



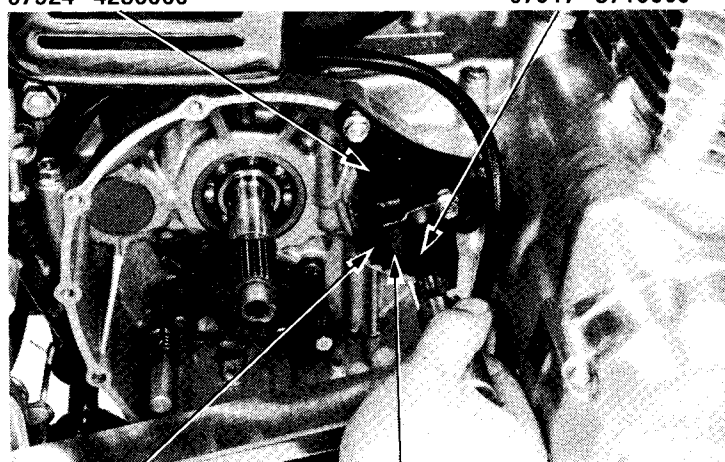
LOCK WASHER

Tighten the lock bolt.

**TORQUE: 8.0–10.0 kg-m (60–72 ft-lb)**

PRIMARY GEAR HOLDER  
07924-4250000

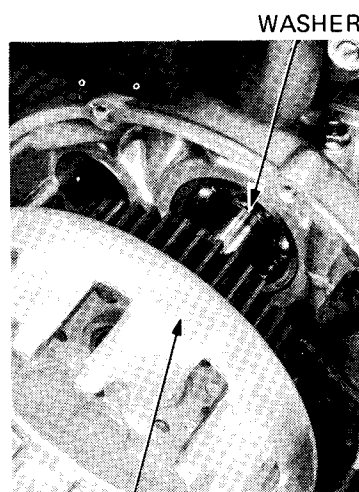
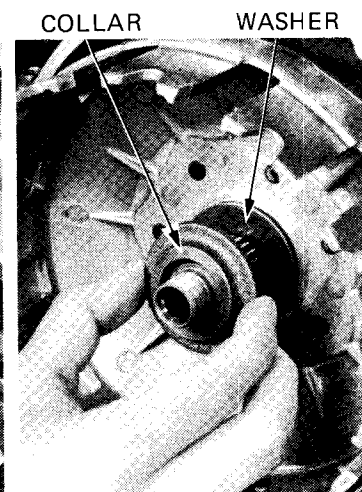
10 mm SOCKET BIT  
07917-3710000



PRIMARY DRIVE GEAR LOCK BOLT

Install the washer and clutch outer.

Install the washer and collar.

CLUTCH  
OUTER

COLLAR

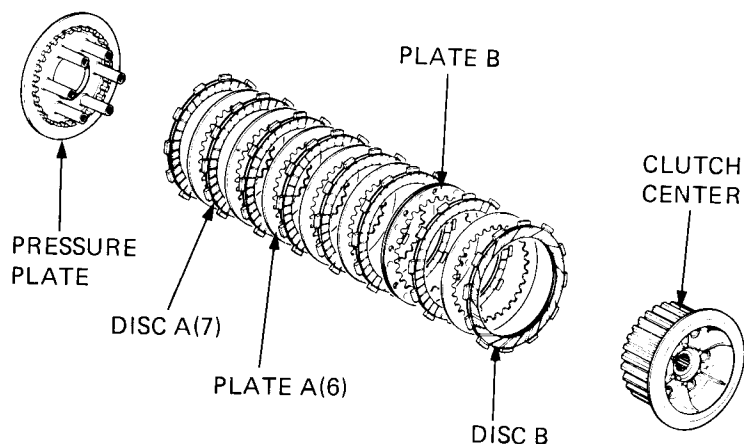
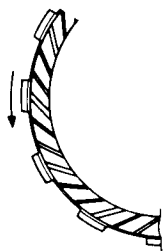
WASHER



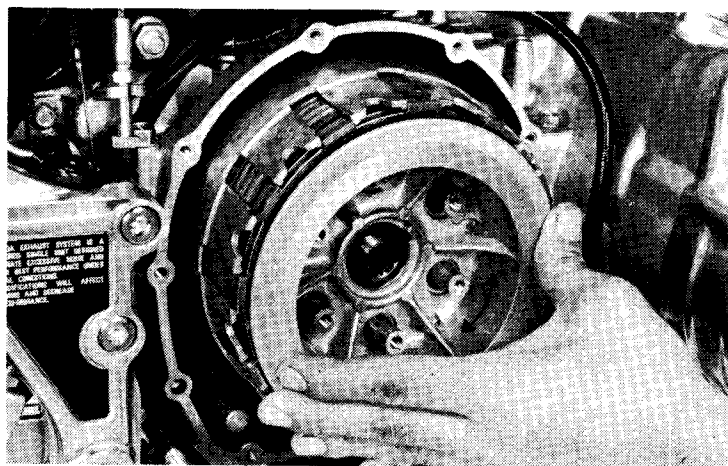
Assemble the clutch discs A and B, plate A and B, clutch pressure plate, and clutch center.

### NOTE

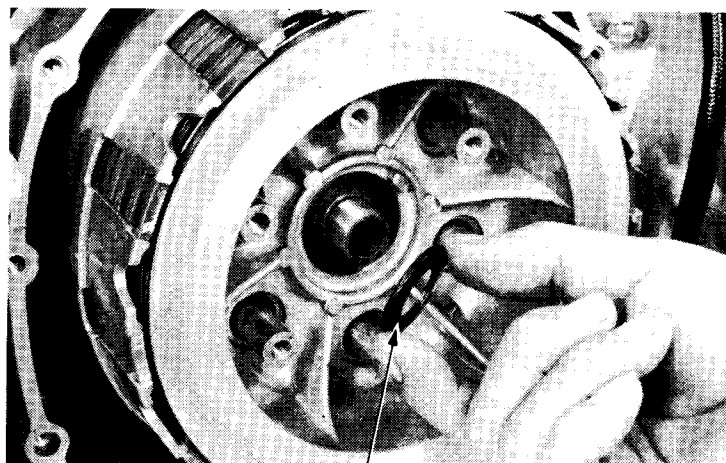
- Before installing the clutch, coat the discs and plates with engine oil.
- Install disc B with the grooves facing in the direction shown.



Install the above assembly, by rotating the clutch center.



Install the plain washer with the "OUTSIDE" mark facing out.

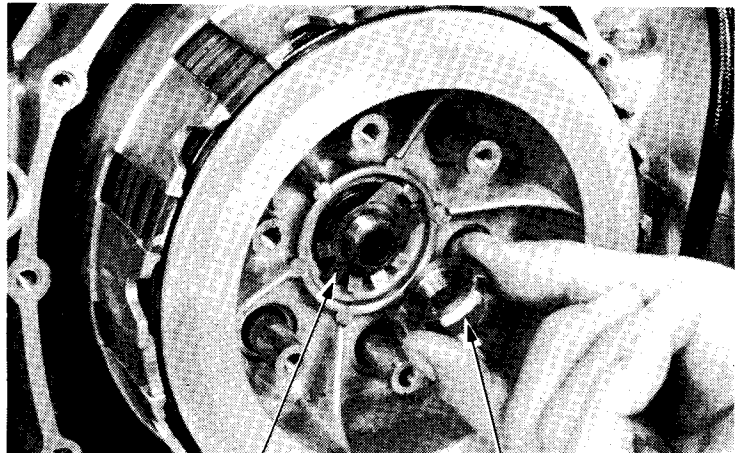


WASHER



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Position the lock washer as shown.  
Install the lock nut with the chamfer facing out.



LOCK WASHER

LOCK NUT

Install the clutch holder on the clutch center with three, 6 mm bolts.

Tighten the lock nut.

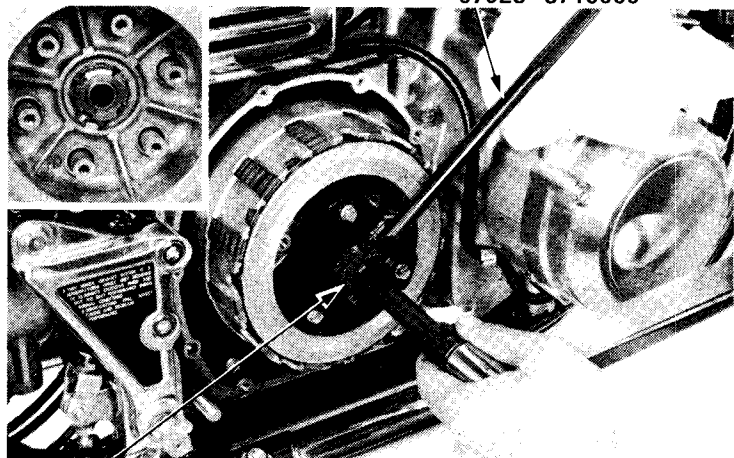
**TORQUE: 3.8–4.2 kg-m (27–30 ft-lb)**

Bend the lock washer tab as shown.

Install the clutch springs, lifter plate, bearing and lifter guide.

Tighten the bolts.

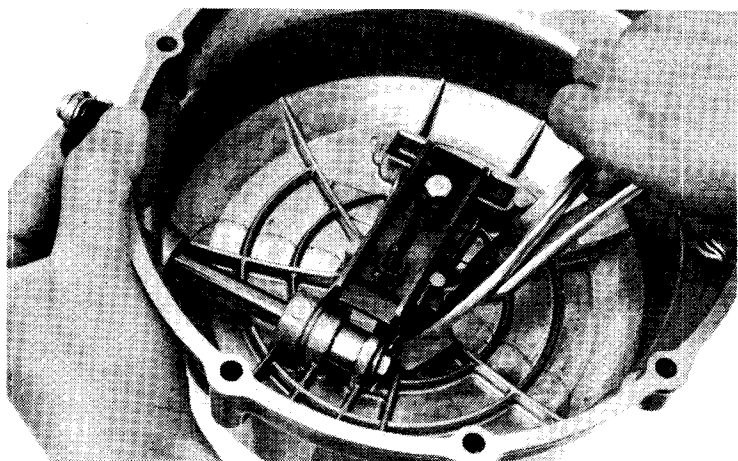
CLUTCH  
CENTER HOLDER  
07923-3710000



LOCK NUT WRENCH  
20 x 24 mm  
07716-0020100

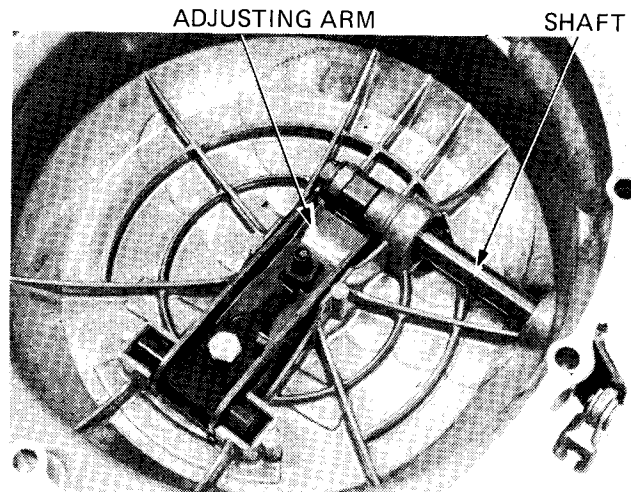
## CLUTCH COVER INSTALLATION

Install the clutch lifter cam and shaft washer.  
Insert the cotter pin and spread the ends.  
Apply molybdenum disulfide grease to the  
advancer shaft hole.

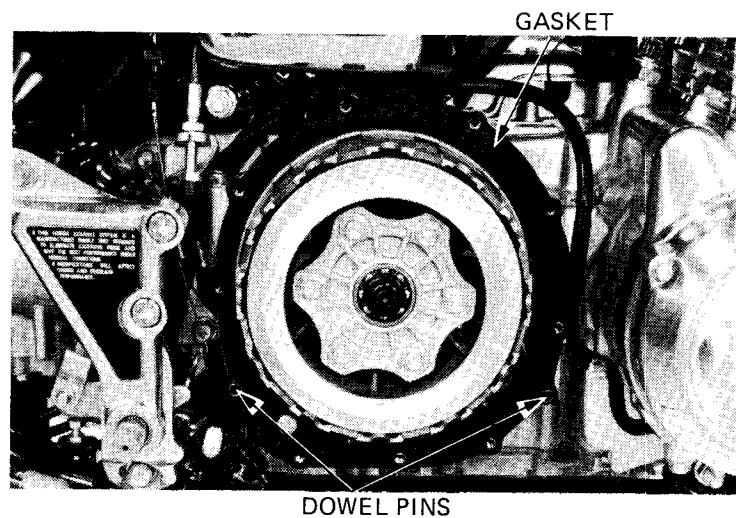




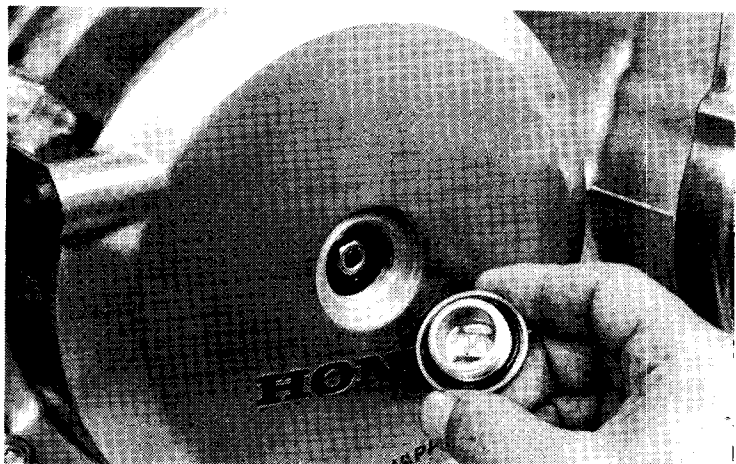
Install the adjusting arm and spring.



Install the dowel pins and gasket, and then install the cover.



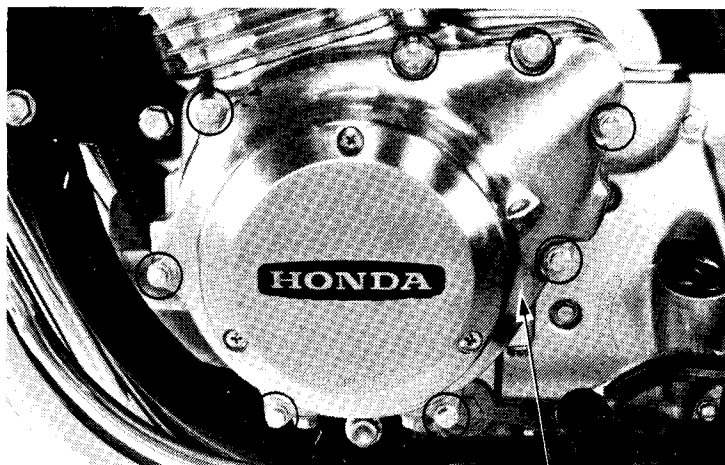
Adjust the clutch (page 3-17).  
Apply grease to the adjusting hole cap O-ring and install.





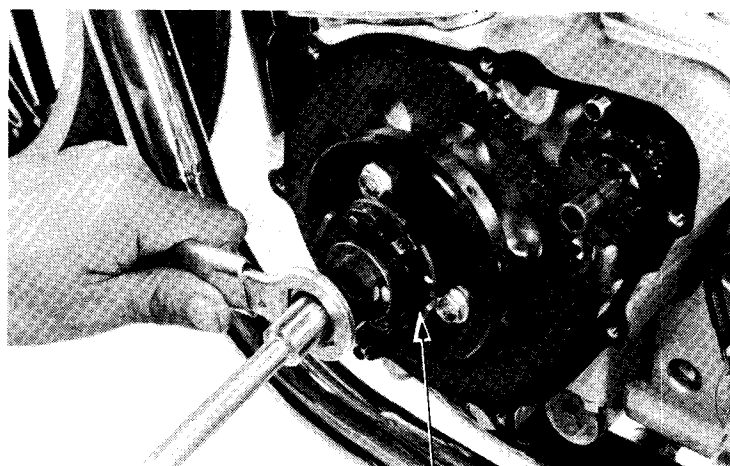
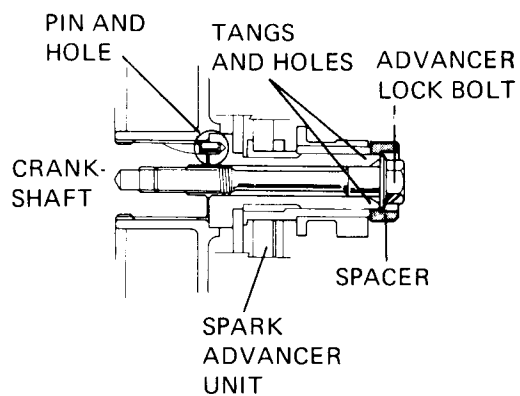
## STARTER CLUTCH DISASSEMBLY

Remove the left crankcase cover with the pulser generator assembly.



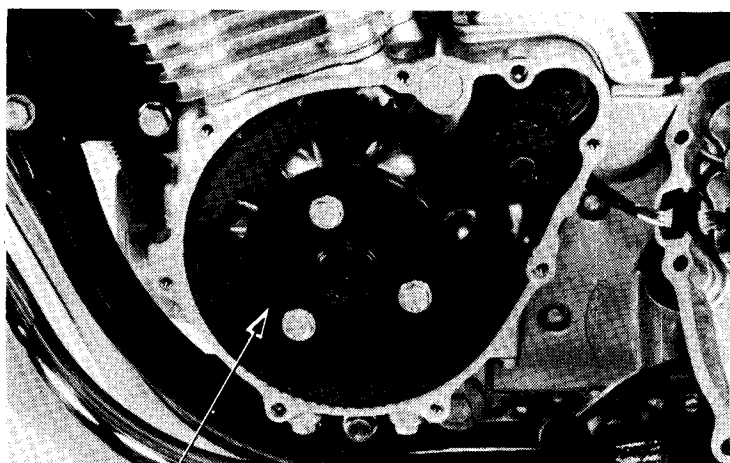
LEFT CRANKCASE  
COVER

Remove the spark advancer unit.



SPARK ADVANCER

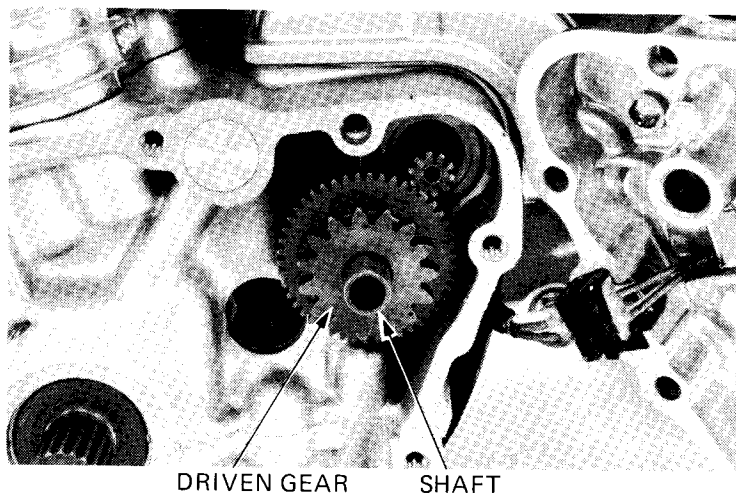
Remove the starter clutch assembly.



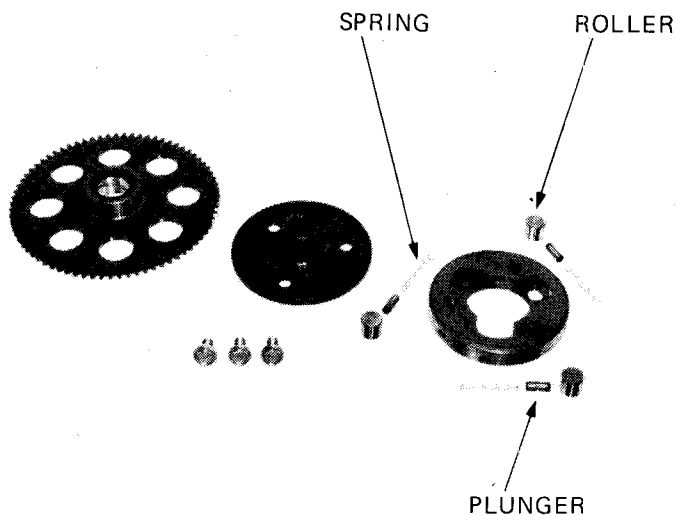
STARTER CLUTCH



Remove the starter driven gear and shaft.



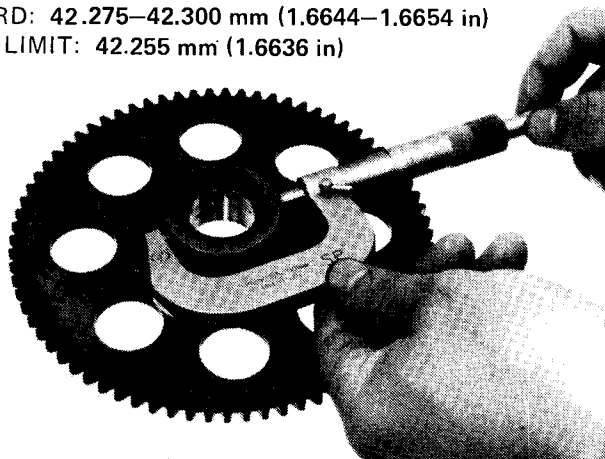
Inspect the rollers for smooth operation.  
Remove the rollers and check for excessive wear.  
Clean all parts with non-flammable or high flash point solvent.



## STARTER DRIVE GEAR INSPECTION

Inspect the drive gear for damage or excessive wear.  
Measure the O. D..

STANDARD: 42.275–42.300 mm (1.6644–1.6654 in)  
SERVICE LIMIT: 42.255 mm (1.6636 in)





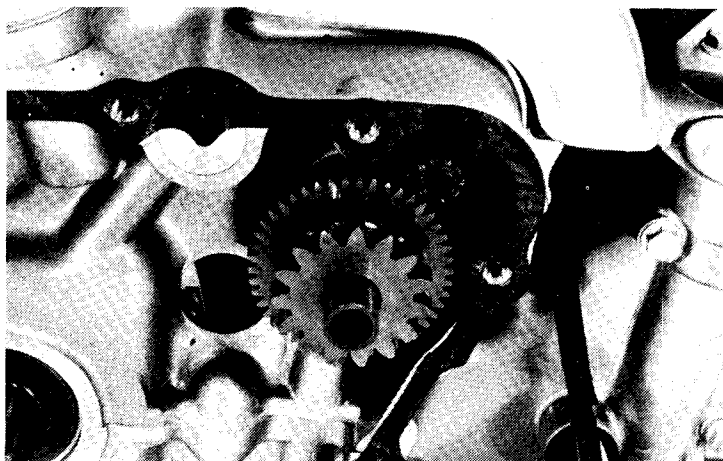
## STARTER CLUTCH ASSEMBLY

Install the springs, plungers and rollers.  
Tighten the locking bolts to the specified torque.

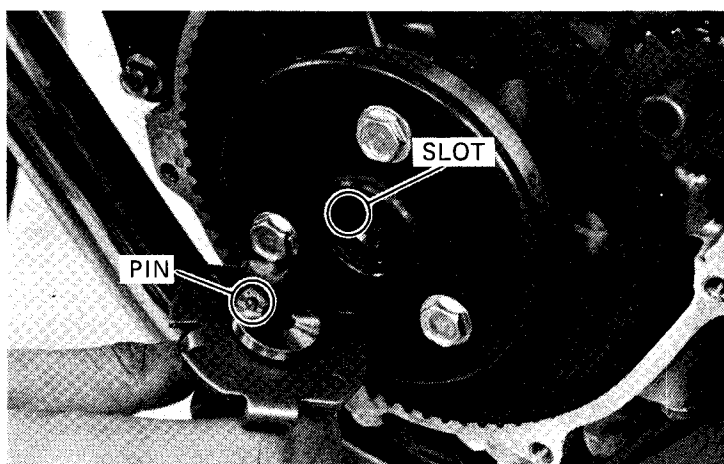
**TORQUE:** 2.6–3.0 kg-m (19–22 ft-lb)

### NOTE

Apply a locking agent to the locking bolt's threads.



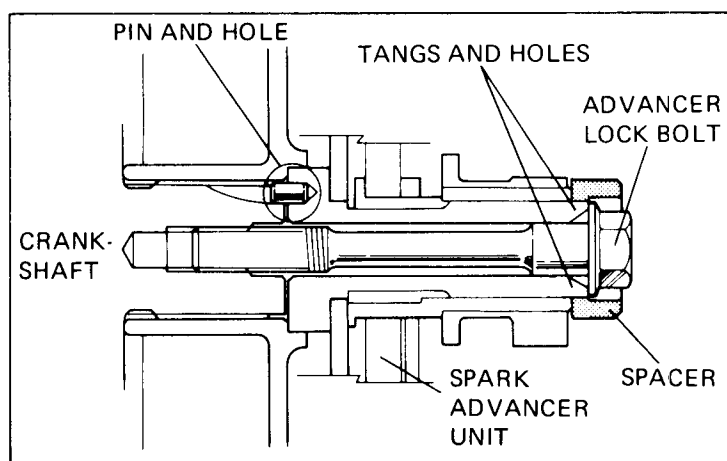
Install the advancer assembly.  
Align the pin on the spark advancer unit with the slot on the crankshaft.



Install the spacer aligning the tangs with the holes, and tighten the advancer lock bolt to the specified torque.

**TORQUE:** 3.3–3.7 kg-m (24–27 ft-lb)

Install the left crankcase cover.



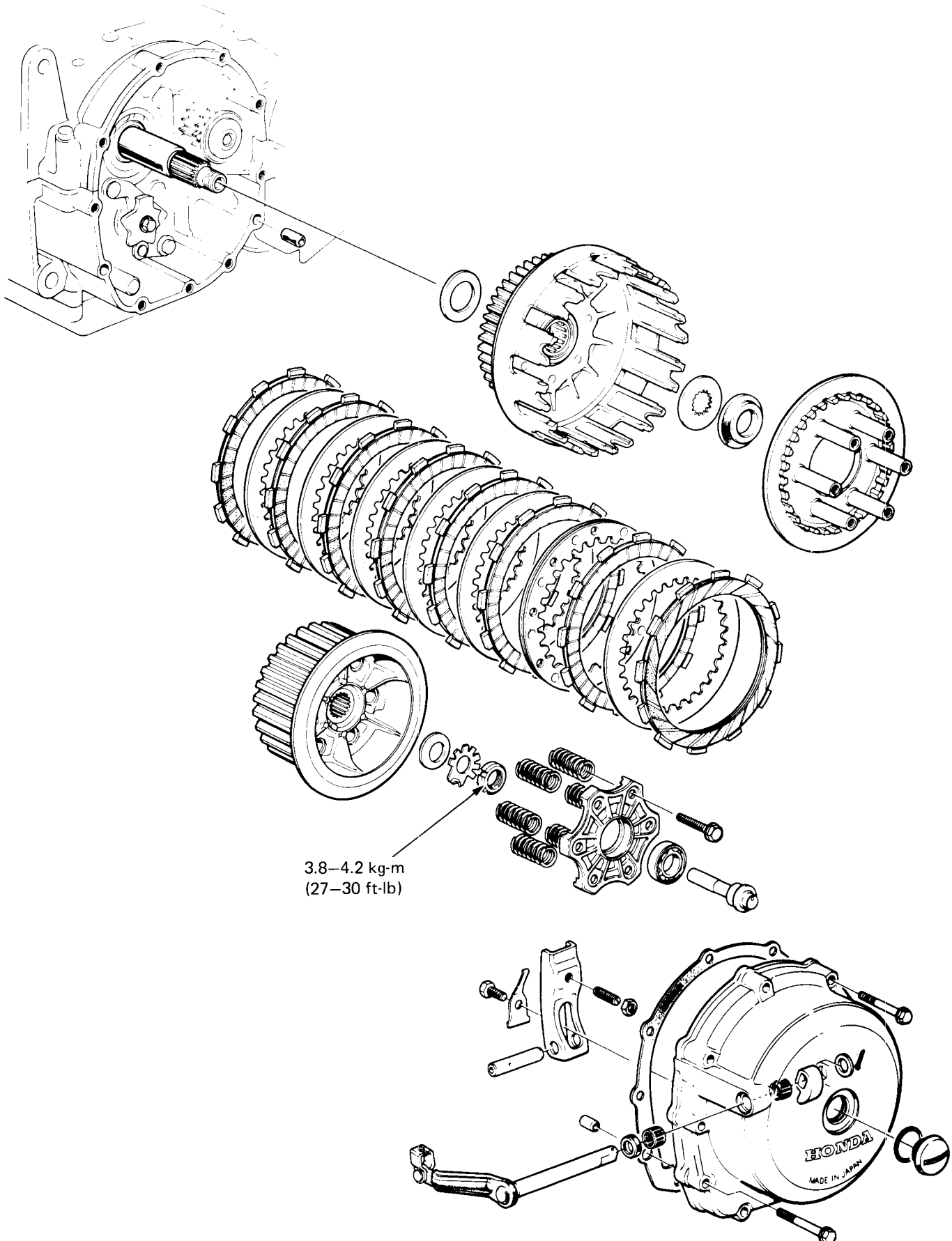




**HONDA**  
**CB900C**

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MEMO





|                      |     |                            |      |
|----------------------|-----|----------------------------|------|
| SERVICE INFORMATION  | 8-1 | CLUTCH INSTALLATION        | 8-6  |
| TROUBLESHOOTING      | 8-2 | CLUTCH COVER INSTALLATION  | 8-8  |
| CLUTCH COVER REMOVAL | 8-3 | STARTER CLUTCH DISASSEMBLY | 8-10 |
| CLUTCH REMOVAL       | 8-3 | STARTER CLUTCH ASSEMBLY    | 8-12 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- This section covers removal and installation of the clutch and starter clutch.
- Clutch maintenance can be done with the engine in the frame.

### TOOLS

#### Special

|                      |               |                                     |
|----------------------|---------------|-------------------------------------|
| Primary Gear Holder  | 07924-4250000 |                                     |
| Clutch Center Holder | 07923-3710000 |                                     |
| 10 mm Socket Bit     | 07916-3710000 | or Commercially available in U.S.A. |

#### Common

|                            |               |                                     |
|----------------------------|---------------|-------------------------------------|
| Lock Nut Wrench 20 x 24 mm | 07716-0020100 | or Commercially available in U.S.A. |
| Handle                     | 07716-0020500 |                                     |

### TORQUE VALUES

|                              |                             |
|------------------------------|-----------------------------|
| Clutch lock nut              | 3.8- 4.2 kg-m (27-30 ft-lb) |
| Primary drive gear lock bolt | 8.0-10.0 kg-m (60-72 ft-lb) |
| Starter clutch locking bolt  | 2.6- 3.0 kg-m (19-22 ft-lb) |
| Spark advancer bolt          | 3.3- 3.7 kg-m (24-27 ft-lb) |

### SPECIFICATIONS

|                 |                                |   | STANDARD  | SERVICE LIMIT                       |
|-----------------|--------------------------------|---|---|-------------------------------------|
| Clutch          | Lever free play (at lever end) |   | 10-20 mm (3/8-3/4 in)                           | —————                               |
|                 | Spring free length             |   | 35.3 mm (1.39 in)                               | 33.9 mm (1.33 in)                   |
|                 | Spring preload/length          |   | 18.3-20.1 kg/25 mm<br>(40.34-43.31 lbs/0.98 in) | 16.8 kg/25 mm<br>(37.0 lbs/0.98 in) |
|                 | Disc thickness                 | A | 3.72-3.88 mm (0.146-0.153 in)                   | 3.4 mm (0.13 in)                    |
|                 |                                | B | 3.72-3.88 mm (0.146-0.153 in)                   | 3.4 mm (0.13 in)                    |
|                 | Plate warpage                  |   | —————   | 0.30 mm (0.012 in)                  |
| Starter clutch  | Drive gear O.D.                |   | 42.275-42.300 mm (1.6644-1.6654 in)             | 42.255 mm (1.6636 in)               |
| Ignition timing | Refer to Section 3.            |   |   |                                     |



## TROUBLESHOOTING

### Clutch

Faulty clutch operation can usually be corrected by adjusting the free play.

#### Clutch slips

1. No free play
2. Discs worn
3. Springs weak

#### Clutch will not disengage

1. Too much free play
2. Plates warped

#### Motorcycle creeps with clutch disengaged

1. Too much free play
2. Plates warped

#### Excessive lever pressure

1. Clutch cable kinked, damaged or dirty
2. Lifter mechanism damaged

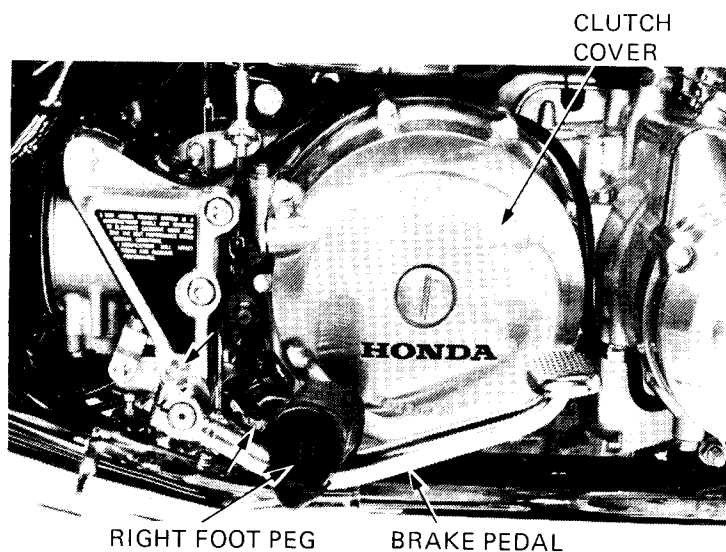
#### Clutch operation feels rough

1. Outer drum slots rough



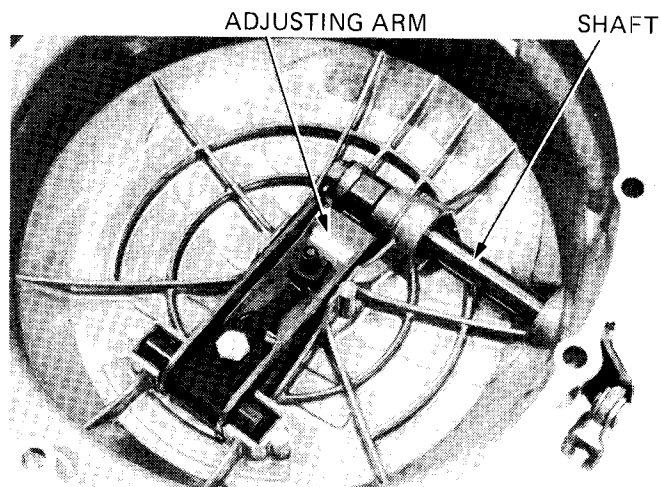
## CLUTCH COVER REMOVAL

Drain the engine oil thoroughly.  
Disconnect the clutch cable at the lower adjuster.  
Remove the rear brake pedal and right foot peg.  
Remove the clutch cover.  
Remove the gasket and dowel pins.



## CLUTCH LIFTER REMOVAL

Remove the clutch lifter shaft and adjusting arm.



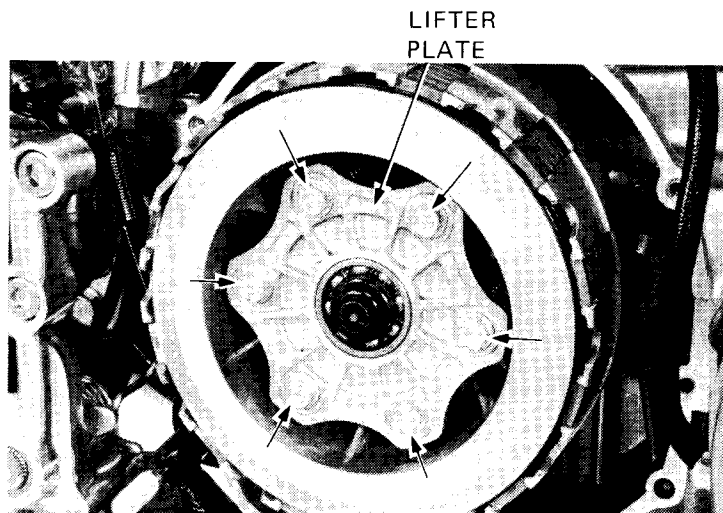
## CLUTCH REMOVAL

Remove the bolts and lifter plate with the clutch lifter guide and release bearing.

### NOTE

Loosen the bolts in a crisscross pattern in 2-3 steps.

Remove the clutch springs.

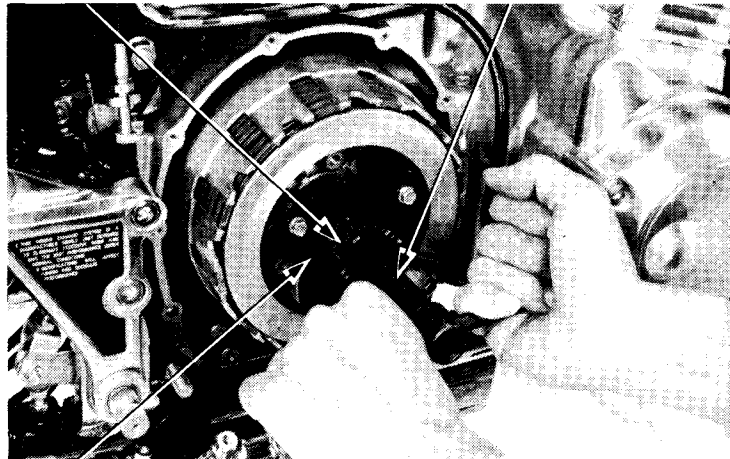




Straighten the lock washer tab.

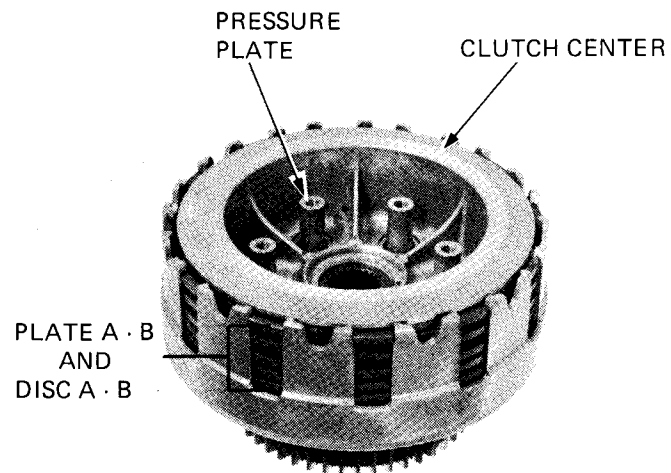
Install the clutch holder on the clutch center with three, 6 mm bolts.  
Remove the lock nut, lock washer and washer.  
The clutch can now be removed as a unit.

LOCK NUT WRENCH 20 x 24 mm  
07716-0020100



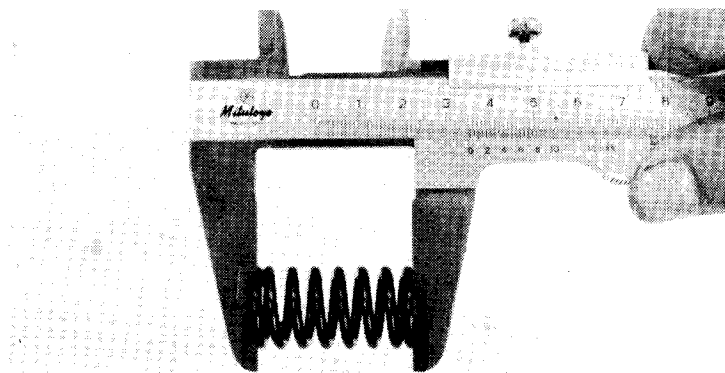
CLUTCH CENTER HOLDER  
07923-3710000

Remove the clutch assembly.



### CLUTCH SPRING INSPECTION

Check spring free length.

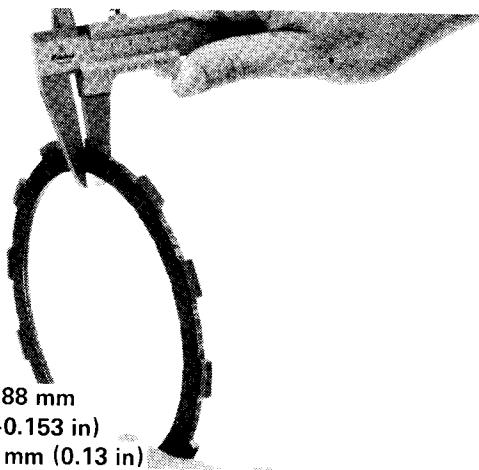


STANDARD: 35.3 mm (1.39 in)  
SERVICE LIMIT: 33.9 mm (1.33 in)



### CLUTCH DISC INSPECTION

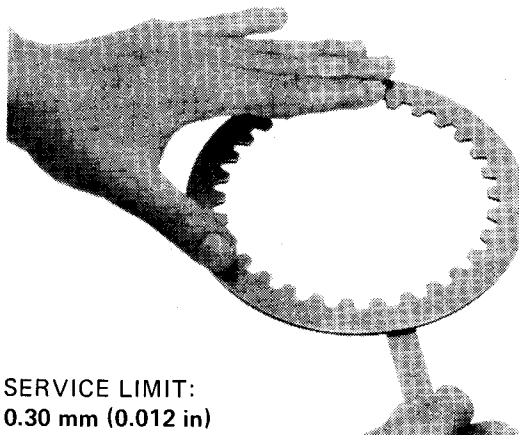
Replace the clutch discs if they show signs of scoring or discoloration.  
Measure disc thickness.



STANDARD: 3.72–3.88 mm  
(0.146–0.153 in)  
SERVICE LIMIT: 3.4 mm (0.13 in)

### PLATE INSPECTION

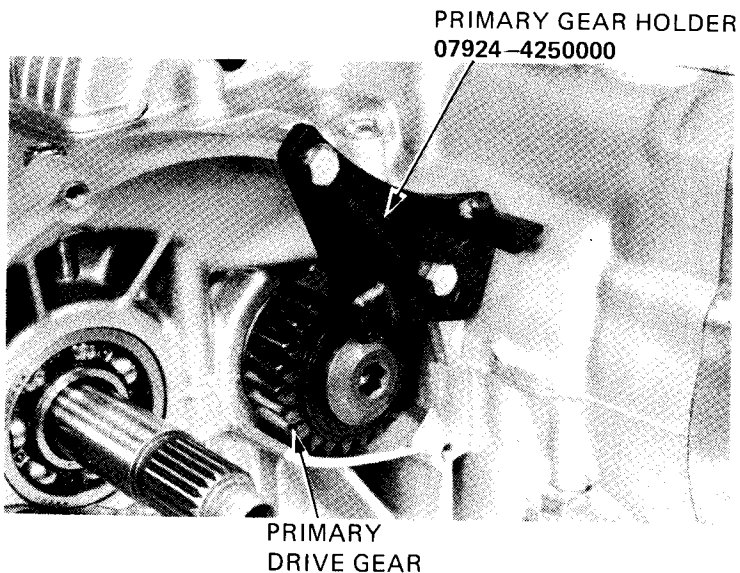
Check for plate warpage on a surface plate, using a feeler gauge.



SERVICE LIMIT:  
0.30 mm (0.012 in)

### PRIMARY DRIVE GEAR REMOVAL

Hold the primary drive gear with the primary gear holder as shown.  
Loosen the lock bolt.



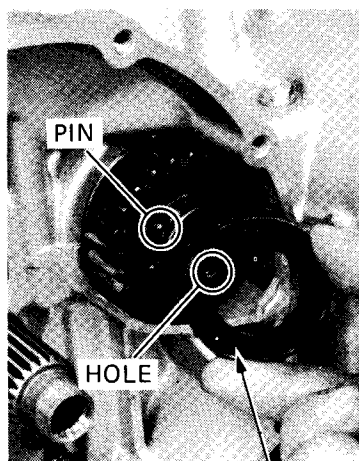


## CLUTCH INSTALLATION

Install the primary drive gear.

### NOTE

- Position the drive gear with the large gear facing out.
- Position the collar and lock washer as shown.



COLLAR



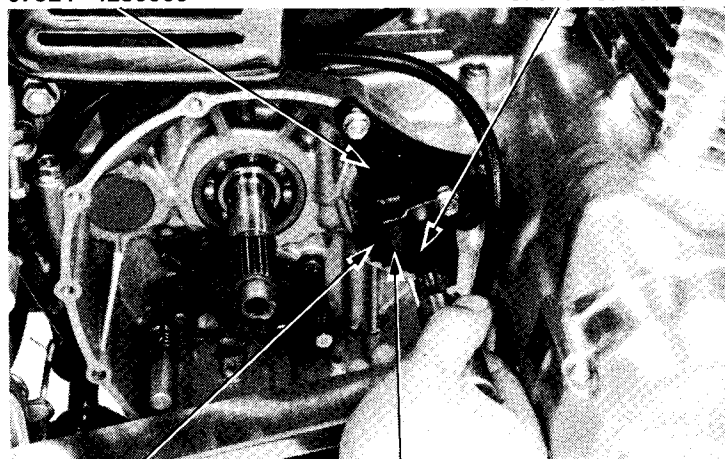
LOCK WASHER

Tighten the lock bolt.

**TORQUE: 8.0–10.0 kg-m (60–72 ft-lb)**

PRIMARY GEAR HOLDER  
07924-4250000

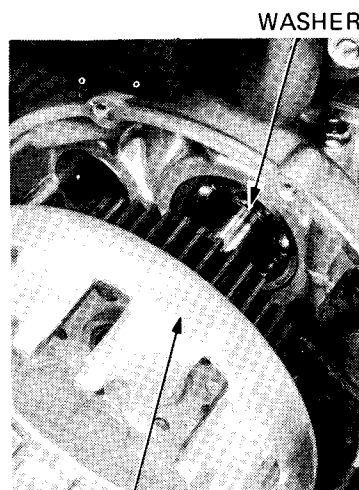
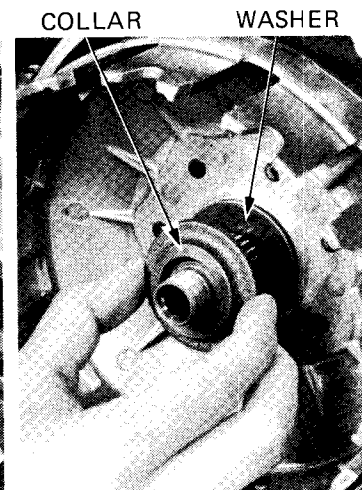
10 mm SOCKET BIT  
07917-3710000



PRIMARY DRIVE GEAR LOCK BOLT

Install the washer and clutch outer.

Install the washer and collar.

CLUTCH  
OUTER

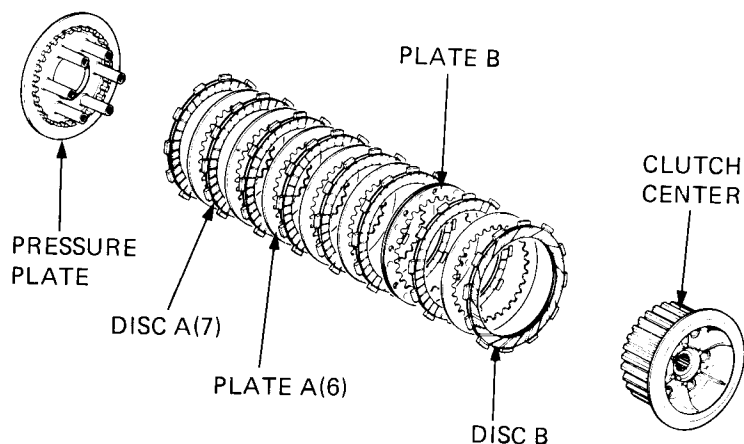
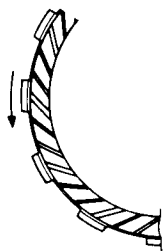




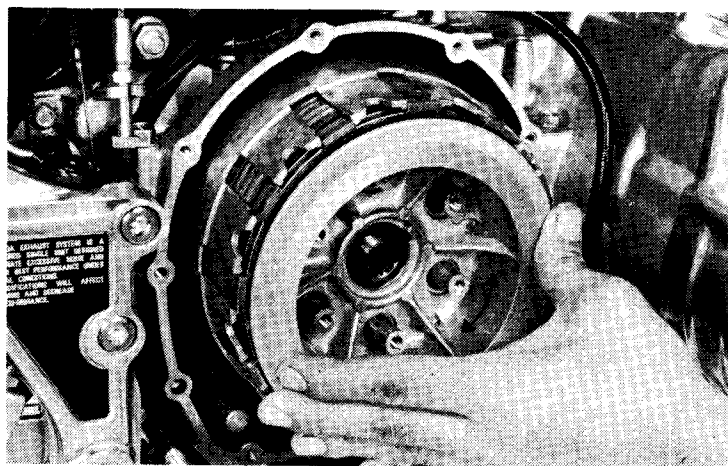
Assemble the clutch discs A and B, plate A and B, clutch pressure plate, and clutch center.

### NOTE

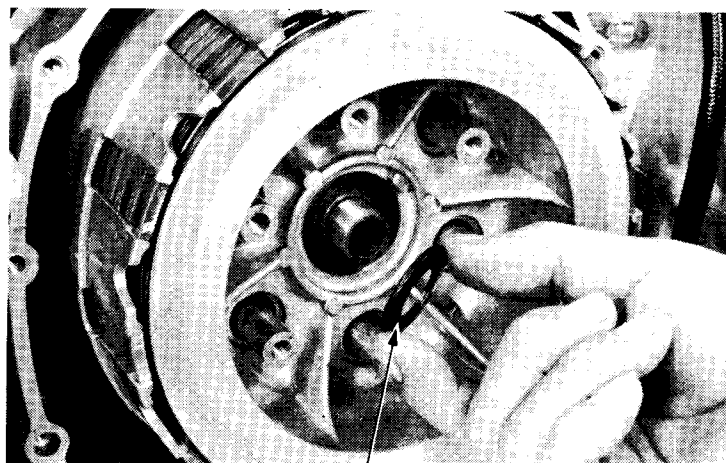
- Before installing the clutch, coat the discs and plates with engine oil.
- Install disc B with the grooves facing in the direction shown.



Install the above assembly, by rotating the clutch center.



Install the plain washer with the "OUTSIDE" mark facing out.

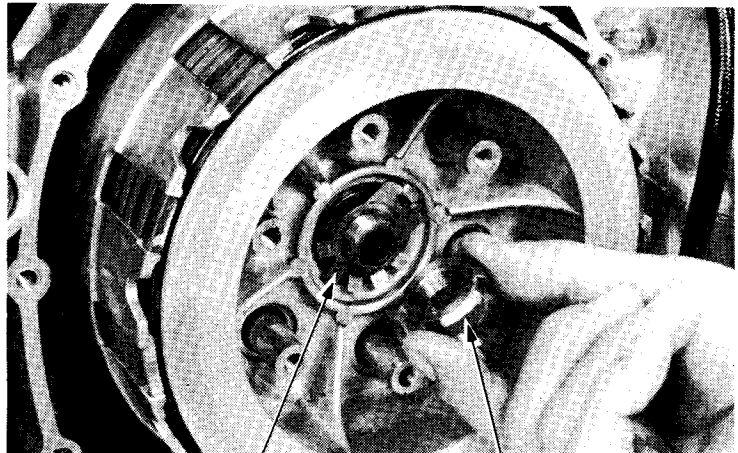


WASHER



## 122 CLUTCH

Position the lock washer as shown.  
Install the lock nut with the chamfer facing out.



LOCK WASHER

LOCK NUT

Install the clutch holder on the clutch center with three, 6 mm bolts.

Tighten the lock nut.

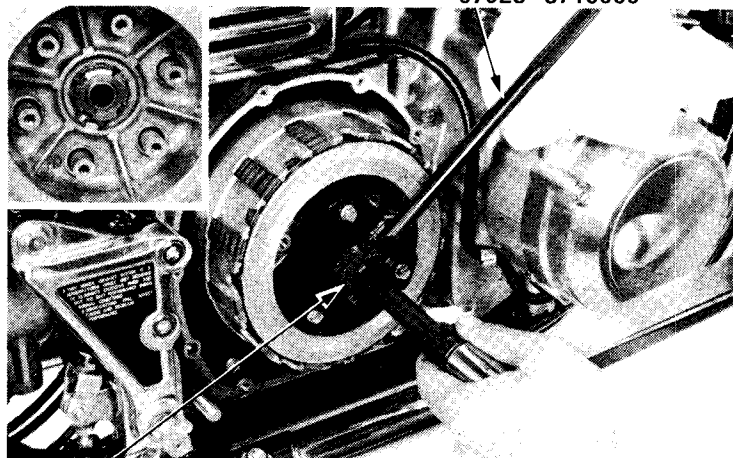
**TORQUE: 3.8–4.2 kg-m (27–30 ft-lb)**

Bend the lock washer tab as shown.

Install the clutch springs, lifter plate, bearing and lifter guide.

Tighten the bolts.

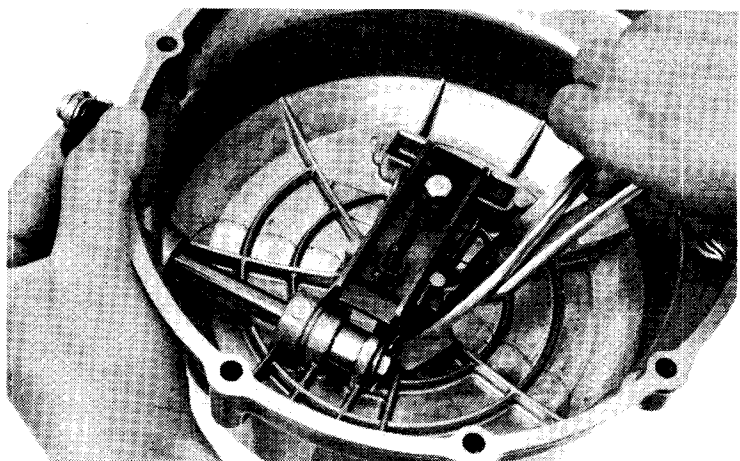
CLUTCH  
CENTER HOLDER  
07923-3710000



LOCK NUT WRENCH  
20 x 24 mm  
07716-0020100

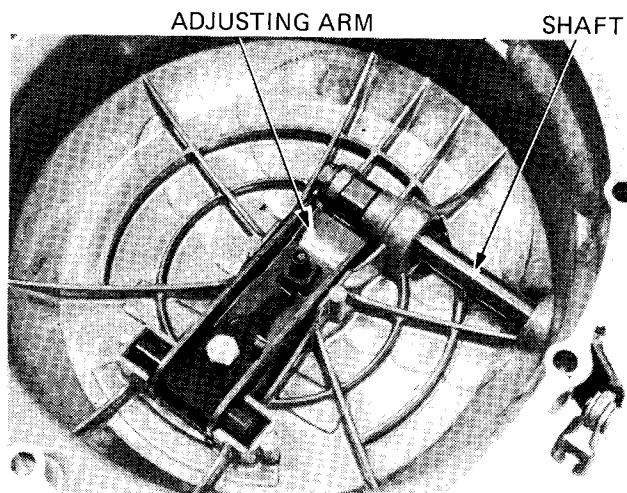
## CLUTCH COVER INSTALLATION

Install the clutch lifter cam and shaft washer.  
Insert the cotter pin and spread the ends.  
Apply molybdenum disulfide grease to the  
advancer shaft hole.

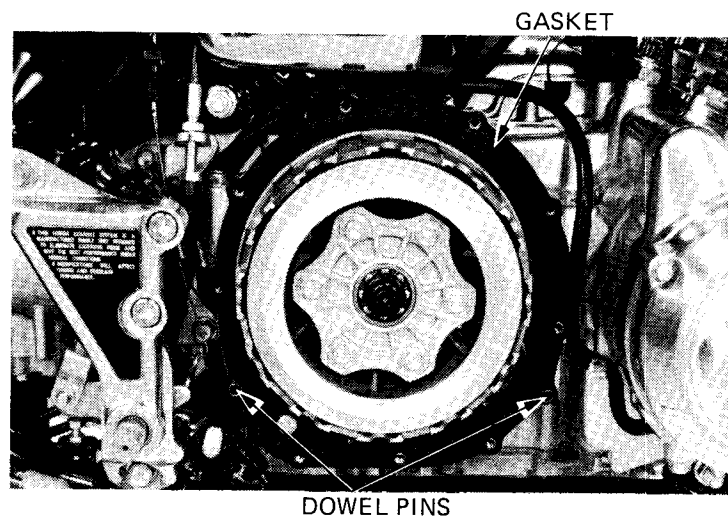




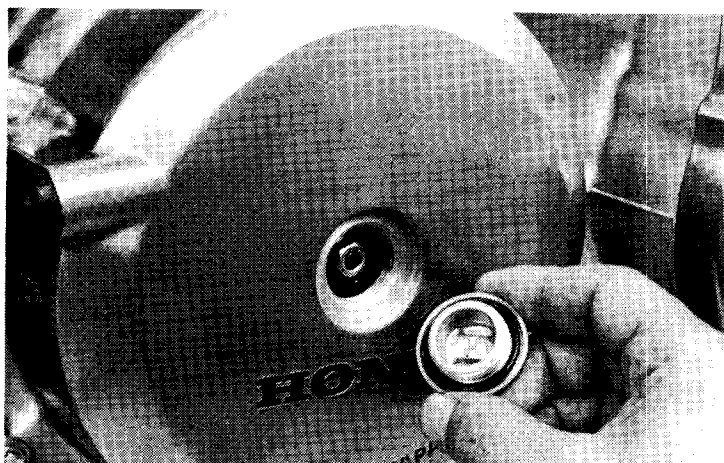
Install the adjusting arm and spring.



Install the dowel pins and gasket, and then install the cover.



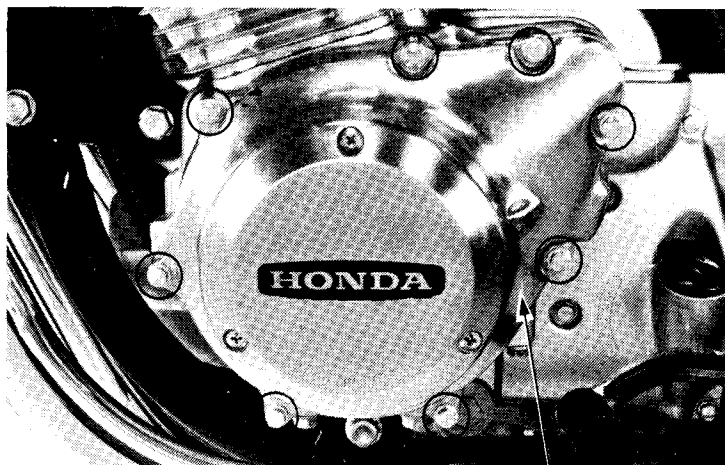
Adjust the clutch (page 3-17).  
Apply grease to the adjusting hole cap O-ring and install.





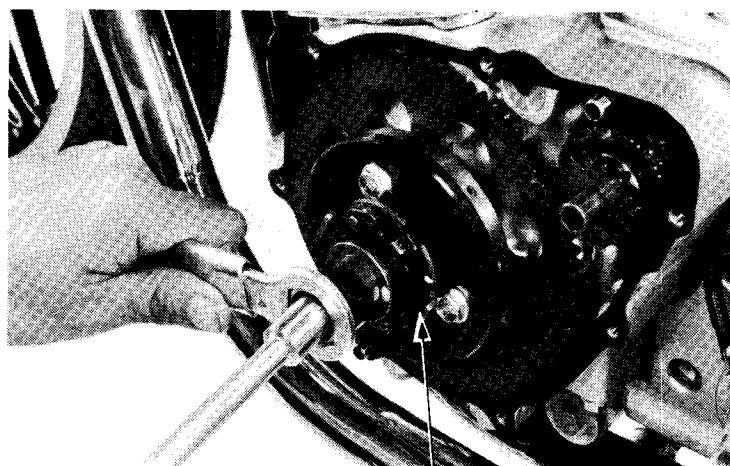
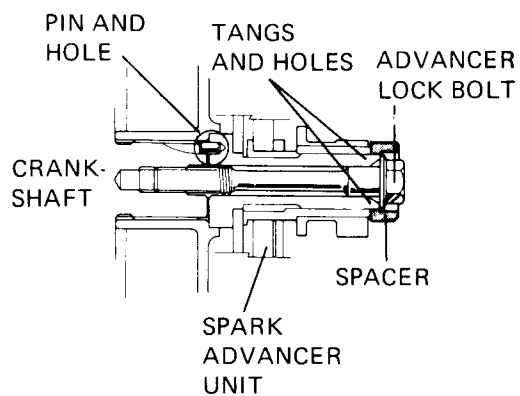
## STARTER CLUTCH DISASSEMBLY

Remove the left crankcase cover with the pulser generator assembly.



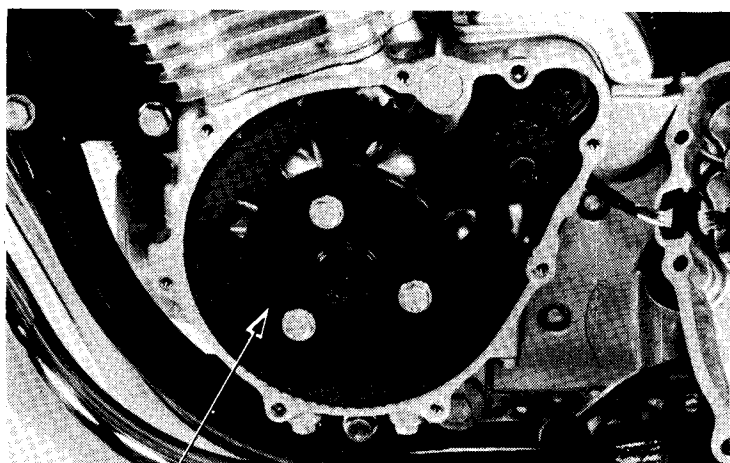
LEFT CRANKCASE  
COVER

Remove the spark advancer unit.



SPARK ADVANCER

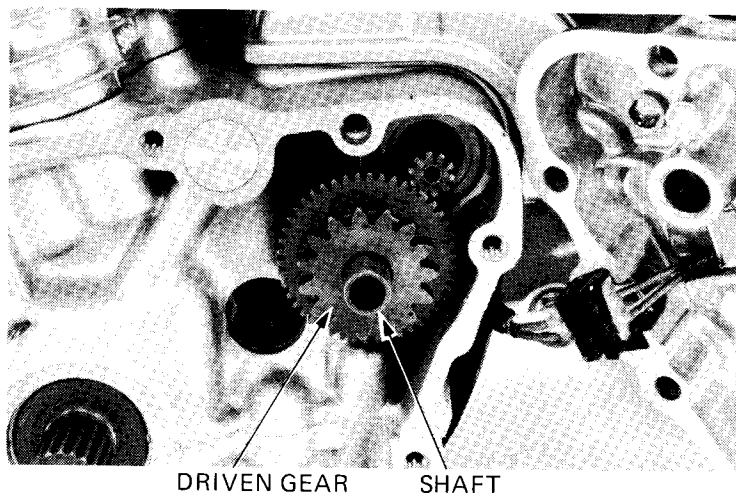
Remove the starter clutch assembly.



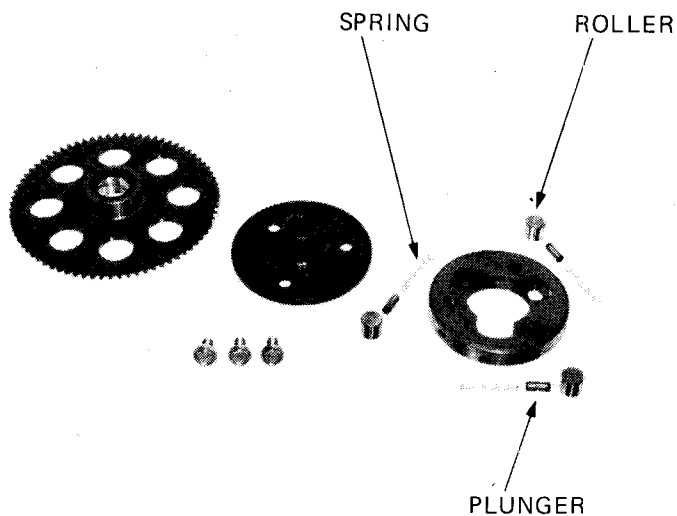
STARTER CLUTCH



Remove the starter driven gear and shaft.



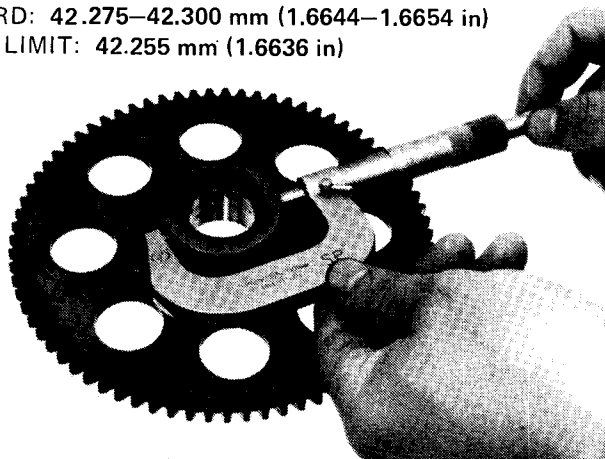
Inspect the rollers for smooth operation.  
Remove the rollers and check for excessive wear.  
Clean all parts with non-flammable or high flash point solvent.



## STARTER DRIVE GEAR INSPECTION

Inspect the drive gear for damage or excessive wear.  
Measure the O. D..

STANDARD: 42.275–42.300 mm (1.6644–1.6654 in)  
SERVICE LIMIT: 42.255 mm (1.6636 in)





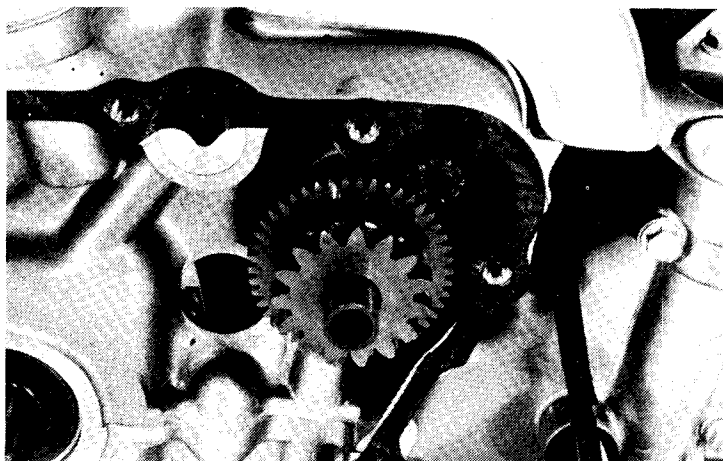
## STARTER CLUTCH ASSEMBLY

Install the springs, plungers and rollers.  
 Tighten the locking bolts to the specified torque.

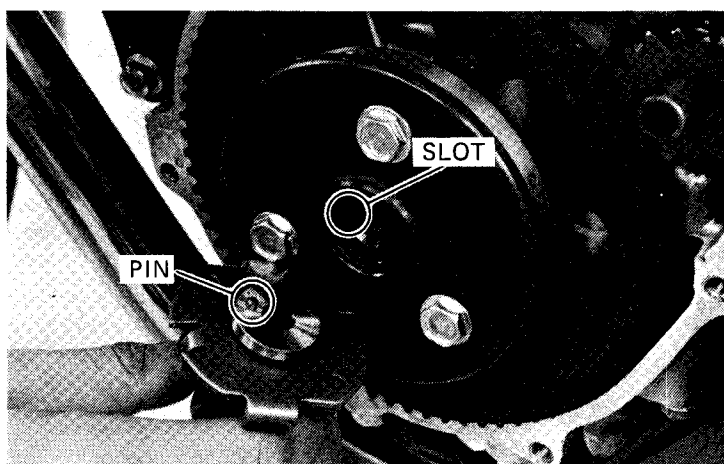
**TORQUE:** 2.6–3.0 kg-m (19–22 ft-lb)

### NOTE

Apply a locking agent to the locking bolt's threads.



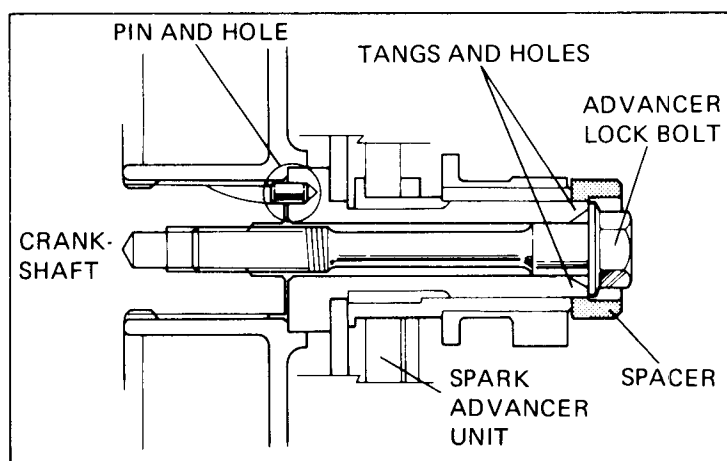
Install the advancer assembly.  
 Align the pin on the spark advancer unit with the slot on the crankshaft.



Install the spacer aligning the tangs with the holes, and tighten the advancer lock bolt to the specified torque.

**TORQUE:** 3.3–3.7 kg-m (24–27 ft-lb)

Install the left crankcase cover.





**HONDA**  
**CB900C**

127

MEMO







|                                |     |
|--------------------------------|-----|
| SERVICE INFORMATION            | 9-1 |
| TROUBLESHOOTING                | 9-1 |
| GEARSHIFT LINKAGE REMOVAL      | 9-2 |
| GEARSHIFT LINKAGE INSTALLATION | 9-4 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The gearshift spindle and stopper arms can be serviced with the engine in the frame.
- If the shift forks, drum and transmission require servicing, remove the engine and separate the crankcase.

### TORQUE VALUE

Neutral switch 1.6-2.0 kg-m (12-14 ft-lb)

## TROUBLESHOOTING

### Hard to shift

1. Improper clutch adjustment; too much free play
2. Shift forks bent
3. Shift shaft bent
4. Shift claw bent
5. Shift drum cam grooves damaged

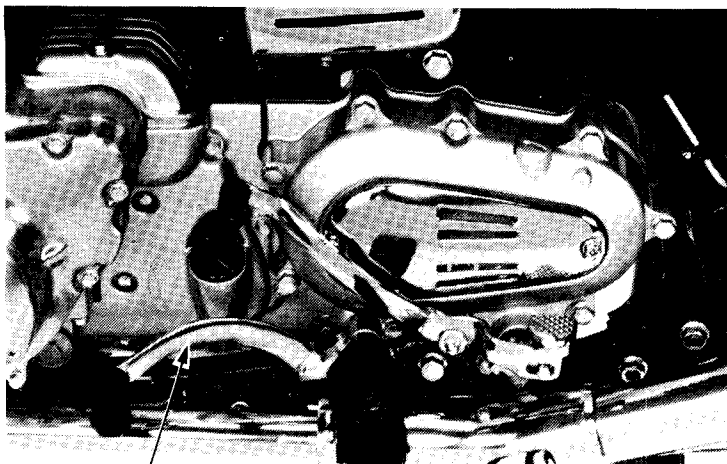
### Transmission jumps out of gear

1. Gear dogs worn
2. Shift shaft bent
3. Shift drum stopper broken
4. Shift forks bent



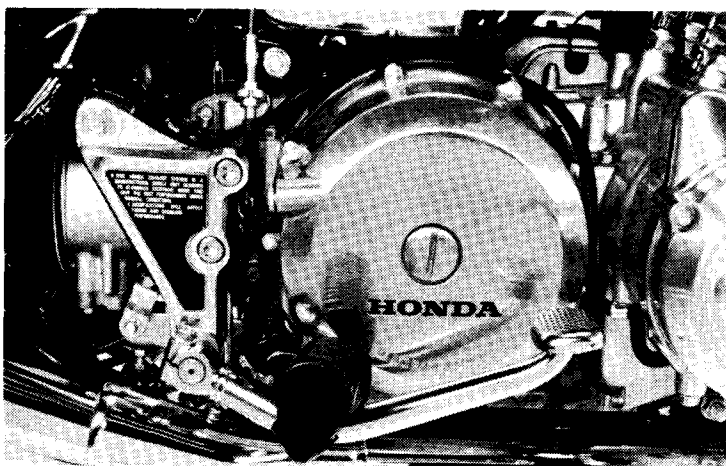
## GEARSHIFT LINKAGE REMOVAL

Drain the engine oil.  
Remove the gearshift pedal.

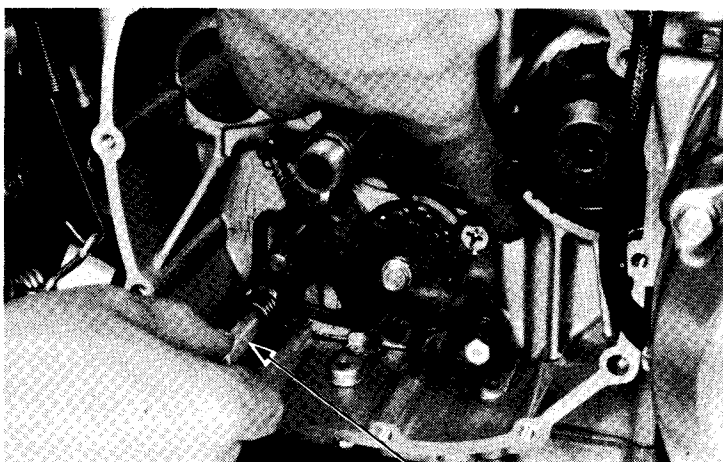


GEARSHIFT PEDAL

Remove the clutch cover and clutch assembly  
(Section 8).



Pull the gearshift spindle assembly out.

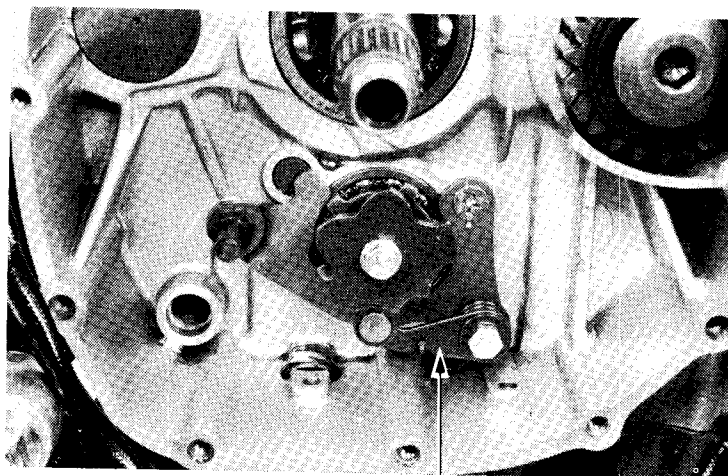


GEARSHIFT SPINDLE



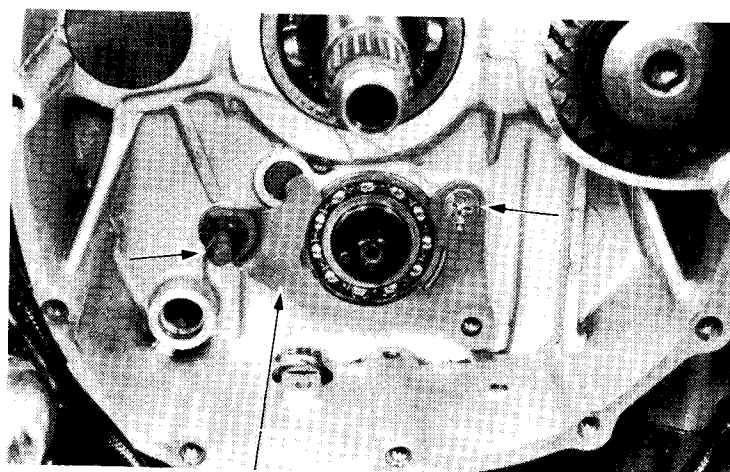
Remove the drum stopper arm bolt, arm and spring.

Remove the roller stopper plate bolt and plate.



DRUM STOPPER ARM

If bearing removal is necessary, remove the bearing stopper plate.



STOPPER PLATE

### NEUTRAL SWITCH INSPECTION

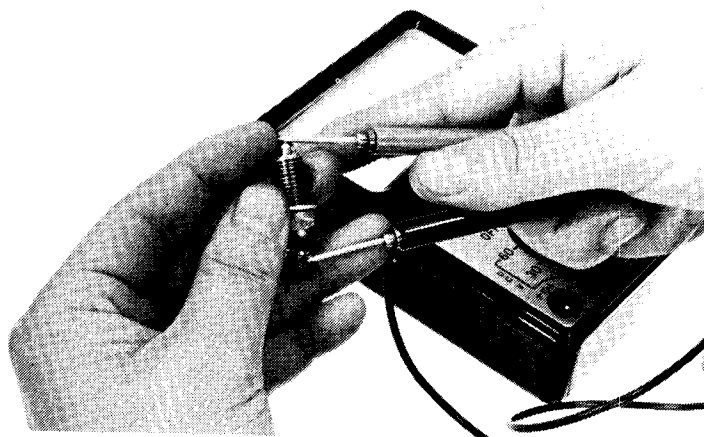
Remove the oil pump cover and neutral switch.

Check for continuity between the top and bottom terminals.

The switch is normal if there is continuity.

Also check for shorts between the top terminal and any body ground.

Replace the switch if there is continuity.



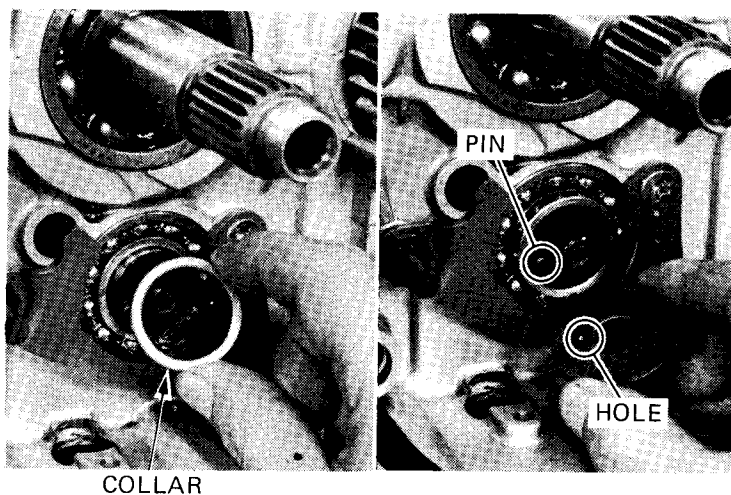


## GEARSHIFT LINKAGE INSTALLATION

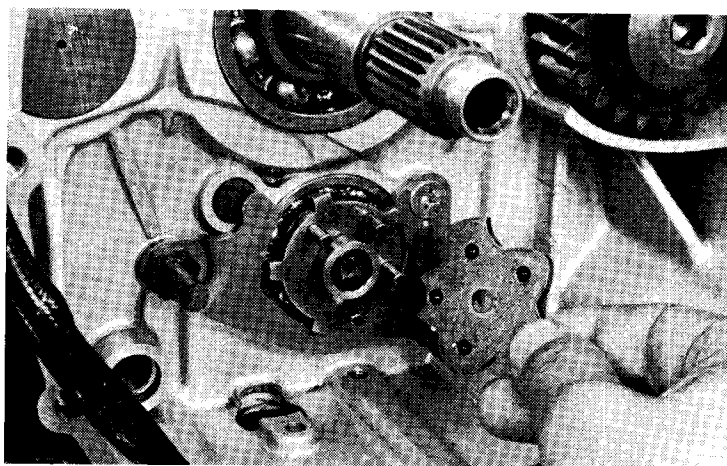
Install the collar.  
Align the hole in the roller stopper base plate  
with the pin on the shift drum.

### NOTE

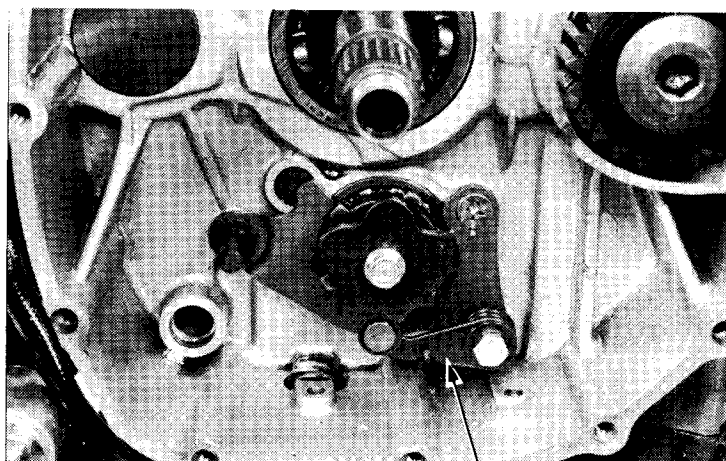
If bearing replacement is necessary,  
apply locking agent to the screw  
threads.



Install the roller stopper pins, plate and bolt.  
Tighten the bolt securely.



Install the drum stopper arm, bolt and return  
spring.  
Tighten the bolt securely.



DRUM STOPPER ARM



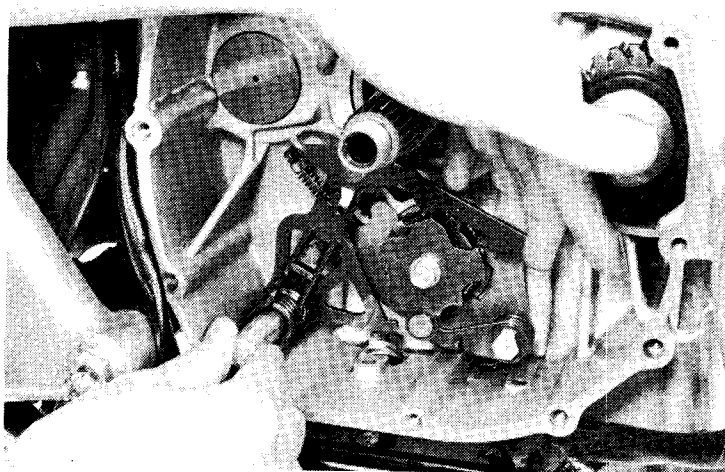
Assemble the gear shift spindle and return spring.

Install as shown.

Rotate the gearshift spindle and check the linkage for smooth operation.

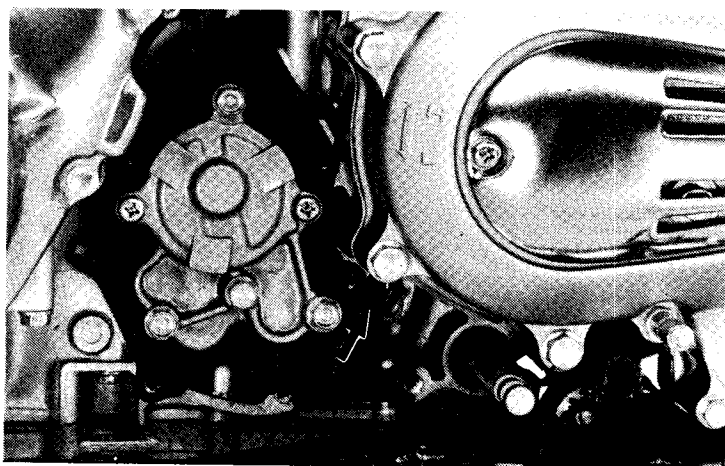
Install the clutch assembly and cover.

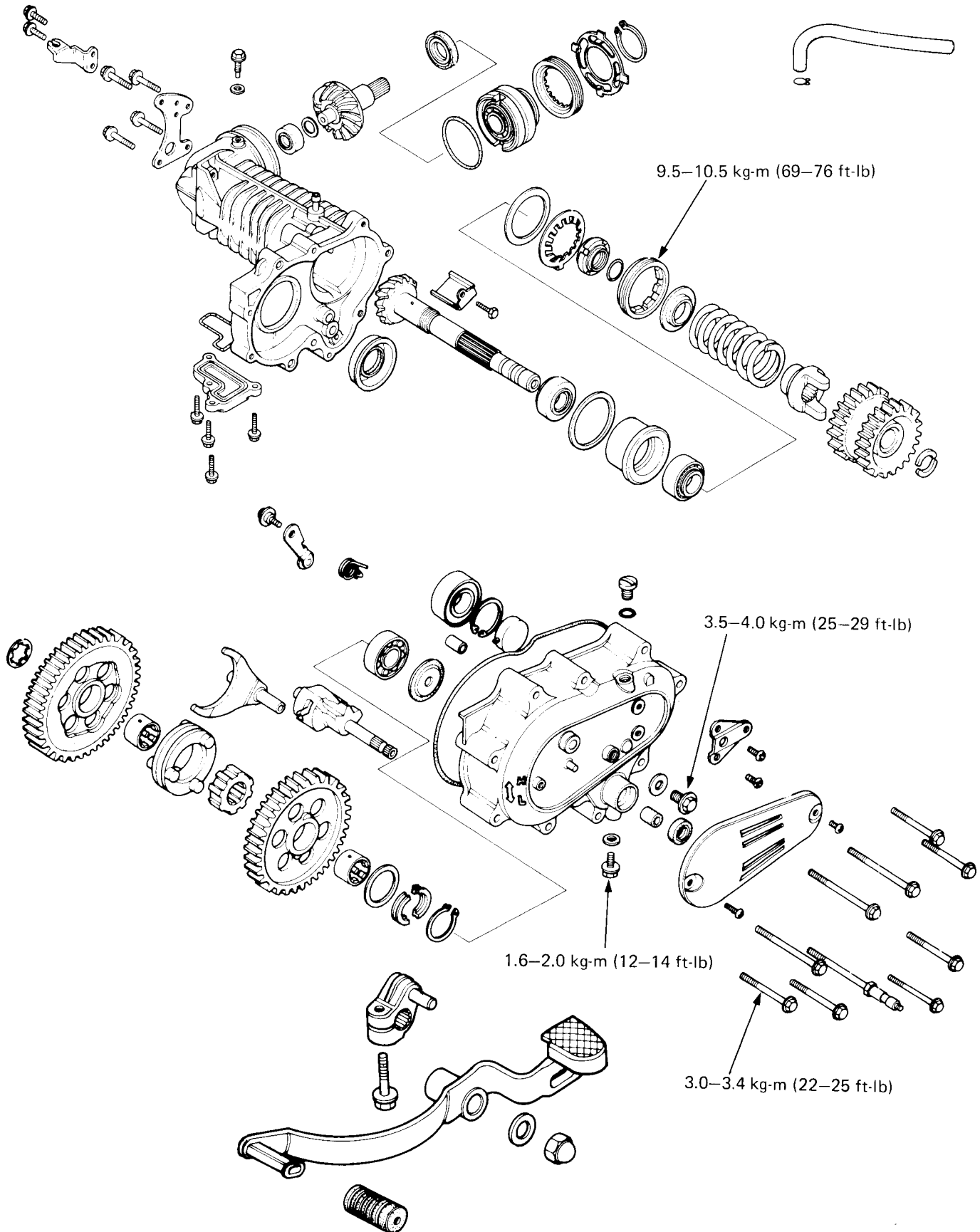
Install the gearshift pedal.



Install the neutral switch and connect the lead.

Install the oil pump cover.







|                             |       |                      |       |
|-----------------------------|-------|----------------------|-------|
| SERVICE INFORMATION         | 10- 1 | SUBTRANSMISSION CASE |       |
| TROUBLESHOOTING             | 10- 2 | REMOVAL              | 10- 9 |
| SUBTRANSMISSION DISASSEMBLY | 10- 3 | RETAINER B OIL SEAL  |       |
| SUBTRANSMISSION ASSEMBLY    | 10- 6 | REPLACEMENT          | 10- 9 |
|                             |       | SUBTRANSMISSION CASE |       |
|                             |       | INSTALLATION         | 10-15 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- These parts can be serviced with the subtransmission in the frame.
  - Reduction drive/driven gears and collars.
  - Damper lifter, spring and spring seat.
  - Gear shift linkage.
  - Subtransmission oil pump (see section 2).
- The swing arm and subtransmission must be removed to service these parts.
  - Subtransmission case and oil seal.
- Replace the subtransmission as an assembly if bearings, drive or driven gears need replacement.

### TOOLS

#### Special

|                         |               |                         |
|-------------------------|---------------|-------------------------|
| Retainer wrench A       | 07910-4610100 | Not available in U.S.A. |
| Retainer wrench B       | 07910-4610200 |                         |
| Damper compressor       | 07964-4610000 |                         |
| Preload inspection tool | 07998-4610000 |                         |
| Subtransmission base    | 07965-4610000 | Not available in U.S.A. |

#### Common

|                         |                                |
|-------------------------|--------------------------------|
| Bearing driver handle A | 07749-0010000 or 07949-6110000 |
| Bearing driver outer    |                                |
| 37 x 40 mm              | 07746-0010200                  |
| 42 x 47 mm              | 07746-0010300                  |
| Bearing driver handle C | 07746-0030100                  |



## SPECIFICATIONS

|  | STANDARD                          | SERVICE LIMIT       |
|--|-----------------------------------|---------------------|
| Reduction drive gear I.D.                  | 31.000–31.025 mm (1.220–1.221 in) | 31.04 mm (1.222 in) |
| Reduction drive gear collar O.D.           | 30.950–30.975 mm (1.218–1.219 in) | 30.94 mm (1.218 in) |
| Reduction driven gear I.D.                 | 25.000–25.021 mm (0.984–0.985 in) | 25.04 mm (0.986 in) |
| Final drive gear shaft O.D.                | 24.959–24.980 mm (0.982–0.983 in) | 24.95 mm (0.982 in) |
| Final drive gear damper spring free length | 107.7 mm (4.24 in)                | —                   |
| Final drive gear backlash                  | 0.08 – 0.18 mm (0.003–0.007 in)   | 0.25 mm (0.010 in)  |
| Shift fork claw thickness                  | 6.00 – 6.10 mm (0.236–0.240 in)   | 5.7 mm (0.22 in)    |
| Reduction gear backlash                    | 0.072– 0.143 mm (0.003–0.006 in)  | 0.20 mm (0.008 in)  |

### Subtransmission

Oil capacity                      0.6 liter (0.61 US qt)  
    Hypoid gear oil SAE #80

## TORQUE VALUES

Subtransmission cover            3.0– 3.4 kg-m (22–25 ft-lb)  
 Oil level check bolt            3.5– 4.0 kg-m (25–29 ft-lb)  
 Oil drain bolt                    1.6– 2.0 kg-m (12–14 ft-lb)  
 Oil cap bolt                      0.4– 0.6 kg-m ( 3– 4 ft-lb)  
 Final drive gear ass'y. lock nut   9.5–10.5 kg-m (69–76 ft-lb)

## TROUBLESHOOTING

### Hard to shift

1. Improper clutch adjustment: too much free play
2. Shift fork bent
3. Shift shaft bent
4. Shift claw bent
5. Shift drum cam grooves damaged

### Transmission jumps out of gear

1. Gear dogs worn
2. Shift shaft bent
3. Shift drum stopper broken
4. Shift forks bent

### Final drive gear noise

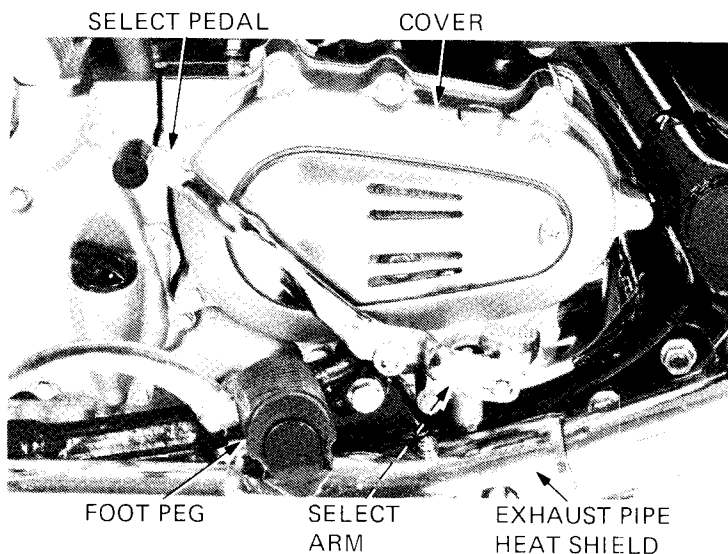
1. Oil level too low
2. Excessive backlash
3. Drive shaft splines damaged or worn
4. Insufficient lubricant



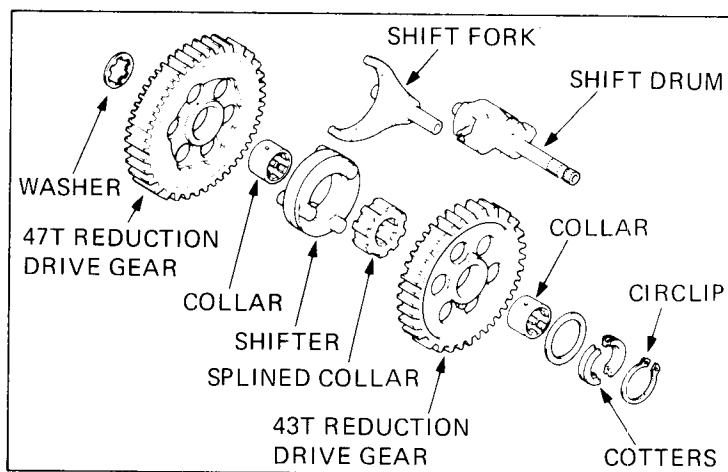


## SUBTRANSMISSION DISASSEMBLY

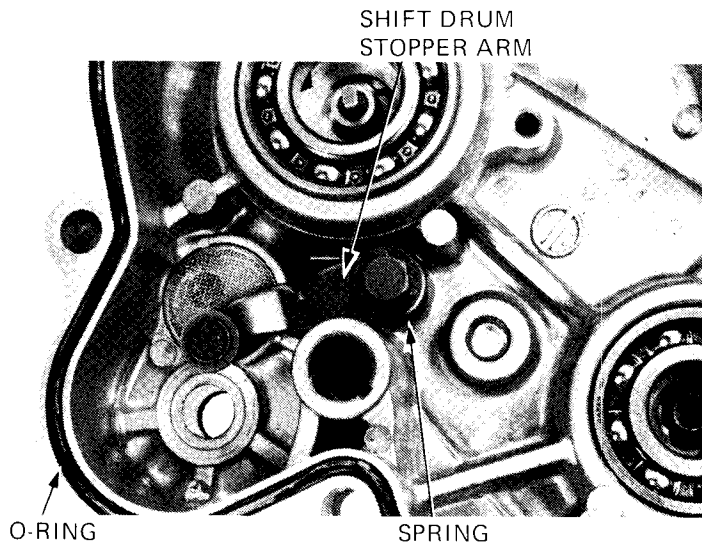
Remove the foot pegs.  
Remove the exhaust pipe heat shield.  
Remove the select pedal and arm.  
Drain the oil (Page 2-9).  
Remove the cover.



Remove the circlip, washer and cotters.  
Remove the 43T reduction drive gear and collar.  
Remove the shift drum, shift fork and shifter with spline collar.  
Remove the collar, and the 47T reduction driven gear and washer.



Remove the shift drum stopper arm and spring.  
Remove the O-ring.





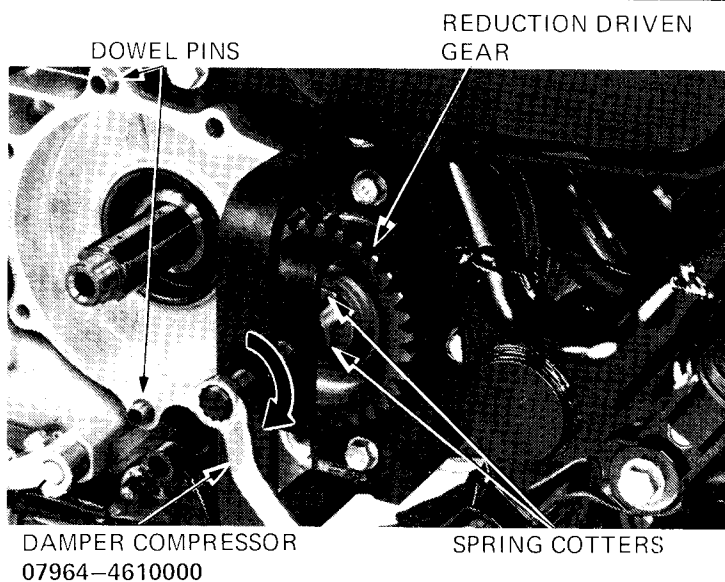
Compress the reduction driven gear with the special tool and remove the spring cotters.

After removing the spring cotters, loosen the special tool until the spring is fully released. Then, remove the tool.

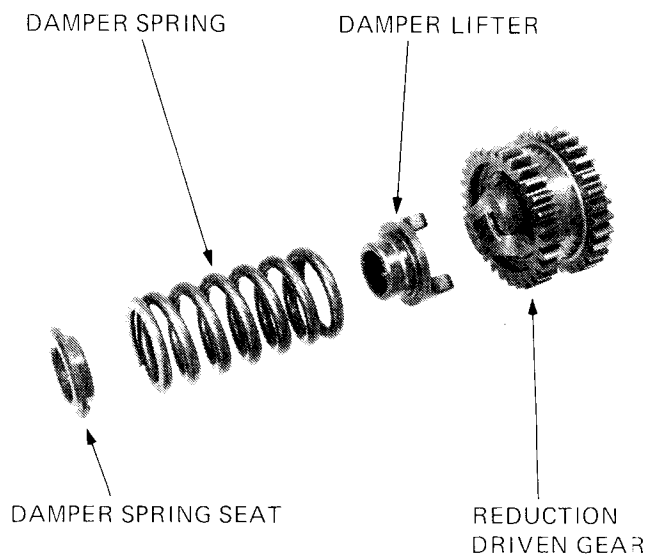
**WARNING**

*The reduction driven gear will pop out when the tool is removed without releasing the spring.*

Remove the dowel pins.



Remove the reduction driven gear, damper lifter, damper spring, damper spring seat.


**INSPECTION**

Check drive gear slots, teeth and rubber for excessive or abnormal wear, or evidence of insufficient lubrication.

Measure each gear I.D. and collar O.D.

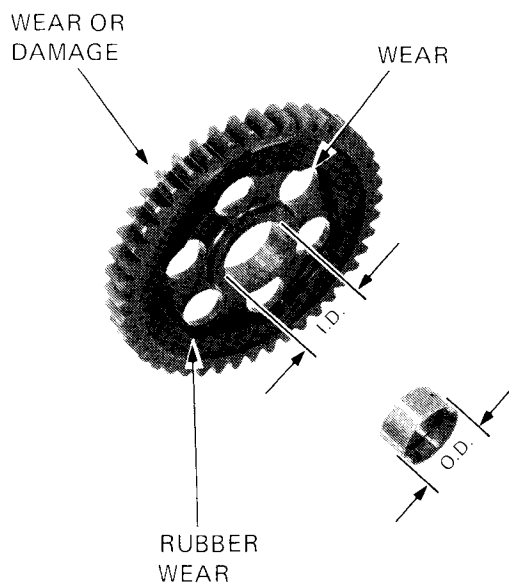
**SERVICE LIMIT:**

**DRIVE GEAR (43T, 47T) I.D.:**

31.04 mm (1.222 in)

**GEAR COLLAR O.D.:**

30.94 mm (1.218 in)



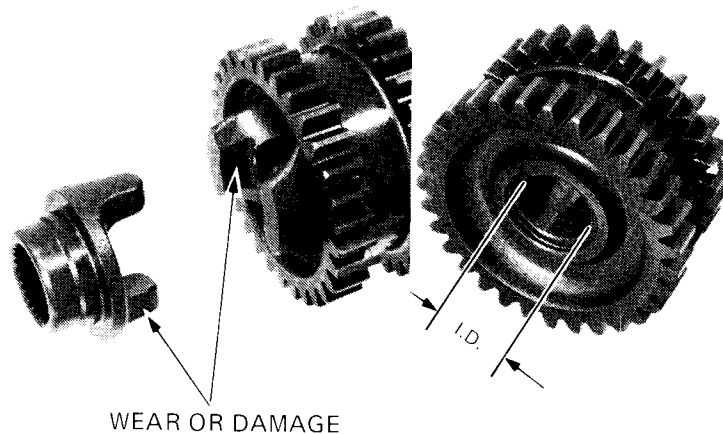


Check the driven gear teeth for excessive or abnormal wear, or evidence of insufficient lubrication.

Check the damper lifter for wear or damage.

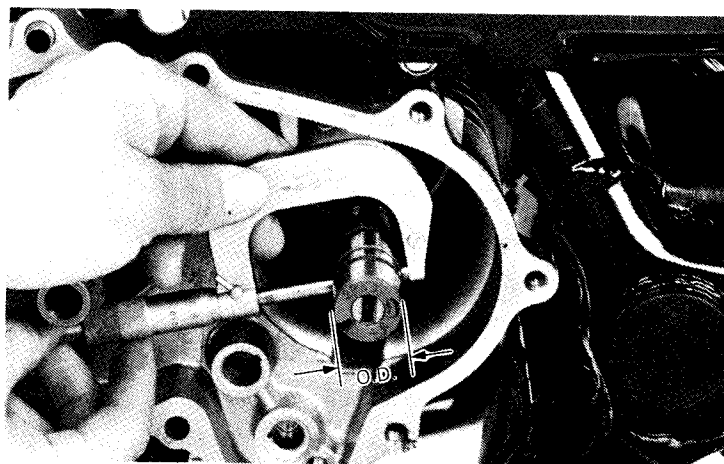
Measure the driven gear I.D.

**SERVICE LIMIT: 25.04 mm (0.982 in)**



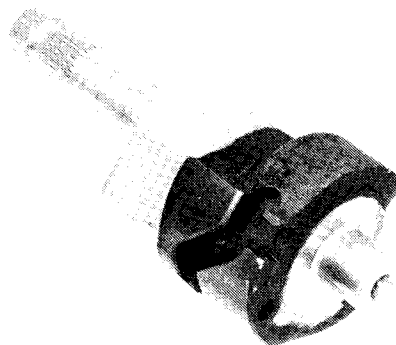
Measure the final drive gear shaft O.D.

**SERVICE LIMIT: 24.95 mm (0.982 in)**



Inspect the shift drum end for scoring, scratches, or evidence of insufficient lubrication.

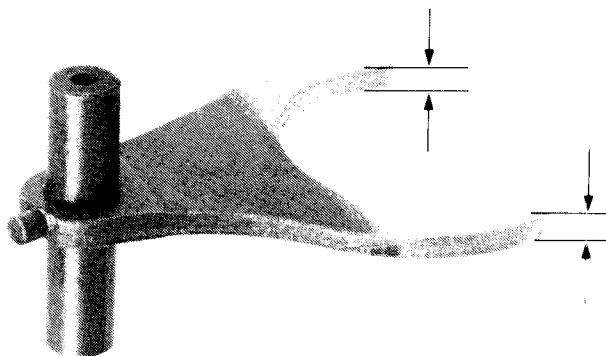
Check the shift drum grooves for damage.





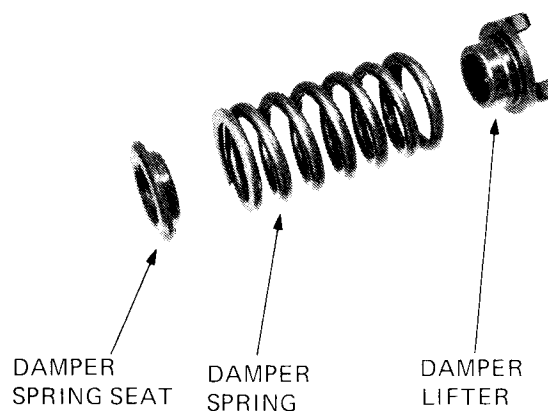
Measure the shift fork claw thickness.

**SERVICE LIMIT: 5.7 mm (0.224 in)**

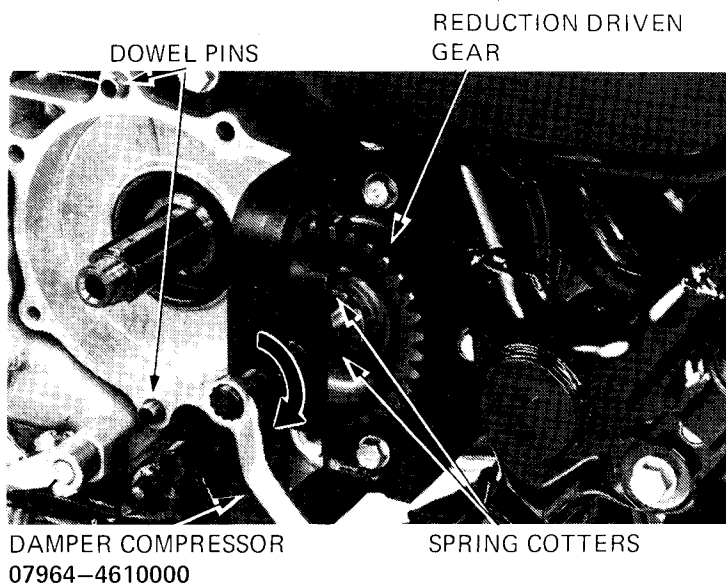


## SUBTRANSMISSION ASSEMBLY

Install the damper spring seat, damper spring and damper lifter.



Install the reduction driven gear, and compress it with the special tool.  
 Install the spring cotters.  
 Remove the special tool.  
 Install the dowel pins.



DAMPER COMPRESSOR  
07964-4610000

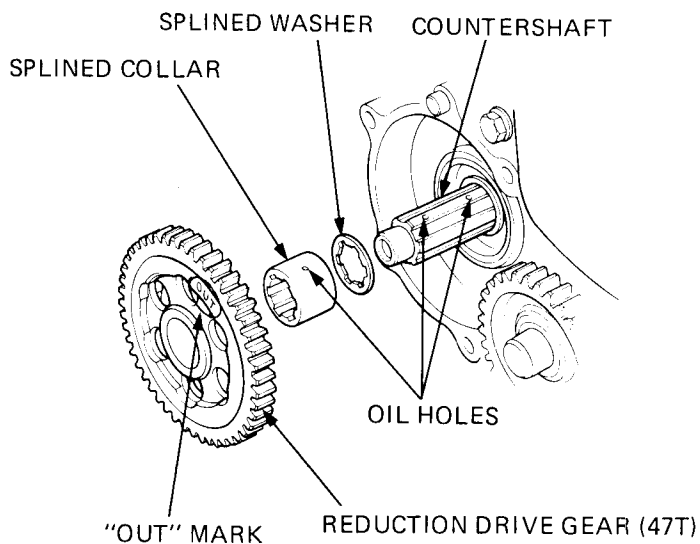
SPRING COTTERS



Install the splined washer onto the countershaft.

Install a reduction drive gear collar, aligning the collar's and the countershaft's oil holes.

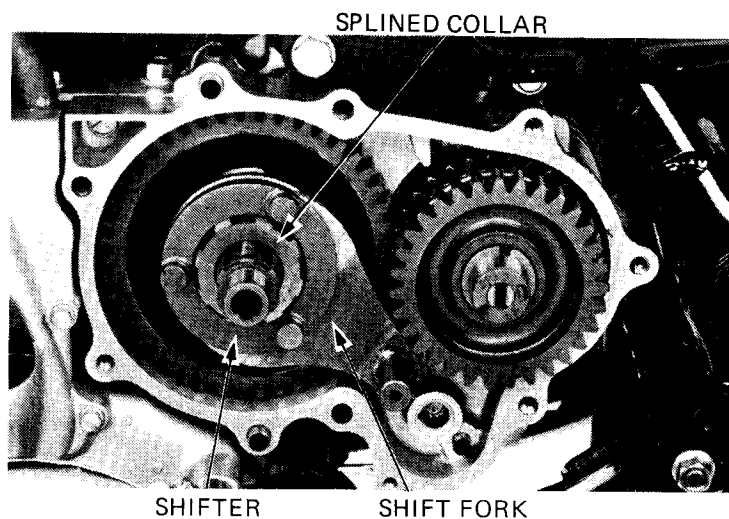
Install the 47T reduction drive gear with the "OUT" mark facing toward you.



Install the splined collar.

Install the shifter and shift fork as an assembly. Engage the shifter dogs with the drive gear.

Install the other drive gear collar, aligning the collar's and the countershaft's oil holes.

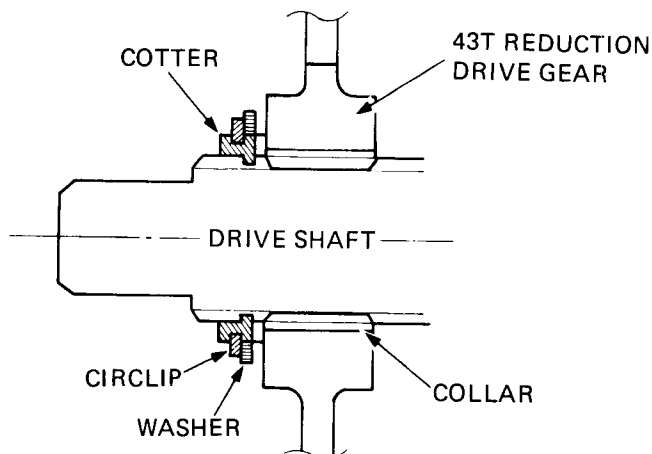


Install the 43T reduction drive gear with the "OUT" mark facing toward you.

Seat the cotters into the driveshaft grooves.

Place the thrust washer over the cotters.

Seat the cotter circlip into the cotter groove.

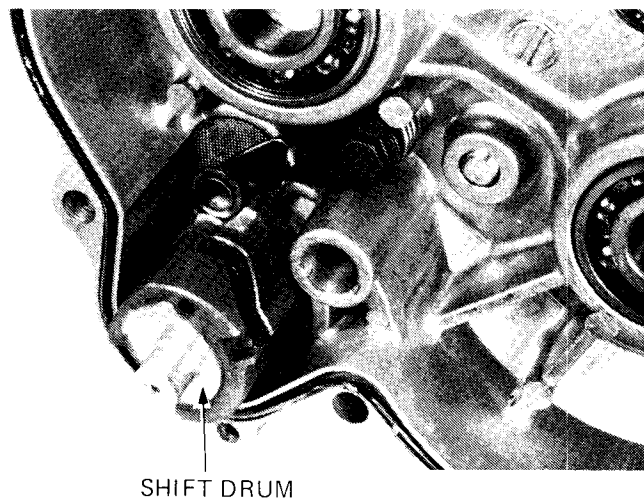




Install the stopper arm and spring.  
 Install the shift drum as shown.

**NOTE**

The shift drum groove will engage the shift fork boss automatically when the shift drum is assembled as shown.



SHIFT DRUM

Install the cover.

**NOTE**

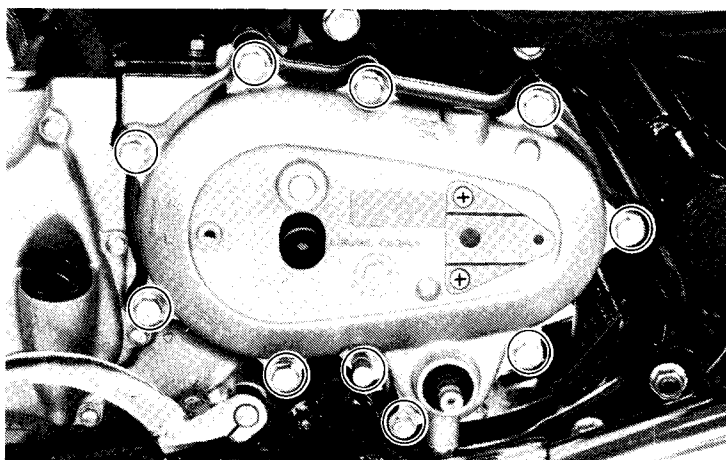
- Check the location of the shift drum or shift fork if difficulty is encountered in installing the cover.
- Do not strike the cover with excessive force.

Tighten the cover bolts.

**TORQUE: 3.0–3.4 kg-m (22–25 ft-lb).**

Install the exhaust pipe heat shield.

Fill the case with the recommended oil (page 2-9).



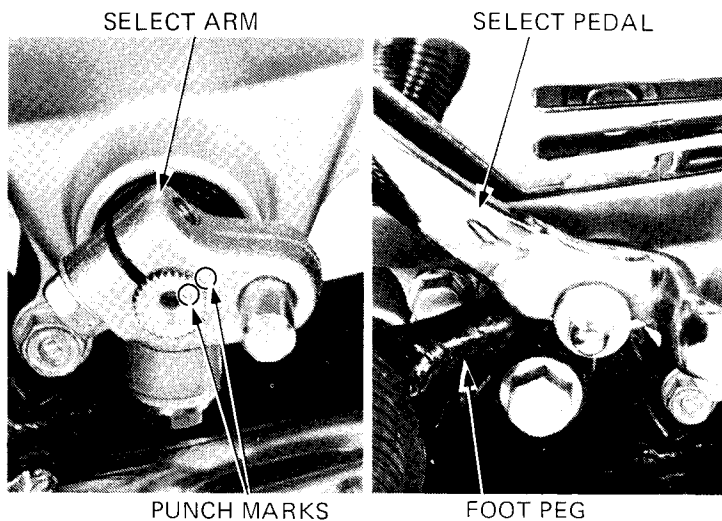
Align the punch marks and install the select arm.

Install the select pedal.

**NOTE**

Make sure that the select pedal toe end is in the "HI" position on the cover.

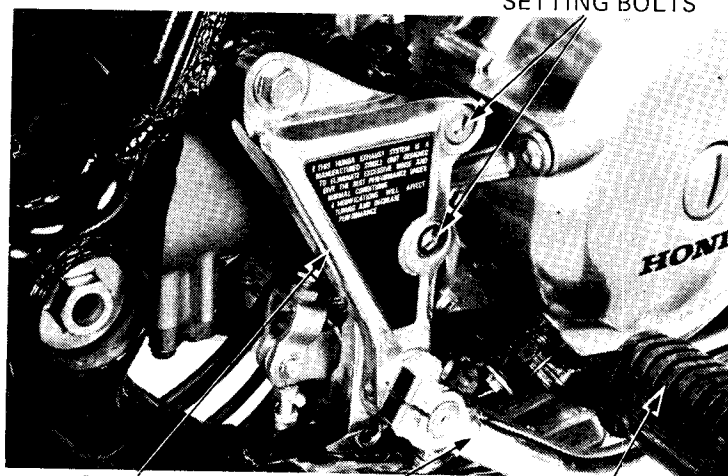
Install the foot pegs.





## SUBTRANSMISSION CASE REMOVAL

Remove the subtransmission (page 10-3).  
Remove the swing arm (page 15-12).  
Remove the foot pegs.  
Remove the right exhaust pipe heat shield.  
Remove the rear brake pedal.  
Remove the brake pedal bracket, and master cylinder bolts.



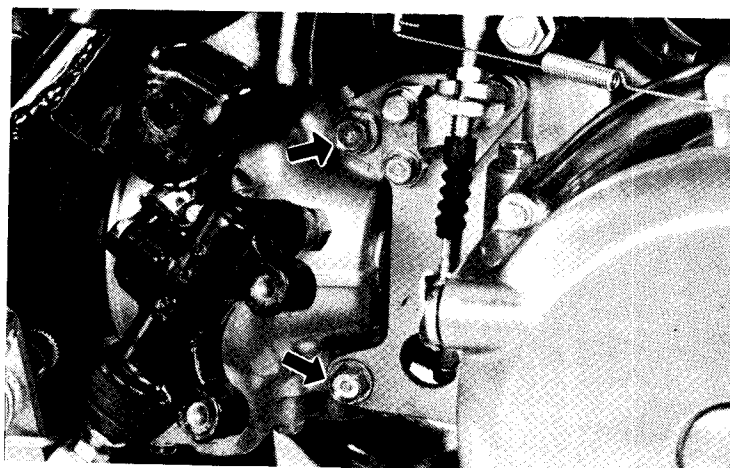
BRAKE PEDAL  
BRACKET

BRAKE  
PEDAL

FOOT PEGS

Remove the subtransmission case mounting bolts.

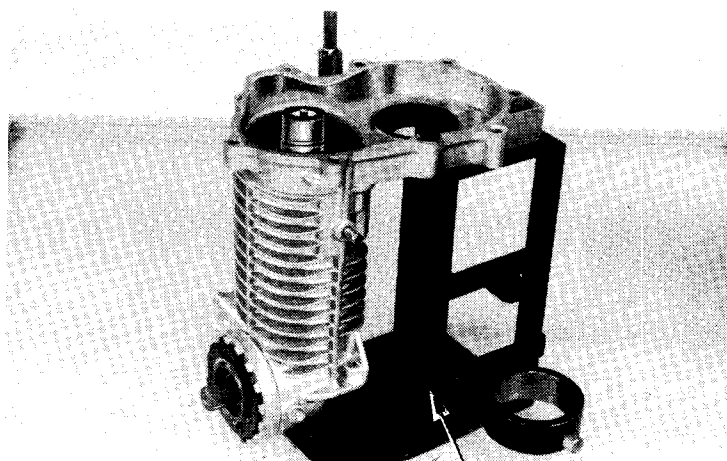
Remove the subtransmission case.



## RETAINER B OIL SEAL REPLACEMENT

### DRIVE GEAR REMOVAL

Attach the subtransmission case to the base.

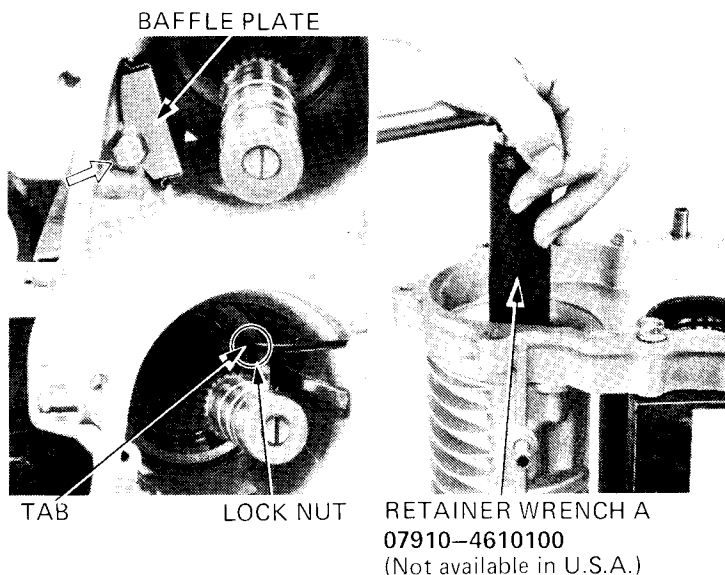


SUBTRANSMISSION BASE  
07965-4610000 (Not available in U.S.A.)

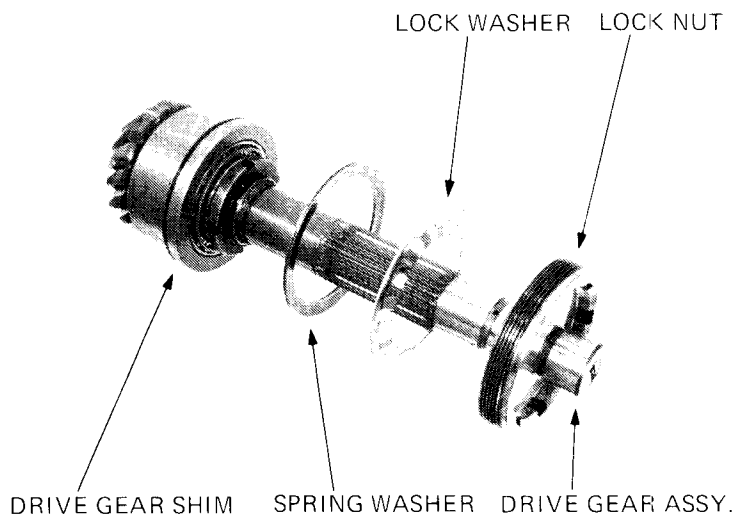


Remove the baffle plate.  
 Straighten the lock washer tab.

Remove the lock nut.

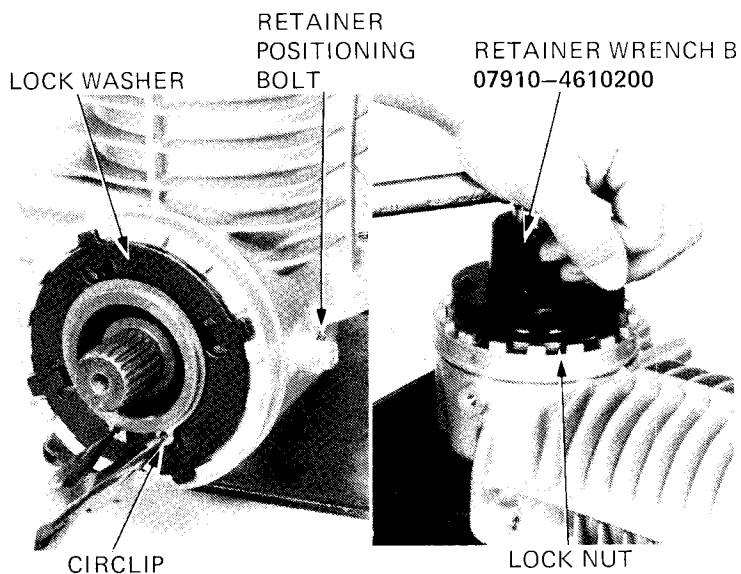


Remove the lock washer, spring washer and  
 drive gear assembly with the drive gear shim.



### RETAINER B AND DRIVEN GEAR ASSEMBLY REMOVAL

Remove the circlip and lock washer.  
 Remove the retainer positioning bolt.  
 Remove the lock nut.

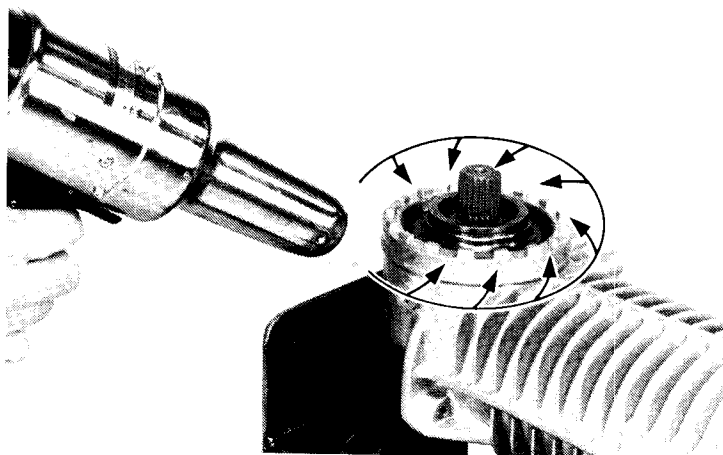






Heat the outside of the case evenly with a 1 kw dryer for more than 15 minutes.

Hold the dryer about 5 cm (2 in) from the case.



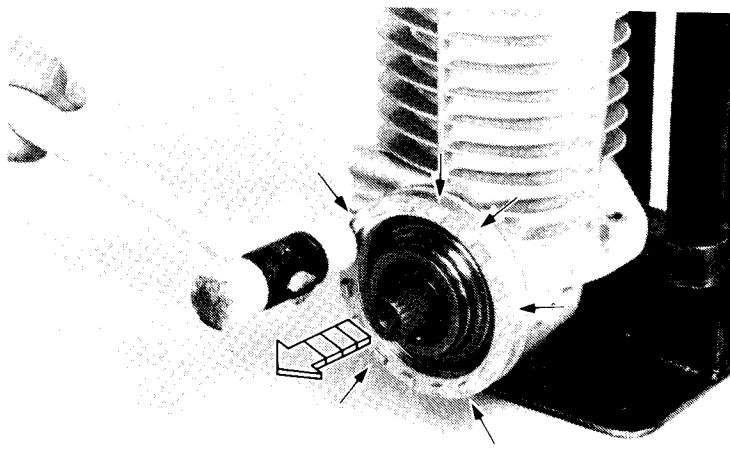
Remove retainer B and driven gear assembly, tapping around the case with a plastic hammer.

#### NOTE

Check that the 30203C bearing outer is removed with the gear assembly.

#### WARNING

*Be sure to wear gloves when removing the heated case.*

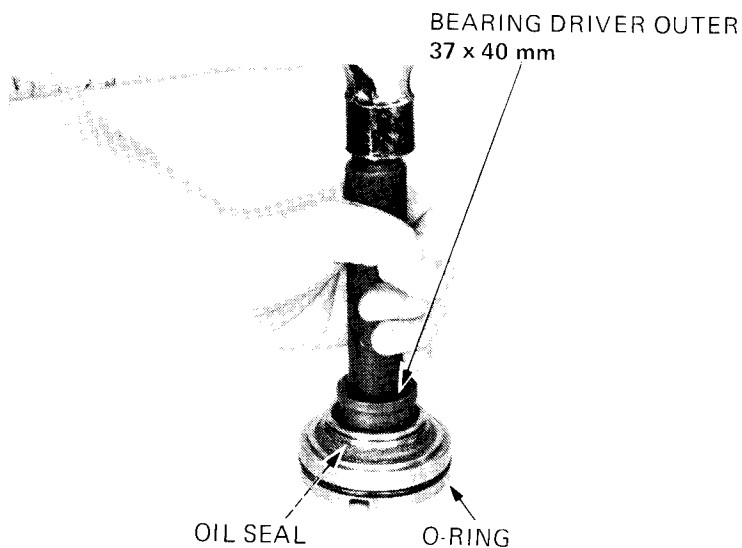


## RETAINER B OIL SEAL AND O-RING REPLACEMENT

Drive out the oil seal.  
Remove the retainer B o-ring.

#### NOTE

Replace the O-ring with a new one whenever retainer B is disassembled.





Install a new O-ring on **retainer B**.  
 Coat the new oil seal with gear oil.  
 Drive the oil seal into retainer B.

**NOTE**

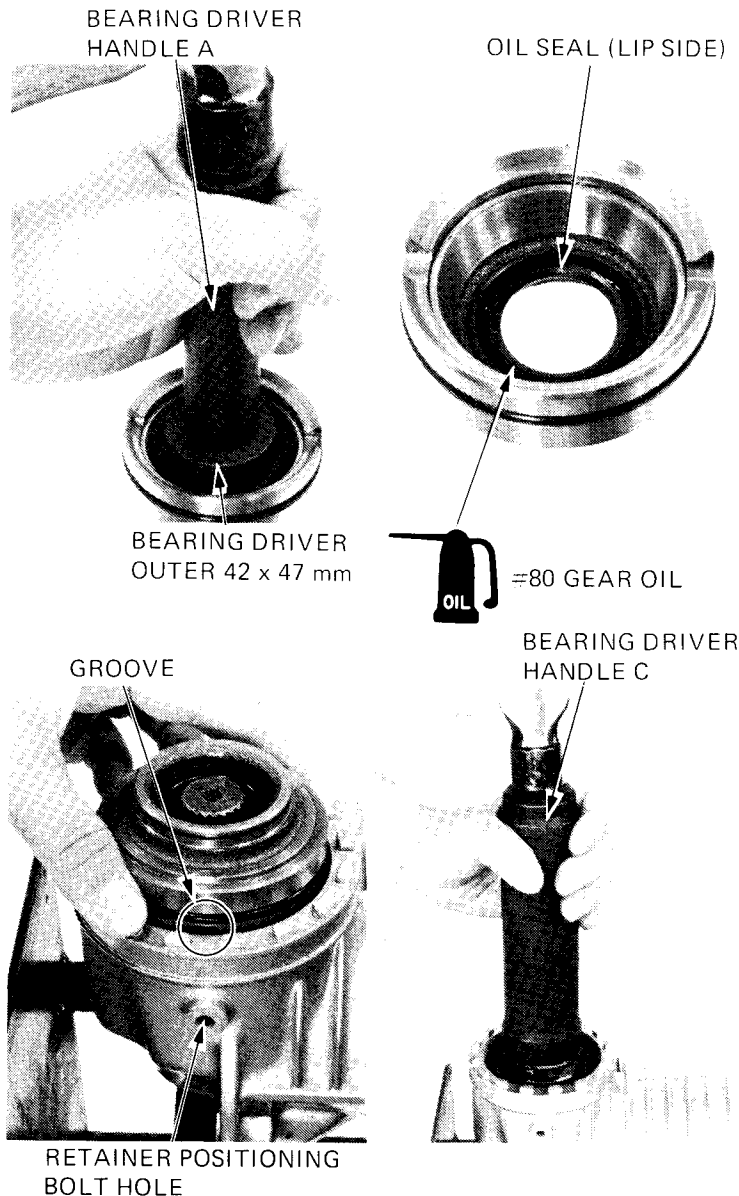
- Install the oil seal with the sealing lip facing the inside.
- Avoid damaging the oil seal spring band.
- Before driving in the oil seal check that the 20306C bearing is in place in retainer B.

**RETAINER B AND DRIVEN GEAR INSTALLATION**

Place retainer B over the driven shaft, aligning the groove with the retainer positioning bolt hole and drive it into the case until the 20306C bearing outer race lightly seats on the inner bearing.

**CAUTION:**

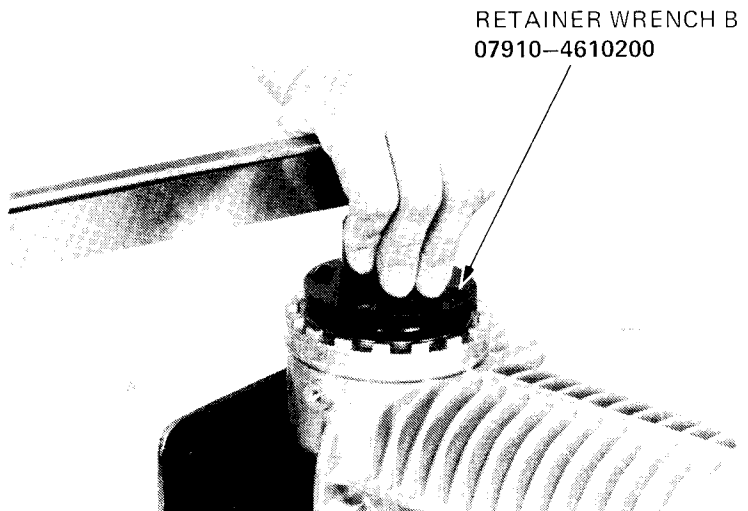
- *Drive retainer B in squarely.*
- *Rotate the driven shaft while driving retainer B. Stop driving when resistance is felt.*



Install the special tool.  
 Install and tighten the lock nut.

**TORQUE: 3.5–4.5 kg-m (25–33 ft-lb)**

Rotate the driven gear shaft 2–3 turns.

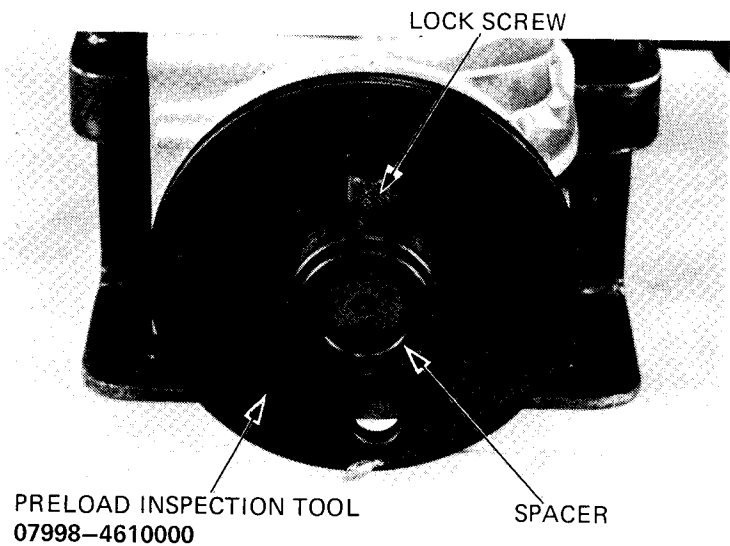




Slide the PRELOAD INSPECTION TOOL over the shaft through a spacer. Secure with the lock screw.

**NOTE**

Before tightening, make sure that the end of the lock screw is inserted in the shaft splines.



## DRIVEN GEAR PRELOAD INSPECTION

Wind the string around the groove of the tool. Attach a spring scale to the string and measure the force needed to turn the tool.

**NOTE**

Force required to begin gear movement may exceed preload limits.

**DRIVEN GEAR PRELOAD:** 0.6–0.8 kg  
(1.32–1.76 lbs)  
[3.0–4.0 kg-cm, 2.6–3.5 in-lb]

To increase the preload, turn in the lock nut.

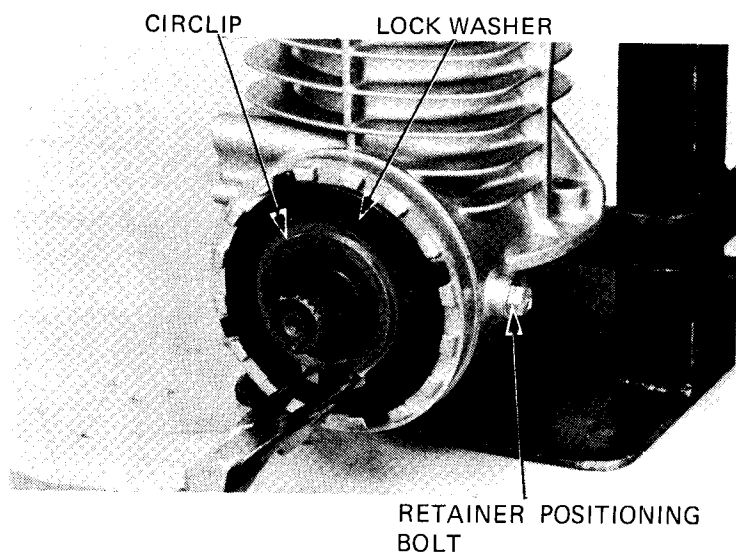
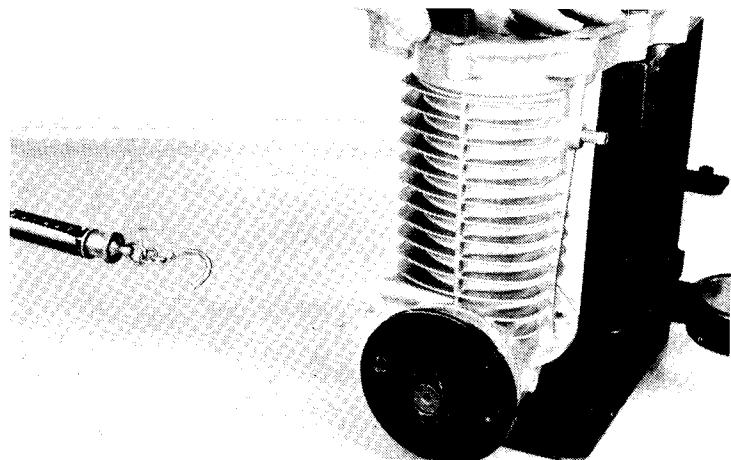
**NOTE**

Turn the shaft 2–3 rotations each time the nut is tightened.

Recheck the preload.

Install and tighten the retainer positioning bolt.

Install the lock washer and circlip.





## DRIVE GEAR INSTALLATION

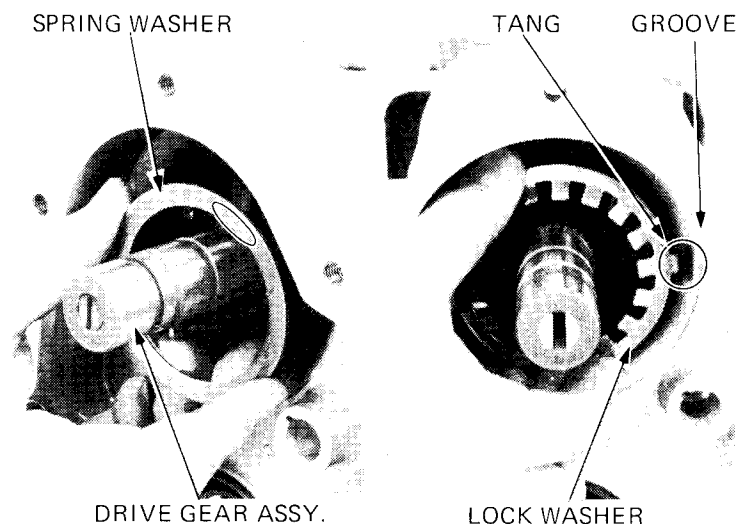
Install the drive gear assembly with shim into the final gear case.

Install the spring washer.

### NOTE

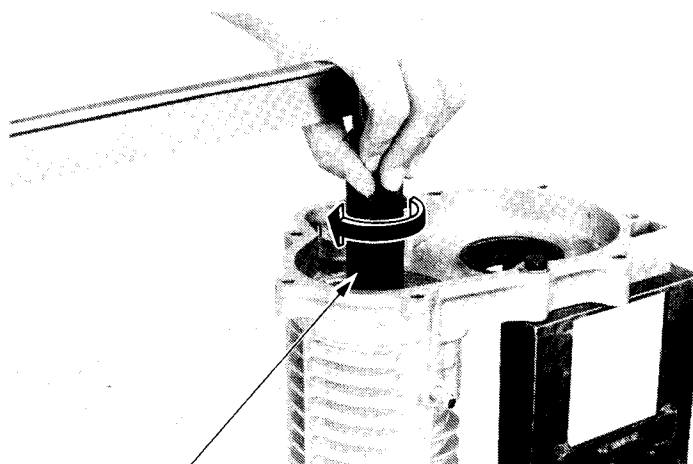
Be sure the washer facing direction marked "OUT" is correct.

Install the lock washer aligning the lock washer tang with the case groove.



Install and tighten the lock nut.

**TORQUE: 9.5–10.5 kg-m (69–76 ft-lb).**



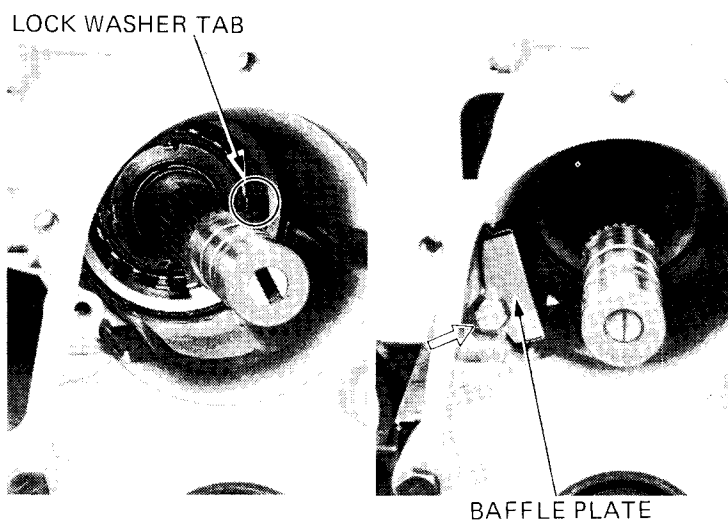
07910-4610100 (Not available in U.S.A.)

Bend the tabs of the lock washer.

Install the baffle plate.

Coat the bolt threads and underside of the bolt with thread lock and tighten.

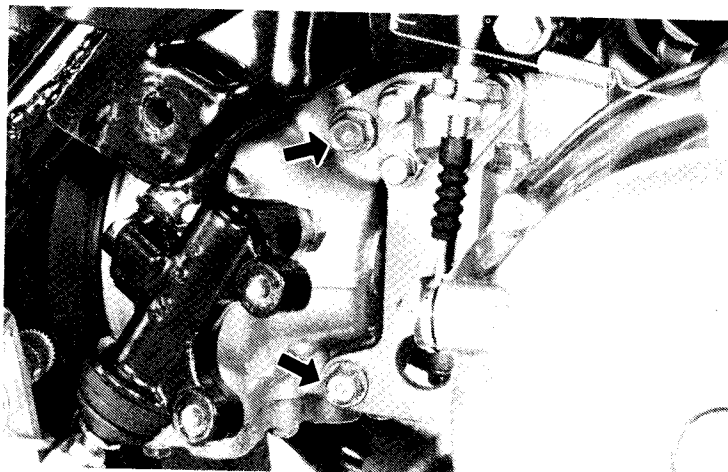
Remove the final drive case from the base.





## SUBTRANSMISSION CASE INSTALLATION

Attach the subtransmission case to the engine.  
Install the subtransmission (page 10-6).  
Tighten the subtransmission case mounting bolts.



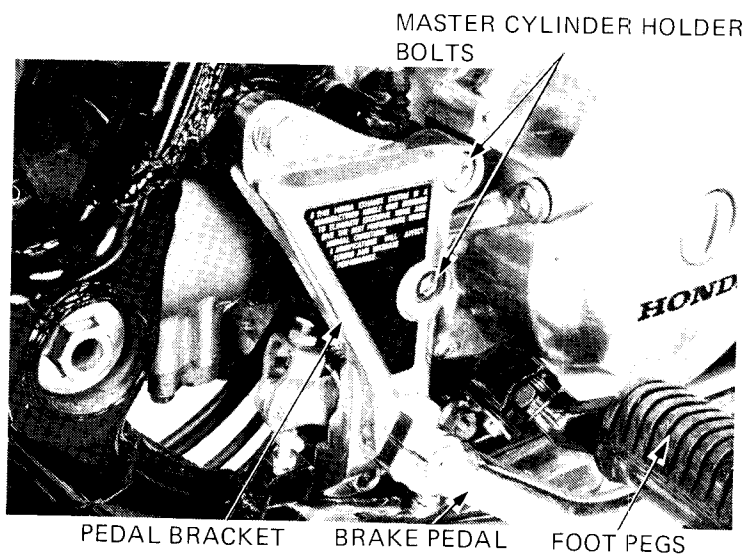
Install the master cylinder holder bolts, then the master cylinder mounting bolts.  
Install the brake pedal and right exhaust pipe heat shield.

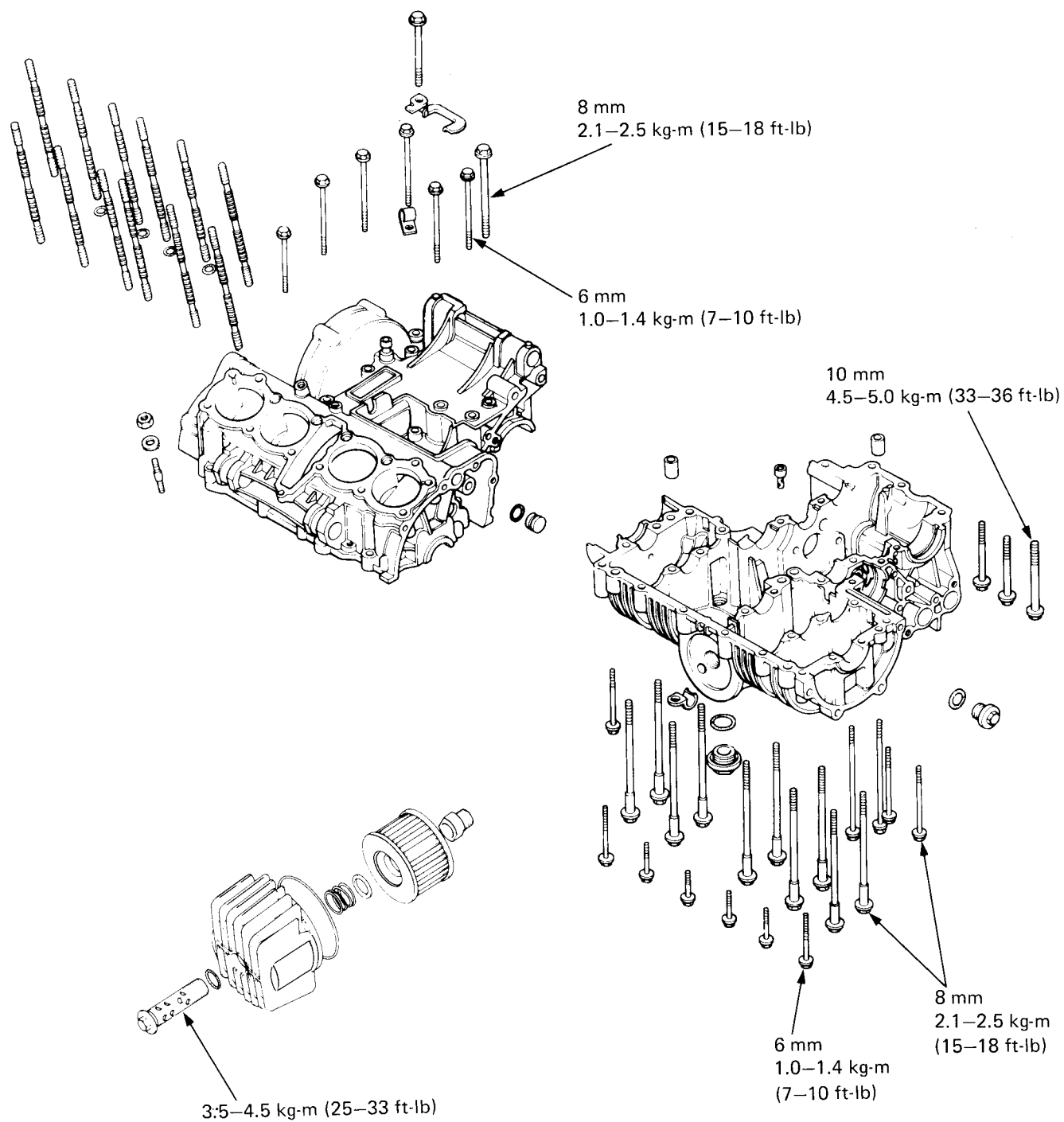
Install the foot pegs.  
Install the swing arm (page 15-15).

Fill the subtransmission with the recommended oil (page 2-9).

**OIL CAPACITY:** 0.6 liter  
(0.61 U.S. qt.)

**OIL TYPE:** Hypoid Gear Oil  
API, GL-5  
SAE #80







|                       |      |
|-----------------------|------|
| SERVICE INFORMATION   | 11-1 |
| CRANKCASE DISASSEMBLY | 11-2 |
| CRANKCASE ASSEMBLY    | 11-3 |

## SERVICE INFORMATION

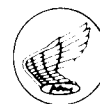
### GENERAL INSTRUCTIONS

- To repair the crankshaft, connecting rod, primary shaft and the transmission including the shift fork and drum, it is necessary to separate the crankcase halves.
- The following parts must be removed before disassembling the crankcase.

|                             |                |
|-----------------------------|----------------|
| • Oil pan                   | See section 2  |
| • Oil pump                  | See section 2  |
| • Cylinder head             | See section 6  |
| • Cylinder/pistons          | See section 7  |
| • Clutch and starter clutch | See section 8  |
| • Gear shift linkage        | See section 9  |
| • Sub transmission          | See section 10 |
| • A.C. generator            | See section 18 |
| • Starter motor             | See section 20 |

### TORQUE VALUES

|                        |                            |
|------------------------|----------------------------|
| 8 mm bolt (Crankshaft) | 2.1-2.5 kg-m (15-18 ft-lb) |
| 8 mm bolt (Crankcase)  | 2.1-2.5 kg-m (15-18 ft-lb) |
| 6 mm bolt              | 1.0-1.4 kg-m ( 7-10 ft-lb) |
| 10 mm bolt             | 4.5-5.0 kg-m (33-36 ft-lb) |



## CRANKCASE DISASSEMBLY

Remove the upper crankcase bolts.

Turn the engine upside-down.

Remove the lower crankcase bolts.

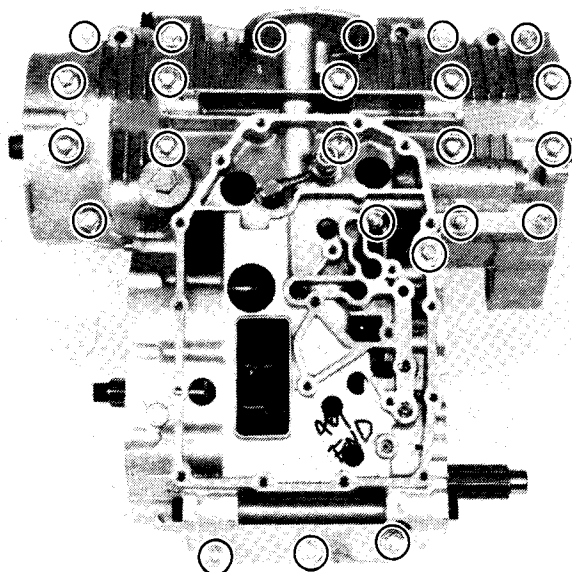
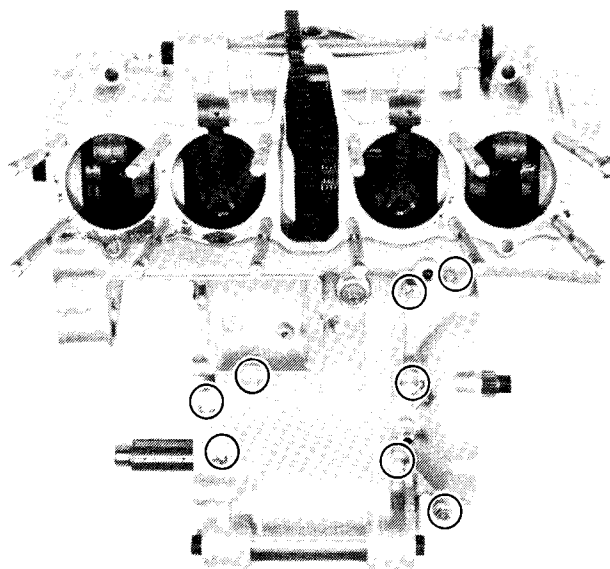
### NOTE

Remove the bolts in two or more steps  
and in a crisscross pattern to prevent  
warping.

Separate the crankcase.

### CAUTION:

*Do not pry between the upper and  
lower cases.*





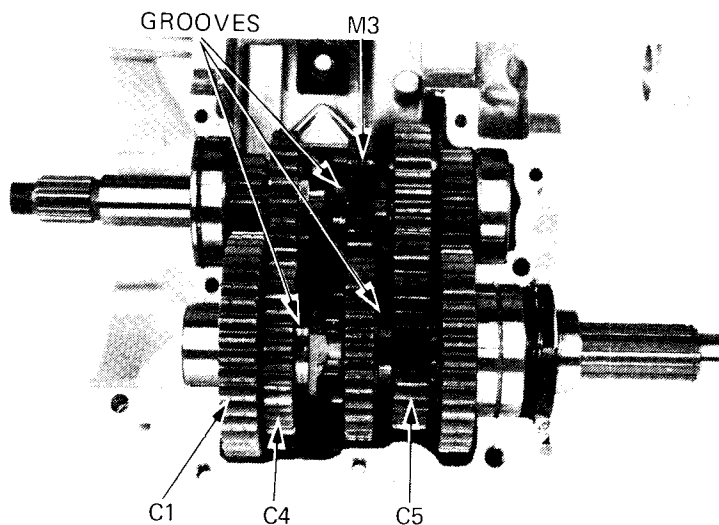


## CRANKCASE ASSEMBLY

Slide the C4 gear into the C1 gear.  
Make sure that the other gears are not engaged.

Apply molybdenum disulfide grease to the groove of the M3 gear and C4, C5 gears.

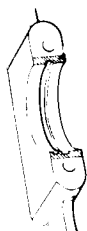
Apply molybdenum disulfide grease to the crankshaft main bearings.



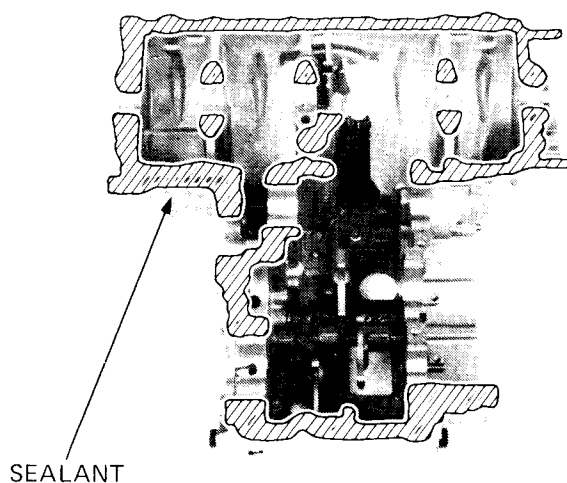
Clean the crankcase mating surfaces.  
Apply liquid sealant to the mating surface of the lower and upper crankcase.

### CAUTION:

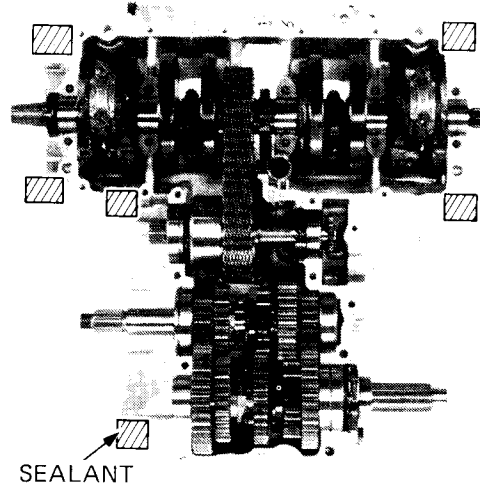
*Do not apply sealant to the area near the main bearings.*



LOWER CRANKCASE



UPPER CRANKCASE





Assemble the crankcase halves, aligning the shift fork claws with the gears.

Tighten the bolts to the specified torque values in the sequence shown.

**TORQUE VALUES:**

|                        |                               |
|------------------------|-------------------------------|
| 8 mm bolt (Crankshaft) | 2.1–2.5 kg-m<br>(15–18 ft-lb) |
| 8 mm bolt (Crankcase)  | 2.1–2.5 kg-m<br>(15–18 ft-lb) |
| 6 mm bolt              | 1.0–1.4 kg-m<br>(7–10 ft-lb)  |
| 10 mm bolt             | 4.5–5.0 kg-m<br>(33–36 ft-lb) |

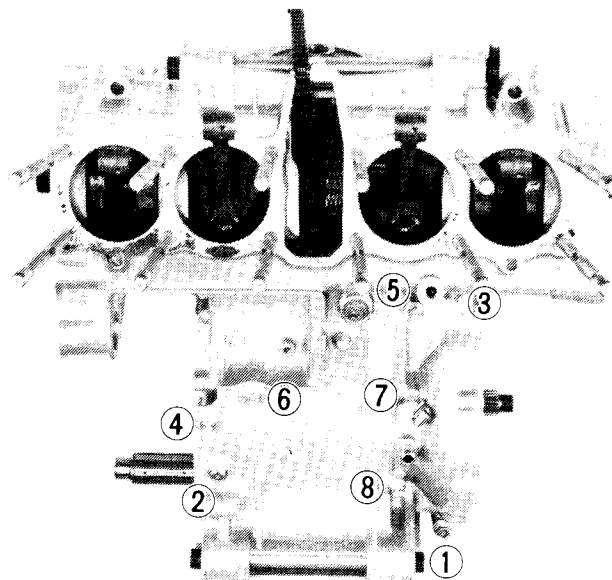
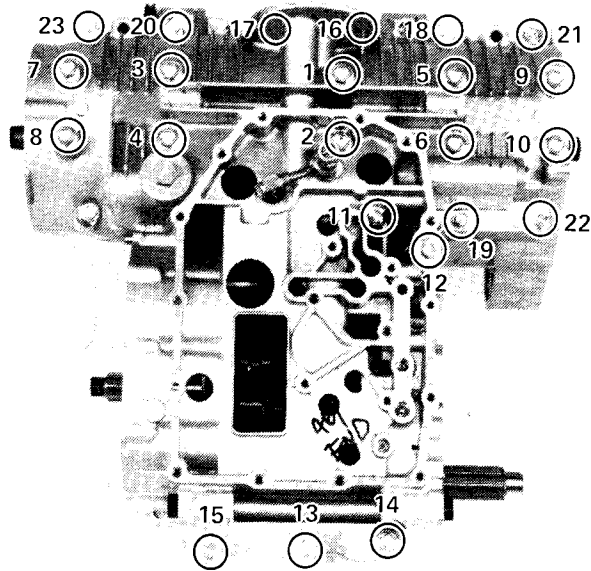
**NOTE**

- Make sure that the plain washers are under the bolt heads of the ten crankshaft bearing bolts.
- Apply engine oil to the threads and head of the ten crankshaft holding bolts.

Tighten the upper crankcase bolts to the specified torque, proceeding front to rear.

**NOTE**

If the oil galley cap is removed, apply molybdenum disulfide grease to the threads before installing.

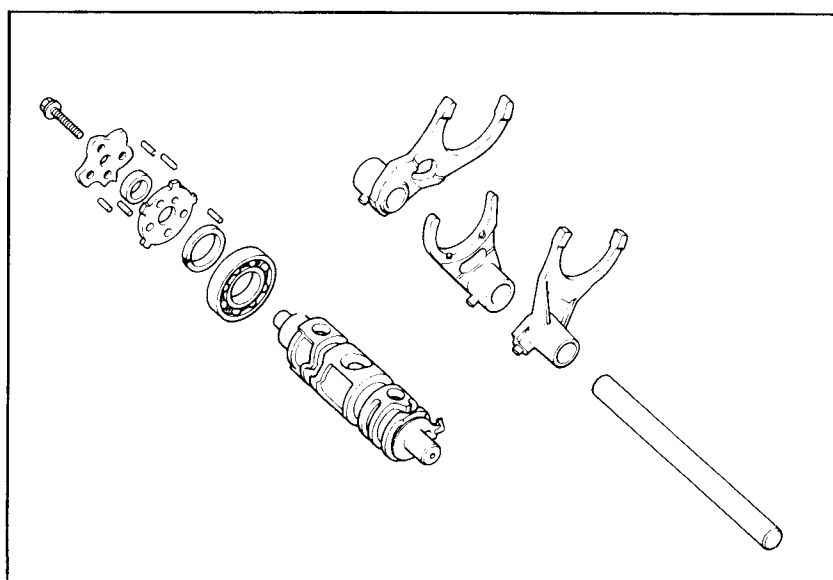
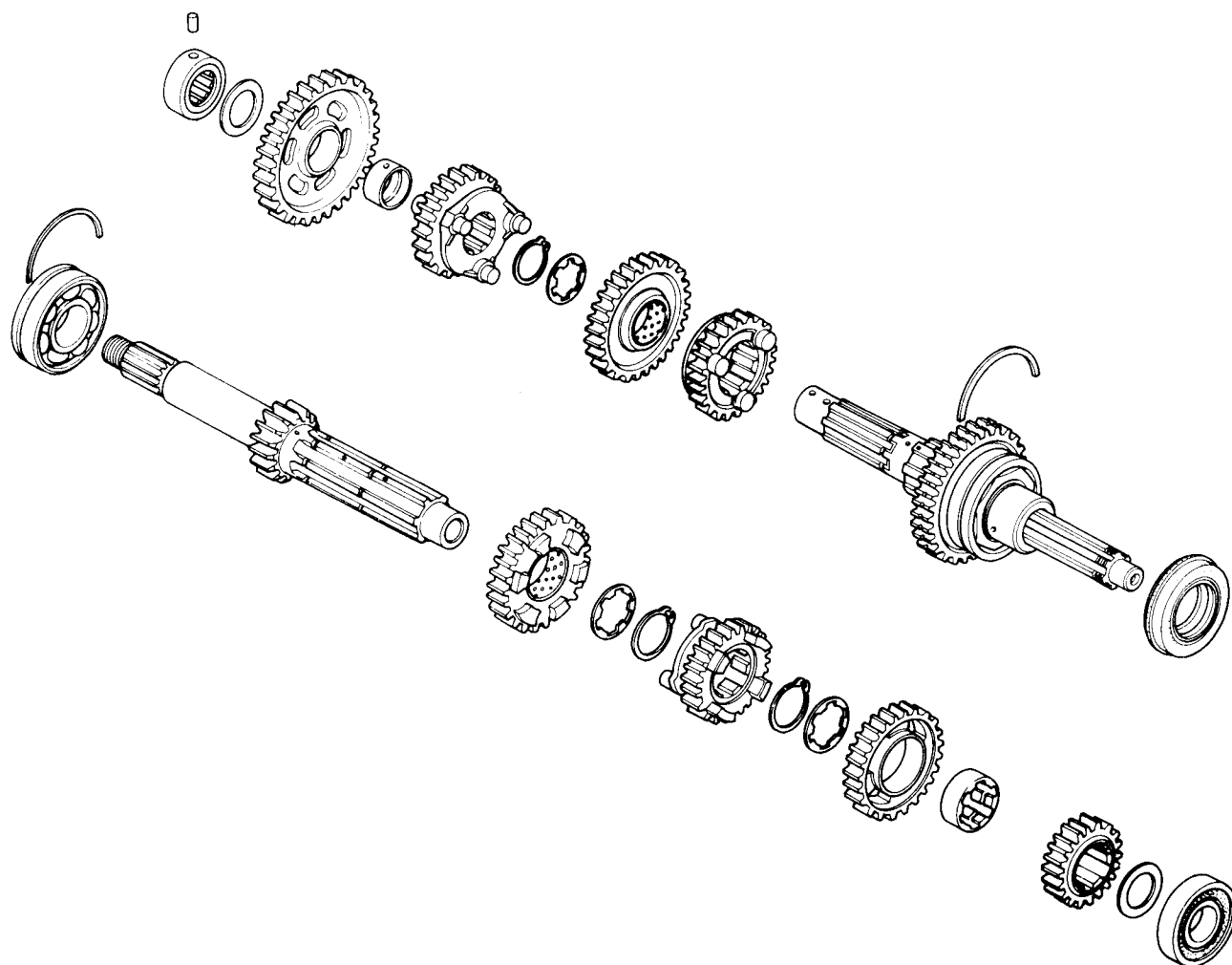




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|                           |      |
|---------------------------|------|
| SERVICE INFORMATION       | 12-1 |
| TROUBLESHOOTING           | 12-2 |
| TRANSMISSION DISASSEMBLY  | 12-3 |
| SHIFT FORK AND SHIFT DRUM | 12-5 |
| TRANSMISSION ASSEMBLY     | 12-8 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The gear shift linkage can be serviced with the engine in the frame (Section 9).
- For internal transmission repairs, the crankcase must be separated (Section 11).

### TOOLS

#### Common

|                    |               |                  |
|--------------------|---------------|------------------|
| Driver Handle B    | 07746-0020100 | or 07945-3230201 |
| Driver Handle C    | 07746-0030100 | or 07945-3710200 |
| 25 mm Inner Driver | 07746-0030200 |                  |

### SPECIFICATIONS

| Transmission | Backlash                           |                     | STANDARD                            | SERVICE LIMIT         |
|--------------|------------------------------------|---------------------|-------------------------------------|-----------------------|
|              |                                    |                     |                                     |                       |
|              |                                    | low, 2nd            | 0.021- 0.110 mm (0.0008-0.0043 in)  | 0.15 mm (0.006 in)    |
|              |                                    | 3rd, 4th, 5th       | 0.023- 0.117 mm (0.0009-0.0046 in)  | 0.15 mm (0.006 in)    |
|              | Gear I.D.                          | M4 gear             | 28.020-28.041 mm (1.1031-1.1040 in) | 28.06 mm (1.105 in)   |
|              |                                    | M5 gear             | 31.025-31.050 mm (1.2215-1.2224 in) | 31.07 mm (1.223 in)   |
|              |                                    | C1 gear             | 25.000-25.021 mm (0.9843-0.9851 in) | 25.06 mm (0.987 in)   |
|              |                                    | C3 gear             | 28.020-28.041 mm (1.3031-1.1040 in) | 28.07 mm (1.105 in)   |
|              | Gear bushing                       | M5 O.D.             | 30.950-30.975 mm (1.2185-1.2195 in) | 30.93 mm (1.218 in)   |
|              |                                    | C1 O.D.             | 24.959-24.980 mm (0.9826-0.9835 in) | 24.93 mm (0.981 in)   |
|              |                                    | C1 I.D.             | 22.010-22.031 mm (0.8665-0.8673 in) | 22.06 mm (0.869 in)   |
|              | Mainshaft O.D.                     | at M4               | 27.959-27.980 mm (1.1007-1.1016 in) | 27.930 mm (1.0996 in) |
|              | Countershaft O.D.                  | at C1 bushing       | 21.987-22.000 mm (0.8656-0.8661 in) | 21.930 mm (0.8634 in) |
|              |                                    | at C3               | 27.959-27.980 mm (1.1007-1.1016 in) | 27.941 mm (1.1000 in) |
|              | Gear to bushing or shaft clearance | M4 to shaft         | 0.040- 0.082 mm (0.0016-0.0032 in)  | 0.10 mm (0.004 in)    |
|              |                                    | M5 to M5 bushing    | 0.050- 0.100 mm (0.0020-0.0039 in)  | 0.12 mm (0.005 in)    |
|              |                                    | C1 to C1 bushing    | 0.010- 0.0044 mm (0.0004-0.0017 in) | 0.10 mm (0.004 in)    |
|              |                                    | C1 bushing to shaft | 0.020- 0.062 mm (0.0008-0.0024 in)  | 0.10 mm (0.004 in)    |
|              |                                    | C3 to shaft         | 0.040- 0.082 mm (0.0016-0.0032 in)  | 0.10 mm (0.004 in)    |



|            |                |                | STANDARD                            | SERVICE LIMIT       |
|------------|----------------|----------------|-------------------------------------|---------------------|
| Shift fork | Claw thickness |                | 6.43–6.50 mm (0.253–0.256 in)       | 6.1 mm (0.24 in)    |
|            | I.D.           | Center         | 13.000–13.018 mm (0.5118–0.5125 in) | 13.04 mm (0.513 in) |
|            |                | Left and right | 13.000–13.018 mm (0.5118–0.5125 in) | 13.04 mm (0.513 in) |
| Fork shaft | O.D.           |                | 12.966–12.984 mm (0.5104–0.5112 in) | 12.90 mm (0.508 in) |

## TROUBLESHOOTING

### Hard to shift

1. Improper clutch adjustment: too much free play
2. Shift fork bent
3. Shift shaft bent
4. Shift claw bent
5. Shift drum cam grooves damaged

### Transmission jumps out of gear

1. Gear dogs worn
2. Shift shaft bent
3. Shift drum stopper broken
4. Shift forks bent

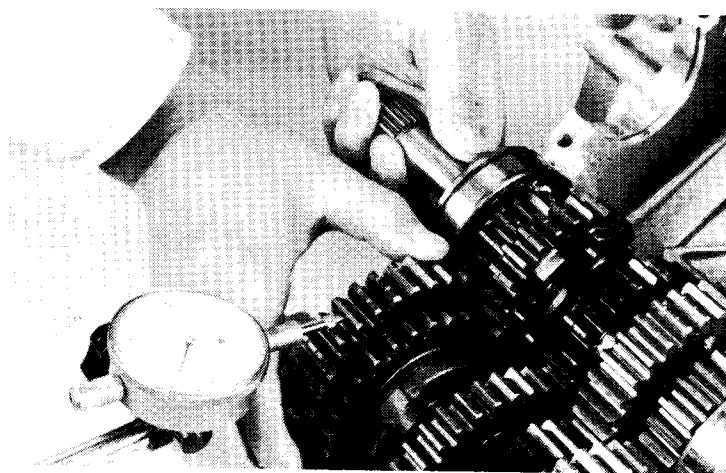


For servicing of the gearshift linkage, see Section 9.

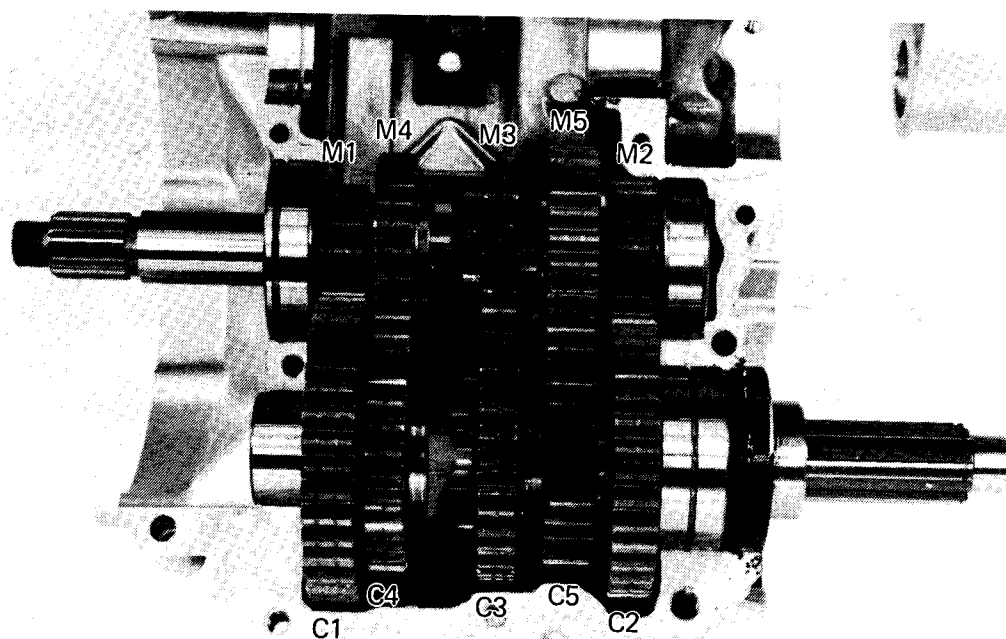
## TRANSMISSION DISASSEMBLY

Separate the crankcase (Section 11).  
Inspect each gear for backlash.

**SERVICE LIMIT:** 0.15 mm (0.006 in)



Remove the mainshaft and countershaft.  
Remove the dowel pins from the crankcase.





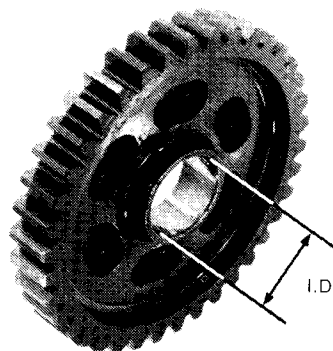
## TRANSMISSION INSPECTION

Check gear dogs, dog holes and teeth for excessive or abnormal wear, or evidence of insufficient lubrication.

Measure the I.D. of each gear.

**SERVICE LIMITS:**

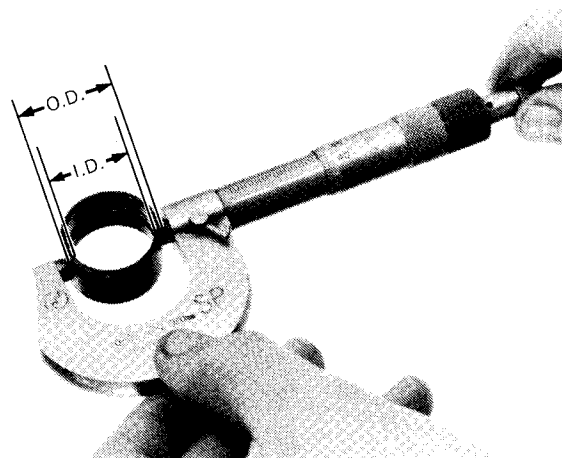
|           |                     |
|-----------|---------------------|
| M4 gear:  | 28.06 mm (1.105 in) |
| M5 gear:  | 31.07 mm (1.113 in) |
| C1 gear : | 25.06 mm (0.987 in) |
| C3 gear : | 28.07 mm (1.105 in) |



Measure the I.D. and O.D. of the gear bushings.

**SERVICE LIMITS:**

|           |                     |
|-----------|---------------------|
| M5 O.D.:  | 30.93 mm (1.218 in) |
| C1 O.D. : | 24.93 mm (0.981 in) |
| C1 I.D. : | 22.06 mm (0.869 in) |



Measure the O.D. of the mainshaft and countershaft.

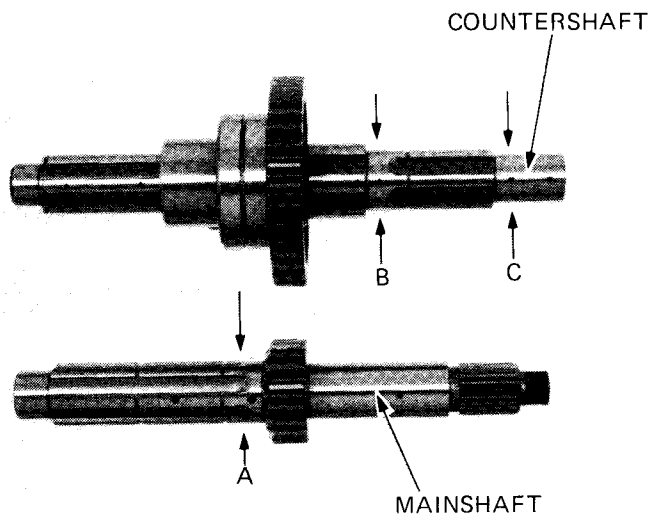
**SERVICE LIMITS:**

|                   |                         |
|-------------------|-------------------------|
| A (at M4 gear)    | : 27.930 mm (1.0996 in) |
| B (at C3 gear)    | : 27.941 mm (1.1000 in) |
| C (at C1 bushing) | : 21.930 mm (0.8634 in) |

Calculate the clearance between the gear and gear shaft or bushing.

**SERVICE LIMITS:**

|                     |                      |
|---------------------|----------------------|
| M5 to M5 bushing    | : 0.12 mm (0.005 in) |
| M4 to shaft         | : 0.10 mm (0.004 in) |
| C1 to C1 bushing    | : 0.10 mm (0.004 in) |
| C1 bushing to shaft | : 0.10 mm (0.004 in) |
| C3 to shaft         | : 0.10 mm (0.004 in) |



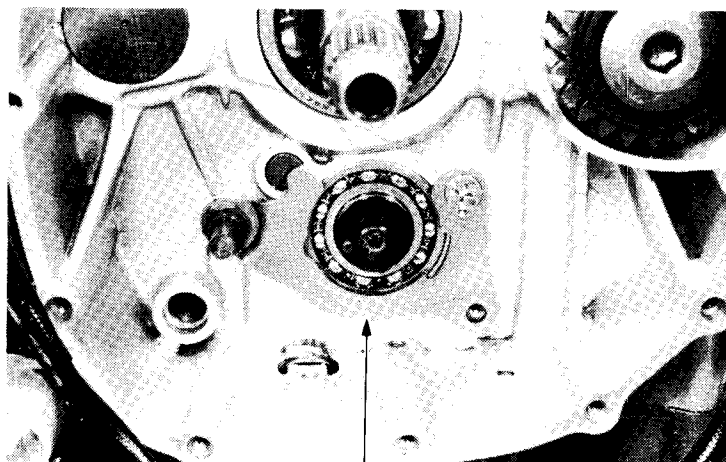




## SHIFT FORK AND SHIFT DRUM

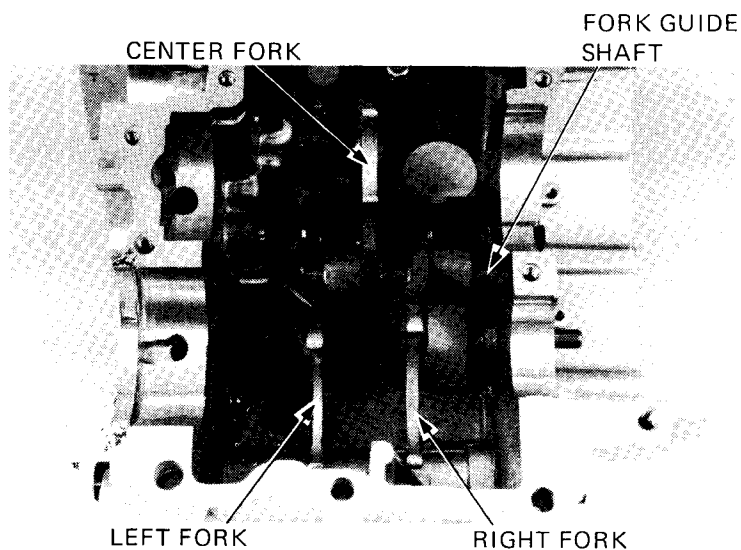
### REMOVAL

Remove the bearing stopper plate.



BEARING STOPPER PLATE

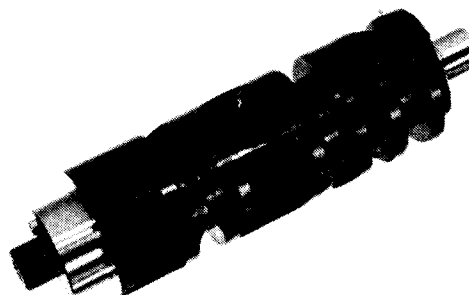
Remove the shift fork shaft and shift forks.  
Remove the shift drum.



### GEAR SHIFT DRUM AND SHIFT FORK INSPECTION

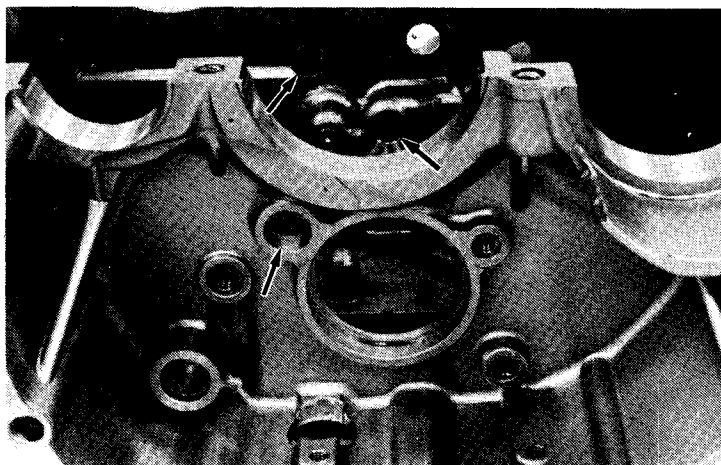
Inspect the shift drum end for scoring, scratches, or evidence of insufficient lubrication.

Check the shift drum grooves for damage.

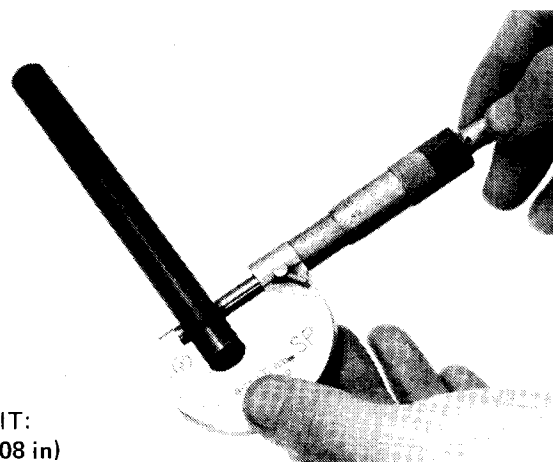




Inspect the shift drum hole and shift fork shaft hole for scoring or scratches.



Measure the shift fork shaft O.D.  
Check for scratches, scoring, or evidence of insufficient lubrication.

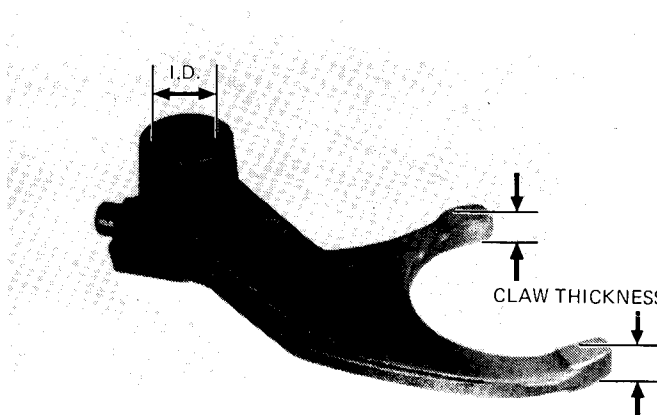


**SERVICE LIMIT:**  
**12.90 mm (0.508 in)**

Measure the shift fork I.D. and claw thickness.

**SERVICE LIMITS:**

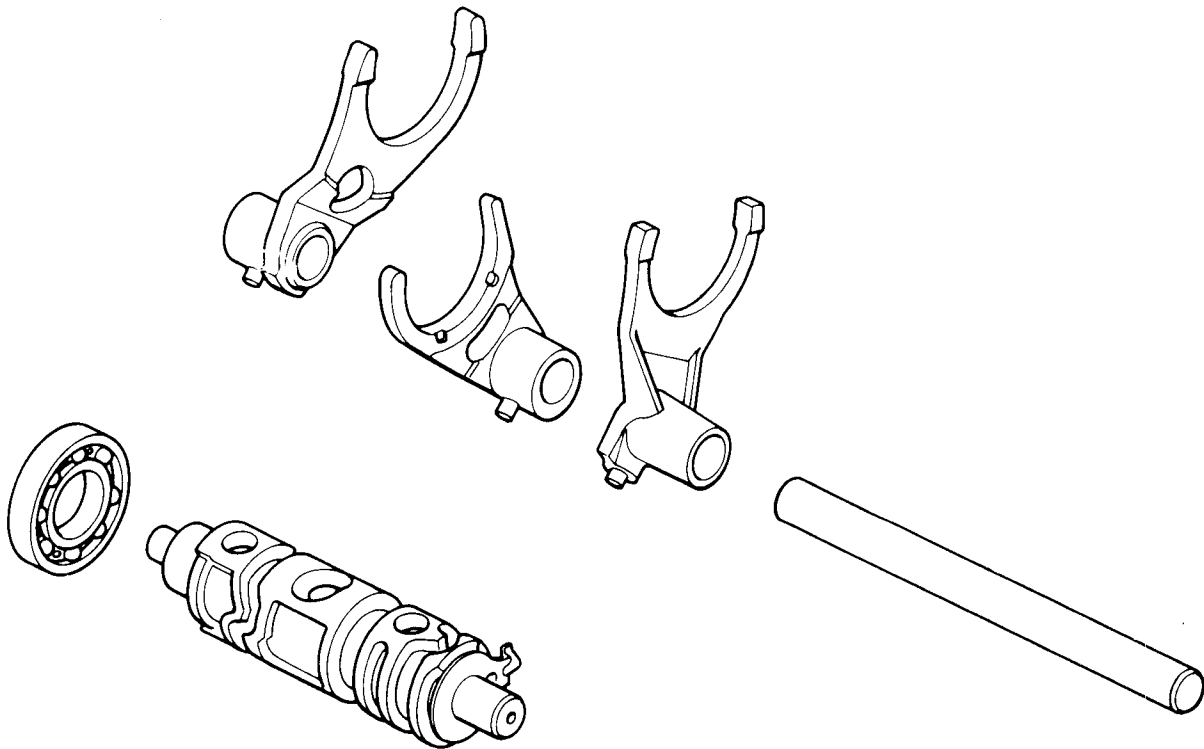
**I.D.:** 13.04 mm (0.513 in)  
**CLAW THICKNESS:** 6.1 mm (0.24 in)





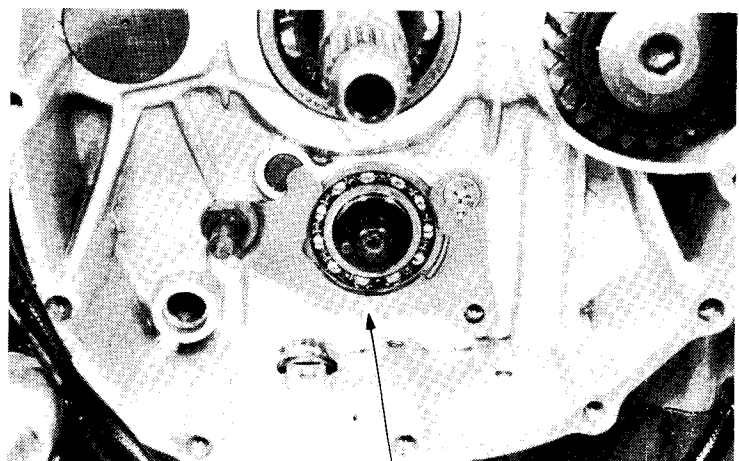
## INSTALLATION

Install the shift drum and shift fork, by reversing the removal procedure.  
Key points are shown here.



### CAUTION:

*When installing the bearing stopper plate, apply a locking agent to the screw threads.*



BEARING STOPPER PLATE

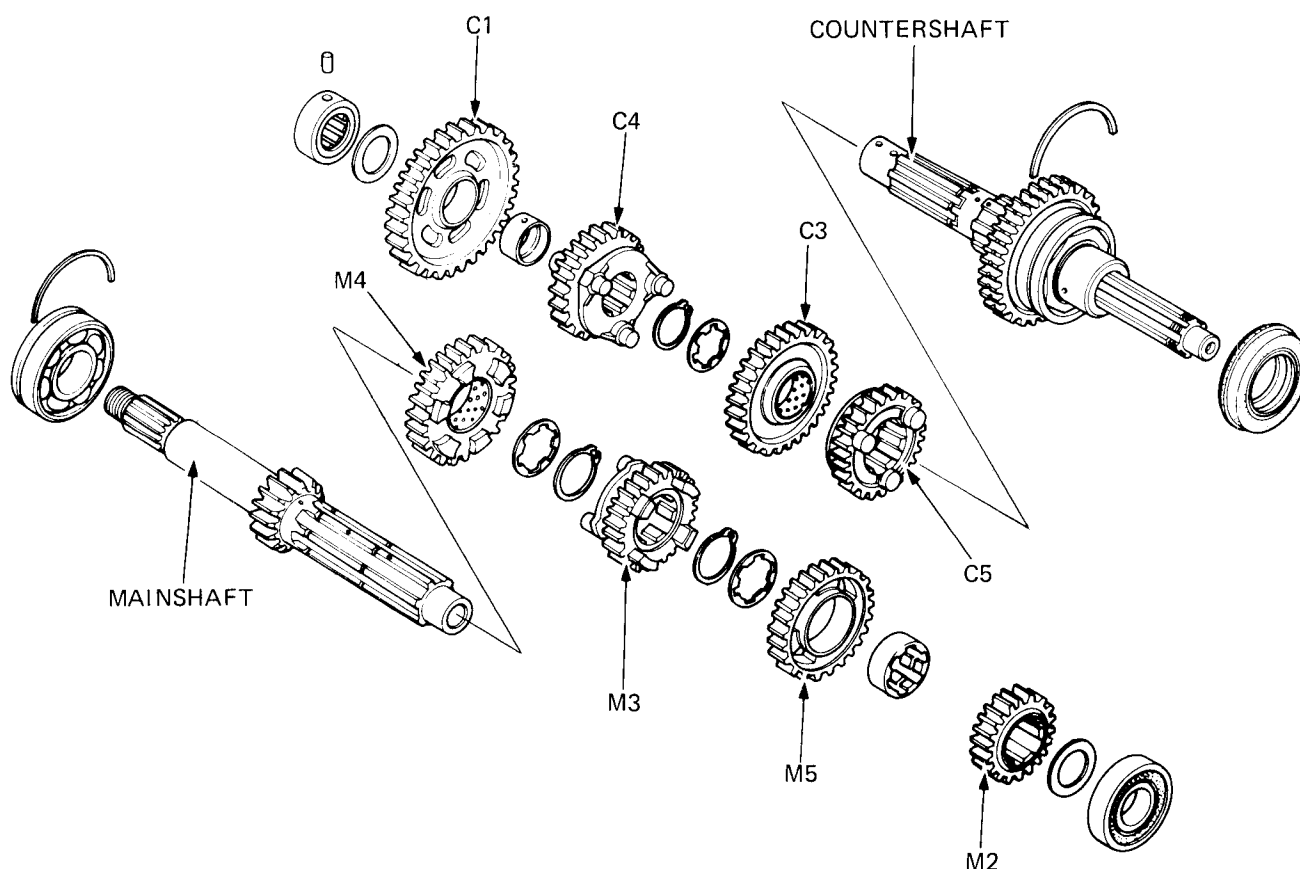


## TRANSMISSION ASSEMBLY

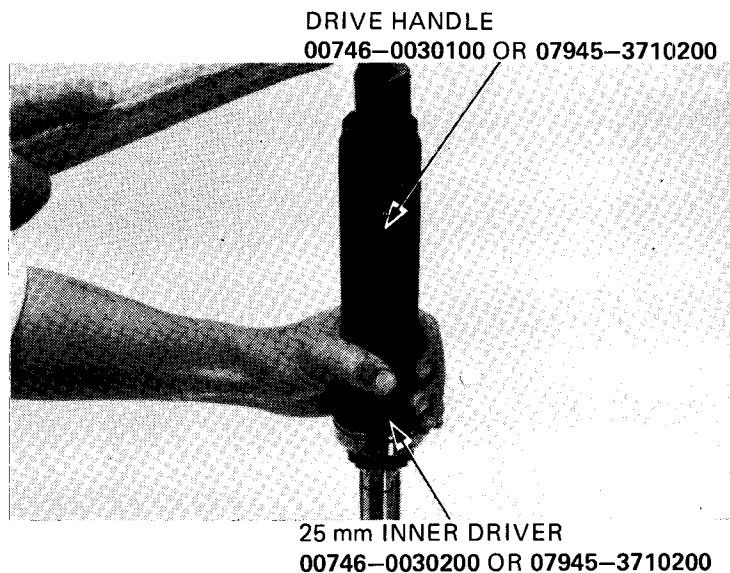
Assemble the mainshaft and countershaft.

### NOTE

- Check the gears for freedom of movement or rotation on the shaft.
- Check that the snap rings are seated in the grooves.

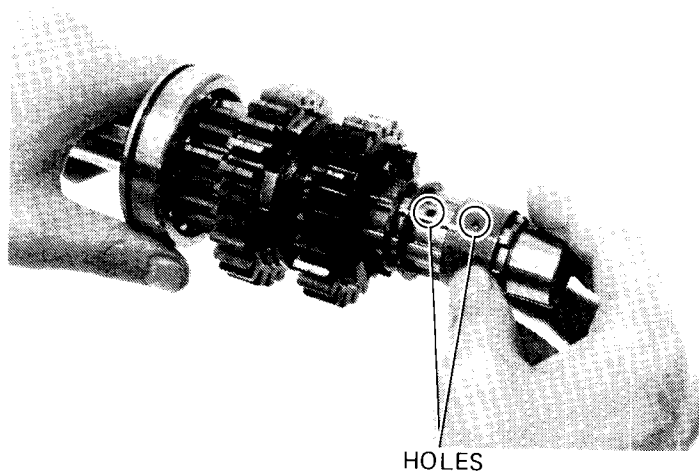


Install the mainshaft bearing with tools.

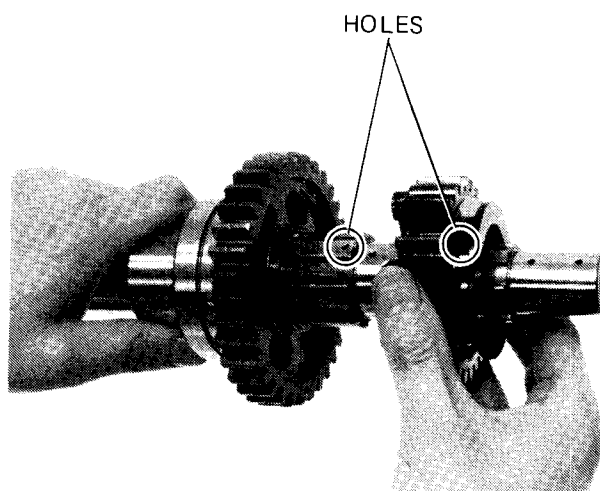




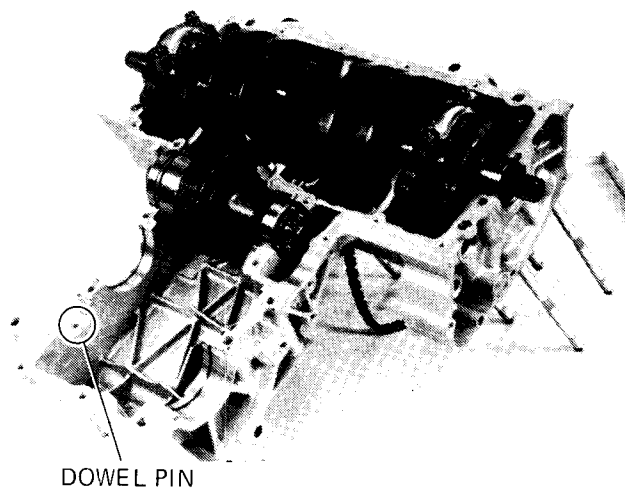
Align the hole in the M5 gear bushing with the hole in the mainshaft.



Align the hole in the C5 gear with the hole in the countershaft.

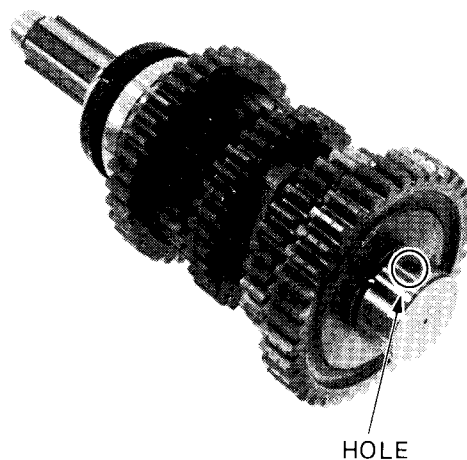


Insert the dowel pin.

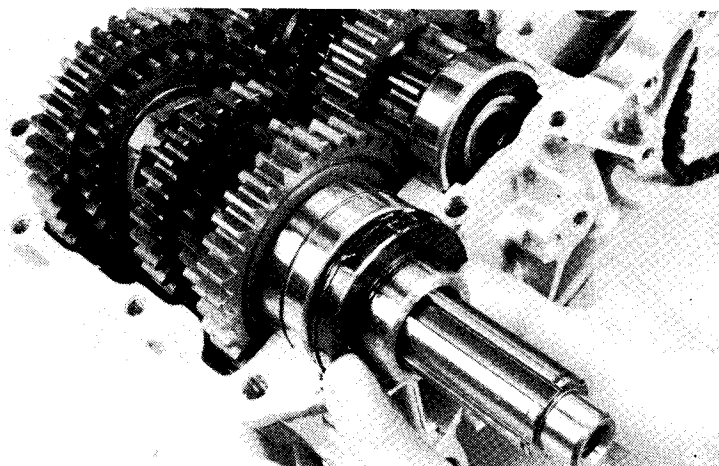




Align the hole in the countershaft bearing with the dowel pin.

**NOTE**

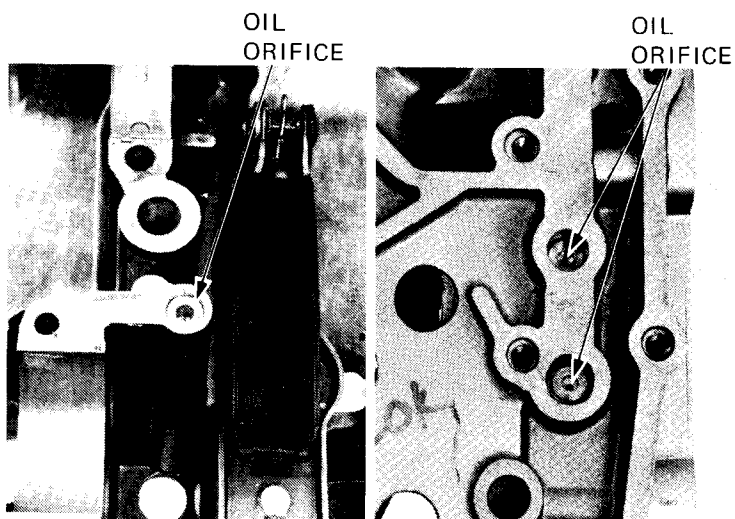
Push the countershaft oil seal in until the oil seal lip is seated completely on the bearing before assembling the lower crankcase to prevent oil leakage.



Install the lower crankcase (Refer to Section 11).

**NOTE**

Check the oil orifice for clogging, before installing the lower crankcase.

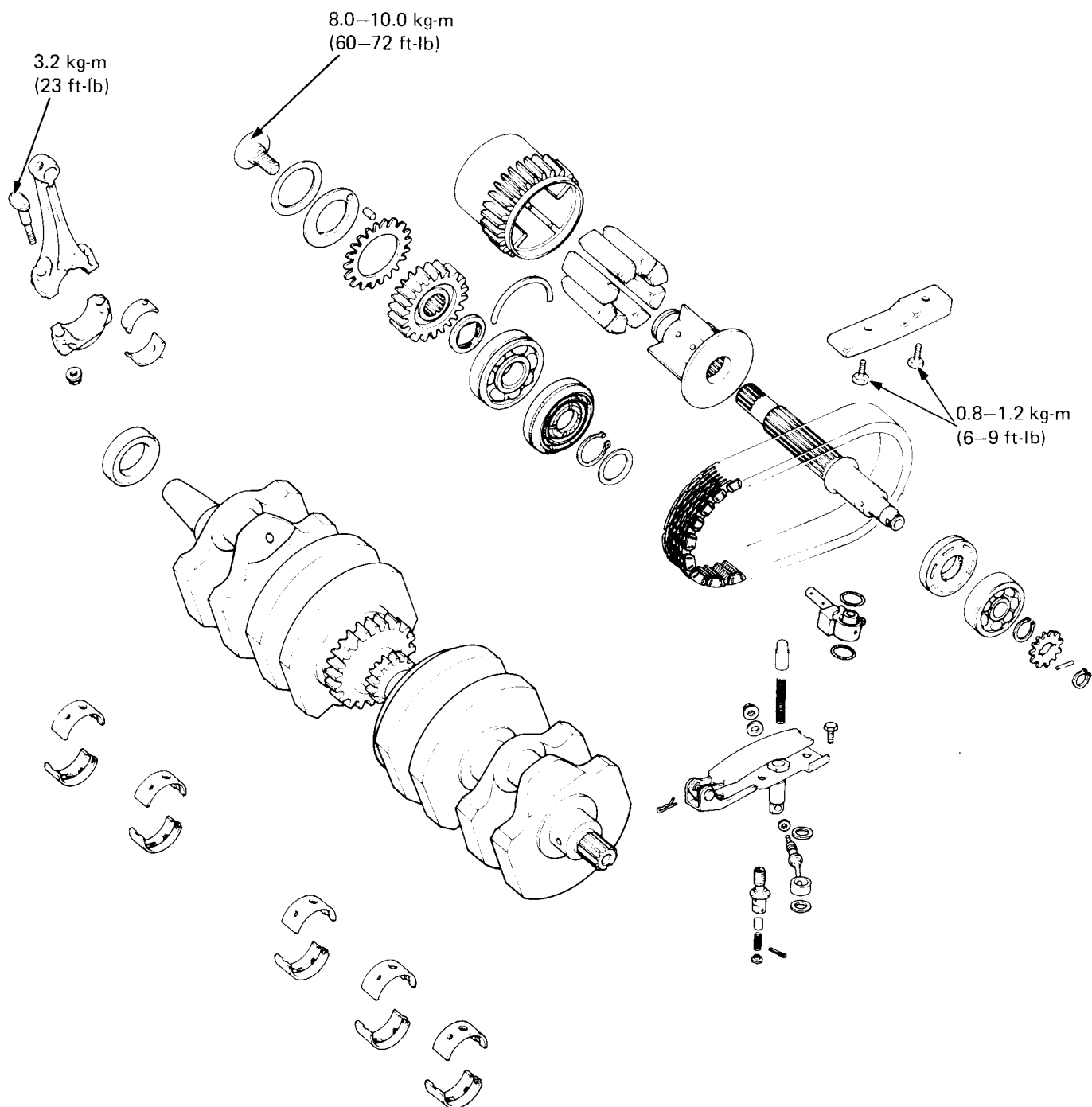




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**CB900C**

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MEMO







|                                     |       |
|-------------------------------------|-------|
| SERVICE INFORMATION                 | 13- 1 |
| TROUBLESHOOTING                     | 13- 2 |
| PRIMARY SHAFT REMOVAL               | 13- 3 |
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## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- All bearing inserts are select fit and are identified by color code. Select replacement bearings from the code tables. After installing new bearings, recheck them with plastigauge to verify clearance.
- Apply molybdenum disulfide grease to the main journals and crankpins during assembly.

### TOOLS

#### Common

|                    |               |
|--------------------|---------------|
| Driver Handle      | 07746-0020100 |
| 20 mm Inner driver | 07746-0030200 |

### TORQUE VALUES

|                              |                             |
|------------------------------|-----------------------------|
| Crankpin                     | 3.2 kg-m (23 ft-lb)         |
| Crankshaft                   | 2.1-2.5 kg-m (15-18 ft-lb)  |
| Primary chain tensioner bolt | 0.8-1.2 kg-m ( 6- 9 ft-lb)  |
| Primary shaft lock bolt      | 8.0-10.0 kg-m (60-72 ft-lb) |



## SPECIFICATIONS

|                  |                                       | STANDARD                            | SERVICE LIMIT         |
|------------------|---------------------------------------|-------------------------------------|-----------------------|
| Electric Starter | Drive gear O.D.                       | 47.175–47.200 mm (1.8573–1.8583 in) | 47.155 mm (1.8565 in) |
|                  | Idle gear I.D.                        | 10.000–10.015 mm (0.3937–0.3943 in) | 10.04 mm (0.395 in)   |
|                  | Idle gear shaft O.D.                  | 11.966–11.984 mm (0.4711–0.4718 in) | 11.95 mm (0.470 in)   |
|                  | Idle gear-to-shaft clearance          | —————                               | 0.10 mm (0.004 in)    |
| Crankshaft       | Connecting rod big end side clearance | 0.05–0.20 mm (0.002–0.008 in)       | 0.3 mm (0.01 in)      |
|                  | Runout                                | —————                               | 0.05 mm (0.002 in)    |
|                  | Crankpin oil clearance                | 0.020–0.060 mm (0.0008–0.0024 in)   | 0.08 mm (0.003 in)    |
|                  | Main journal oil clearance            | 0.020–0.060 mm (0.0008–0.0024 in)   | 0.08 mm (0.003 in)    |
| Cam chain        | Length at 13 kg tension               | 315.40–315.74 mm (12.417–12.430 in) | 318.2 mm (12.53 in)   |
| Primary chain    | Length at 36 kg tension               | 139.3–139.5 mm (5.48–5.49 in)       | 140.9 mm (5.55 in)    |

## TROUBLESHOOTING

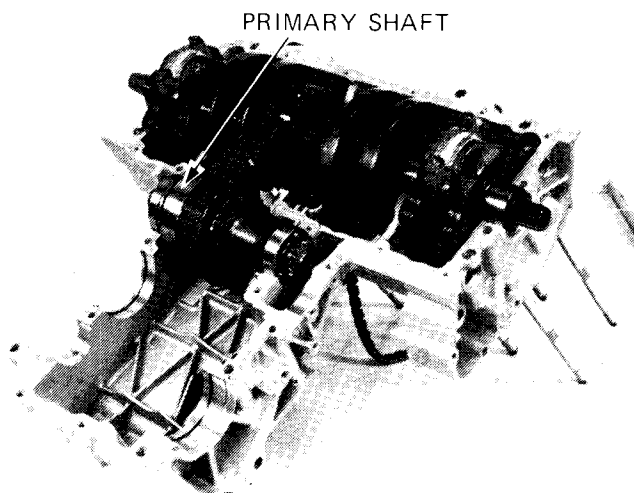
## Excessive noise

- Worn main journal bearing
- Worn crank pin bearing

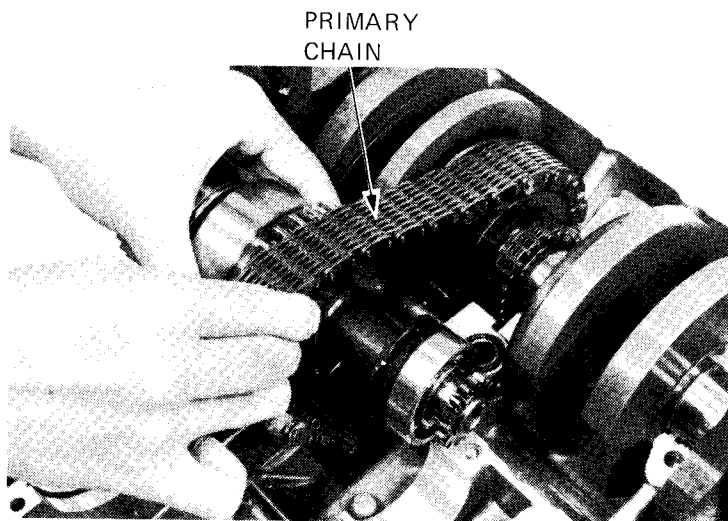


## PRIMARY SHAFT REMOVAL

Remove the starting motor (Section 20).  
Remove the A.C. generator (Section 18).  
Loosen the primary shaft drive gear lock bolt (Section 8).  
Disassemble the crankcase (Section 11).  
Remove the transmission assembly (Section 12).



Raise the primary shaft assembly and remove the primary chain.

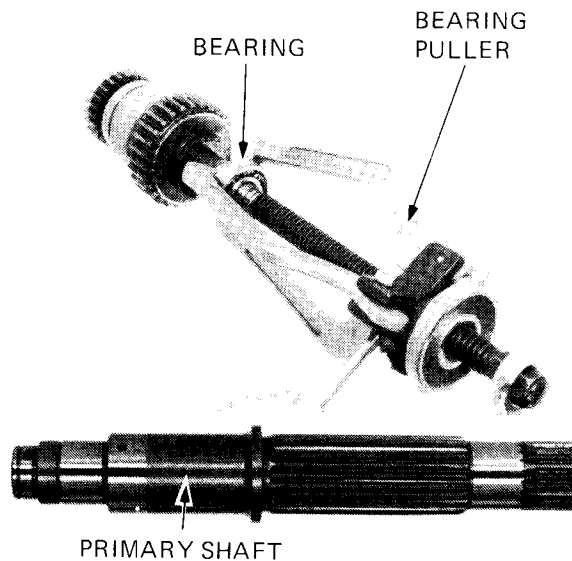


## PRIMARY SHAFT DISASSEMBLY

Remove the bearing.

### PRIMARY SHAFT INSPECTION

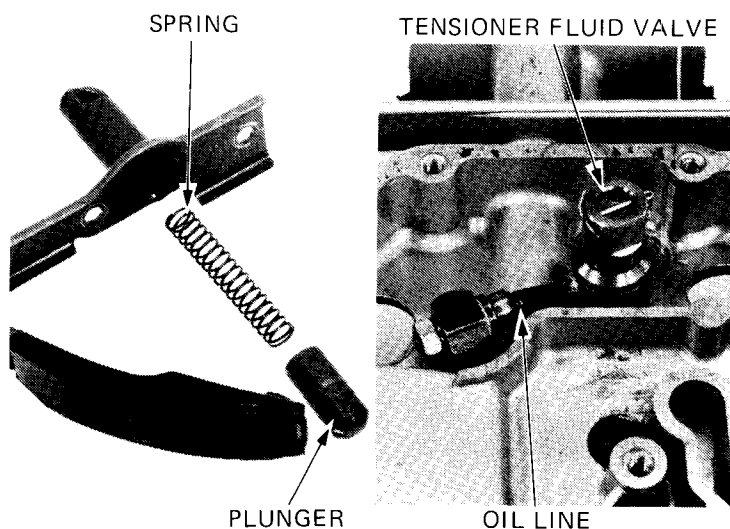
Check for scoring, wear or other damage.





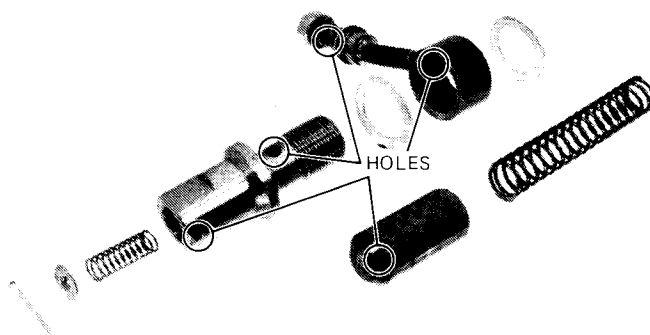
## PRIMARY CHAIN TENSIONER DISASSEMBLY

Remove the spring and plunger.  
 Remove the nut, tensioner fluid valve and oil line.  
 Remove the slipper assembly.



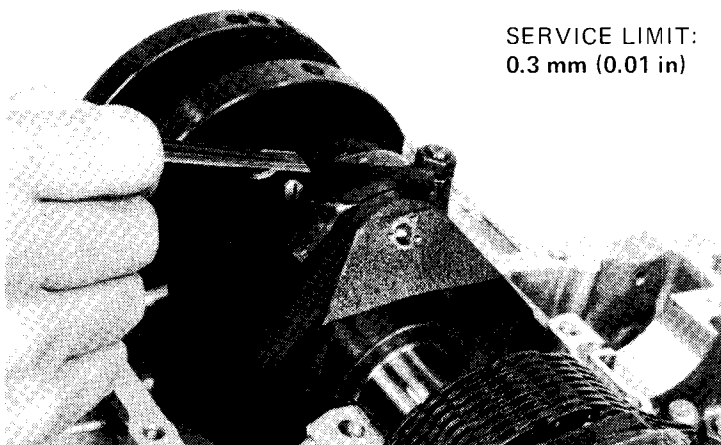
## INSPECTION

Check the holes in the oil line and plunger for blockage.  
 Clean all parts with non-flammable or high flash point solvent.  
 Inspect the slipper for damage or excessive wear.



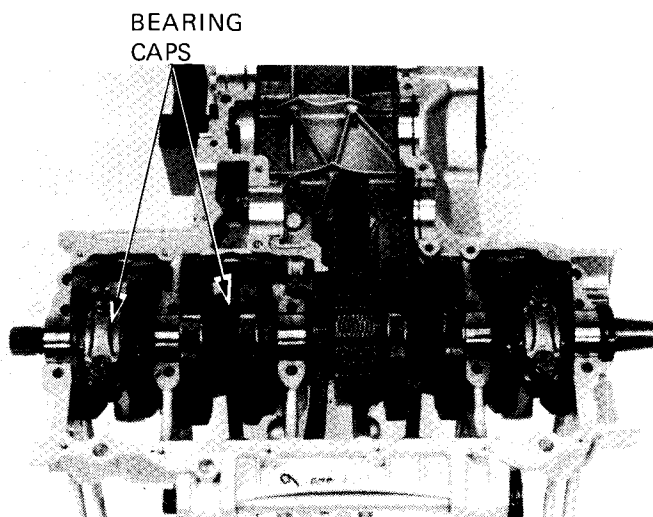
## CONNECTING ROD REMOVAL

Check the connecting rod side clearance.





Remove the bearing caps and rods.



### NOTE

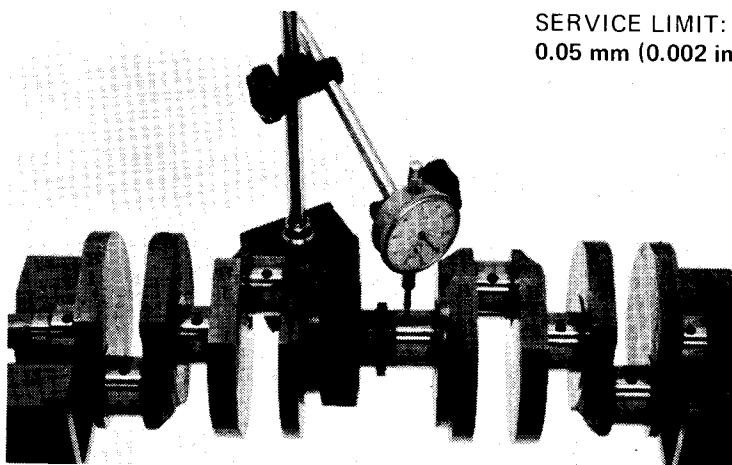
Mark the rods, bearings and bearing caps to indicate cylinder position.



### CRANKSHAFT INSPECTION

Remove the cam chain and primary chain.  
Set the crankshaft on a stand or V blocks.  
Set a dial indicator to the center main journal.  
Rotate the crankshaft two revolutions and read runout at the center journal.  
Actual runout is 1/2 of Total Indicator Reading.

SERVICE LIMIT:  
0.05 mm (0.002 in)





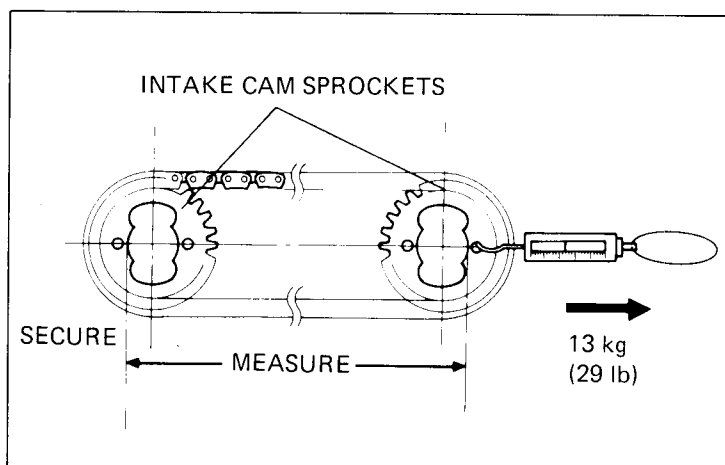
### CAM CHAIN LENGTH MEASUREMENT

Place the cam chain over the intake cam sprockets.

Secure one sprocket. Apply 13 kg (29 lb) of tension with a spring scale to the other sprocket.

Measure the chain length as shown.

**SERVICE LIMIT: 318.2 mm (12.53 in)**

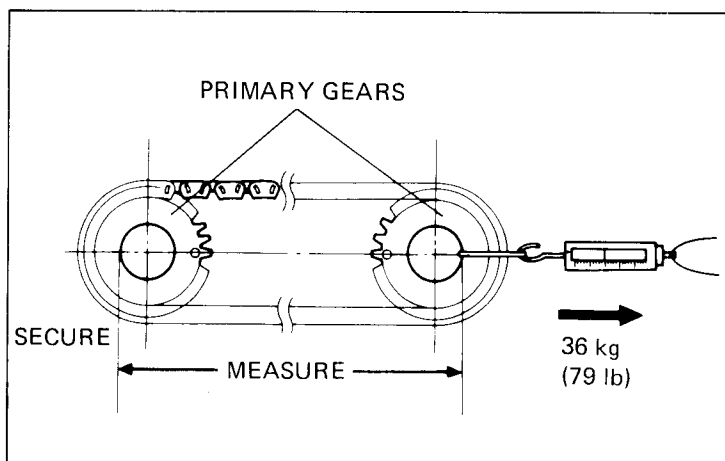


### PRIMARY CHAIN LENGTH MEASUREMENT

Place the primary chain over the primary driven gears. Secure one gear.

Apply 36 kg (79 lb) of tension with a spring scale to the other gear. Measure the chain length as shown.

**SERVICE LIMIT: 140.9 mm (5.54 in)**



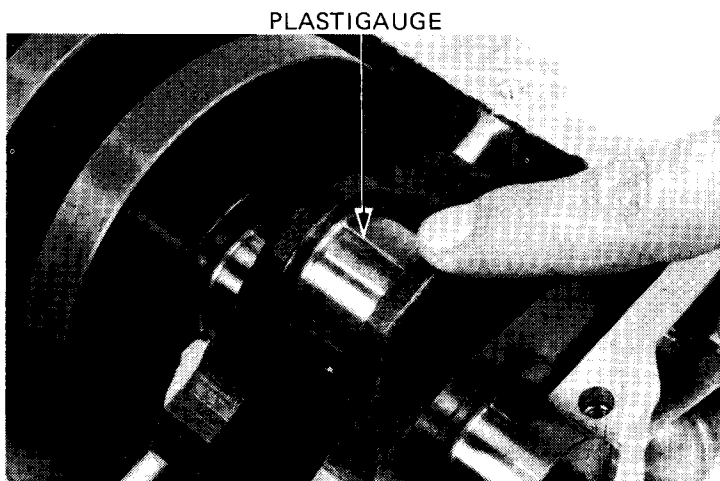
## BEARING INSPECTION

### CONNECTING RODS

Inspect the bearing inserts for damage or separation.

Clean all oil from the bearing inserts and crankpins.

Put a piece of plastigauge on each crankpin avoiding the oil hole.



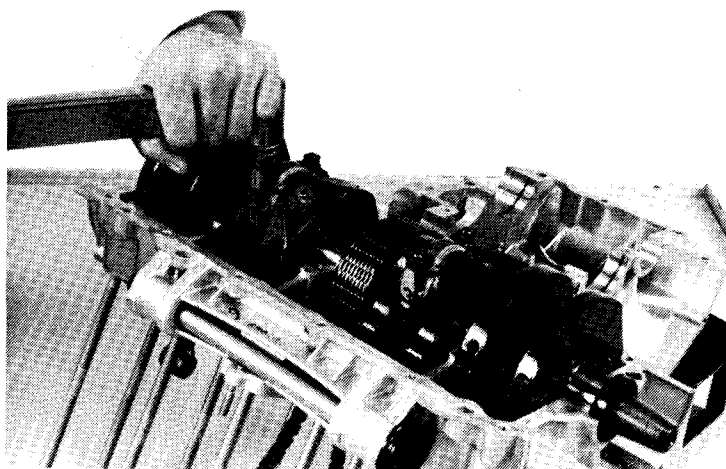


Install the bearing caps and rods on the correct crankpins, and tighten them evenly.

**TORQUE: 3.2 kg-m (23 ft-lb)**

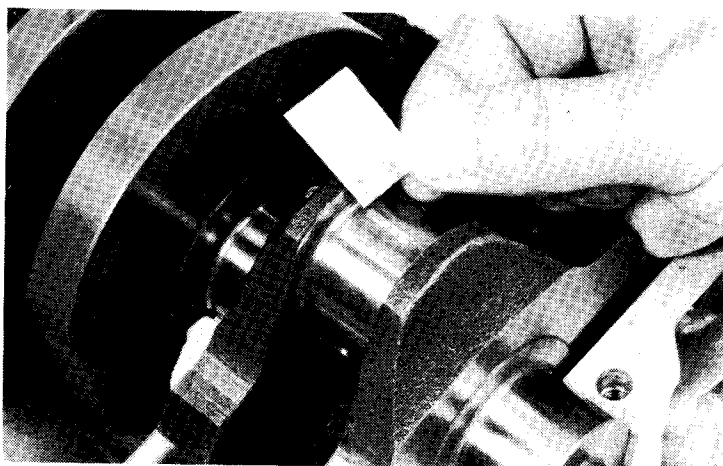
### NOTE

Do not rotate the crankshaft during inspection.



Remove the caps and measure the compressed plastigauge on each crankpin.

**OIL CLEARANCE SERVICE LIMIT:**  
0.08 mm (0.003 in)

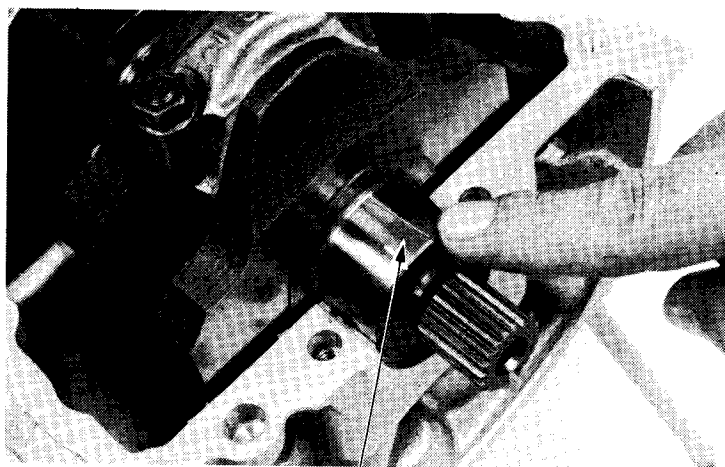


### MAIN BEARINGS

Inspect the bearing inserts for damage or separation.

Clean all oil from the bearing inserts and journals.

Put a piece of plastigauge on each journal, avoiding the oil holes.



PLASTIGAUGE



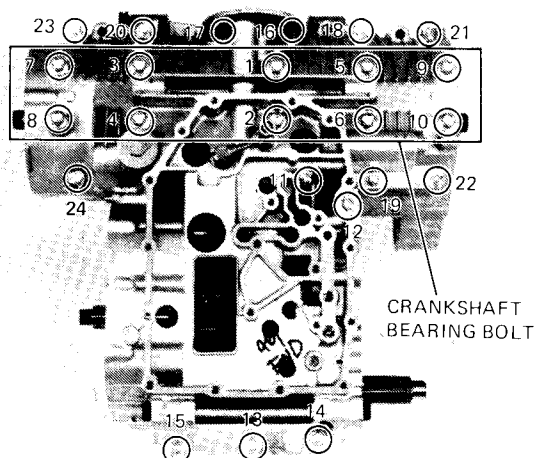
Install the main bearings on the correct journals on the lower crankcase and tighten them evenly in the sequence shown and in 2-3 steps.

**TORQUE VALUES:**

|                        |                               |
|------------------------|-------------------------------|
| 8 mm bolt (Crankshaft) | 2.1–2.5 kg-m<br>(15–18 ft-lb) |
| 8 mm bolt (Crankcase)  | 2.1–2.5 kg-m<br>(15–18 ft-lb) |
| 6 mm bolt              | 1.0–1.4 kg-m<br>(7–10 ft-lb)  |
| 10 mm bolt             | 4.5–5.0 kg-m<br>(33–36 ft-lb) |

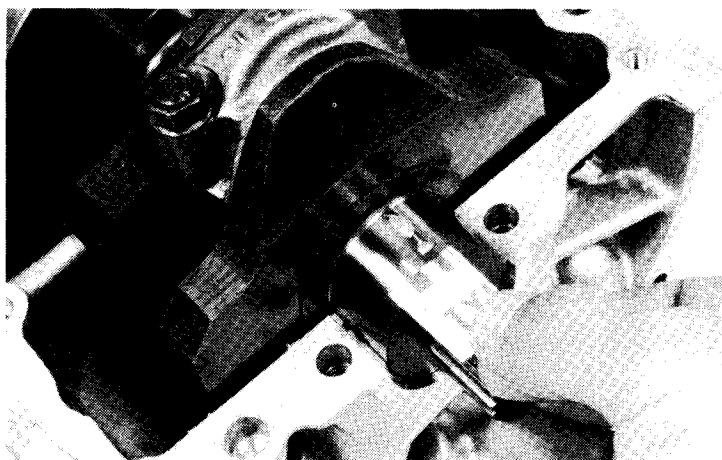
**NOTE**

Do not rotate the crankshaft during inspection.



Remove the lower crankcase and measure the compressed plastigauge on each journal.

**OIL CLEARANCE SERVICE LIMIT:**  
 0.08 mm (0.003 in)

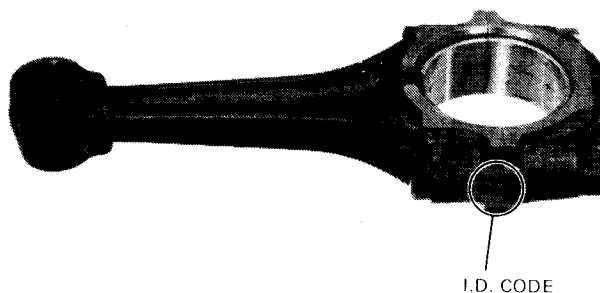


## BEARING SELECTION

If rod bearing clearance is beyond tolerance, select replacement bearings as follows:

### CONNECTING ROD BEARING INSERTS

Determine and record the corresponding rod I.D. code number.



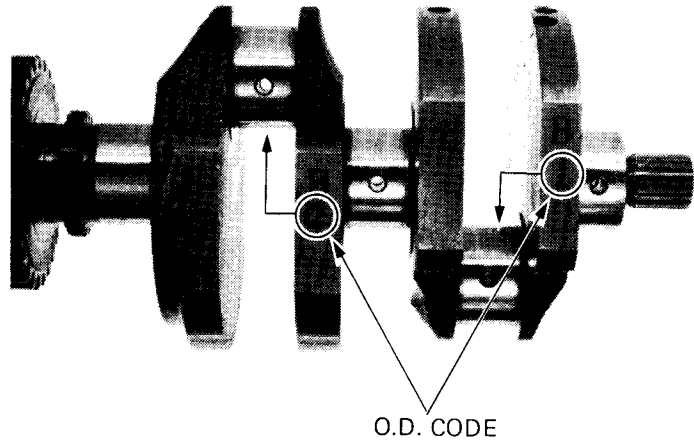




Determine and record the corresponding crankpin O.D. code number (or measure the crankpin O.D.).

#### NOTE

Number 1, 2 or 3 on each crank weight is the code for each crankpin O.D.

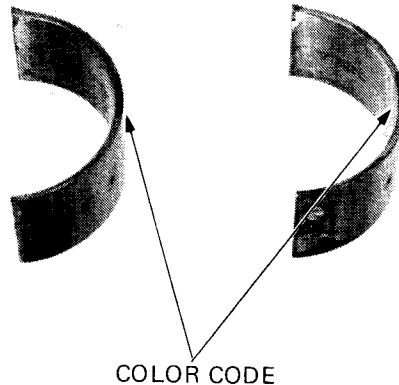


Cross reference the crankpin and rod codes to determine the replacement bearing color.

|                                    |   |                      | CRANKPIN O.D. CODE NO. |                      |                      |
|------------------------------------|---|----------------------|------------------------|----------------------|----------------------|
|                                    |   |                      | 1                      | 2                    | 3                    |
|                                    |   |                      | 35.992–<br>36.000 mm   | 35.984–<br>35.992 mm | 35.975–<br>35.984 mm |
| CONNECTING<br>ROD I.D.<br>CODE NO. | 1 | 39.000–<br>39.008 mm | E (Yellow)             | D (Green)            | C (Brown)            |
|                                    | 2 | 39.008–<br>39.016 mm | D (Green)              | C (Brown)            | B (Black)            |
|                                    | 3 | 39.016–<br>39.024 mm | C (Brown)              | B (Black)            | A (Blue)             |

#### BEARING INSERT THICKNESS:

A (Blue) : 1.502–1.506 mm (0.0591–0.0593 in)  
 B (Black) : 1.498–1.502 mm (0.0590–0.0591 in)  
 C (Brown) : 1.494–1.498 mm (0.0588–0.0590 in)  
 D (Green) : 1.490–1.494 mm (0.0587–0.0588 in)  
 E (Yellow) : 1.486–1.490 mm (0.0585–0.0587 in)

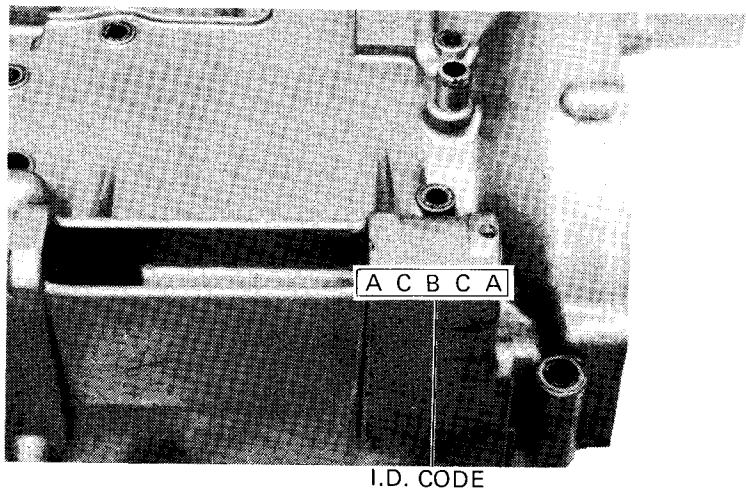


#### MAIN BEARING

Determine and record crankcase I.D. code numbers.

#### NOTE

Letters A, B or C on the upper rear crankcase are the codes for the main journal I.D. from left to right; I.D. code for the third main journal from left to right is B.

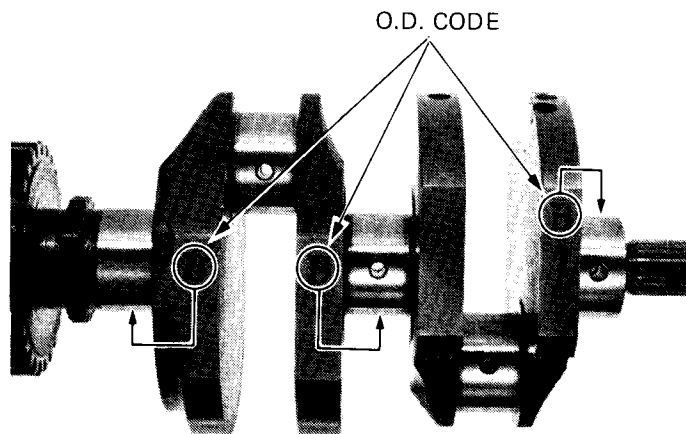




Determine and record the corresponding main journal O.D. code letters (or measure the main journal O.D.).

### NOTE

Letter A, B or C on each crank weight is the code for the adjacent main journal O.D.

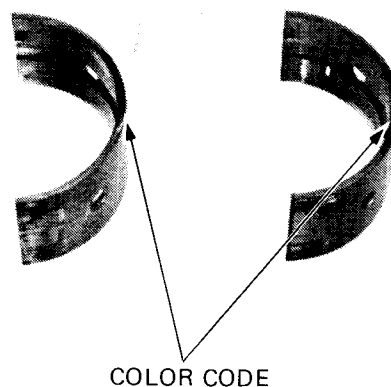


Cross reference the case and journal codes to determine the replacement bearing.

|                    |   | MAIN JOURNAL O.D. CODE NO. |                  |                  |
|--------------------|---|----------------------------|------------------|------------------|
|                    |   | A                          | B                | C                |
|                    |   | 35.992–36.000 mm           | 35.984–35.992 mm | 35.975–35.984 mm |
| CASE I.D. CODE NO. | A | 39.000–39.008 mm           | D (Yellow)       | C (Green)        |
|                    | B | 39.008–39.016 mm           | C (Green)        | B (Brown)        |
|                    | C | 39.016–39.024 mm           | B (Brown)        | A (Black)        |

### MAIN BEARING INSERT THICKNESS:

A (Black) : 1.498–1.502 mm (0.0590–0.0591 in)  
B (Brown) : 1.494–1.498 mm (0.0588–0.0590 in)  
C (Green) : 1.490–1.494 mm (0.0587–0.0588 in)  
D (Yellow) : 1.486–1.490 mm (0.0585–0.0587 in)  
E (Blue) : 1.502–1.506 mm (0.0591–0.0593 in)

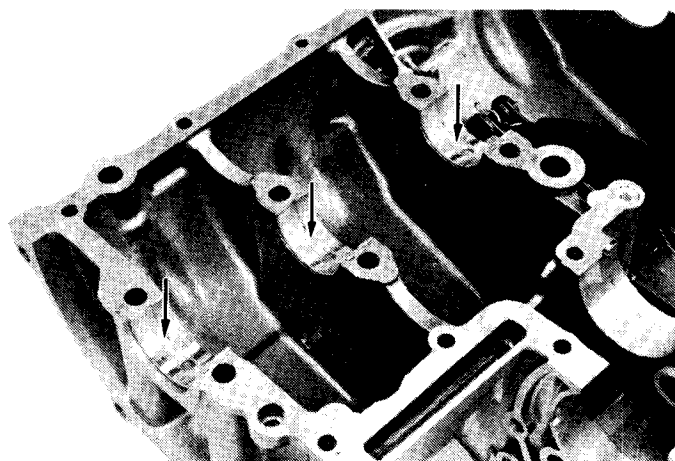


## CONNECTING ROD INSTALLATION

Install the main bearings into the upper crankcase.

Apply molybdenum disulfide grease to the upper and lower main bearings.

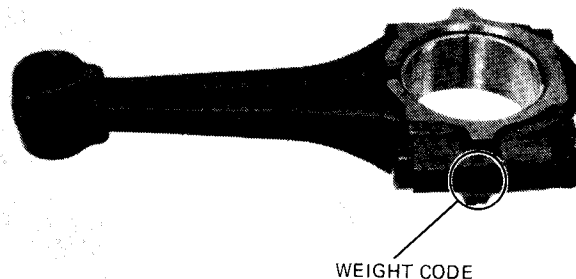
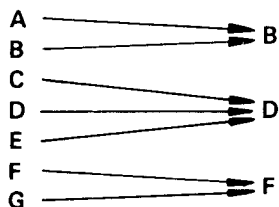
Install the crankshaft with the cam chain and primary chain.



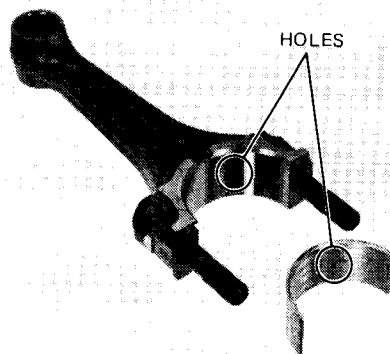


Before installing the connecting rods, make sure that the weight code combination is properly made:

**Factory set code      Available code**

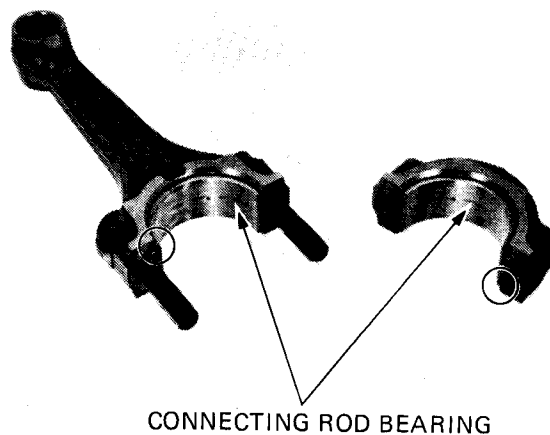


Align the hole in the bearing insert with the hole in the connecting rod.



Install the connecting rod and cap bearing inserts.

Apply molybdenum disulfide grease to the connecting rod bearings.



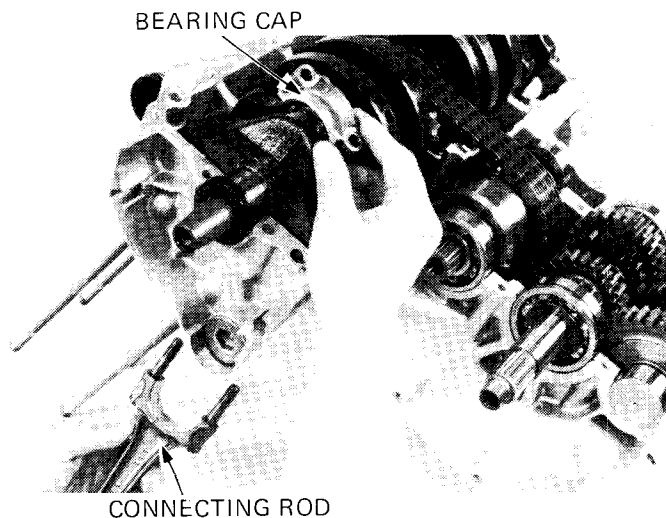


## 180 CRANKSHAFT/PRIMARY SHAFT

Install the connecting rods and bearing caps.

### NOTE

- Be sure connecting rods are installed in their correct position and the oil holes point to the rear.
- Cross reference the rod and cap I.D. codes to insure original assembly.

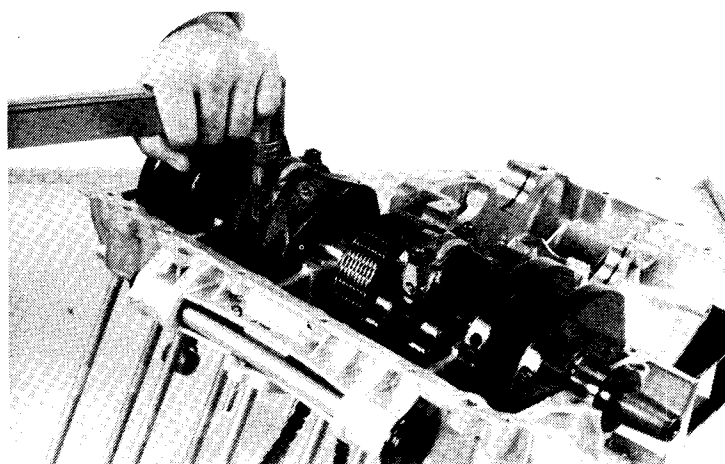


Tighten the connecting rod bearing cap bolts.

**TORQUE: 3.2 kg-m (23 ft-lb)**

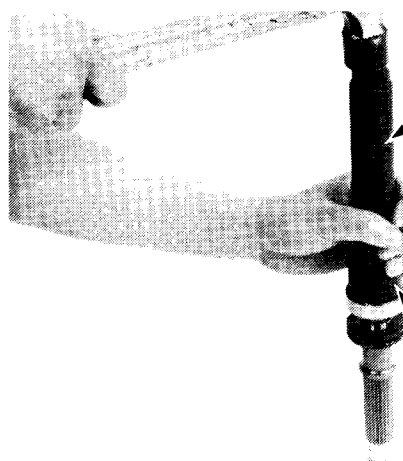
### NOTE

- Tighten the rod bearing cap bolts in two or more steps.
- After tightening the bolts, check that the rod moves freely without binding.



## PRIMARY SHAFT ASSEMBLY

Insert the bearing into the primary shaft.

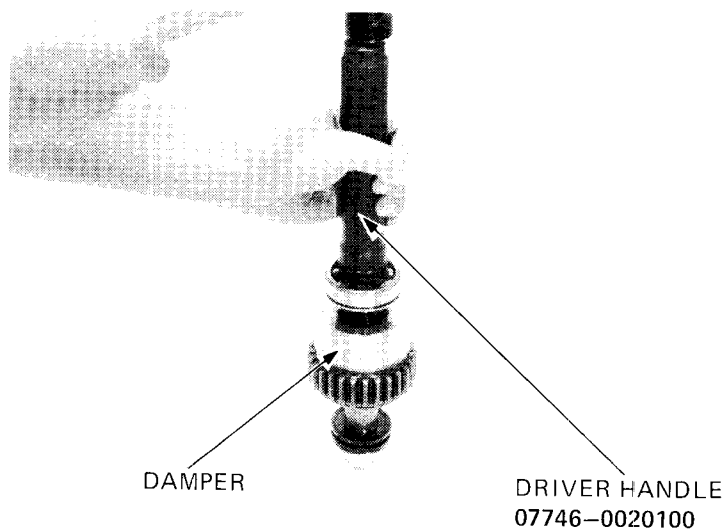


DRIVER HANDLE  
07746-0020100

20 mm INNER DRIVER  
07746-0030200

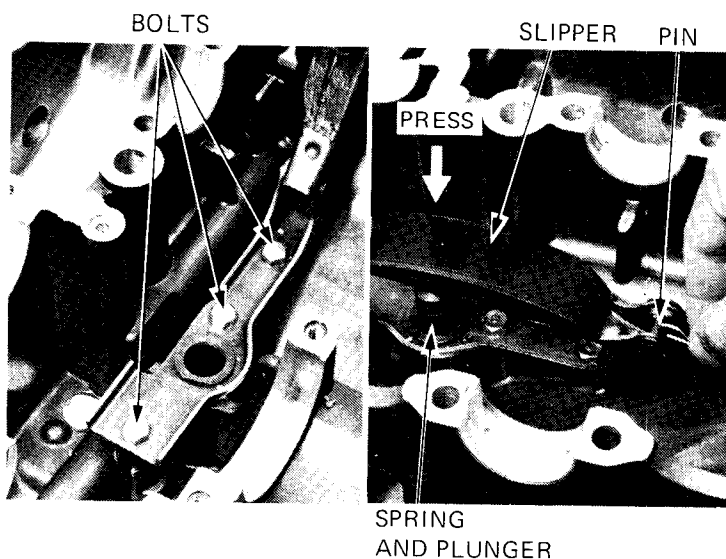


Install the damper and bearings.  
Tighten the lock bolt (Section 8).

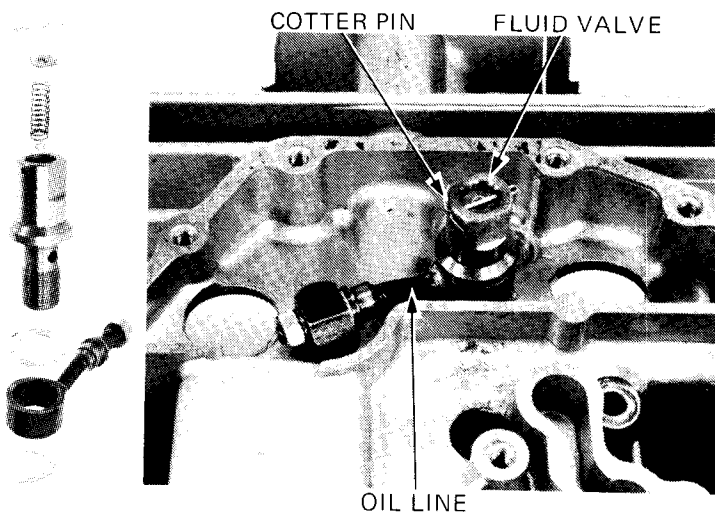


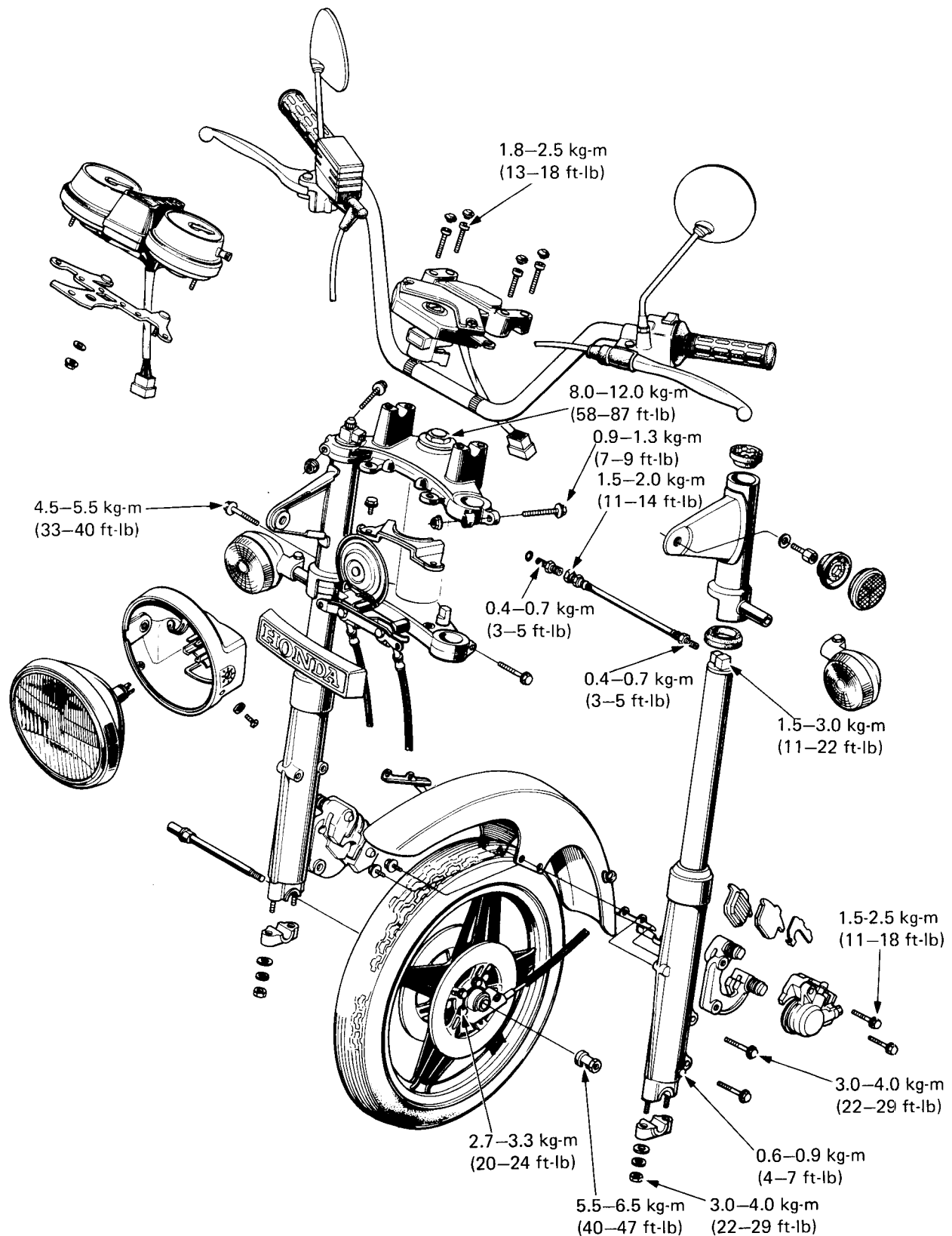
## PRIMARY CHAIN TENSIONER ASSEMBLY

Install the slipper base.  
Tighten the bolts securely.  
Insert the spring and plunger.  
Press the slipper down and install the pin.



Install the fluid valve and oil line. Tighten the nut.  
Insert the spring and plunger.  
Install the cotter pin as shown.







|                     |       |
|---------------------|-------|
| SERVICE INFORMATION | 14- 1 |
| TROUBLESHOOTING     | 14- 2 |
| HEADLIGHT           | 14- 3 |
| INSTRUMENTS         | 14- 4 |
| HANDLEBAR           | 14- 6 |
| FRONT WHEEL         | 14-10 |
| FRONT FORK          | 14-15 |
| STEERING STEM       | 14-22 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- A jack or other support is required to support the motorcycle.
- Never ride on the rim or try to bend the wheel.

### TOOLS

#### Special

|                           |               |                           |
|---------------------------|---------------|---------------------------|
| Steering Stem Socket      | 07916-3710100 |                           |
| Hollow Set Wrench 6 mm    | 07917-3230000 | or Commercially available |
| Bearing Race Remover      | 07946-3710500 |                           |
| Steering Stem Driver      | 07946-3710600 |                           |
| Bearing Driver Attachment | 07946-3710700 |                           |
| Bearing race remover      | 07953-4250001 |                           |

#### Common

|                                   |               |                           |
|-----------------------------------|---------------|---------------------------|
| Retainer Wrench B                 | 07710-0010200 | } or 07910-3230101        |
| Retainer Wrench Body              | 07710-0010401 |                           |
| Bearing Driver Outer 42 x 47 mm   | 07746-0010300 | } or 07946-9350200        |
| Bearing Driver Pilot 15 mm        | 07746-0040300 |                           |
| Front Fork Oil Seal Driver Body   | 07747-0010100 | } or 07947-3710100        |
| Front Fork Oil Seal Attachment E  | 07747-0010600 |                           |
| Lock Nut Wrench Socket 30 x 32 mm | 07716-0020400 | or Commercially available |
| Bearing Driver Handle A           | 07749-0010000 | or 07949-6110000          |
| Extension Bar                     | 07716-0020500 | or Commercially available |

### TORQUE VALUES

|                            |                             |                          |
|----------------------------|-----------------------------|--------------------------|
| Front brake disc           | 2.7-3.3 kg-m (20-24 ft-lb)  |                          |
| Front brake caliper holder | 3.0-4.0 kg-m (22-29 ft-lb)  |                          |
| Front brake caliper        | 1.5-2.5 kg-m (11-18 ft-lb)  |                          |
| Front axle nut             | 5.5-6.5 kg-m (40-47 ft-lb)  |                          |
| Steering stem nut          | 8.0-12.0 kg-m (58-87 ft-lb) |                          |
| Steering top thread nut    | 1.4-1.6 kg-m (10-12 ft-lb)  | Apply oil to the threads |
| Fork top bridge bolt       | 0.9-1.3 kg-m ( 7- 9 ft-lb)  |                          |
| Steering stem pinch bolts  | 4.5-5.5 kg-m (33-40 ft-lb)  |                          |
| Fork cap bolt              | 1.5-3.0 kg-m (11-22 ft-lb)  |                          |
| Fork drain bolt            | 0.6-0.9 kg-m ( 4- 7 ft-lb)  |                          |
| Fork socket bolt           | 1.5-2.5 kg-m (11-18 ft-lb)  |                          |
| Air hose                   | 1.5-2.0 kg-m (11-14 ft-lb)  |                          |
|                            | right                       |                          |
|                            | left                        |                          |
| Air hose connector         | 0.4-0.7 kg-m ( 3- 5 ft-lb)  |                          |
| Air valve                  | 0.4-0.7 kg-m ( 3- 5 ft-lb)  |                          |
| Axle holder                | 3.0-4.0 kg-m (22-29 ft-lb)  |                          |



## SPECIFICATIONS

|                                |          | STANDARD                               | SERVICE LIMIT       |
|--------------------------------|----------|--|---------------------|
| Axle shaft runout              |          | ———                                    | 0.2 mm ( 0.01 in)   |
| Front wheel rim runout         | Radial   | ———                                    | 2.0 mm ( 0.08 in)   |
|                                | Axial    | ———                                    | 2.0 mm ( 0.08 in)   |
| Fork spring free length        | Spring A | 437.7 mm (17.23 in)                    | 429 mm (16.9 in)    |
|                                | Spring B | 169 mm ( 6.7 in)                       | 165.5 mm ( 6.51 in) |
| Fork tube run out              |          | ———                                    | 0.2 mm ( 0.01 in)   |
| Front fork slider bushing O.D. |          | 37.92–38.04 mm (1.493–1.498 in)        | 37.87 mm (1.491 in) |
| Front fork tube O.D.           |          | 36.950–36.975 mm (1.455–1.456 in)      | 36.90 mm (1.453 in) |
| Front fork fluid capacity      |          | 280 ± 2.5 cc (9.5 ± 0.08 oz)           | ———                 |
| Front fork air pressure        |          | 0.8–1.1 kg/cm <sup>2</sup> (11–16 psi) | ———                 |
| Front fork guide bushing I.D.  |          | 38.97–39.04 mm (1.534–1.537 in)        | 39.09 mm (1.539 in) |

## TROUBLESHOOTING

### Hard steering

1. Steering stem nut too tight
2. Faulty steering stem bearings
3. Damaged steering stem bearings
4. Insufficient tire pressure

### Steers to one side or does not track straight

1. Unevenly adjusted right and left shock absorbers
2. Bent front forks
3. Bent front axle; wheel installed incorrectly

### Front wheel wobbling

1. Distorted rim
2. Worn front wheel bearing
3. Faulty tire
4. Axle not tightened properly

### Soft suspension

1. Weak fork spring
2. Insufficient fluid in front forks
3. Front fork air pressure incorrect

### Head suspension

1. Incorrect fluid weight in front forks
2. Fork air pressure incorrect

### Front suspension noise

1. Worn slider or guide bushings
2. Insufficient fluid in forks
3. Loose front fork fasteners
4. Lack of grease in speedometer gear box



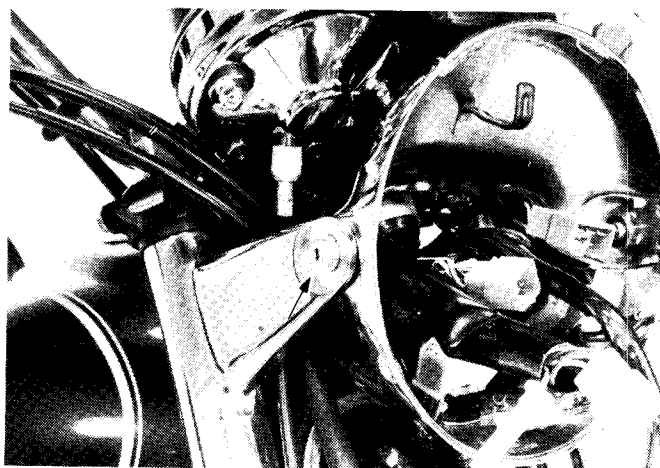


## HEADLIGHT

### HEADLIGHT CASE REMOVAL

Remove the headlight and disconnect all wires at their couplers and connectors.

To remove the headlight case, unscrew the headlight case mounts.



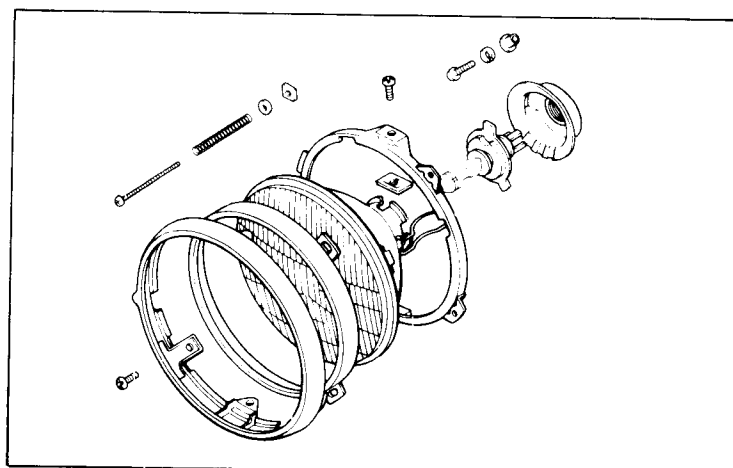
### HEADLIGHT DISASSEMBLY/ ASSEMBLY

Remove the retaining screws and horizontal adjusting screw from the rim.

Remove the two sealed beam unit retaining screws, and sealed beam unit.

Assembly is essentially the reverse of disassembly.

After assembly, adjust the headlight beam (Page 3-16).



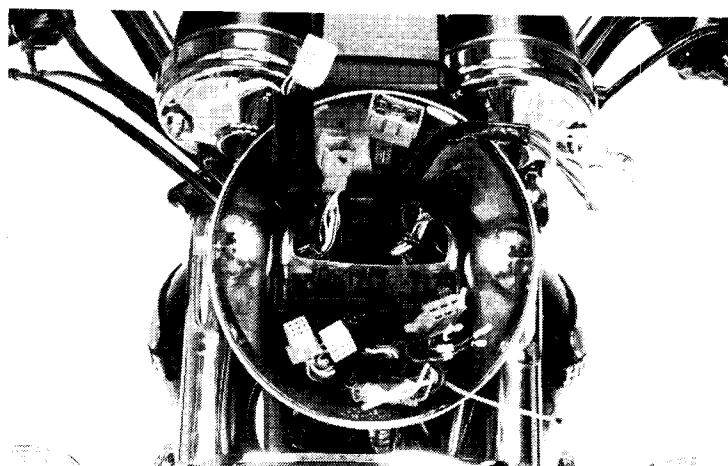
### HEADLIGHT CASE INSTALLATION

Route the wires into the headlight case through the headlight case hole.

#### LOWER HOLE:

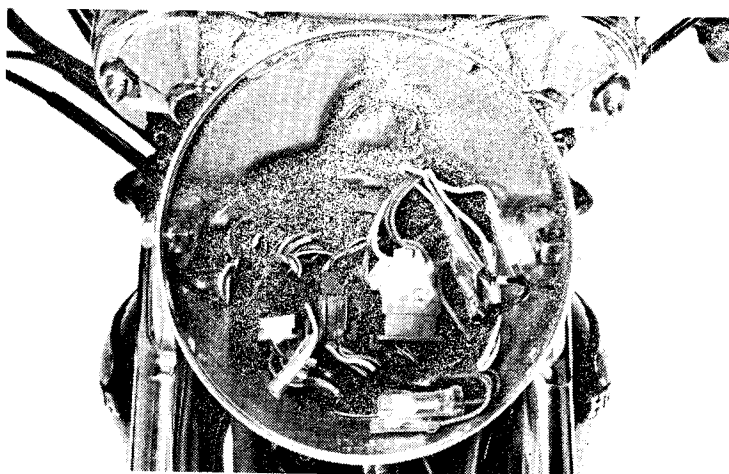
Main wire harness  
Right turn signal wires  
Left turn signal wires  
Horn wires  
Instrument wires  
Right handlebar switch wires  
Fuse holder wires  
Left handlebar switch wires

#### UPPER HOLE:





Connect the wire connectors and couplers. Install the coupler into the holder in the handlight case.

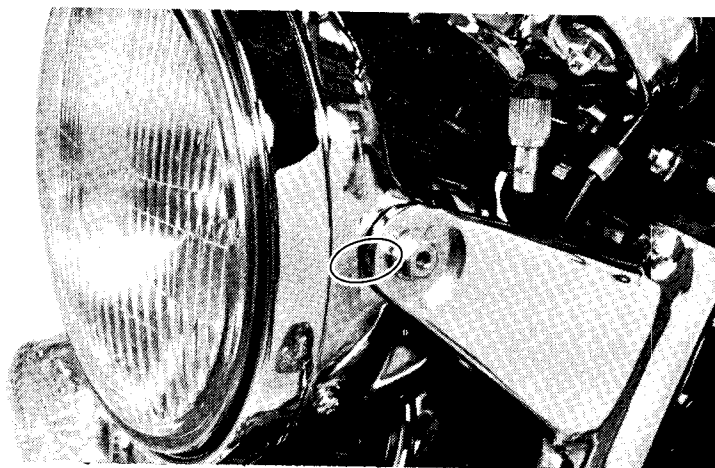


Align the index marks on the headlight case with the punch marks on the brackets.

**NOTE**

Check each component for operation after assembling.

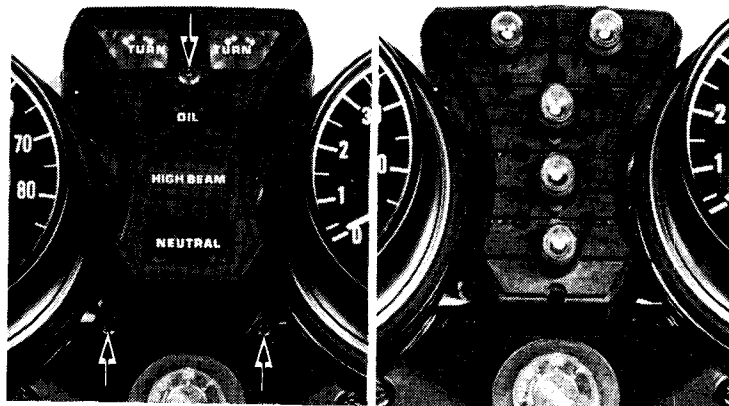
Install the headlight and reflectors.

**INSTRUMENTS****INDICATOR LIGHT BULB REPLACEMENT**

Remove the indicator light panel screws and panel.

Replace the bulb.

If a replacement bulb does not light, check the wiring for short or open circuit, or loose connections.





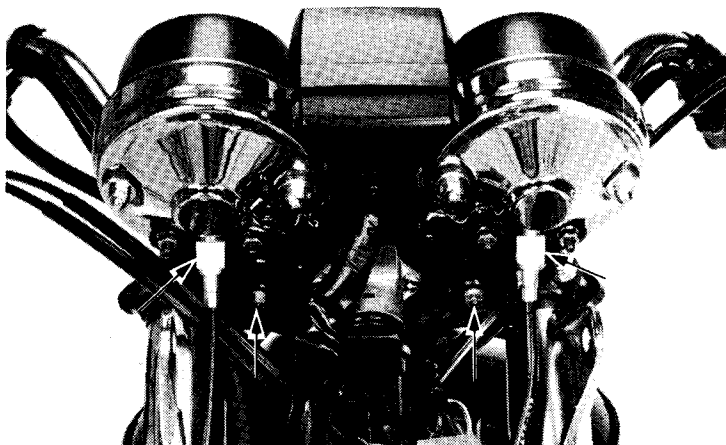
## REMOVAL

Remove the headlight (page 14-3).

Remove the handlebar upper holder (page 14-6).

Disconnect the speedometer and tachometer cables from the instruments.

Remove the instrument mounting nuts.

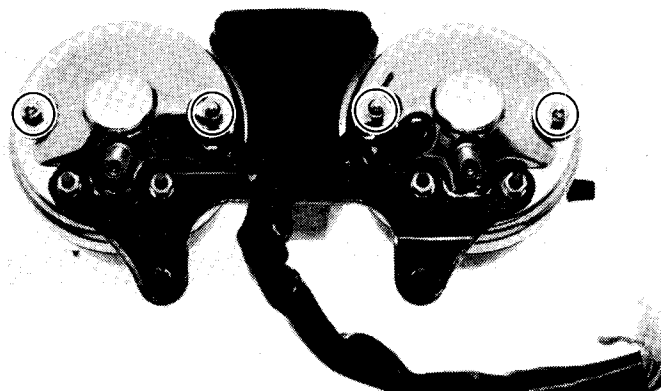


## METER BULB REPLACEMENT

Remove the meter setting nuts.

### CAUTION:

*Do not leave the instrument upside down for a long time.*



Replace the bulb.

After installing a new bulb, check for continuity. If the bulb does not light, inspect the wiring for open or short circuits.

Lubricate the speedometer and tachometer cables before reconnecting.

## ASSEMBLY AND INSTALLATION

Assemble and install the instruments in the reverse order of removal.



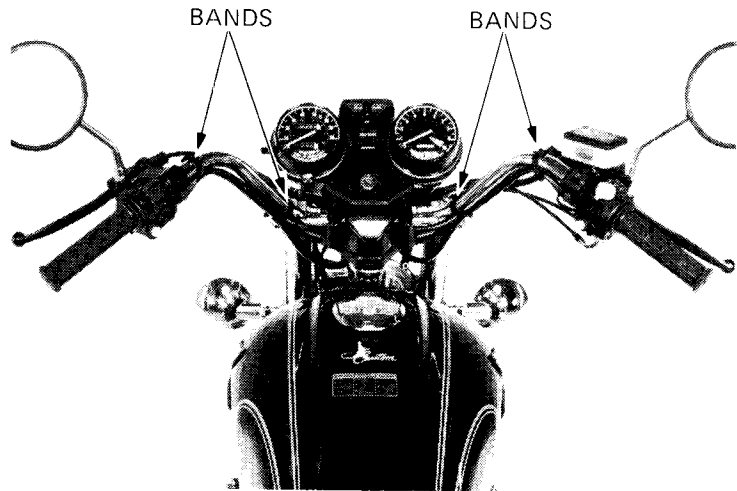


## HANDLEBAR

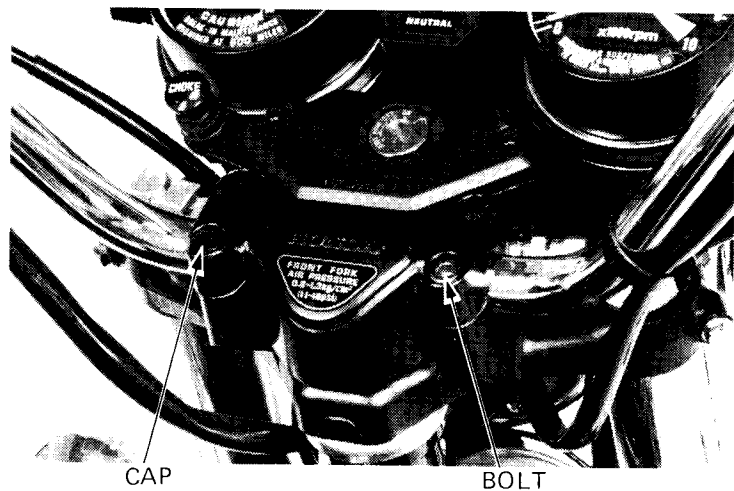
### REMOVAL

Remove the wire bands.

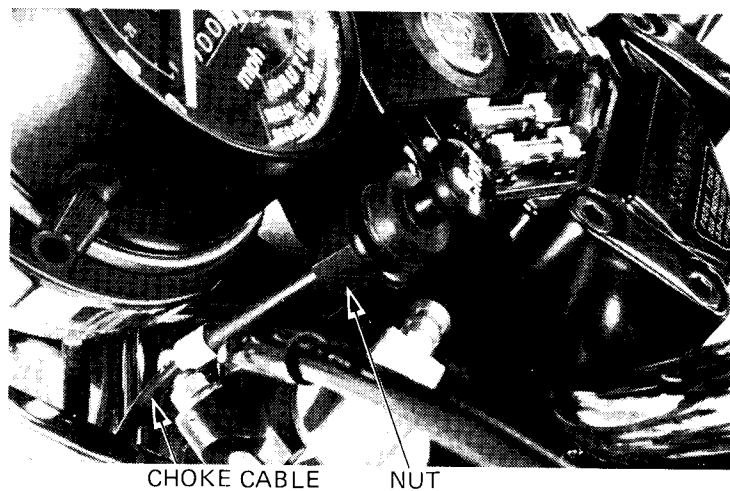
Remove the headlight case (page 14-3).



Remove the handlebar upper holder bolt caps.

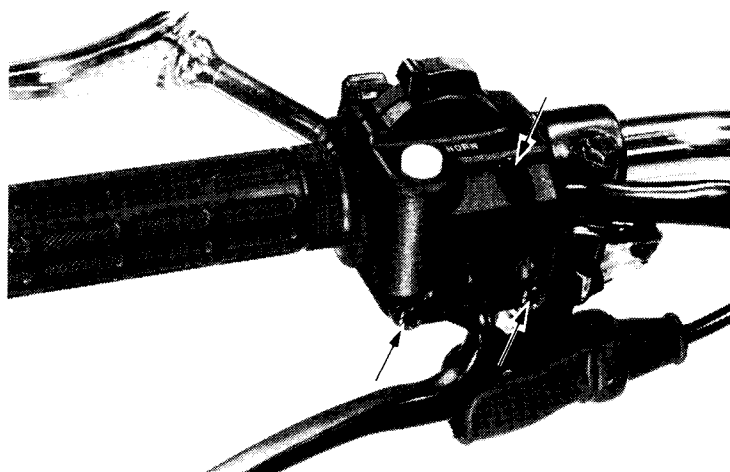


Remove the choke cable from the handlebar upper holder by removing the cable nut.



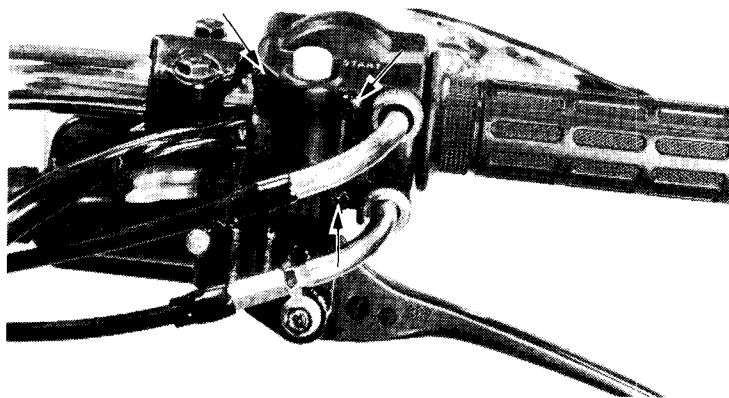


Disconnect the clutch switch wires.  
Remove the left handlebar switch.  
Disconnect the clutch cable.



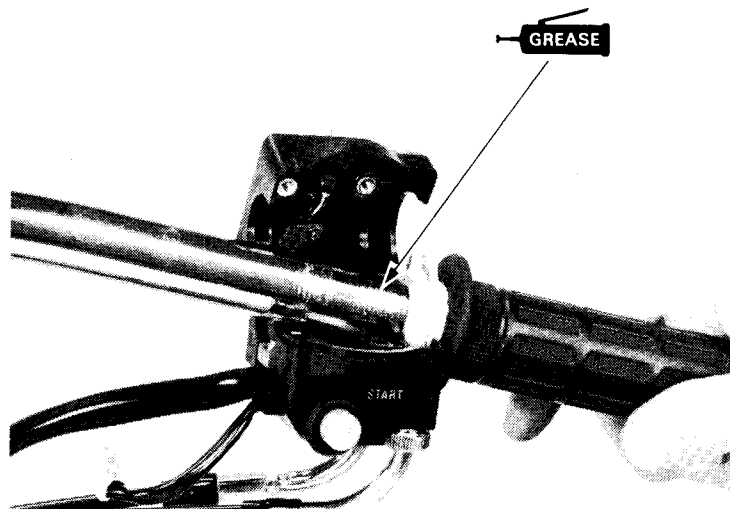
Disconnect the brakelight switch wires.  
Remove the right handlebar switch and throttle grip.  
Remove the front brake master cylinder with the brake lever.

Remove the handlebar upper holders and handlebar.



### INSTALLATION

Apply grease to the throttle grip sliding surface.



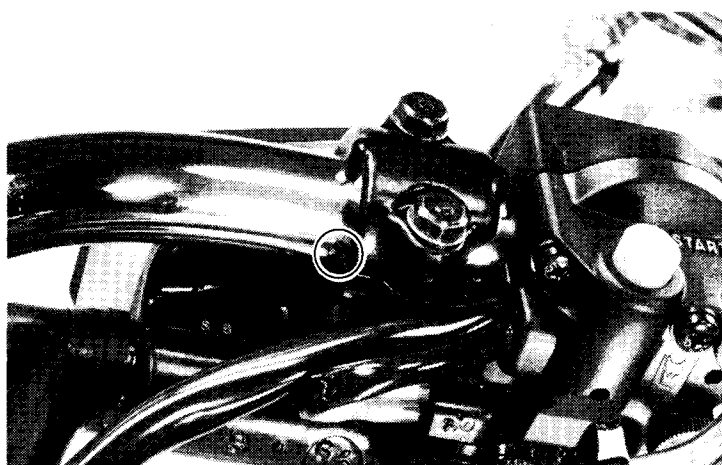


Install the front brake master cylinder with the punch mark facing down.

Align the end of the holder with the handlebar punch mark.

Tighten the upper bolt first, then lower.

Connect the brake light switch wires.

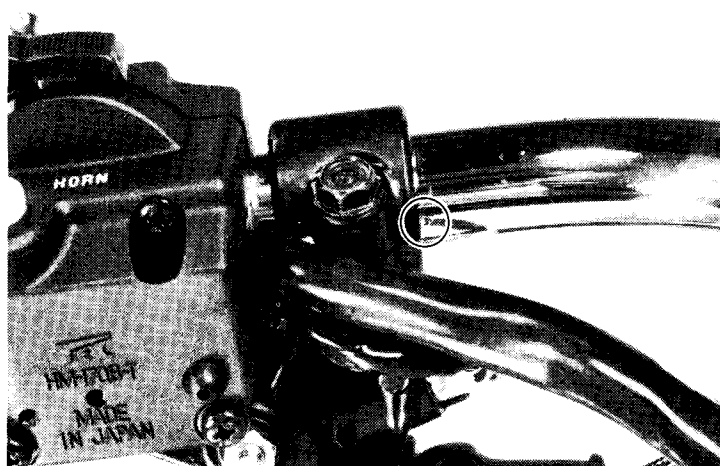


Install the left handlebar switch.

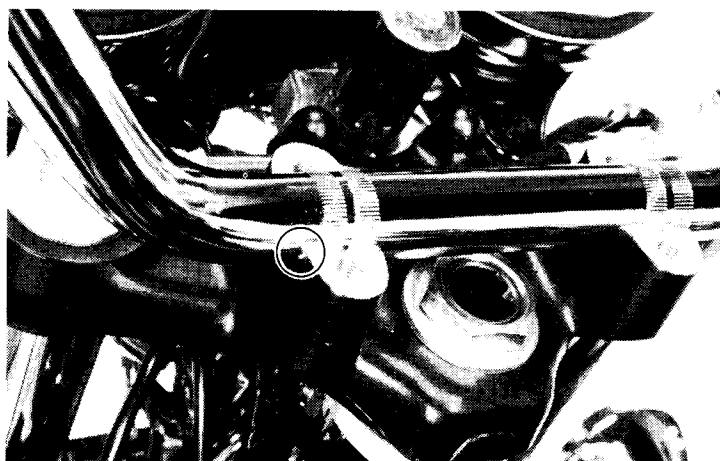
Tighten the clutch lever bracket pinch bolt by aligning the slit of the bracket with the punch mark.

Connect the clutch switch wire.

Connect the clutch cable.



Place the handlebar onto the lower holder by aligning the punch mark with the upper face of the lower holder.





Install the choke cable to the handlebar upper holder.

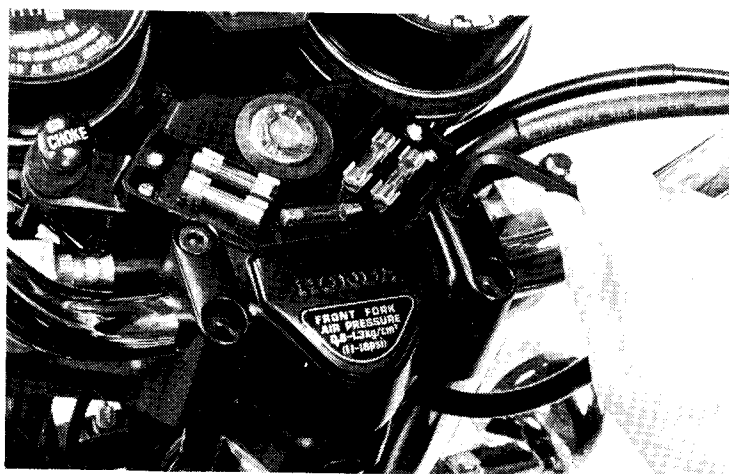
Install the handlebar upper holder.

Tighten the forward bolts first, then tighten the rear bolts.

**TORQUE: 2.5–3.0 kg-m (18–22 ft-lb)**

Route the switch wires (page 1–10).

Install the headlight (page 14-3).



## FUSE HOLDER REPLACEMENT

Remove the fuse cover.

Unscrew the screws holding the fuse holder.

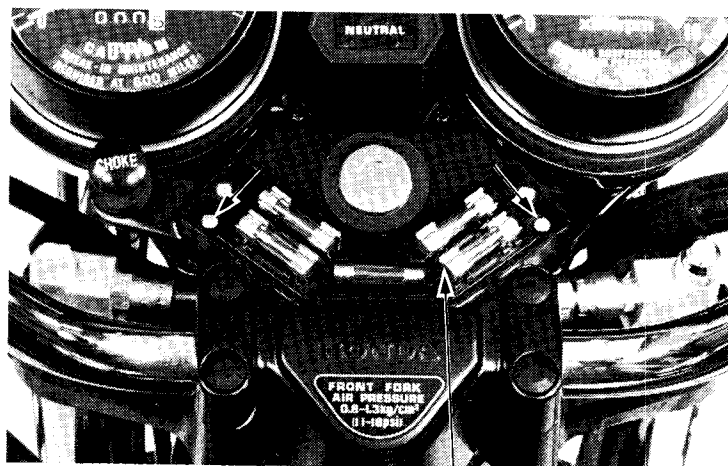
Remove the headlight.

Disconnect the wire coupler.

Remove the fuse holder.

### NOTE

Before disconnecting the holder wires, tie a string to them. This string can be used as a draw cord when installing a new holder.

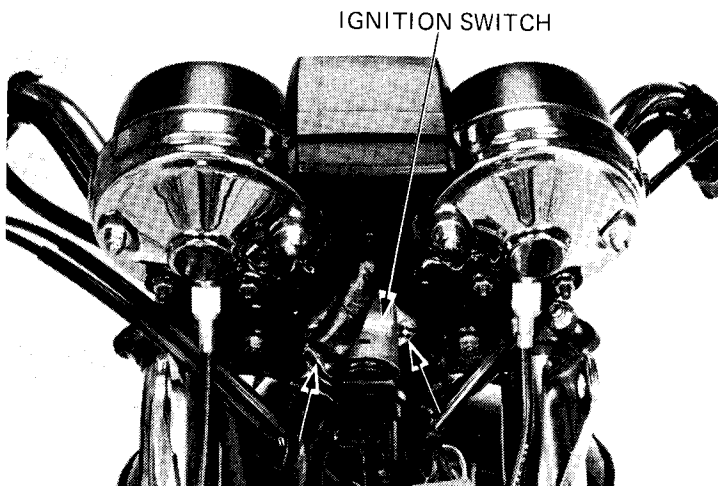


FUSE HOLDER

## IGNITION SWITCH REPLACEMENT

Remove the headlight (page 14-3).

Remove the bolt holding the ignition switch and disconnect the wire harness coupler.



IGNITION SWITCH



## FRONT WHEEL

### REMOVAL

Remove the speedometer cable set screw and the speedometer cable.

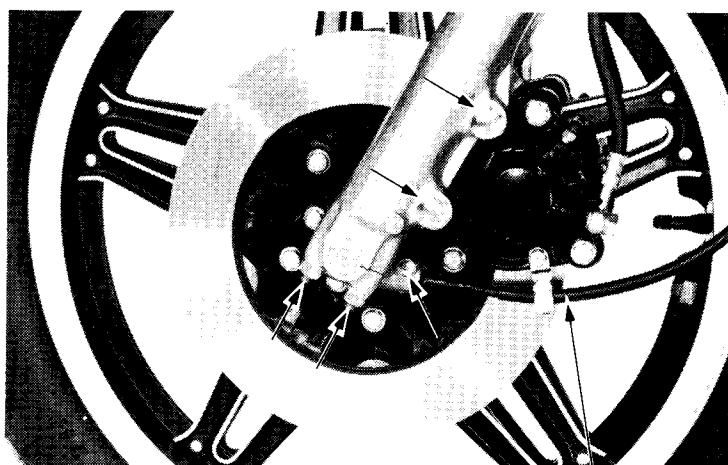
Remove the right or left side caliper assemblies by loosening the bolts.

#### NOTE

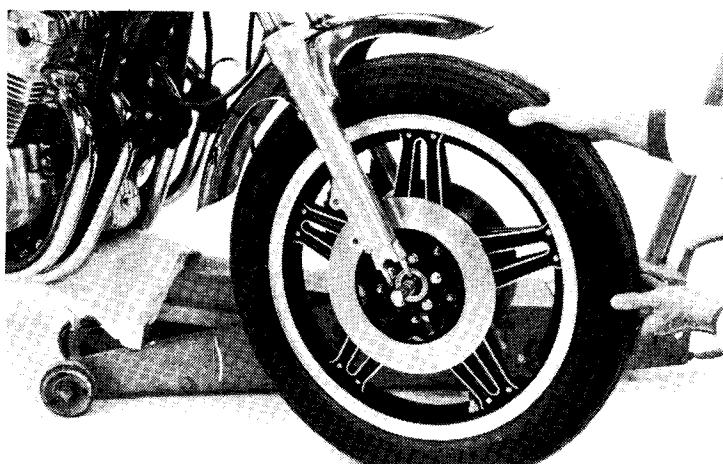
Do not operate the front brake lever after removing the front wheel. To do so will cause difficulty in fitting the brake disc between the brake pads.

Remove the right and left axle holders.

Jack up the engine until the forks clear the front axle and remove the front wheel.



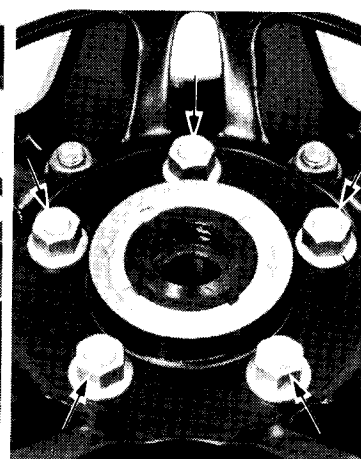
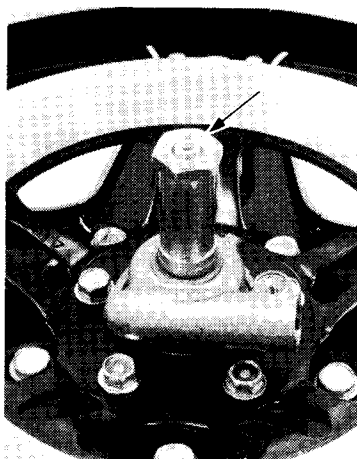
SPEEDOMETER  
CABLE



### DISASSEMBLY

Remove the axle nut, speedometer gear box, axle and collar.

Remove five bolts and discs.



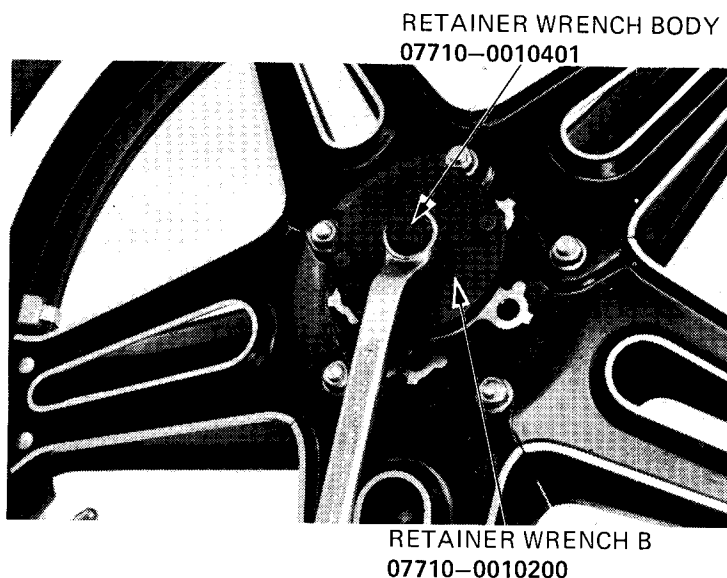




Remove the retainer.  
Remove the bearings and the distance collar  
from the hub.

**NOTE**

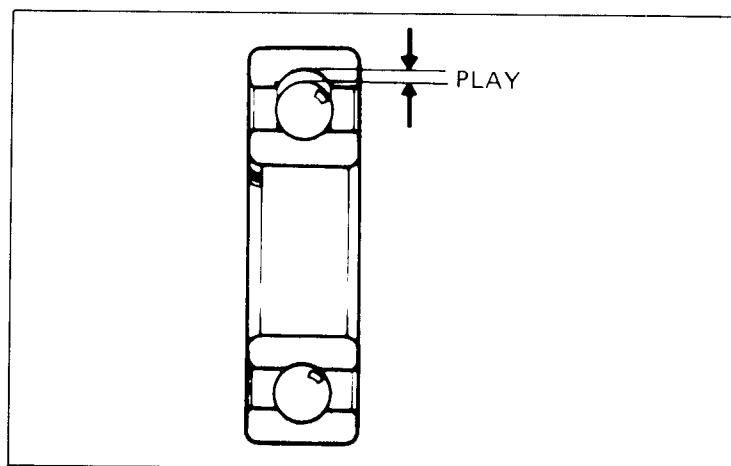
If the bearings are removed, they should  
be replaced with new ones.



**WHEEL BEARINGS:**

Check wheel bearing play by placing the  
wheel in a truing stand and spinning the wheel  
by hand. Replace the bearings with new ones  
if they are noisy or have excessive play.

**SERVICE LIMIT:** 0.027 mm (0.001 in)



**WHEEL INSPECTION**

Check the rim runout by placing the wheel in  
a truing stand. Spin the wheel slowly and  
read the runout using a dial indicator.

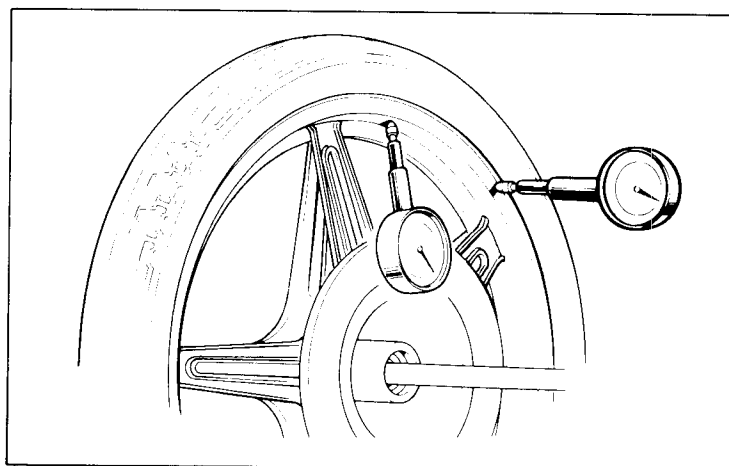
**SERVICE LIMITS:**

**RADIAL RUNOUT:** 2.0 mm (0.08 in)

**AXIAL RUNOUT:** 2.0 mm (0.08 in)

**NOTE**

The COMSTAR WHEEL cannot be re-  
paired and must be replaced with a new  
one if the service limits are exceeded.

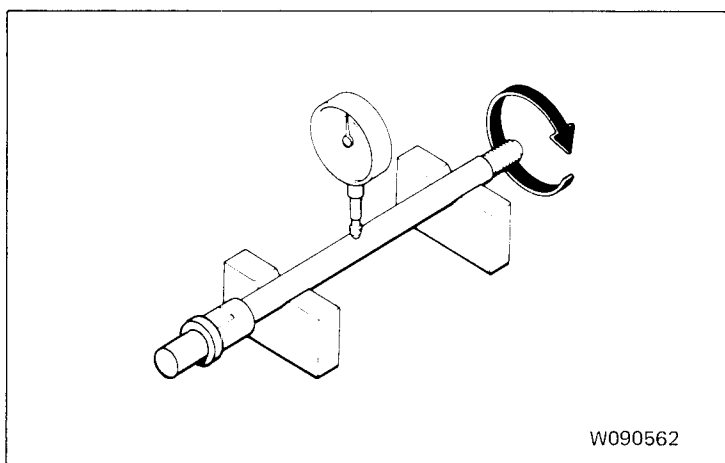




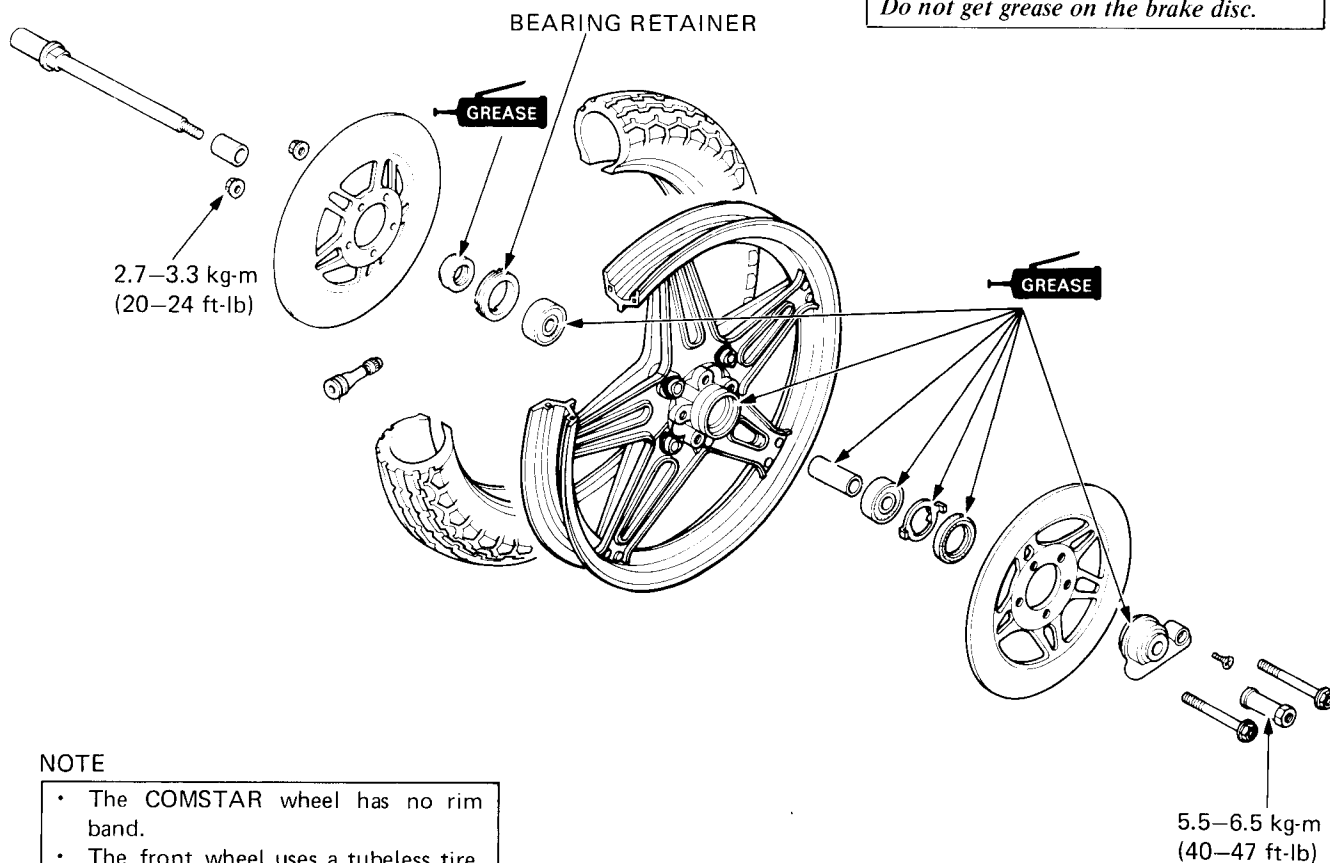
### AXLE INSPECTION

Set the axle in V blocks and measure the runout. The actual runout is 1/2 of the Total Indicator Reading.

**SERVICE LIMIT: 0.2 mm (0.01 in)**



### ASSEMBLY



#### NOTE

- The COMSTAR wheel has no rim band.
- The front wheel uses a tubeless tire. For tubeless tire repair, refer to the HONDA TUBELESS TIRE MANUAL.



Pack all bearing cavities with grease.  
Drive in the right bearing first.  
Press the distance collar into place.

#### NOTE

Be certain the distance collar is in position before installing the bearings.

Drive in the left bearing.

#### NOTE

- Drive the bearing squarely.
- Drive the bearing into position, making sure that it is fully seated and that the sealed side is facing out.

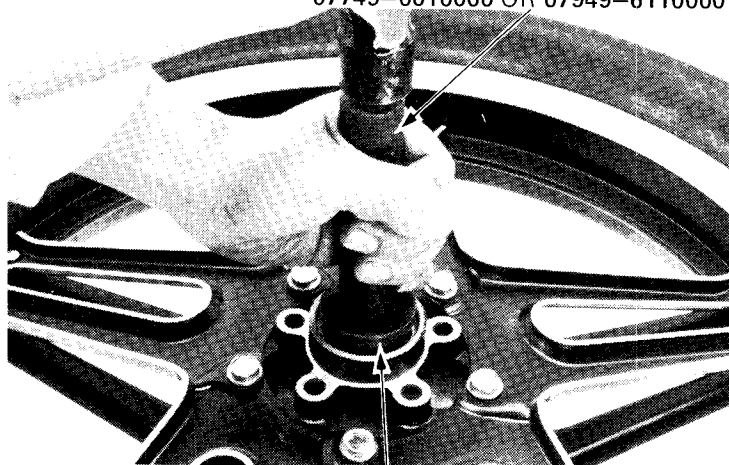
Install the bearing retainer with the tool used to remove it.

#### NOTE

Inspect the retainer. If the threads are damaged, it should be replaced.

Install the seal and the bearing retainer and peen the edge of the retainer.

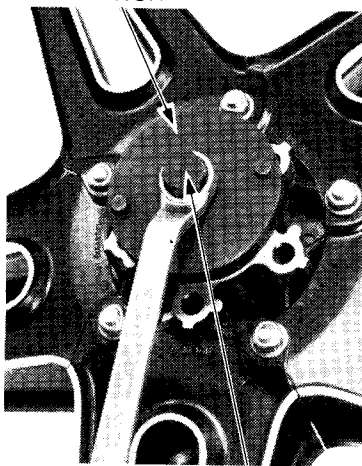
BEARING DRIVER HANDLE A  
07749-0010000 OR 07949-6110000



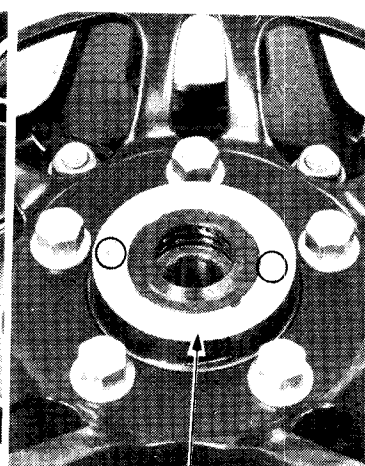
BEARING DRIVER OUTER 42 x 47 mm  
07746-0010300 OR 07946-9350200

BEARING DRIVER PILOT 15 mm  
07746-0040300 OR 07946-9350200

RETAINER  
WRENCH



RETAINER  
WRENCH BODY



BEARING  
RETAINER

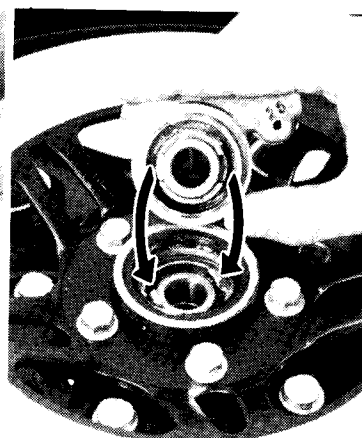
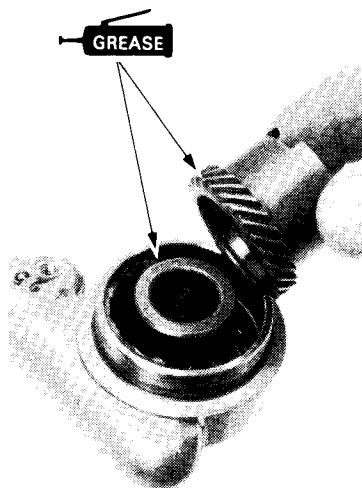
Install the left and right discs.

**TORQUE: 2.7–3.3 kg-m (20–24 ft-lb)**

Install the speedometer gear retainer.  
Lubricate the inside of the oil seal and install it.

Remove the speedometer drive gear from the gear box. Wipe old grease off, check the sliding surfaces for wear or damage. Replace the drive gear and/or gear box if necessary. Fill the gear box with grease and install the drive gear.

Install the speedometer gear in the wheel hub, aligning the tangs with the slots.



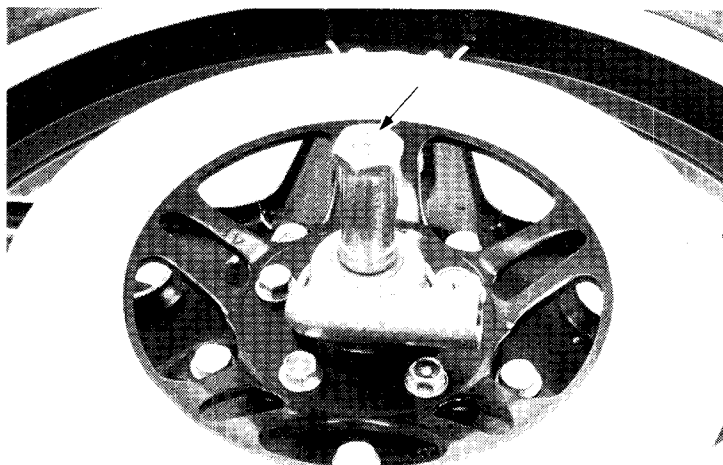


Install the left side collar and axle.

Install the axle nut.

**TORQUE: 5.5–6.5 kg-m (40–47 ft-lb)**

Clean the brake discs with a high quality degreasing agent.



## INSTALLATION

Fit the calipers over the discs, taking care not to damage the brake pads. Install the caliper mounting bolts.

**TORQUE: 3.0–4.0 kg-m (22–29 ft-lb)**

Install the axle holders with the "F" arrow forward. Tighten the forward axle holder nuts lightly.

Tighten the right axle holder nuts to the specified torque, starting with the forward nuts.

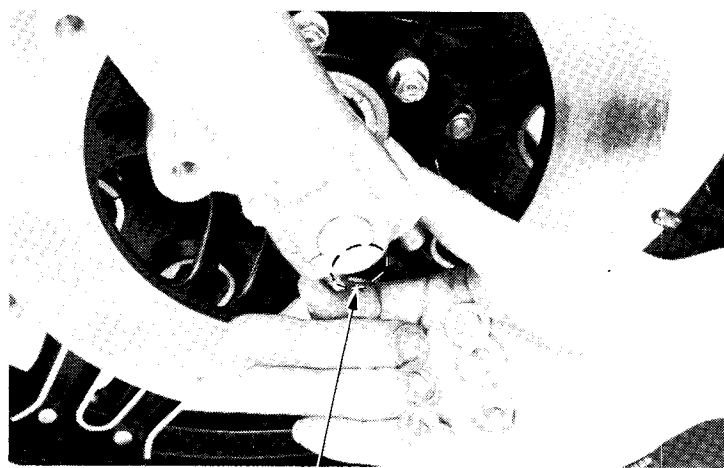
**TORQUE: 1.8–2.5 kg-m (13–18 ft-lb)**

Measure the outside surface of the left brake disc and the rear of the left caliper holder with a 0.7 mm (0.028 in) feeler gauge.

If the gauge cannot be inserted, pull the left fork out until the gauge can be inserted.

Tighten the left holder nuts.

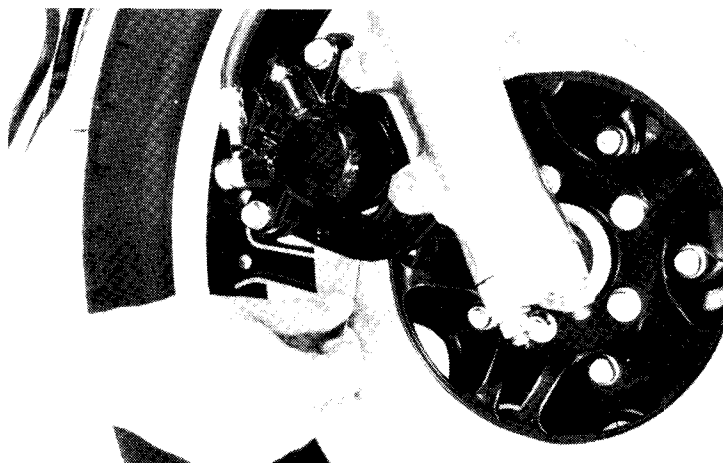
There should be at least 0.7 mm (0.028 in) clearance between the caliper holder and disc.



"F" ARROW MARK

## CAUTION:

*After installing the wheel, apply the brakes several times and recheck the clearance on both sides. Failure to provide clearance will damage the brake discs and affect braking efficiency.*



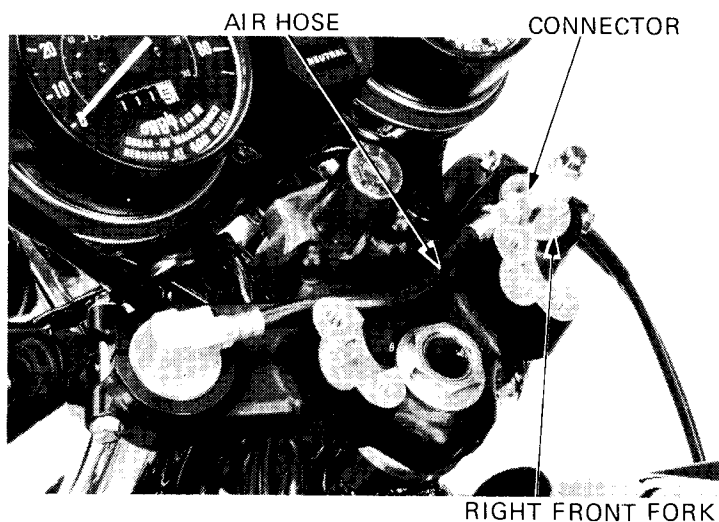


## FRONT FORK

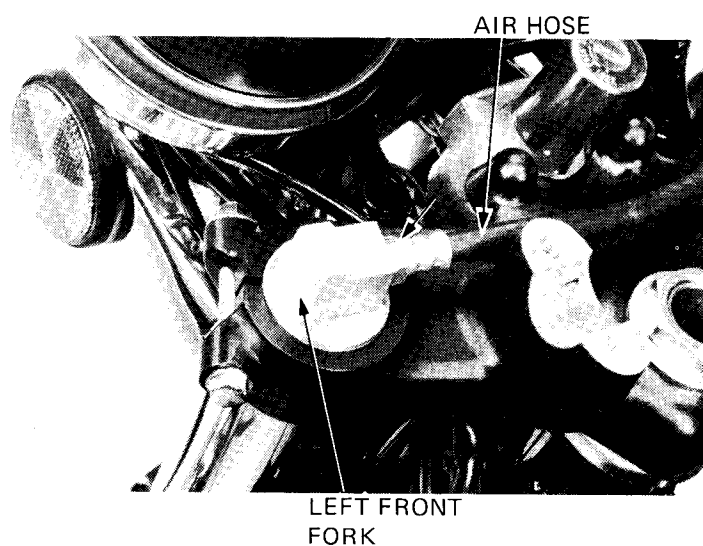
### REMOVAL

Remove the handlebar.

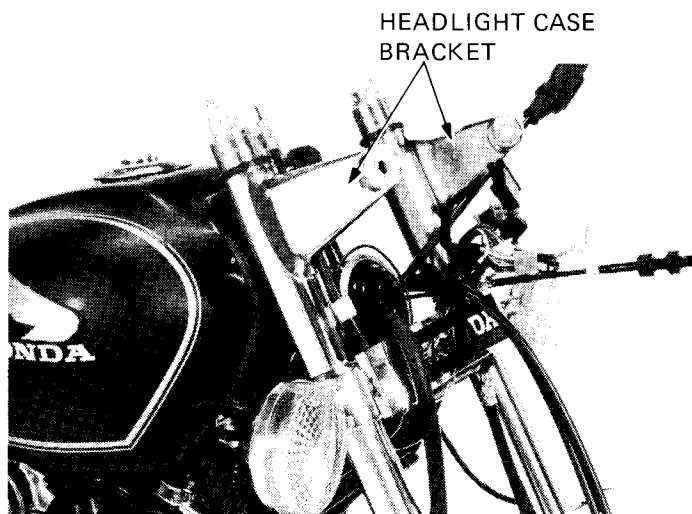
Disconnect the air hose and remove the connector from the right front fork.



Disconnect the air hose from the left front fork.

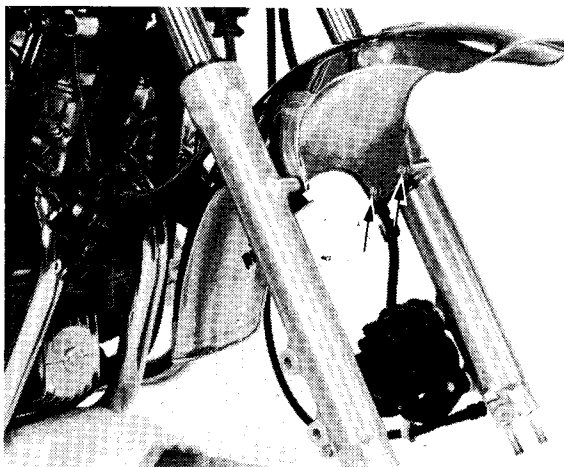


Remove the fork top bridge (page 14-22).  
Remove the headlight case bracket.

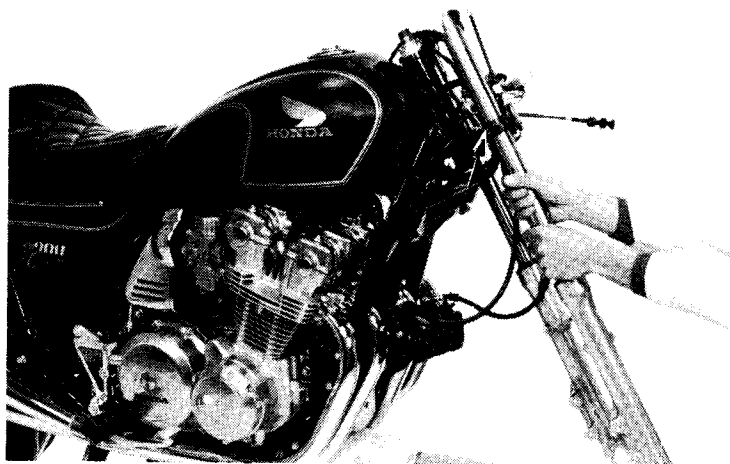




Remove the front wheel (page 14-10).  
Remove the brake caliper.  
Remove the fender.



Loosen the fork lower pinch bolt and remove the front fork.



## DISASSEMBLY

### Seal Removal

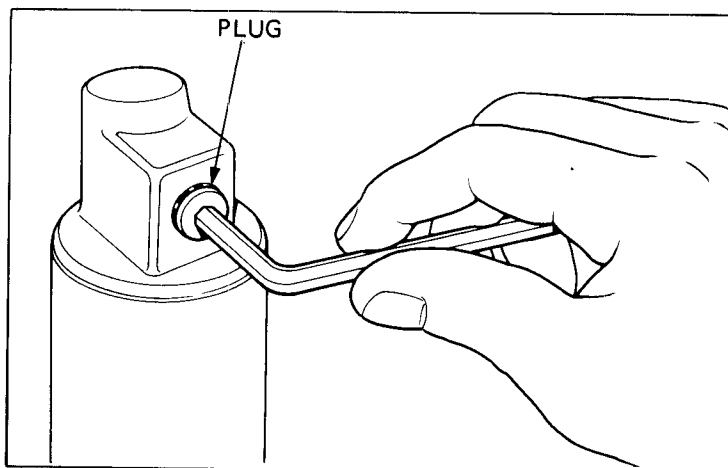
#### **WARNING**

*The fork tube caps are under air and spring pressure. Front fork air pressure must be relieved and care used when removing the fork tube caps to prevent them from becoming projectiles. Wear eye and face protection.*

#### NOTES

- Fork seal replacement does not require inner fork tube and slider separation.
- This procedure is for air assisted forks only.

Release air pressure and remove valve stem and hose connector (if applicable). Install the special plugs into the cap.





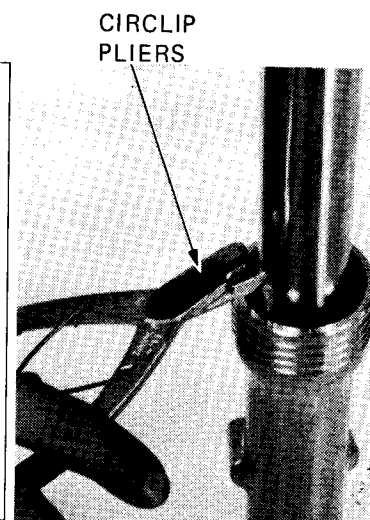
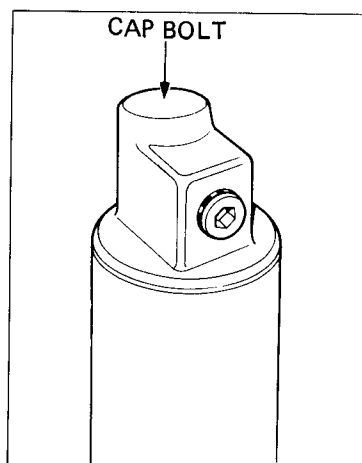
Place the fork inner tube into a vice with soft jaws or shop towel and loosen the fork tube cap.

Remove the fork tube cap.

Remove the oil seal dust cover and snap ring.

Remove the back-up plate with a magnet.

Extend the inner tube up all the way. Pour ATF into the fork tube up to the bottom of the cap threads and install the fork tube cap.



Place the seal driver over the fork tube. Wrap a shop towel around the seal area.

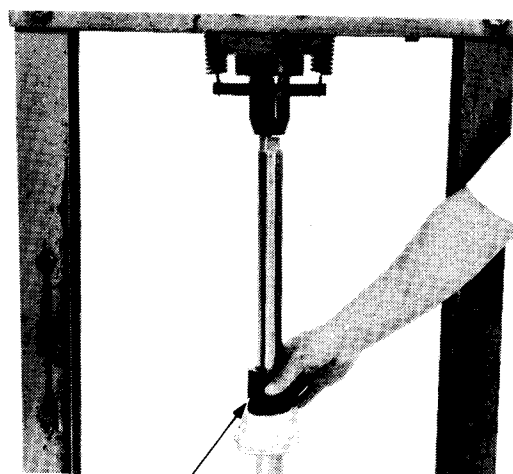
Compress the fork tube with a hydraulic press until the fork seal is forced out. Hold the driver against the seal during removal to keep it from tilting.

Remove the cap, tool and seal and pour the ATF out.

### NOTE

For Seal installation See page 14-21.

Remove the back-up ring with a magnet.



FORK SEAL DRIVER  
07947-3710100

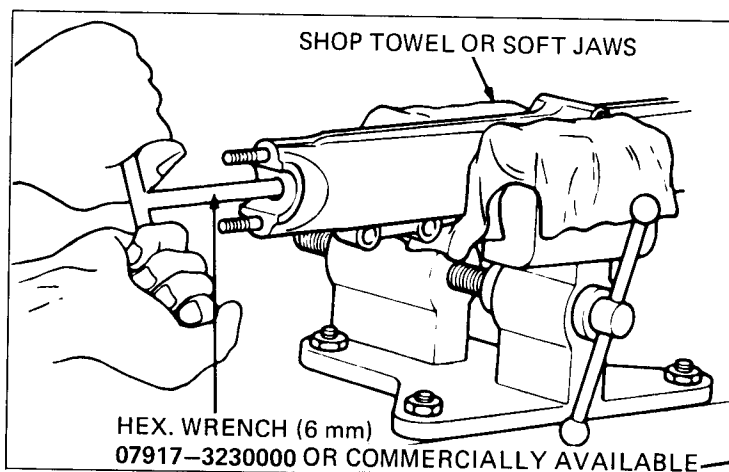
### Fork Tube Separation

Hold the fork slider in a vise with soft jaws or a shop towel.

Remove the socket bolt with a hex wrench and pump the remaining ATF out through the socket bolt hole.

### CAUTION:

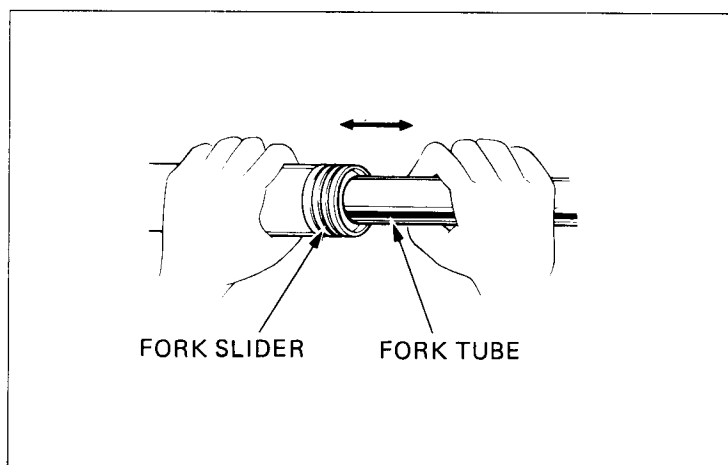
*Do not distort the slider in the vise.*





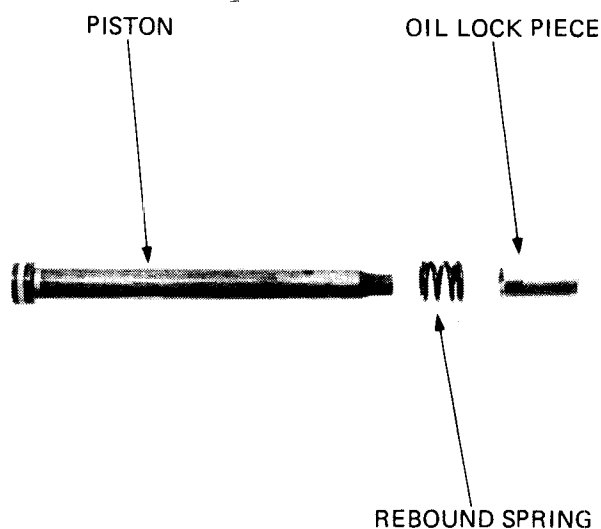
Pull the fork tube out until resistance from the slider bushing is felt. Then move it in and out, tapping the bushing lightly until the fork tube separates from the slider. The slider bushing will be forced out by the fork tube bushing.

Remove the slider bushing from the fork tube.



Remove the piston and rebound spring from the fork tube.

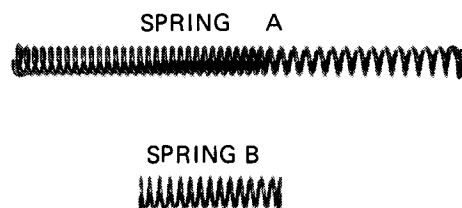
Remove the oil lock piece from inside the slider.



## INSPECTION

Check the fork spring free lengths and replace the springs if shorter than the service limit.

|               | Spring A               | Spring B              |
|---------------|------------------------|-----------------------|
| Standard      | 437.7 mm<br>(17.23 in) | 169 mm<br>(6.7 in)    |
| Service limit | 429 mm<br>(16.9 in)    | 165.5 mm<br>(6.52 in) |







Check the fork tubes, fork sliders, bushings and pistons for score marks, scratches, excessive or abnormal wear, replacing those which can not be reused.

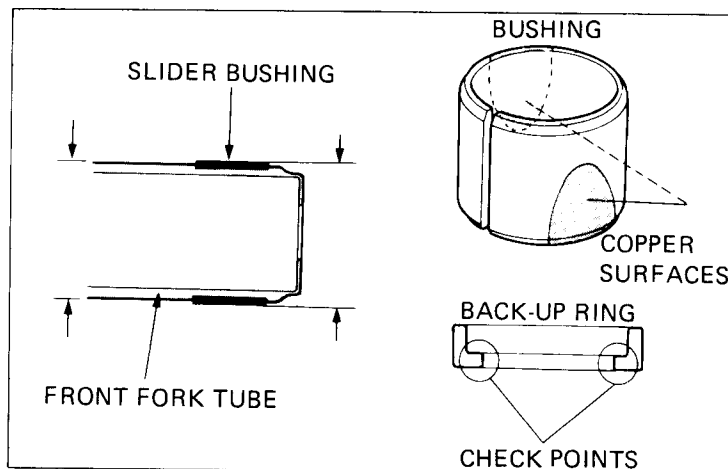
Measure the outside diameter of the fork tube and slider bushing.

**FORK TUBE O.D. SERVICE LIMIT:**  
36.90 mm (1.453 in.)

Visually inspect the slider and fork tube bushings.

Replace if there are excessive scores or scratches, or if the teflon coating is worn so that copper appears over more than 3/4 of the total surface.

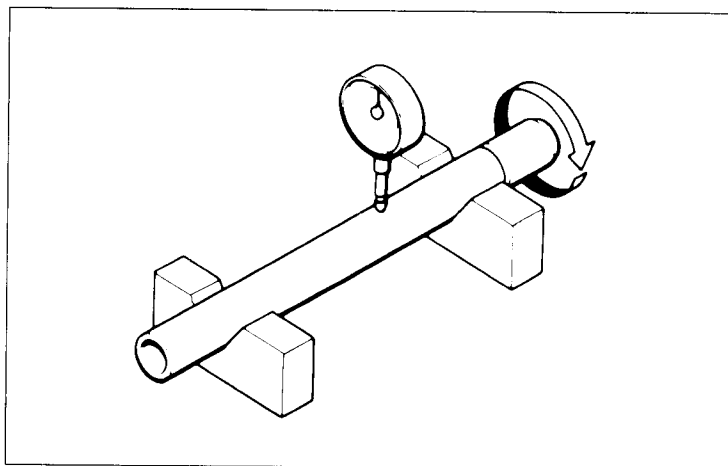
Check the back-up ring at the points shown. Replace if there is any distortion at the points.



Set the fork tube in V blocks and read the runout. Take 1/2 TIR to determine the actual runout.

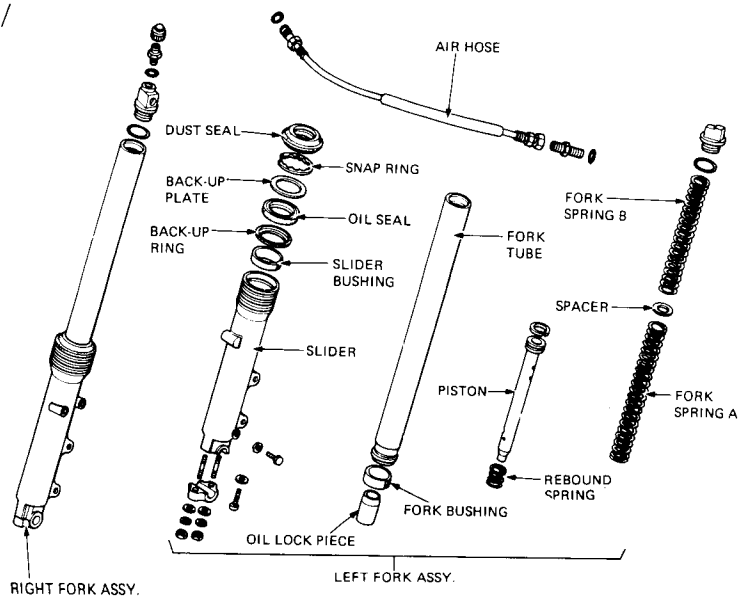
**RUN OUT SERVICE LIMIT:** 0.2 mm  
(0.01 in)

Inspect the fork tube, slider and piston ring for excessive wear and replace if necessary.



### FRONT FORK ASSEMBLY/ INSTALLATION

#### Assembly





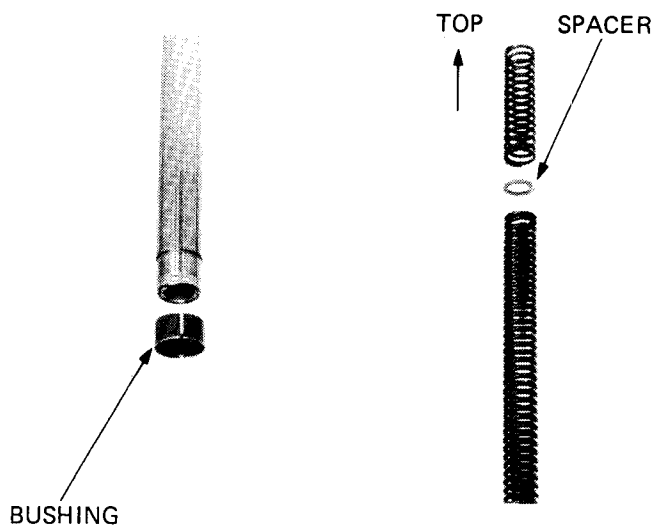
Clean all disassembled parts.

Install the bushing onto the inner tube.

Install the rebound spring and piston into the fork tube.

Place the oil lock piece into the slider and insert the fork tube.

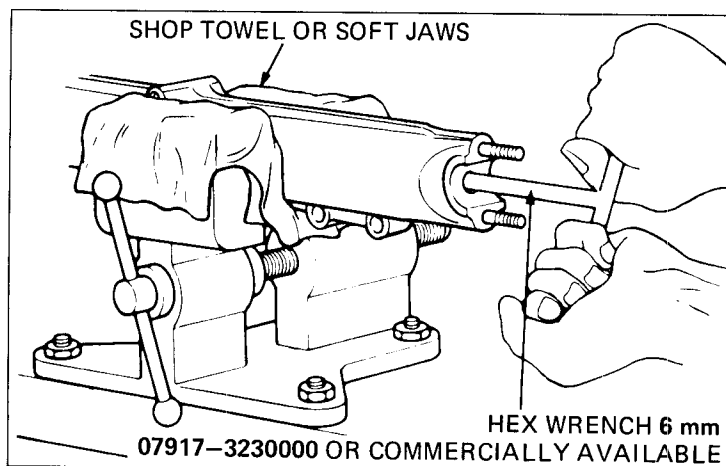
Install the fork springs with the narrow coils toward the top and spacer between the two springs. Install the fork tube cap loosely.



Apply a locking agent to the socket bolt and thread it into the piston. Tighten with a Hex Wrench.

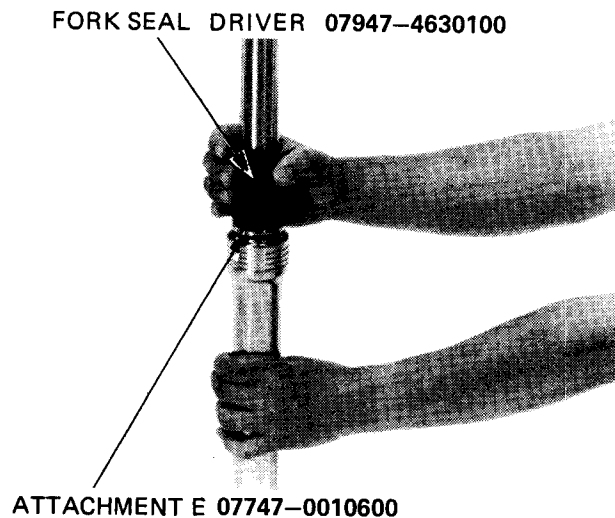
**CAUTION:**

*Do not distort the slider in the vise.*



Place the slider bushing over the fork tube and rest it on the slider.

Drive the bushing into place with the seal driver and attachment E.





Install the back-up ring.

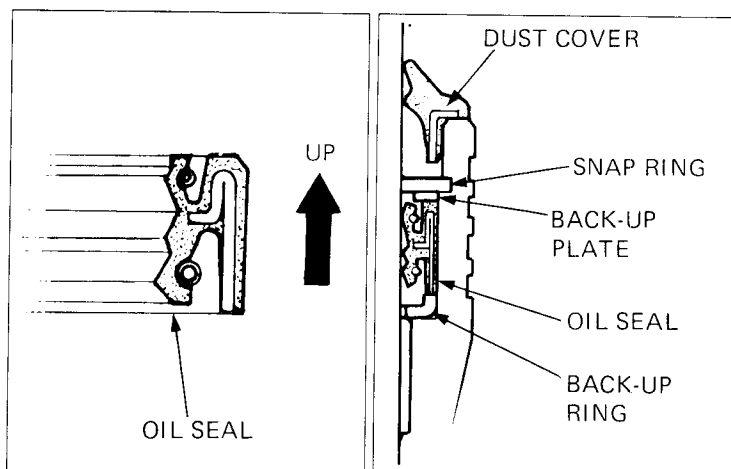
Coat a new oil seal with ATF and install it with the seal markings facing up.

Drive the seal in with the seal driver until the tool bottoms against the slider.

Install the back-up plate, snap ring and dust cover.

### NOTES

- Install the snap ring with its radiused edge facing down.
- If additional seal depth is needed, install the back-up plate and repeat driving the seal in.



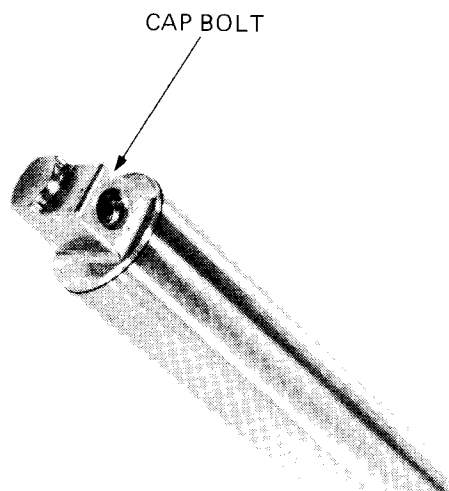
Remove the fork tube cap and pour the specified amount of ATF into the fork tube.

**OIL CAPACITY: 280cc (9.5 oz)**

Install and torque the fork tube cap bolt.

**TORQUE: 1.5 – 3.0 kg-m (11 – 22 ft-lb)**

Remove the plug and install the valve stem and connector.



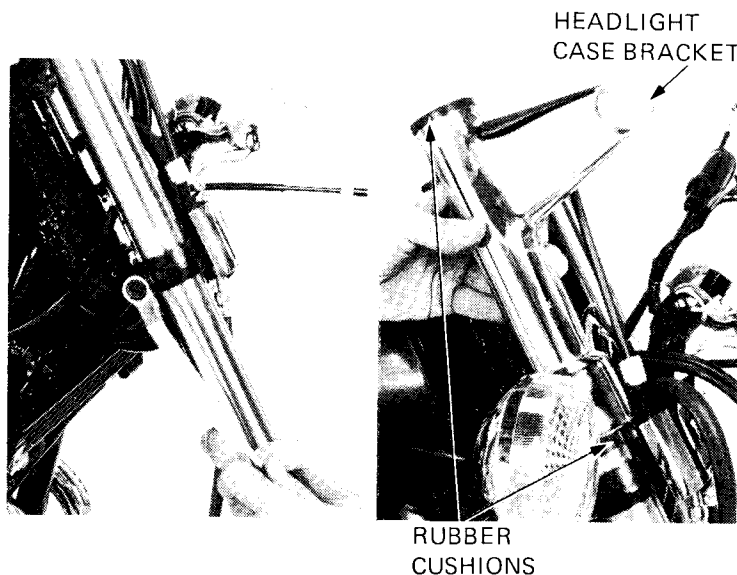
### Installation

Install the front forks.

Tighten the steering stem bolts loosely.

Install the rubber cushions and headlight case bracket.

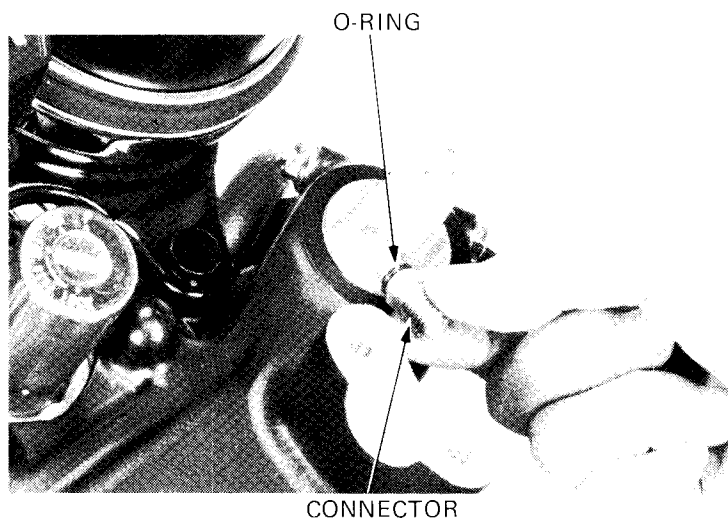
Install the fork top bridge (page 14-27).





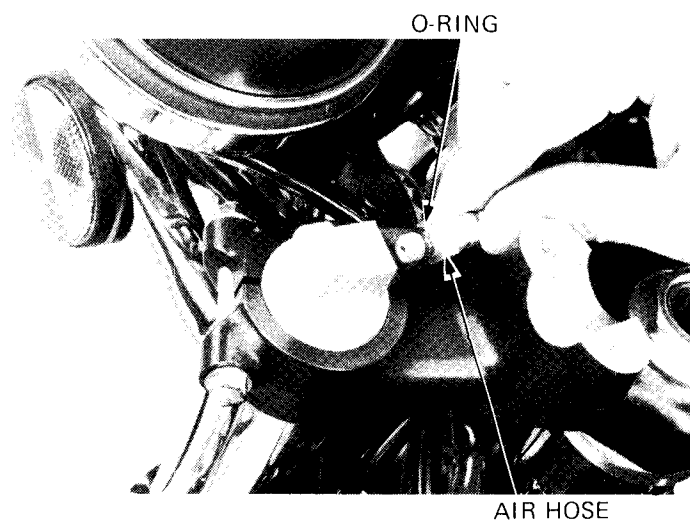
Apply grease to the new O-rings.  
 Place new O-rings on the air hose connectors.  
 Tighten the air hose connectors.

**TORQUE:** 0.4–0.7 kg-m (3–5 ft-lb)



Install the air hose to the left fork.

**TORQUE:** 0.4–0.7 kg-m (3–5 ft-lb)



Connect the air hose to the right fork cap.

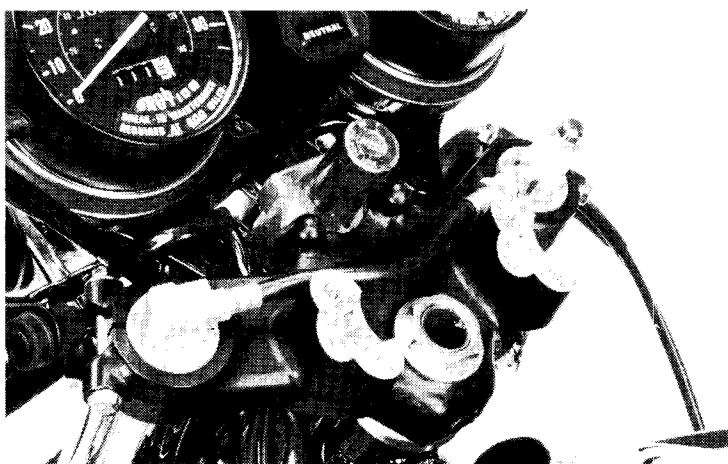
**TORQUE:** 1.5–2.0 kg-m (11–15 ft-lb)

Install the removed parts in the reverse order of removal.

Fill the fork tubes with air to 0.8–1.1 kg/cm<sup>2</sup> (11–16 psi).

**CAUTION:**

- Use only a hand operated air pump to fill the fork tubes.  
Do not use compressed air.
- Maximum pressure is 3 kg/cm<sup>2</sup> (43 psi). Do not exceed this or fork tube component damage may occur.



With the front brake applied, pump the front forks up and down several times. Place the motorcycle on its center stand. Check the air pressure, adjust if necessary.



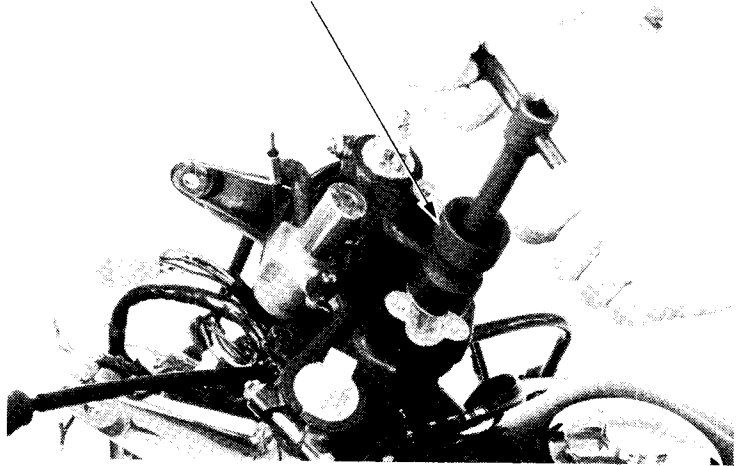
## STEERING STEM

### REMOVAL

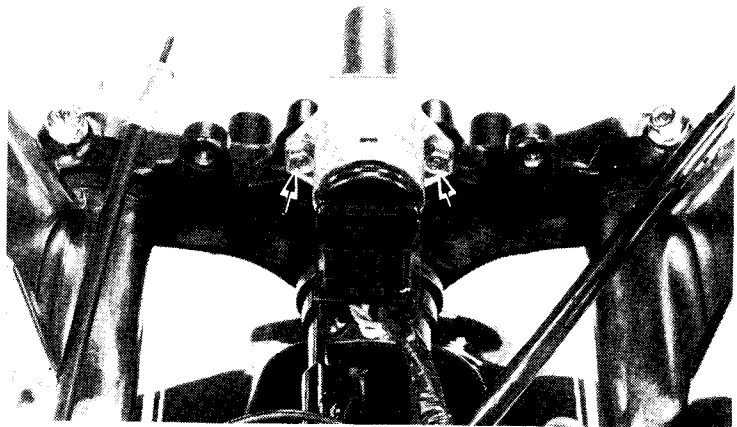
Remove the headlight (page 14-3).  
Remove the instruments (page 14-4).  
Remove the handlebar (page 14-6).  
Remove the front fork air hose and connector (page 14-15).

Loosen the top bridge pinch bolts.  
Remove the steering stem nut.

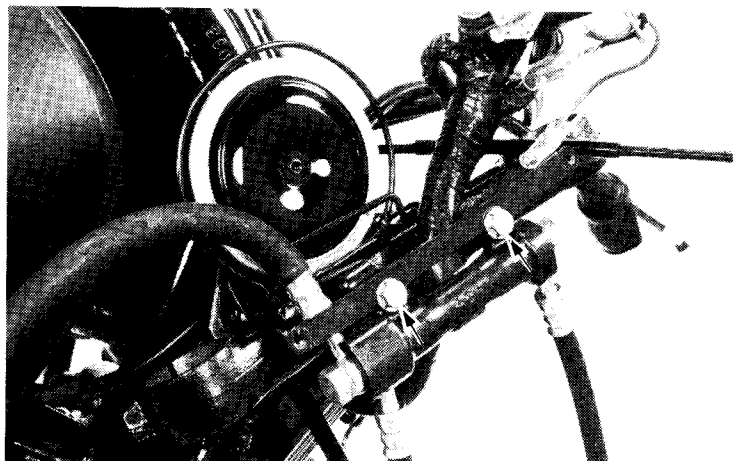
LOCK NUT WRENCH  
30 x 32 mm



Disconnect the ignition switch coupler.  
Remove the fork top bridge.



Remove the front wheel (page 14-10).  
Remove the front fork (page 14-15).  
Remove the brake hose 3-way joint and horn.

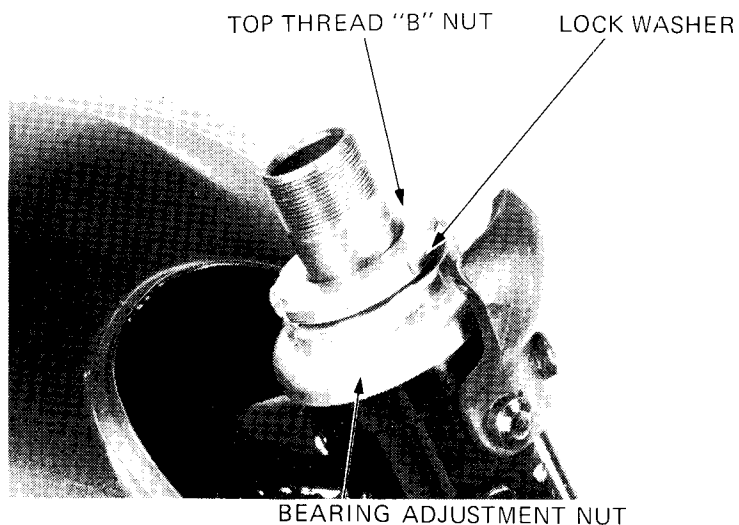




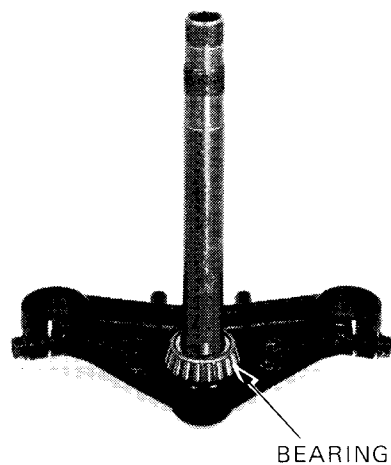
Remove the top thread "B" nut, lockwasher and bearing adjustment nut.

Remove the steering stem.

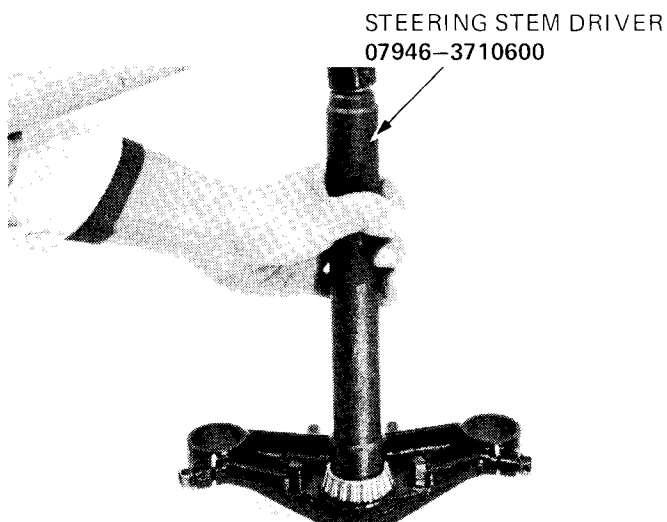
Check the steering stem bearing for damage or wear.



Remove the bearing if necessary.



Install a dust seal onto the steering stem and drive the lower bearing inner race over the stem with the special tool.

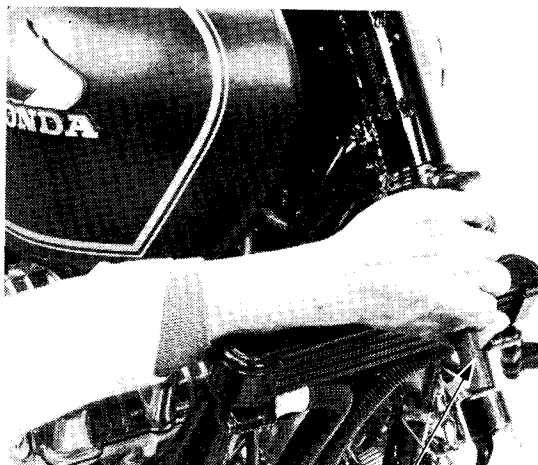




## NOTE

Replace the bearing and bearing race as a set.

Remove the upper bearing race with the special tool.

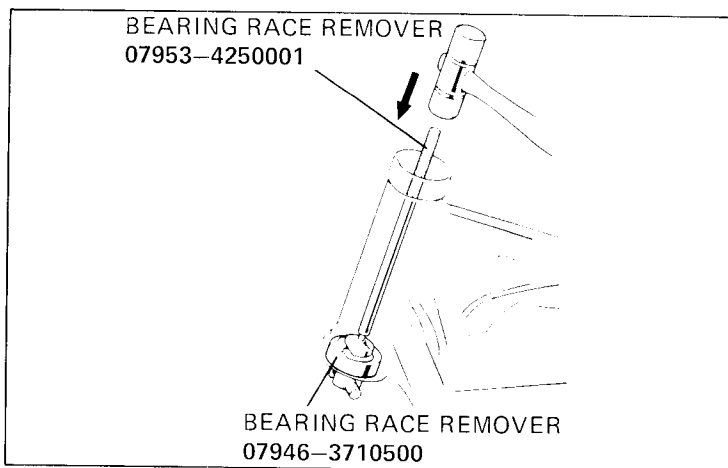


BEARING RACE REMOVER  
07953-4250001

Remove the lower bearing race with the special tool.

## NOTE

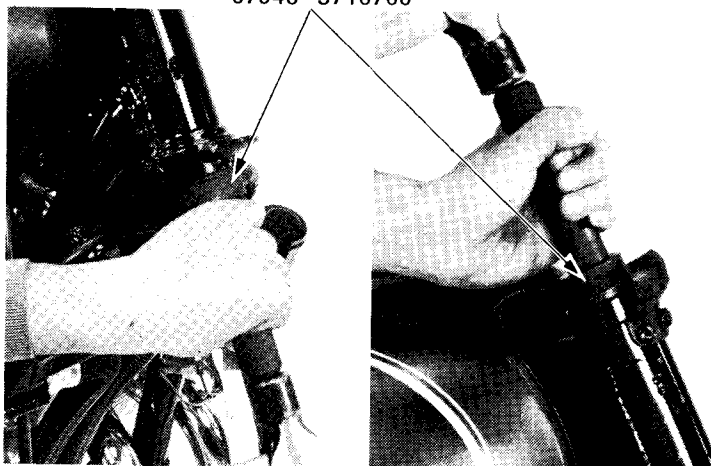
If the motorcycle has been involved in an accident, examine the area around the steering head for cracks.



Drive the upper bearing outer race into the head pipe with the special tools.

Drive the lower bearing outer race into the head pipe with the special tool.

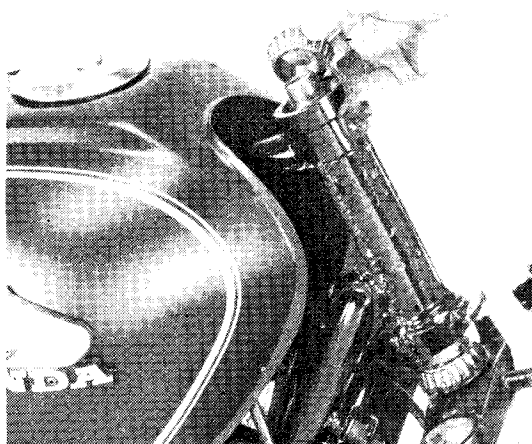
BEARING DRIVER ATTACHMENT  
07946-3710700





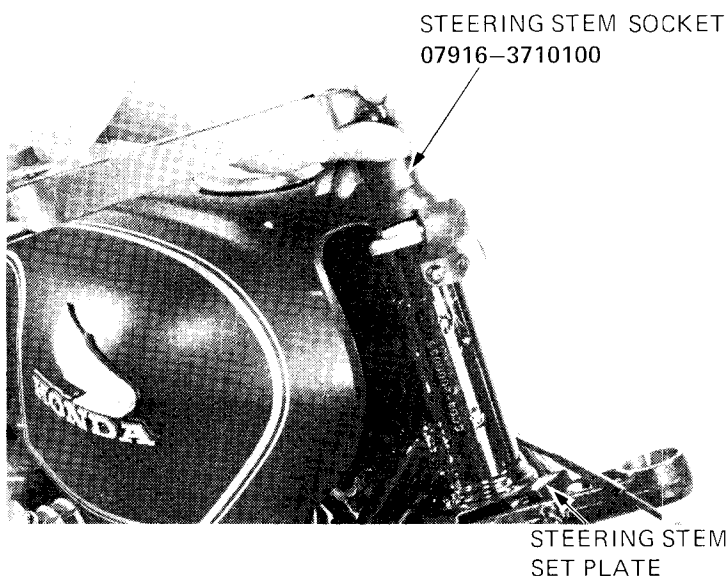
### STEERING STEM INSTALLATION

Pack the bearing cavities with bearing grease. Insert the steering stem into the steering head pipe and install the upper bearing inner race.



Install and tighten the adjustment nut.

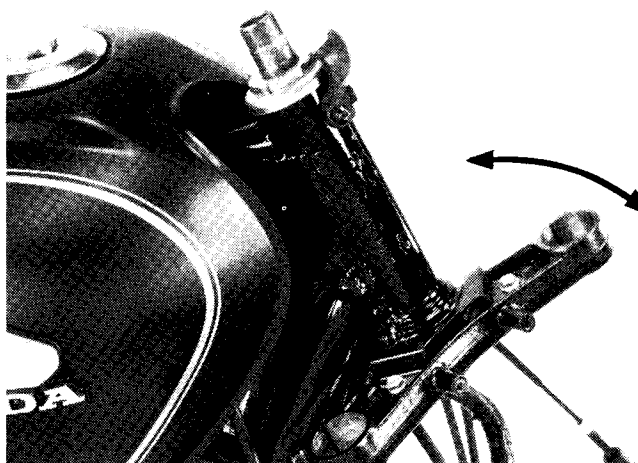
**TORQUE:** 1.4–1.6 kg-m (10–12 ft-lb)



Turn the steering stem lock-to-lock 5 times to seat the bearings.

Repeat the bearing tightening and steering stem turning sequence twice.

If the nut does not tighten after turning the steering stem the first or second time, remove the nut and inspect it and the steering stem threads for dirt or burrs.



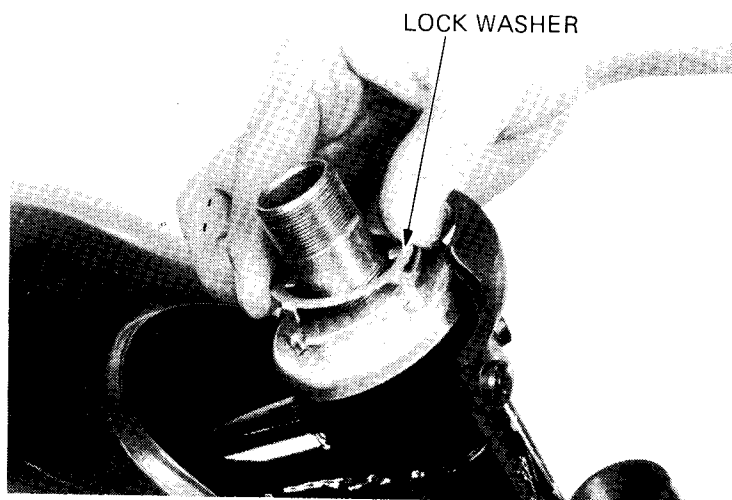




Install a new bearing adjustment nut lock washer aligning the tabs with the nuts grooves.

### NOTE

DO NOT install a used bearing adjustment nut lock washer.

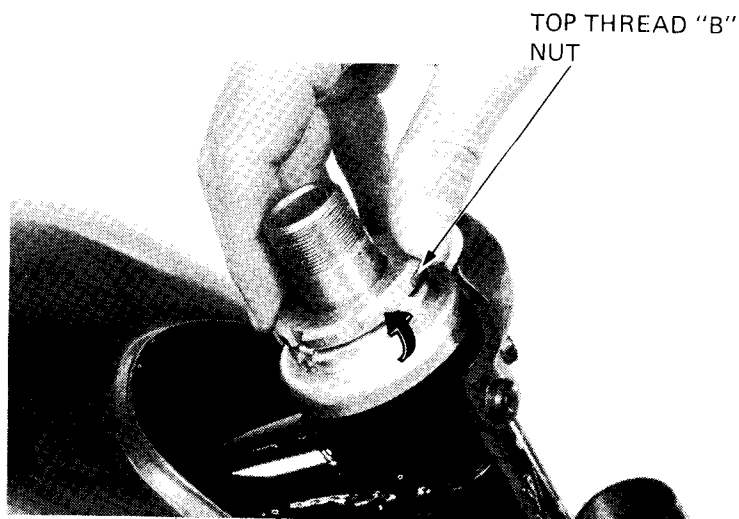


Hand tighten the top thread "B" nut. Hold the adjustment nut and further tighten the "B" nut only to align its grooves with the lock washer tabs.

### NOTE

If the top thread "B" nut grooves cannot be easily aligned with the lock washer tabs, remove the nut, turn it over and reinstall.

Bend the other two lock washer tabs up into the top thread "B" nut grooves.



Install the front forks (page 14-21).  
Install the top bridge.

Tighten the stem nut.

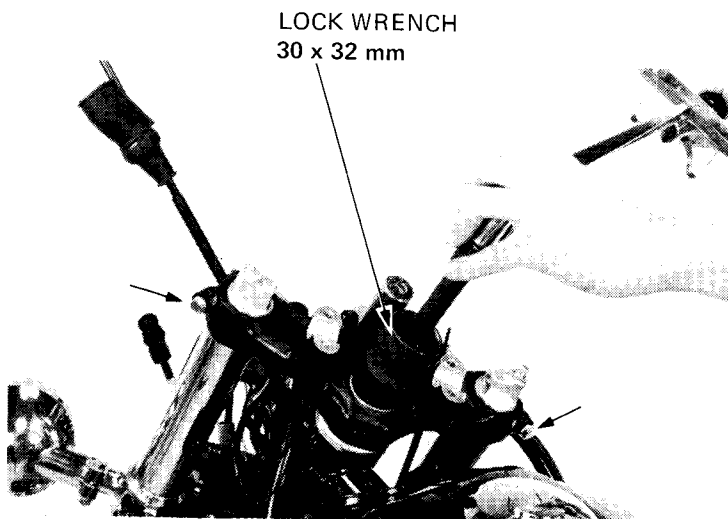
**TORQUE: 8.0–12.0 kg-m (58–87 ft-lb)**

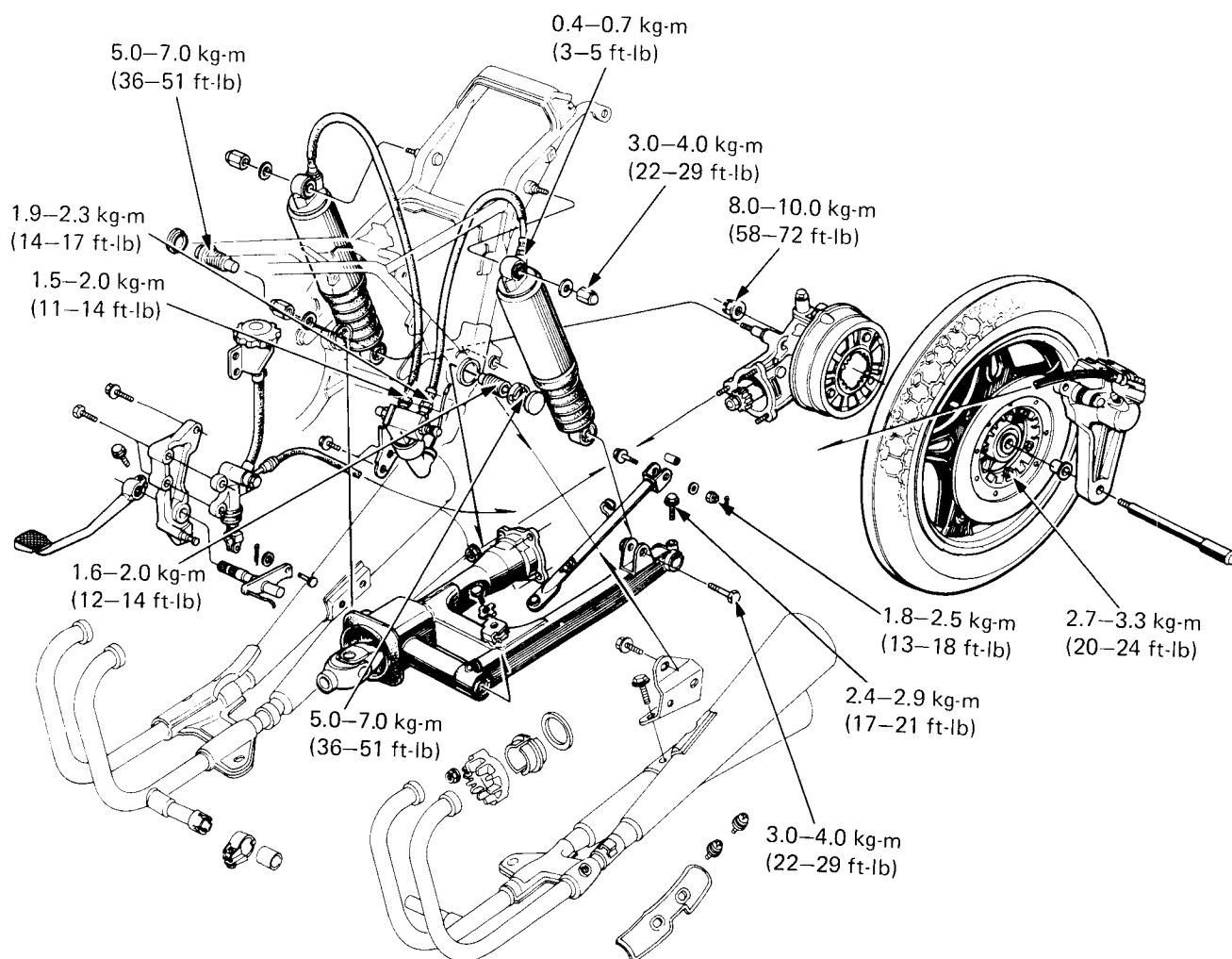
Tighten the top bridge pinch bolts.

**TORQUE: 0.9–1.3 kg-m (7–9 ft-lb)**

Tighten the steering stem pinch bolts.

**TORQUE: 4.5–5.5 kg-m (33–40 ft-lb)**







|                     |       |
|---------------------|-------|
| SERVICE INFORMATION | 15- 1 |
| TROUBLESHOOTING     | 15- 1 |
| REAR WHEEL          | 15- 2 |
| SHOCK ABSORBER      | 15- 8 |
| SWING ARM           | 15-12 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to the TUBELESS TIRE MANUAL.
- Do not remove rivets, nuts and pins from the rim, spoke plate and hub.
- Never ride on the rim or try to bend wheel.
- Avoid damaging the aluminum alloy rim.

### TOOLS

#### Common

|                                 |               |
|---------------------------------|---------------|
| Bearing driver handle A         | 07749-0010000 |
| Bearing driver outer 62 x 68 mm | 07746-0010500 |
| Bearing driver outer 52 x 55 mm | 07746-0010400 |
| Bearing driver pilot 20 mm      | 07746-0040500 |
| Bearing driver pilot 25 mm      | 07746-0040600 |
| Retainer wrench A               | 07710-0010300 |
| Retainer wrench body            | 07710-0010401 |

#### Special

|                                |                                     |
|--------------------------------|-------------------------------------|
| Fork seal driver               | 07947-3710100                       |
| Swingarm pivot lock nut wrench | 07908-4690001<br>or M9500-350-91914 |
| Socket bit 10 mm               | 07917-3710000                       |

### TORQUE VALUES

|                                |                             |
|--------------------------------|-----------------------------|
| Rear brake disc                | 2.7-3.3 kg-m (20-24 ft-lb)  |
| Rear axle nut                  | 8.0-10.0 kg-m (58-72 ft-lb) |
| Rear axle pinch bolt           | 2.4-2.9 kg-m (17-21 ft-lb)  |
| Rear shock absorber            | 3.0-4.0 kg-m (22-29 ft-lb)  |
| Rear brake torque link         | 1.8-2.5 kg-m (13-18 ft-lb)  |
| Swing arm pivot bolt           | 5.0-7.0 kg-m (36-51 ft-lb)  |
| Swing arm pivot adjusting bolt | 1.6-2.0 kg-m (12-14 ft-lb)  |
| Swing arm pivot bolt lock nut  | 5.0-7.0 kg-m (36-51 ft-lb)  |
| 3-way joint lock nut           | 1.9-2.3 kg-m (14-17 ft-lb)  |
| Air pressure switch            | 0.8-1.2 kg-m ( 6- 9 ft-lb)  |
| Air hose (to 3-way joint)      | 1.5-2.0 kg-m (11-14 ft-lb)  |
| (to shock absorber)            | 0.4-0.7 kg-m ( 3- 5 ft-lb)  |
| Air hose connector             | 0.4-0.7 kg-m ( 3- 5 ft-lb)  |
| Air valve                      | 0.4-0.7 kg-m ( 3- 5 ft-lb)  |

### SPECIFICATIONS

|                               |        | STANDARD                               | SERVICE LIMIT    |
|-------------------------------|--------|--|------------------|
| Axle runout                   |        | —                                      | 0.2 mm (0.01 in) |
| Rear wheel rim runout         | Radial | —                                      | 2.0 mm (0.08 in) |
|                               | Axial  | —                                      | 2.0 mm (0.08 in) |
| Shock absorber air pressure   |        | 2.0-4.5 kg/cm <sup>2</sup> (28-64 psi) | —                |
| Shock absorber fluid capacity |        | 365 cc (12.5 ozs)                      | —                |

## TROUBLESHOOTING

### Oscillation

1. Distorted rim
2. Loose wheel bearing
3. Loose or bent spokes
4. Faulty tire
5. Loose axle
6. Tire pressure incorrect
7. Swing arm bushing worn

### Soft Suspension

1. Weak spring
2. Insufficient fluid in shock absorber
3. Shock absorber air pressure incorrect

### Hard Suspension

1. Incorrect fluid weight in shock absorber
2. Bent shock absorber
3. Shock absorber air pressure incorrect

### Suspension Noise

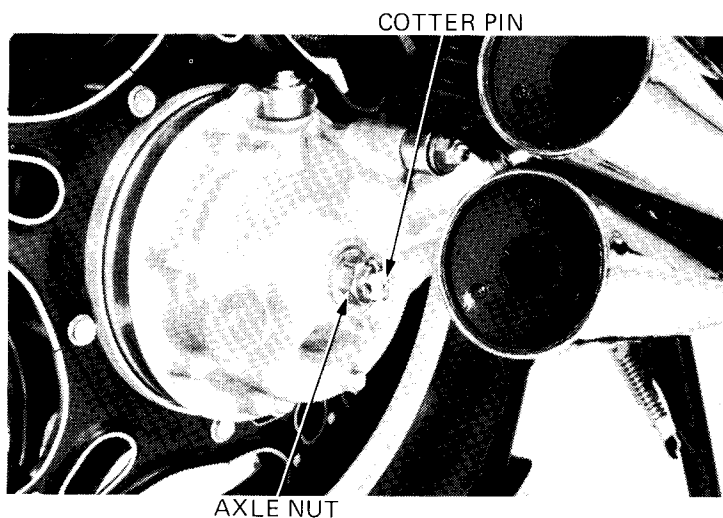
1. Shock case binding
2. Loose fasteners



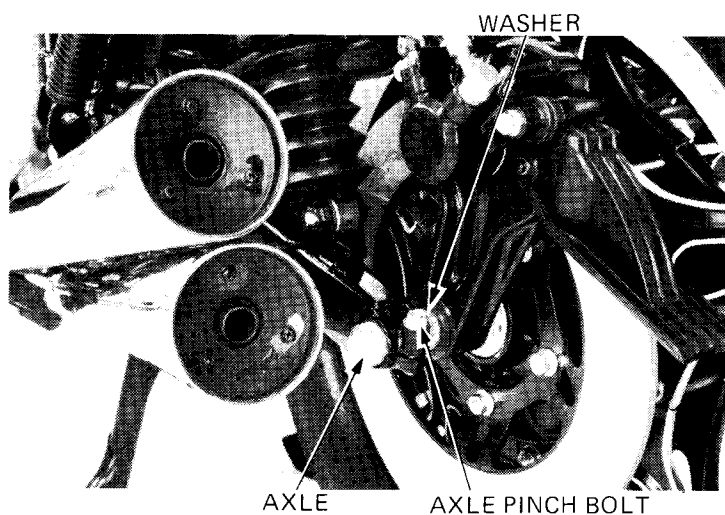
## REAR WHEEL

### REMOVAL

Place the motorcycle on its center stand.  
Remove the cotter pin and loosen the axle nut.

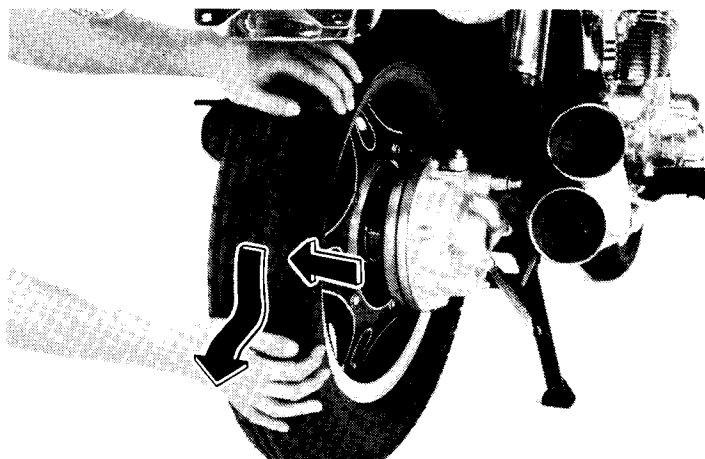


Loosen the axle pinch bolt.  
Remove the rear axle and washer.



Raise the rear brake caliper and move the rear wheel to the left to separate the rear wheel from the final drive gear case.

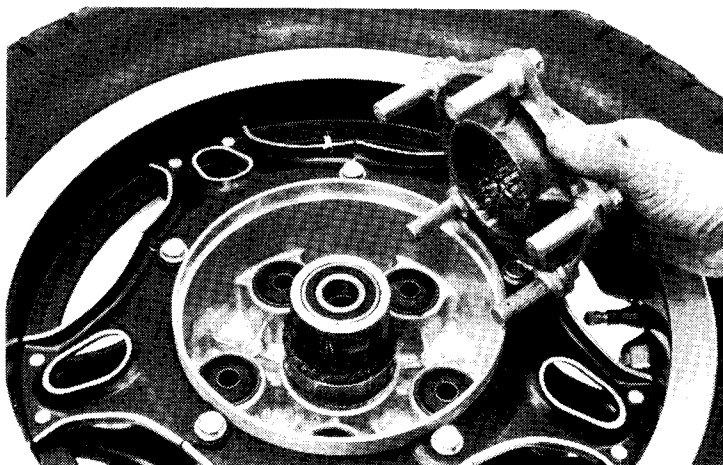
Remove the rear wheel.



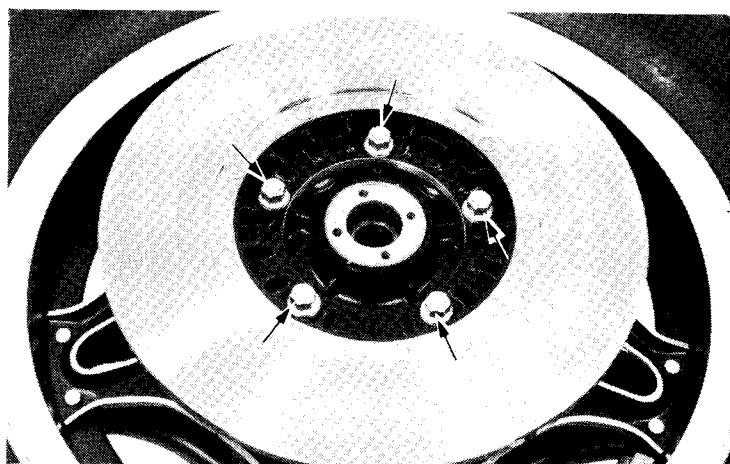


DISASSEMBLY

Remove the final driven flange.

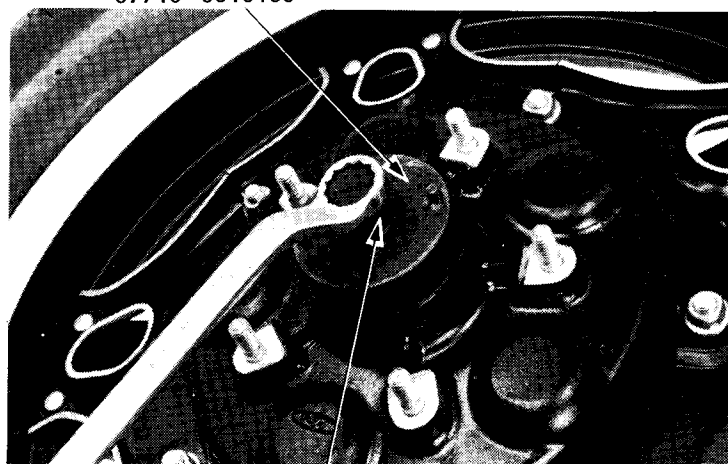


Remove the brake disc.



Remove the bearing retainer.

RETAINER WRENCH A  
07710-0010100



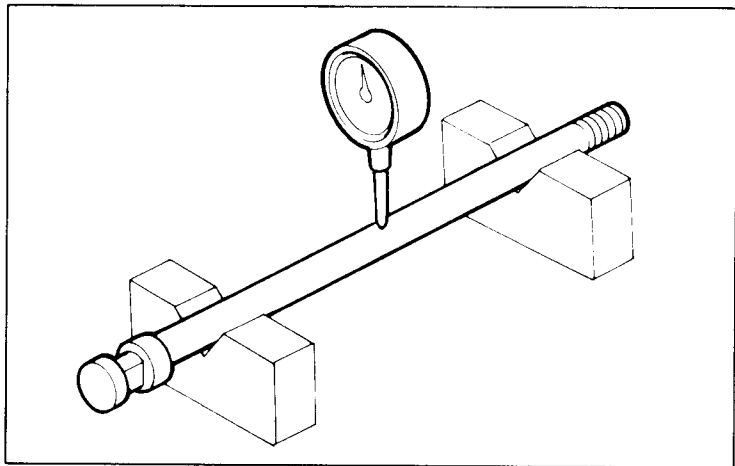
RETAINER WRENCH BODY  
07710-0010401

**AXLE INSPECTION**

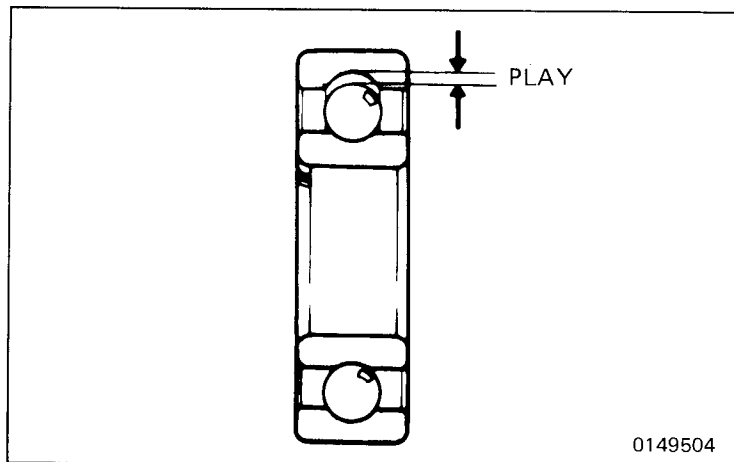
Set the axle in V blocks and read the axle runout.

The actual axle runout is 1/2 of TIR (Total Indicator Reading).

**SERVICE LIMIT: 0.2 mm (0.01 in)**

**REAR WHEEL BEARING PLAY INSPECTION**

Check the wheel bearing play by rotating the wheel by hand. Replace the bearing with new ones if they are noisy or have excessive play.



0149504

**REAR WHEEL RIM RUNOUT INSPECTION**

Check the rim for runout by placing the wheel in a truing stand. Spin the wheel slowly, and read the runout using a dial indicator.

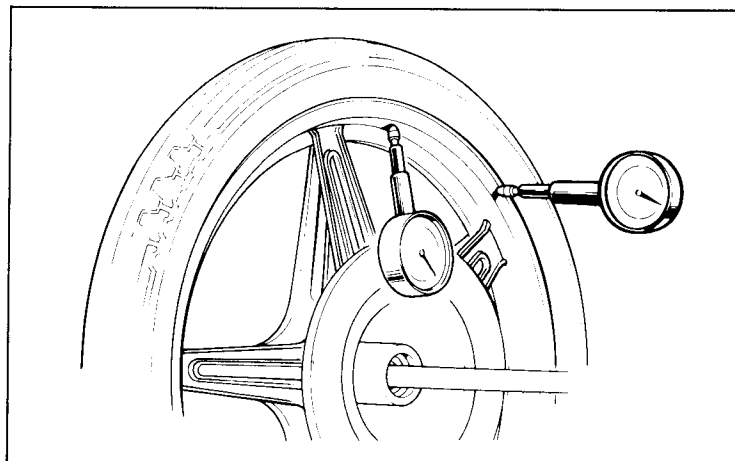
**SERVICE LIMITS:**

**RADIAL RUNOUT: 2.0 mm (0.08 in)**

**AXIAL RUNOUT: 2.0 mm (0.08 in)**

**NOTE**

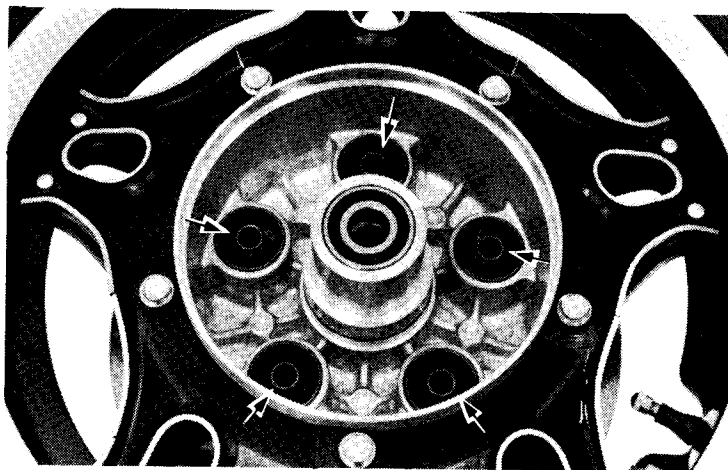
The COMSTAR WHEEL cannot be serviced and must be replaced if the above limits are exceeded.





## DAMPER RUBBER INSPECTION

Replace the damper rubbers if they are damaged or deteriorated.



## ASSEMBLY

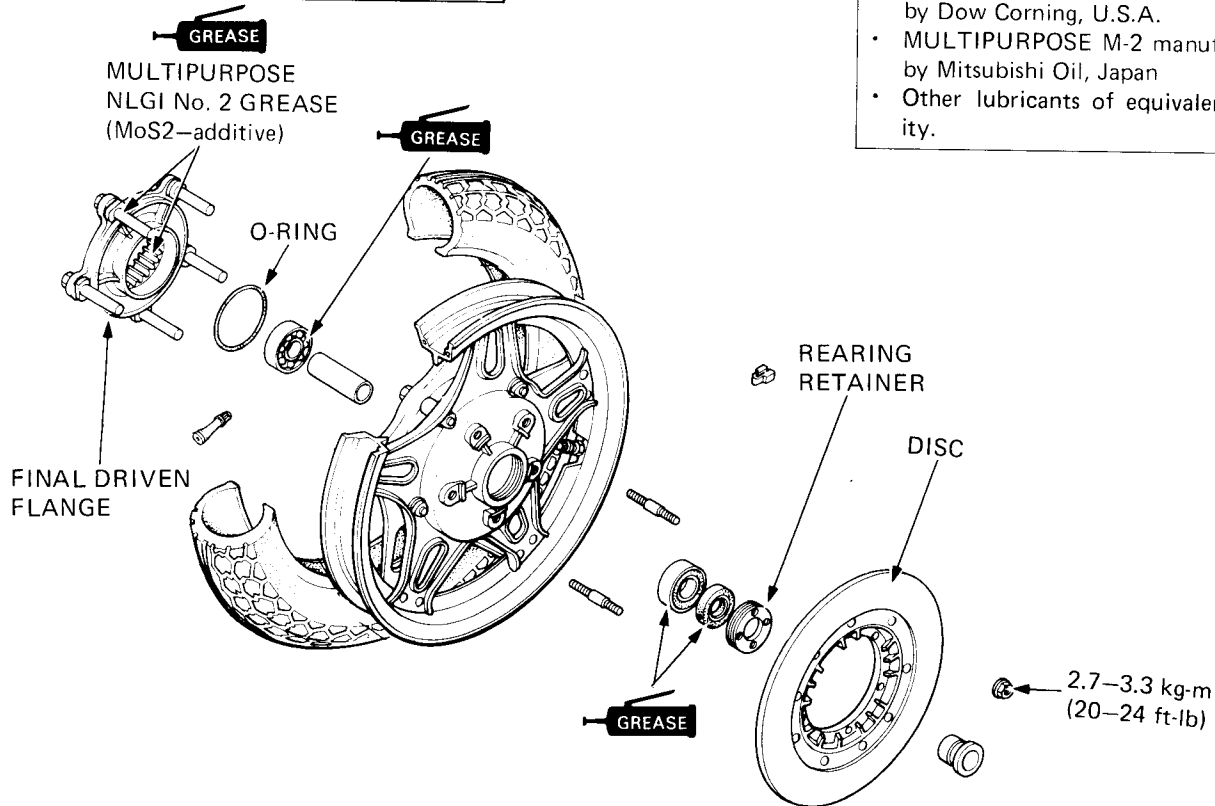
### NOTE

The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to TUBELESS TIRE MANUAL.

### NOTE

Use lithium-based MULTIPURPOSE grease with MoS<sub>2</sub>-additive as follows:

- MOLYKOTE BR2-S manufactured by Dow Corning, U.S.A.
- MULTIPURPOSE M-2 manufactured by Mitsubishi Oil, Japan
- Other lubricants of equivalent quality.



### WARNING

Do not get grease on the brake disc.



Pack all bearing cavities with grease.  
 Press the distance collar into place from the left side.  
 Drive the right ball bearing first, then the left ball bearing.

**CAUTION**

*Drive the bearings squarely.  
 Install the bearings with the sealed end facing out, making sure they are fully seated.*

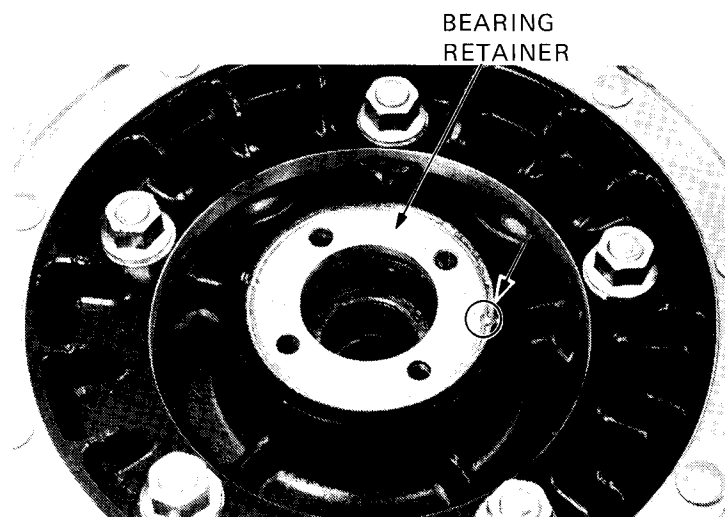


DRIVER HANDLE  
 BEARING DRIVER 62 x 68 mm  
 DRIVER PILOT 20 mm

Install the bearing retainer with the same tool that was used to remove it. Peen it to the hub.

**NOTE**

Check the condition of the bearing retainer.  
 If the threads are damaged, the retainer should be replaced.



BEARING  
 RETAINER

Install the rear brake disc and nut.

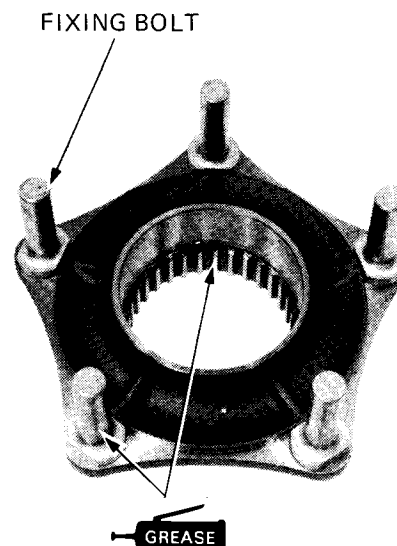
**TORQUE: 2.7–3.3 kg-m, (20–24 ft-lb)**

Clean the brake disc with a high quality degreasing agent.

Install the fixing bolts as shown.  
 Tighten the new nut.

Apply MULTIPURPOSE NLGI No. 2 Grease (MoS2-additive) to the fixing bolts and inside of the final driven flange.

Install the final driven flange onto the rear wheel.



FIXING BOLT

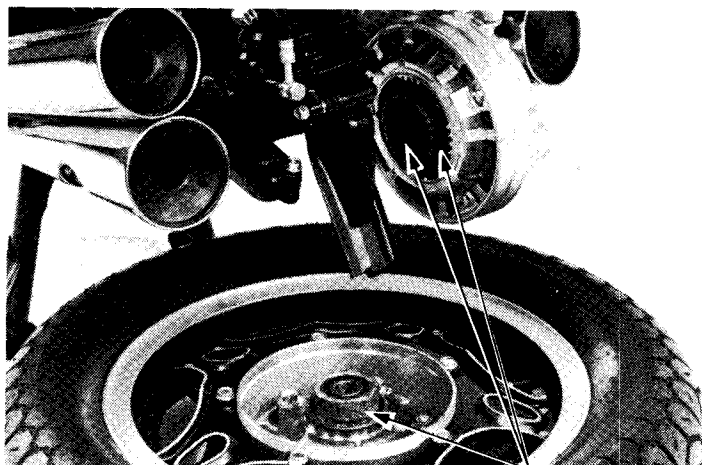
GREASE





### INSTALLATION

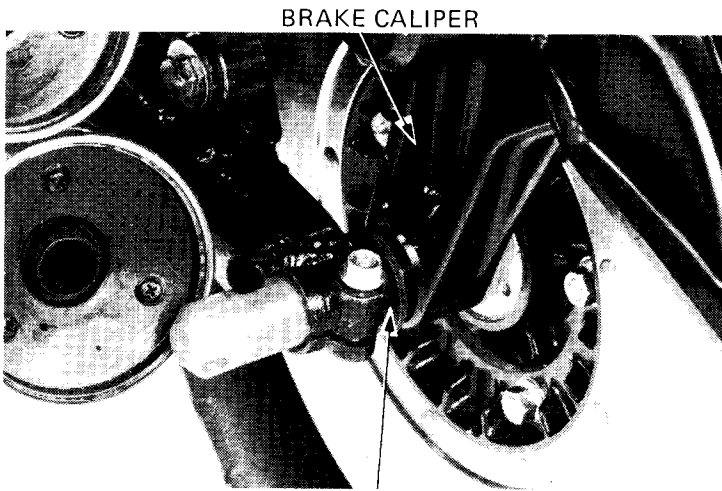
Apply MULTIPURPOSE NLGI No. 2 Grease (MoS<sub>2</sub>-additive) to the final driven flange spline of the rear wheel and ring gear.



GREASE LITHIUM BASED  
MULTIPURPOSE  
GREASE

Install the rear wheel.

Insert the rear axle through the swing arm, washer and brake caliper.



BRAKE CALIPER

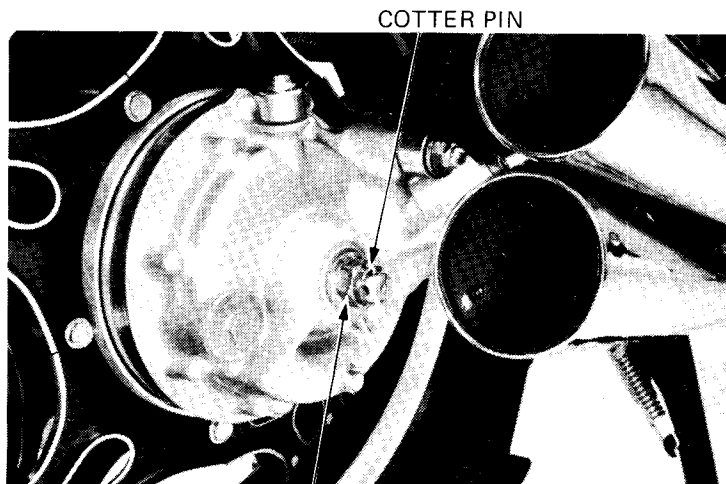
WASHER

Tighten the axle nut.

**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**

Tighten the axle pinch bolt.

**TORQUE: 2.4–2.9 kg-m (17–21 ft-lb)**



COTTER PIN

AXLE NUT

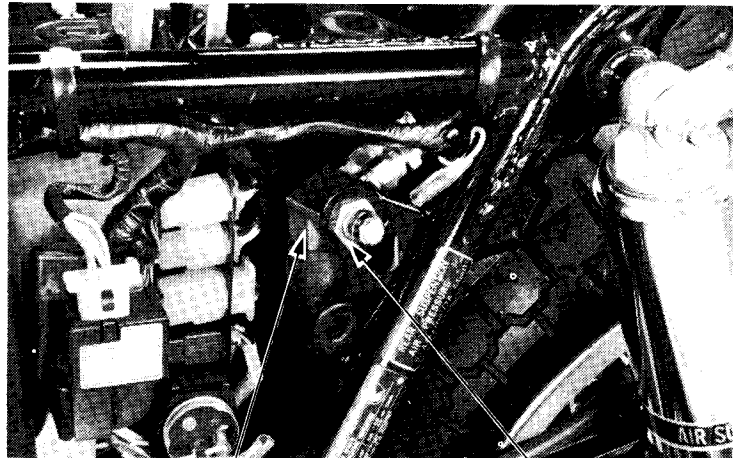


## SHOCK ABSORBER

### REMOVAL

Remove the left side cover.  
Remove the air valve cap and disconnect the switch wire.

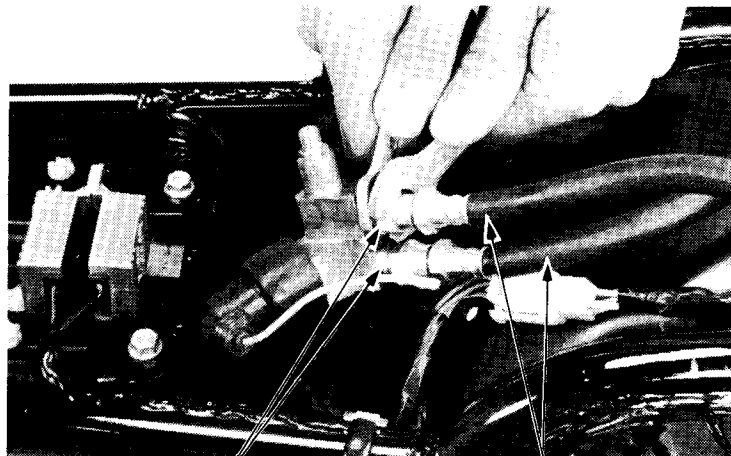
Remove the 3-way joint setting nut.  
Remove the 3-way joint.



3-WAY JOINT

LOCK NUT

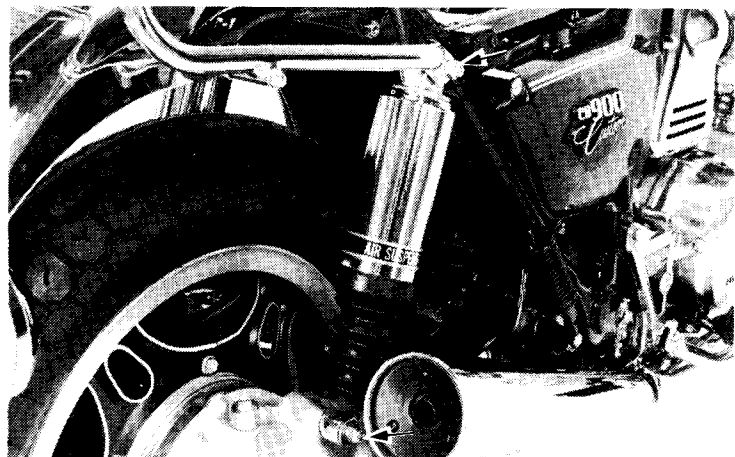
Disconnect the air hoses from the 3-way joint.



CONNECTOR

AIR HOSE

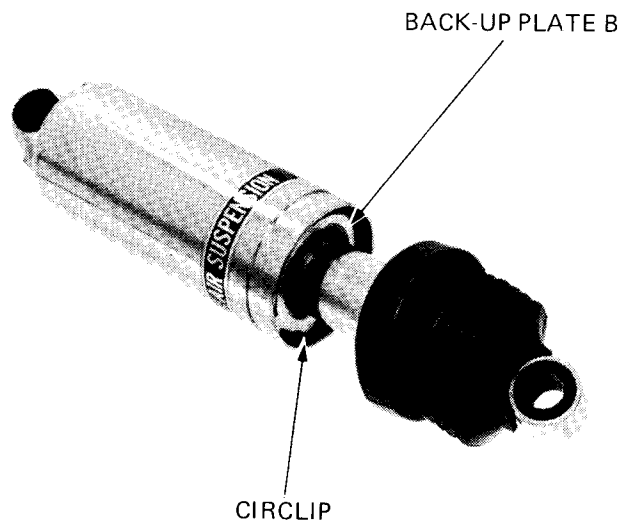
Remove the rear shock absorber.





### DISASSEMBLY

Disconnect the airhose.  
Remove the boot.  
Remove the circlip and back-up plate "B".  
Turn the shock upside down and drain as much oil as possible.



Reconnect the boot to the shock outer.  
Place the shock lower mount in a vise with soft jaws.  
Place a shop towel around the boot area to prevent oil splashing.

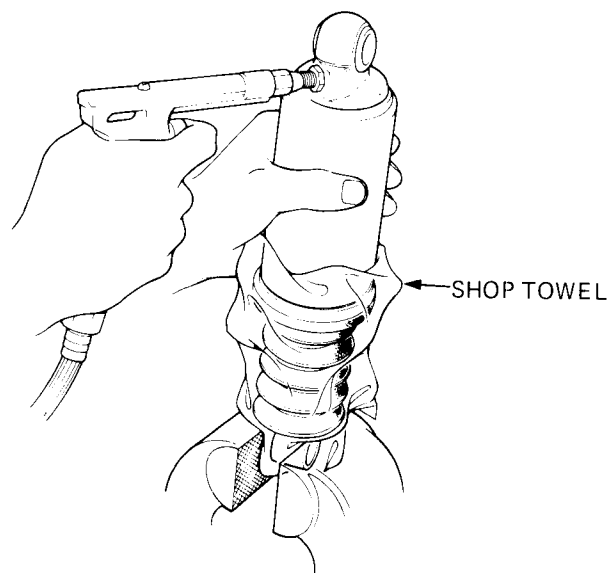
### WARNING

*Do not hold the shock below the seal during the next operation because the seal, back-up plate and the guide bushing will come out with force. Wear eye and face protection.*

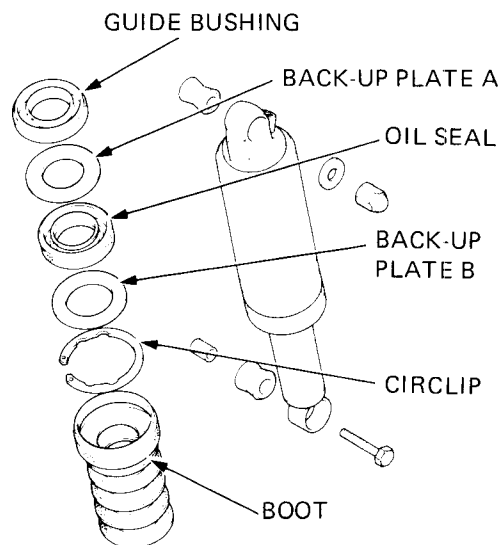
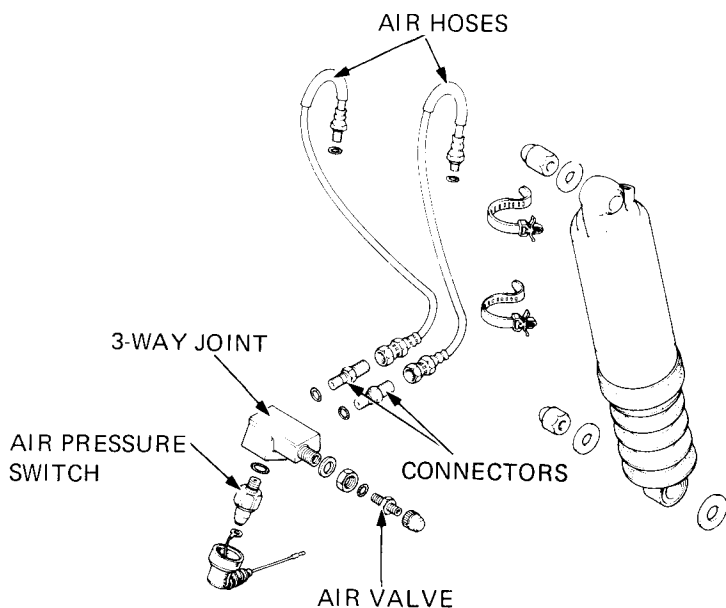
Remove the oil seal by applying compressed air. The seal may stick, therefore small air spurts may be necessary.

Drain the shock oil.

Remove back-up plate A and the guide bushing.



Check the guide bushing for wear.



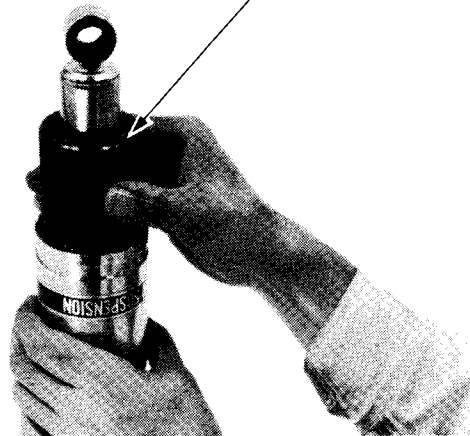
**ASSEMBLY**

Clean all the disassembled parts.  
Fill the shock absorber with ATF

**CAPACITY: 365 cc (12.5 ozs)**

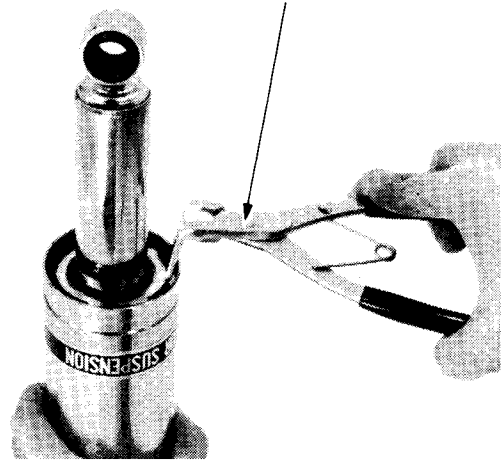
Install the guide bushing and back-up plate A.  
Dip a new oil seal in ATF.  
Install the oil seal and back up plate.  
Drive them into the shock absorber.

FORK SEAL DRIVER  
07947-3710100



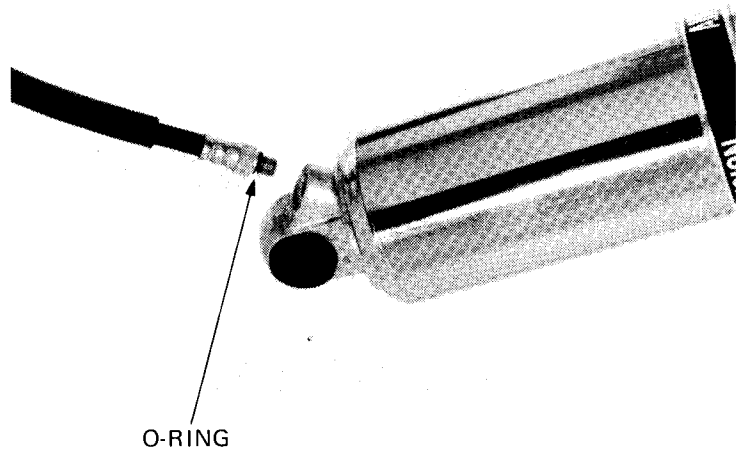
Install the circlip with the sharp edge facing up.  
Install the boot.

CIRCLIP PLIERS  
07914-3230001



Apply grease to a new air hose connector  
O-ring.  
Install the air hose.

**TORQUE: 0.4-0.7 kg-m (3-5 ft-lb)**

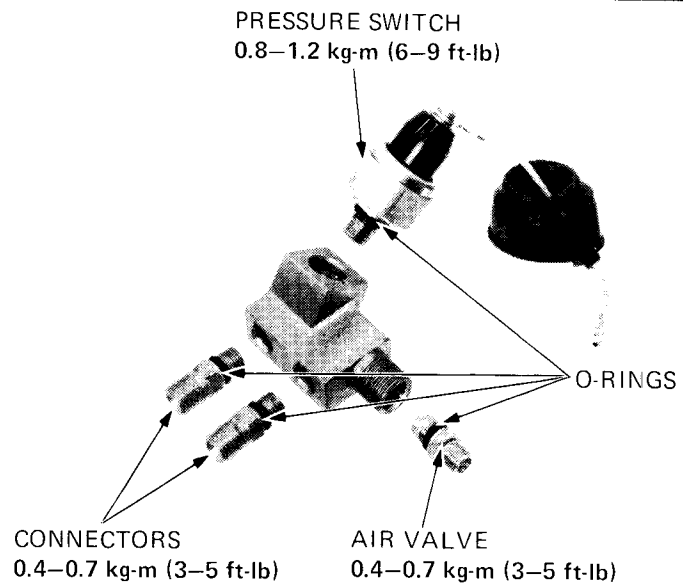




## INSTALLATION

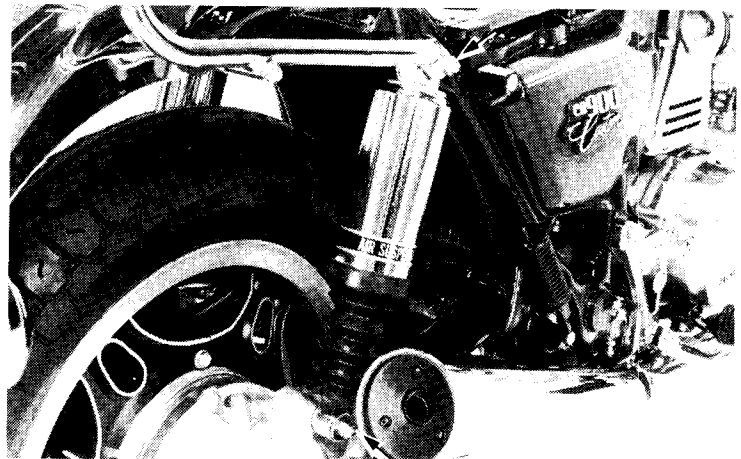
Apply grease to new O-rings.

Install the connectors, air valve and air pressure switch.



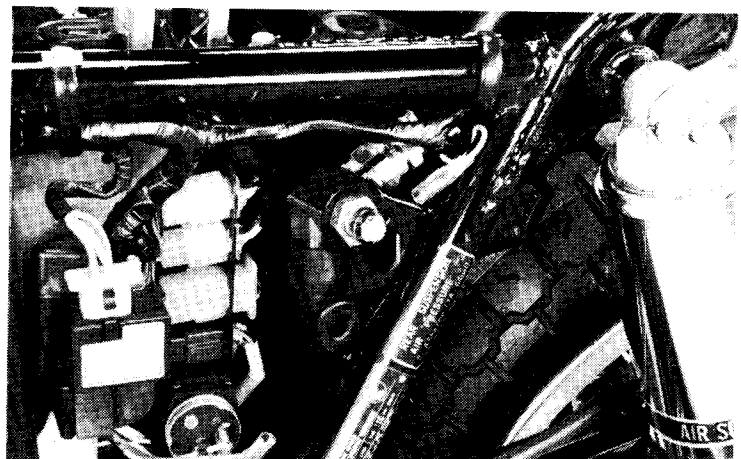
Install the shock absorber.

**TORQUE:** 3.0–4.0 kg-m (22–29 ft-lb)



Connect the air hose to the 3-way joint.  
Install the 3-way joint and connect the switch wire.

Fill the rear shock absorber with air to  
2.0–4.5 kg/cm<sup>2</sup> (28–64 psi).



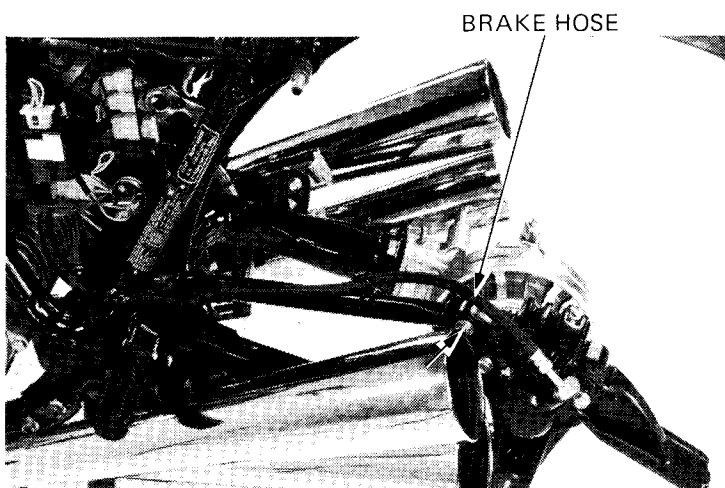


## SWING ARM

### REMOVAL

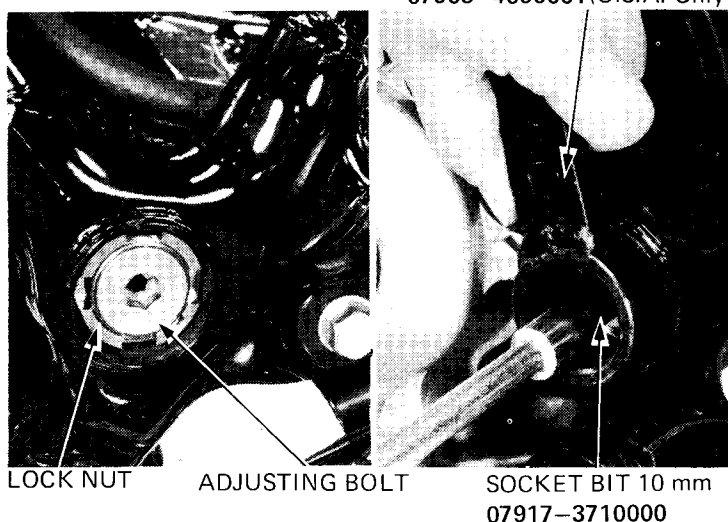
Remove the rear wheel (page 15-2).  
Remove the rear shock absorber lower mounting bolt and nut.  
Remove the brake hose from the swing arm.

Remove the cotter pin and remove the rear brake caliper.  
Remove the final drive gear.



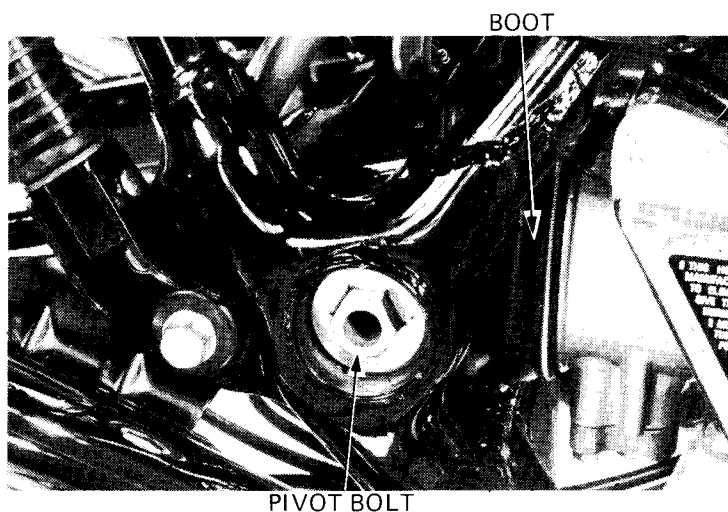
Remove the left swing arm pivot cap.  
Loosen the lock nut and remove the swing arm pivot adjusting bolt.

SWING ARM PIVOT  
LOCK NUT WRENCH  
07908-4690001 (U.S.A. Only)



Remove the right swing arm pivot cap.  
Remove the right swing arm pivot bolt.  
Remove the swing arm.

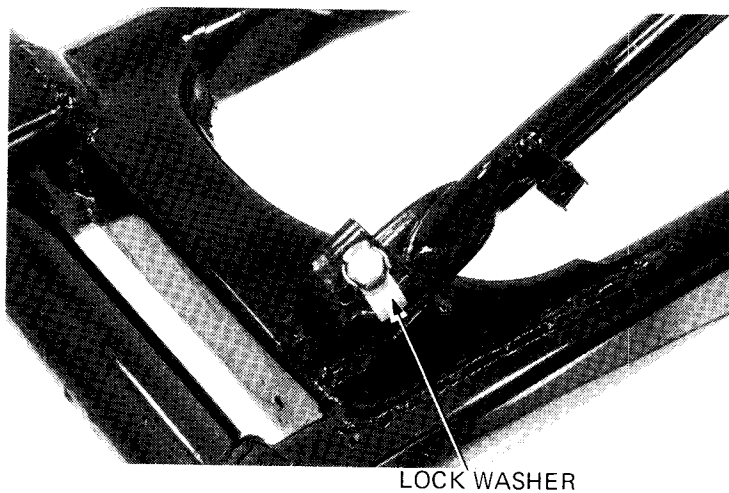
Detach the rubber boot and remove the universal joint circlip.





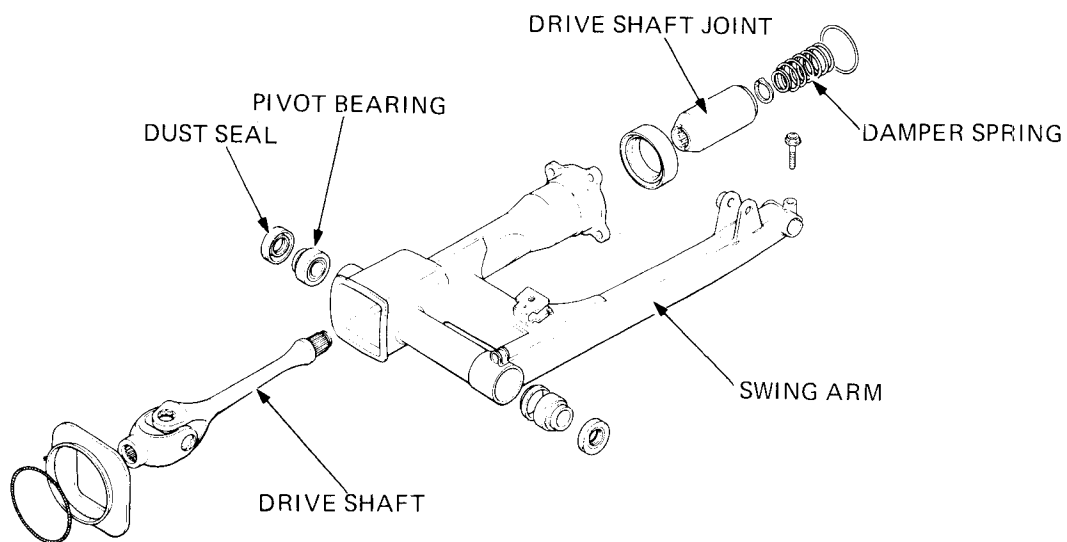
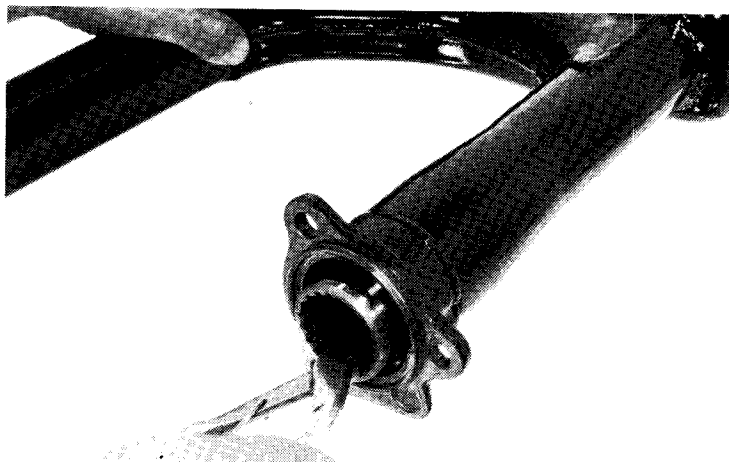
### DISASSEMBLY

Straighten the lockwasher tab and remove the brake torque link.



Remove the circlip and drive shaft coupling.

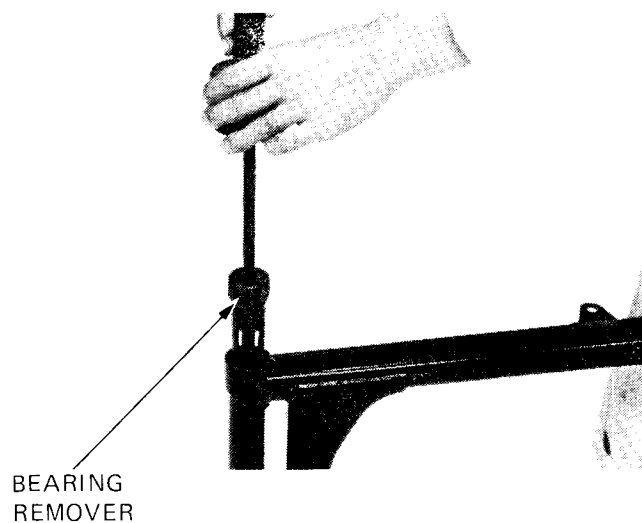
Remove the drive shaft from the swing arm.  
Remove the dust seal and pivot bearing.



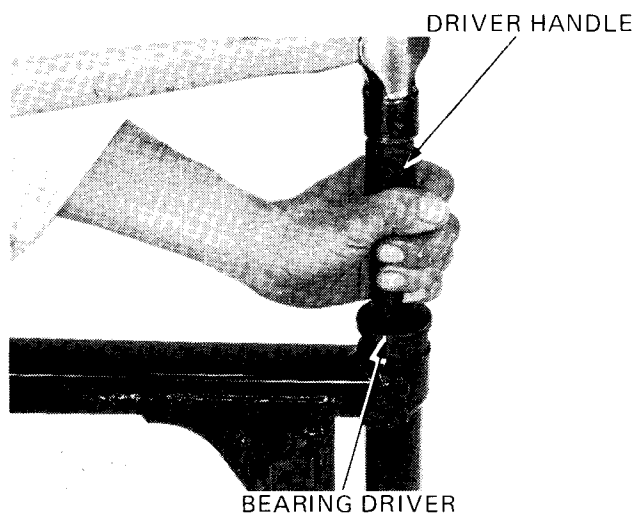


### PIVOT BEARING REPLACEMENT

Remove the bearing outer race.



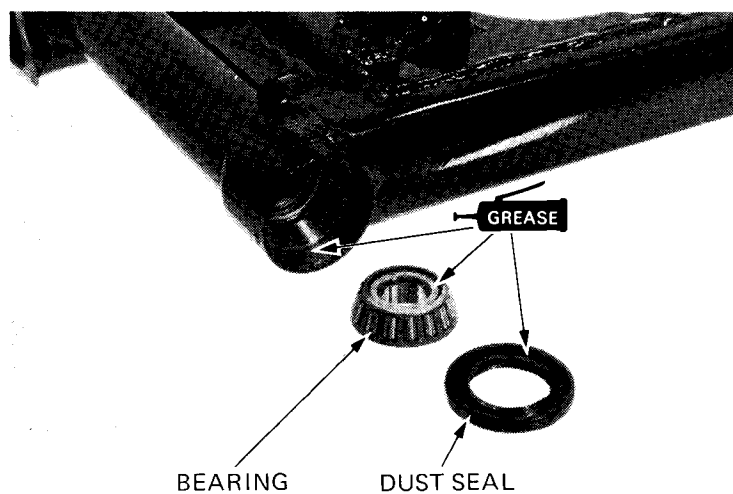
Drive in a new bearing outer race into the swing arm left pivot.



### ASSEMBLY

Apply grease to the pivot bearing and inside of dust seal.

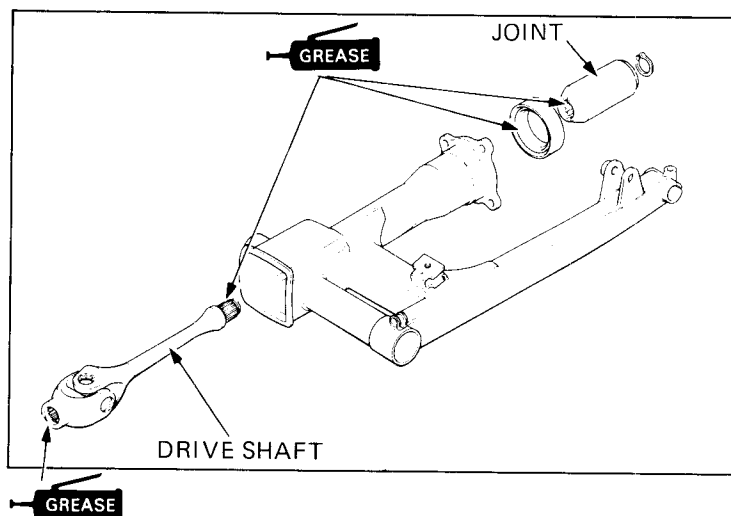
Install the bearing and dust seal.



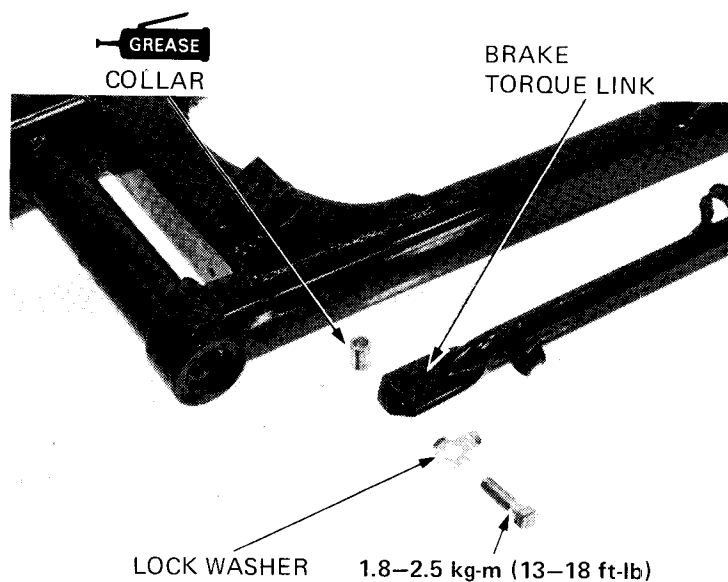




Apply MULTIPURPOSE NLGI No. 2 Grease (MoS2-additive) to the drive shaft, dust seal, joint.  
Install the drive shaft, joint and circlip.



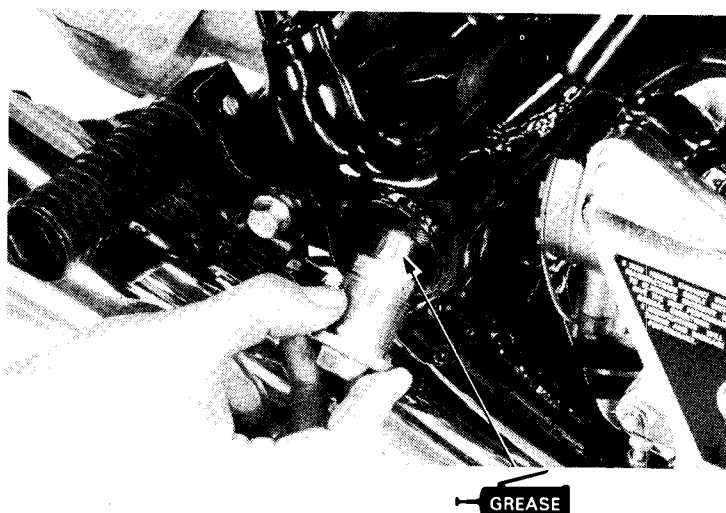
Apply grease to the pivot collar.  
Install the brake torque link with a new lockwasher.



### INSTALLATION

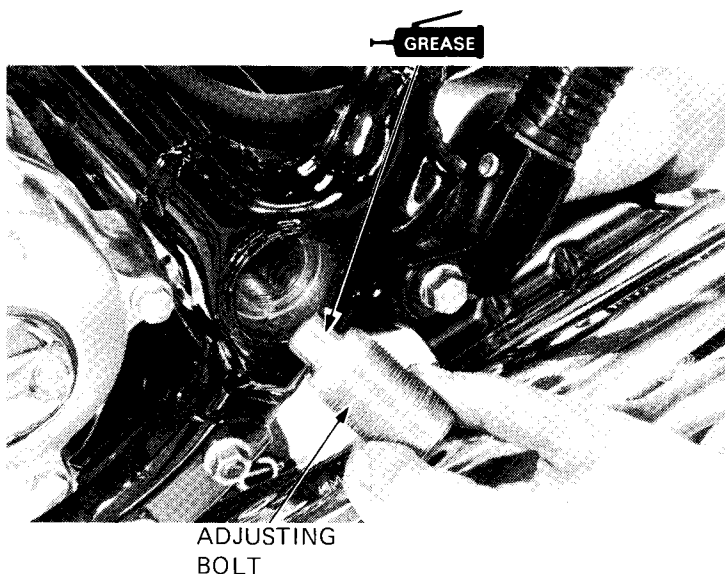
Apply grease to the pivot bolt tip.  
Align the universal joint and drive shaft before the swing arm is in position.  
Install the swing arm and pivot bolt.

**TORQUE: 5.0-7.0 kg-m (36-51 ft-lb)**





Apply grease to the pivot adjusting bolt.



Tighten the pivot adjusting bolt.

**TORQUE 1.6–2.0 kg-m (12–14 ft-lb)**

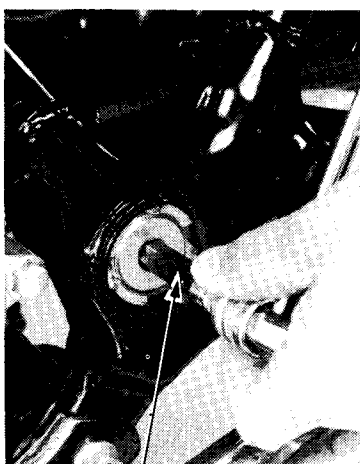
Move the swing arm up and down several times.

Retighten the pivot adjusting bolt to the specified torque.

Tighten the locknut while holding the adjusting nut to keep from turning.

**TORQUE: 5.0–7.0 kg-m (36–51 ft-lb)**

SWINGARM PIVOT  
LOCK NUT WRENCH  
07908–4690001 (U.S.A. Only)



HEX. SOCKET BIT 10 mm  
07917–3710000 OR  
COMMERCIALLY AVAILABLE



Install the spring. Lubricate the splines of the drive shaft and pinion shaft with MULTIPURPOSE NLGI No. 2 Grease (MoS2-additive) and engage.

Temporarily install the gear case on the swing arm.

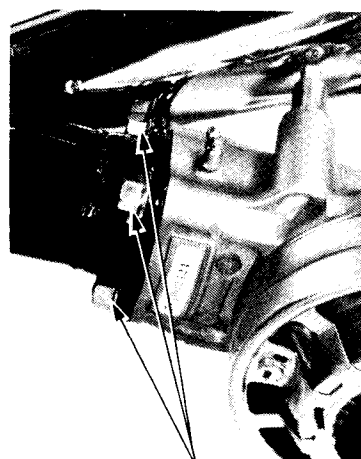
#### NOTE

Do not tighten the final gear case nuts at this time.

Tighten these nuts after the rear axle shaft is inserted.



MULTIPURPOSE  
GREASE



FINAL GEAR  
CASE ATTACHING NUTS



Apply MULTIPURPOSE NLGI No. 2 Grease (MoS<sub>2</sub>-additive) to the inside of the spline shaft, splines of the shaft and driven flange.

Install the rear wheel (page 15-7).

### NOTE

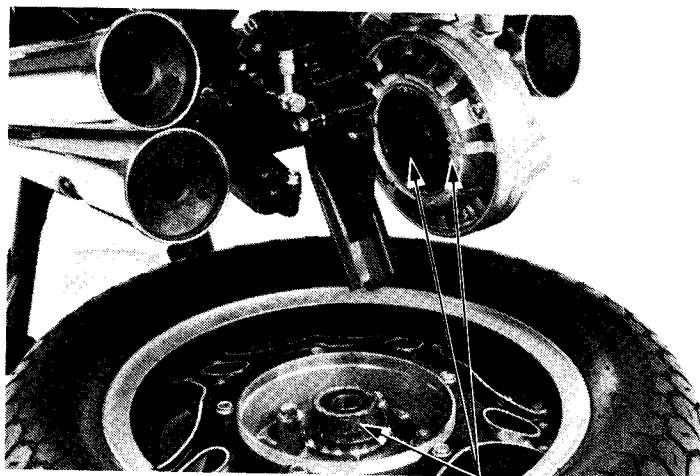
- Do not forget to lubricate.
- Do not tighten the axle at this time.

Tighten the final gear case nuts.

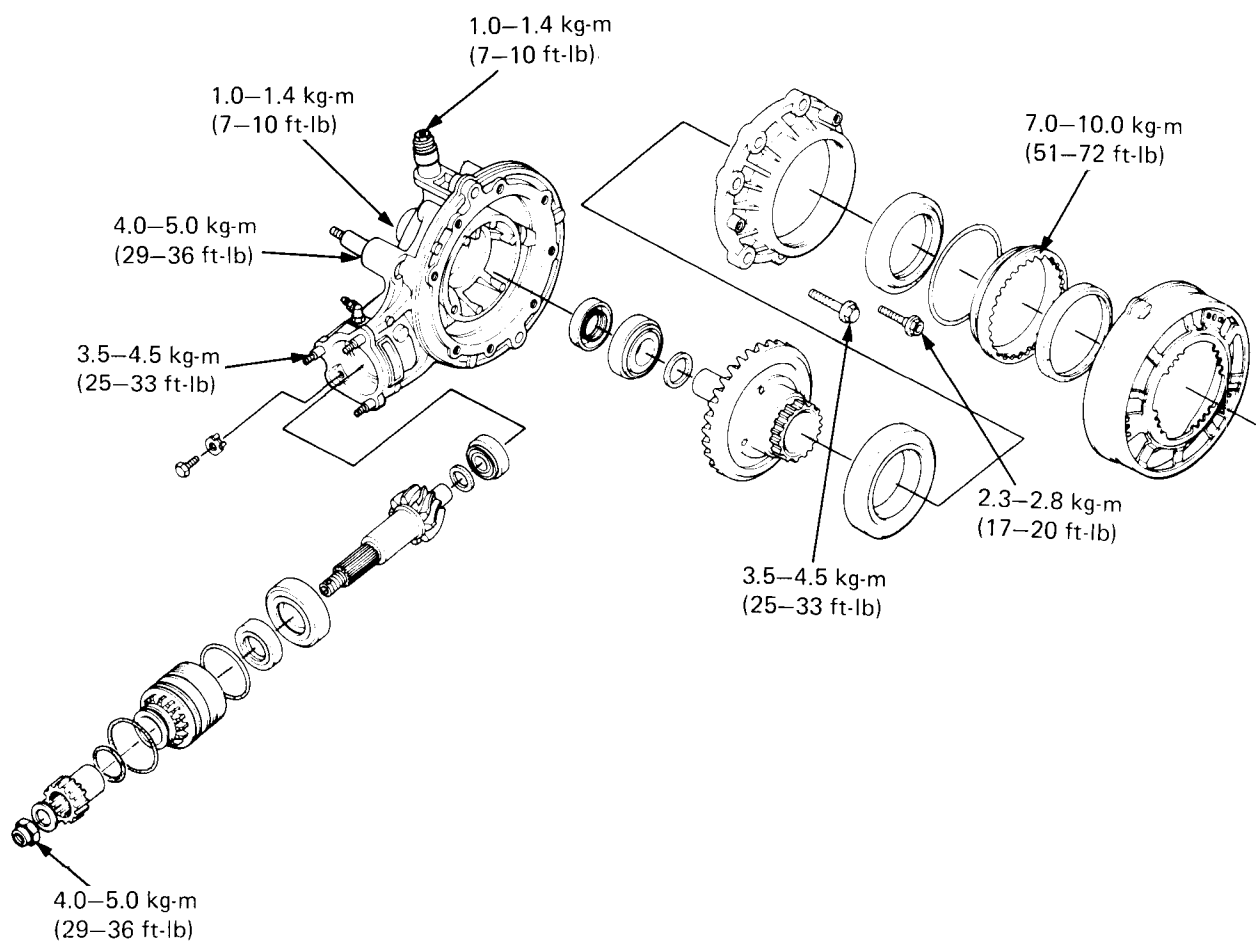
**TORQUE: 3.5–4.5 kg-m (25–33 ft-lb)**

Tighten the rear axle nut.

**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**



GREASE  
MULTIPURPOSE  
GREASE





|                         |       |                                   |       |
|-------------------------|-------|-----------------------------------|-------|
| SERVICE INFORMATION     | 16- 1 | OIL SEAL REMOVAL/<br>INSTALLATION | 16- 4 |
| TROUBLESHOOTING         | 16- 2 |                                   |       |
| FINAL GEAR CASE REMOVAL | 16- 3 | PRELOAD ADJUSTMENT                | 16-11 |
| BACKLASH INSPECTION     | 16- 3 | FINAL GEAR CASE INSTALLATION      | 16-15 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

The final drive gear assembly must be removed for:

- Backlash inspection
- Oil seal and O-ring replacement

Replace all oil seals and O-rings whenever the final drive gear assembly is disassembled.

### TOOLS

#### Special

|                               |  |
|-------------------------------|--|
| Retainer wrench               | 07910-3710000  |
| Final gear case base          | 07965-4630100 — Not available in U.S.A.                  |
| Retainer wrench B             | 07910-4630100  |
| Pinion gear dis/assembly tool | 07931-4630200  |
| Oil seal remover              | 07948-4630100 — Not available in U.S.A.                  |
| Dis/assembly tool A           | 07965-3710100  |
| Dis/assembly tool B           | 07965-4630300 — Not available in U.S.A.                  |
| Gear center guide             | 07965-4630500 — Not available in U.S.A.                  |
| Oil seal guide                | 07973-4630100  |
| O-ring guide                  | 07973-4630200  |
| Preload inspection tool       | 07924-3710000  |
| Oil seal driver attachment    | 07946-6920100 — Not available in U.S.A. or 07945-3330100 |
| Bearing driver attachment     | 07946-9370100  |

#### Common

|                         |                                |
|-------------------------|--------------------------------|
| Bearing driver handle A | 07749-0010000 or 07949-6110000 |
| Pilot 20 mm             | 07746-0040400                  |

### SPECIFICATIONS

|                       |                 | Standard  | Service Limit      |
|-----------------------|-----------------|---|--------------------|
| Final gear oil        | capacity        | 140-160 cc (4.7-5.4 ozs)  | _____              |
|                       | recommended oil | Hypoid-gear oil API, GL-5<br>Above 5°C/41°F SAE #90<br>Below 5°C/41°F SAE #80 | _____              |
| Gear backlash         |                 | 0.08-0.18 mm (0.003-0.007 in)   | 0.30 mm (0.012 in) |
| Gear assembly preload |                 | 9.0-11.5 kg-cm (7.8-10.0 in-lb)   | _____              |
| Pinion gear preload   |                 | 5-6 kg-cm (4.3-5.2 in-lb)   | _____              |



## TORQUE VALUES

|                                    |                             |
|------------------------------------|-----------------------------|
| Final gear case cover 10 mm bolt : | 3.5–4.5 kg-m (25–33 ft-lb)  |
| 8 mm bolt :                        | 2.3–2.8 kg-m (17–20 ft-lb)  |
| Final gear case nut                | 3.5–4.5 kg-m (25–33 ft-lb)  |
| Rear shock absorbers               | 3.0–4.0 kg-m (22–29 ft-lb)  |
| Drain bolt                         | 1.0–1.4 kg-m ( 7–10 ft-lb)  |
| Filler cap                         | 1.0–1.4 kg-m ( 7–10 ft-lb)  |
| Pinion shaft nut                   | 4.0–5.0 kg-m (29–36 ft-lb)  |
| Rear axle nut                      | 8.0–10.0 kg-m (58–72 ft-lb) |
| Axle pinch bolt                    | 2.4–2.9 kg-m (17–21 ft-lb)  |

## TROUBLESHOOTING

### Rear Wheel Will Not Rotate Freely

1. Rear brake dragging
2. Damaged wheel bearing
3. Damaged ring and pinion gear bearings
4. Bent rear axle
5. Bent swingarm
6. Excessive final gear assembly preload

### Excessive Noise

1. Worn or scored ring gear shaft and driven flange
2. Scored driven flange and wheel hub
3. Worn or scored drive pinion and splines
4. Worn pinion and ring gears
5. Excessive backlash between pinion and ring gear
6. Oil level too low

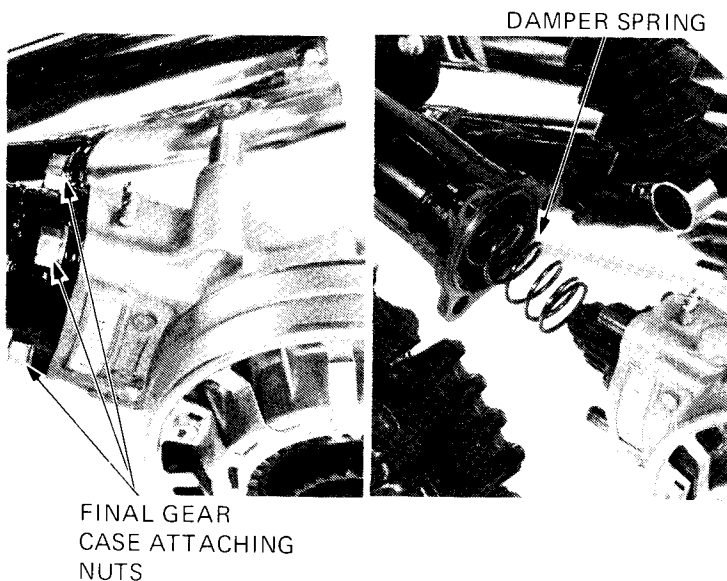
### Oil Leak

1. Clogged hub breather
2. Oil level too high
3. Seals damaged



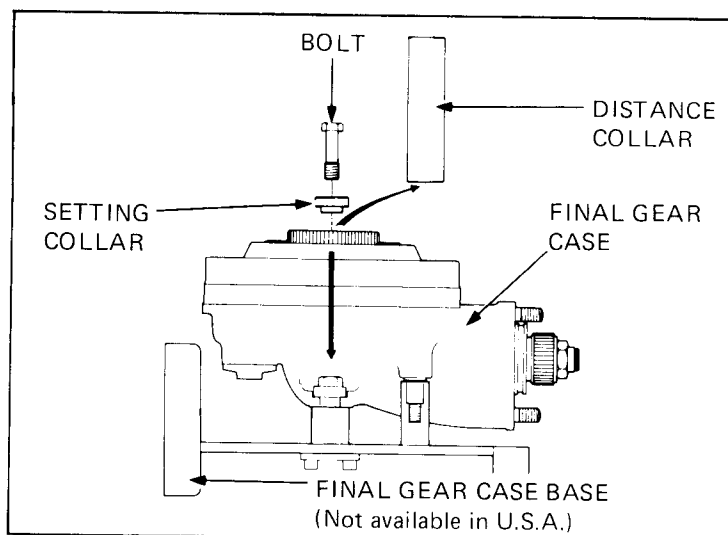
## FINAL GEAR CASE REMOVAL

Place the motorcycle on its center stand.  
Remove the rear wheel (page 15-2).  
Remove the shock absorber from the gear case.  
Remove the gear case attaching nuts.  
Remove the final gear case assembly and damper spring.  
Drain the final gear oil if disassembling the gear case.



## BACKLASH INSPECTION

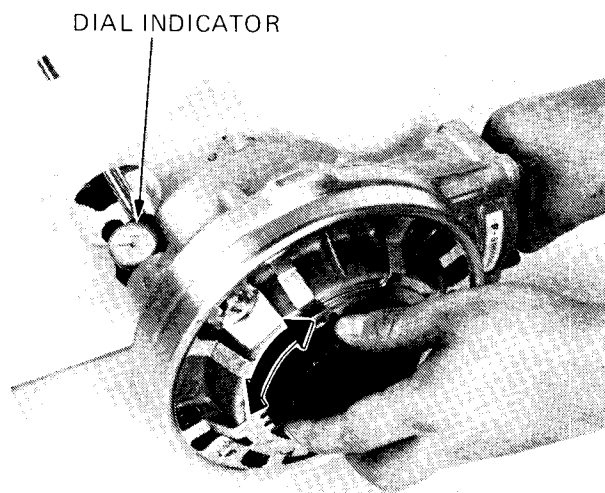
Remove the distance collar.



Remove the oil filler cap.  
Set a horizontal type dial indicator on the ring gear, through the oil filler hole.  
Hold the pinion gear spline by hand.  
Rotate the ring gear by hand until gear slack is taken up.  
Turn the ring gear back and forth to read backlash.

**STANDARD:** 0.08–0.18 mm  
(0.003–0.007 in)

**SERVICE LIMIT:** 0.30 mm (0.02 in)





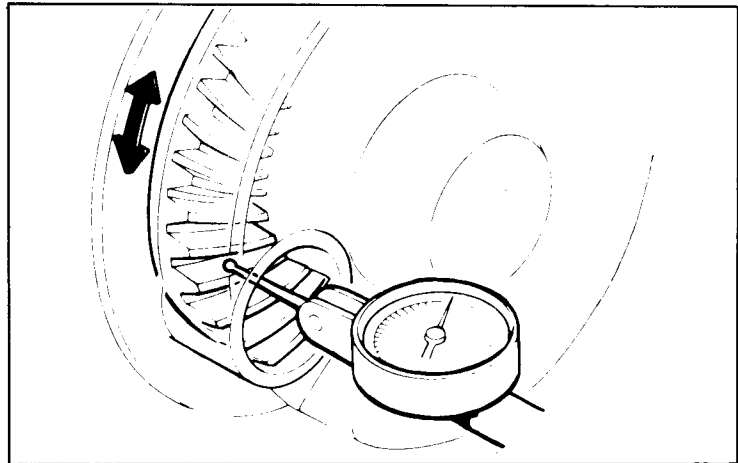
Remove the dial indicator. Turn the ring gear 120° and measure backlash. Repeat this procedure once more. Compare the difference of the three measurements.

#### DIFFERENCE OF MEASUREMENT

**SERVICE LIMIT: 0.1 mm (0.004 in)**

If backlash is excessive, check the final gear assembly preload (page 16-13).

If preload is correct, the final driven gear case assembly needs replacement.



## OIL SEAL REMOVAL/INSTALLATION

#### NOTE

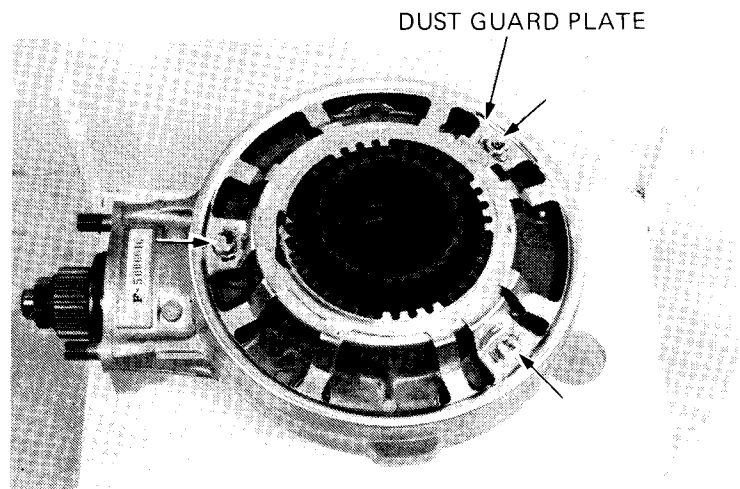
Replace all final gear case oil seals and O-rings whenever the case is disassembled.

#### RING GEAR BEARING RETAINER

Remove the final gear case assembly from the motorcycle (page 16-3).

Remove the distance collar.

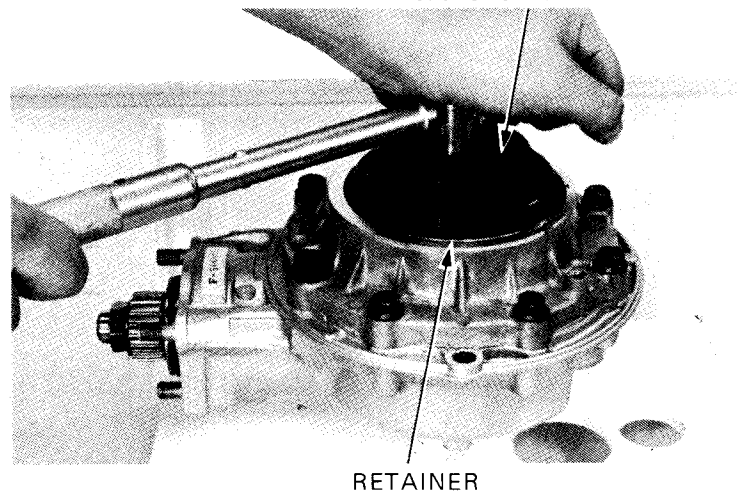
Straighten the dust guard plate lock washer tabs and remove the dust guard plate.



Remove the ring gear bearing preload retainer with the RETAINER WRENCH.

Remove the O-ring.

**RETAINER WRENCH**  
**07910-3710000**







Remove the dust and oil seals from the retainer with a press and special tools.

**NOTE**

Place the dis/assembly tool B with its deep bore facing down.

Coat both new seals outer edges with gear oil. Press the new seals into the ring gear bearing preload retainer.

**NOTE**

Place the dis/assembly tool B with its deep bore facing up.

Coat the new O-ring with gear oil and install it.

Install the ring gear bearing retainer being careful not to fold or damage the oil seal lips.

**NOTE**

After installing the ring gear bearing preload retainer, do the following:

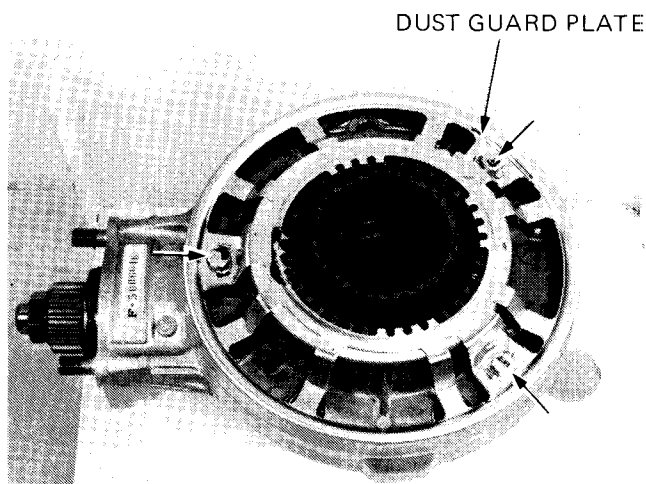
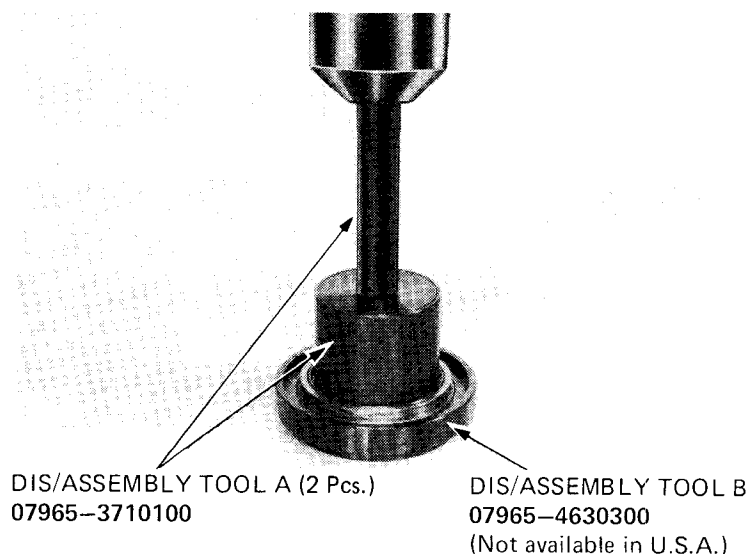
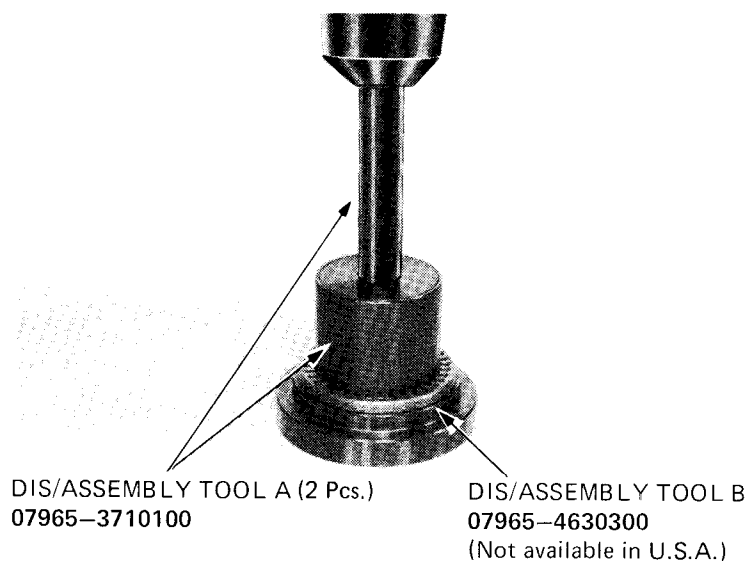
- Final gear assembly preload check (page 16-13).
- Backlash inspection (page 16-3).

## GEAR CASE

Remove the final gear case assembly from the motorcycle (page 16-3).

Remove the distance collar.

Straighten the dust guard plate lock washer tabs and remove the dust guard plate.

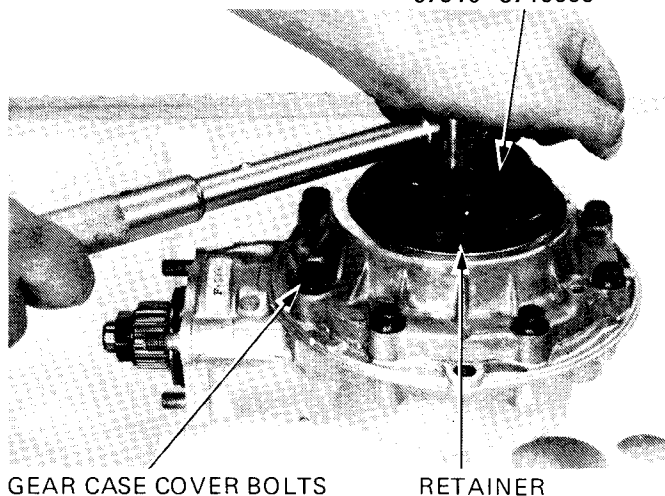




234 FINAL DRIVE

Loosen the ring gear bearing preload retainer 5 notches with the RETAINER WRENCH.  
Remove the eight gear case bolts.  
Lift the gear case cover from the final gear case.

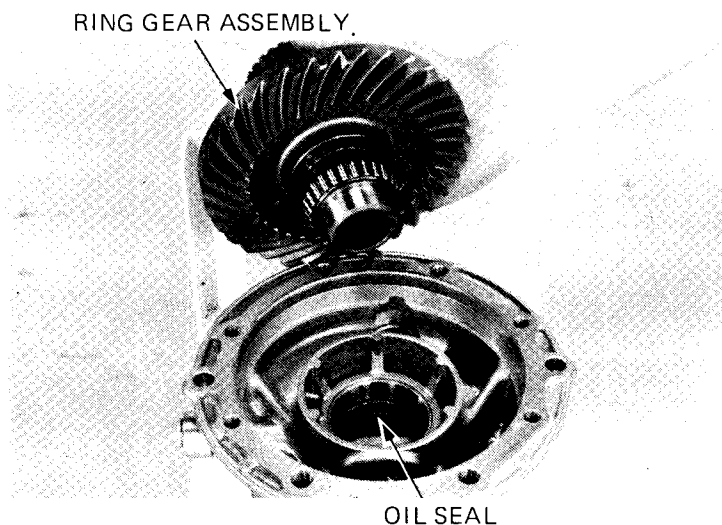
RETAINER WRENCH  
07910-3710000



Remove the ring gear assembly.

**NOTE**

Use care when removing the ring gear as the oil seal spring band is easily turned inside out.



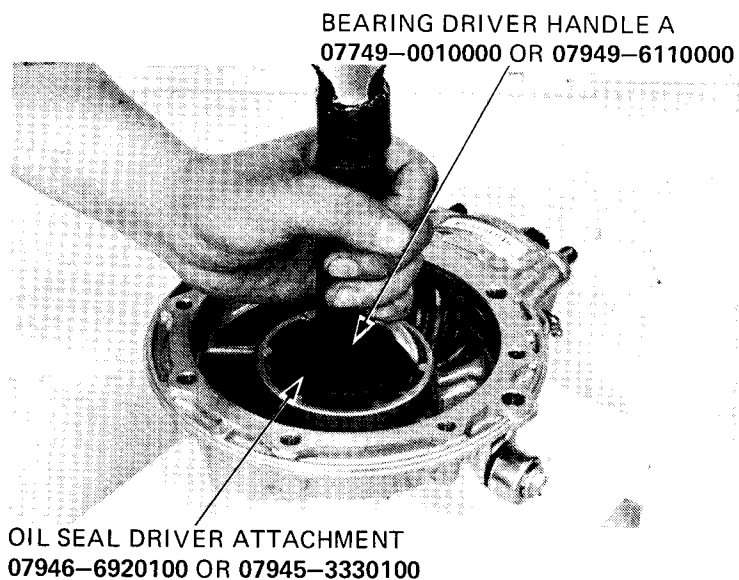
Remove the oil seal from the gear case.

**CAUTION:**

*Be careful not to damage the case during seal removal.*



Coat the new oil seal with gear oil.  
Install the oil seal squarely into the case being careful not to damage the bearing race.

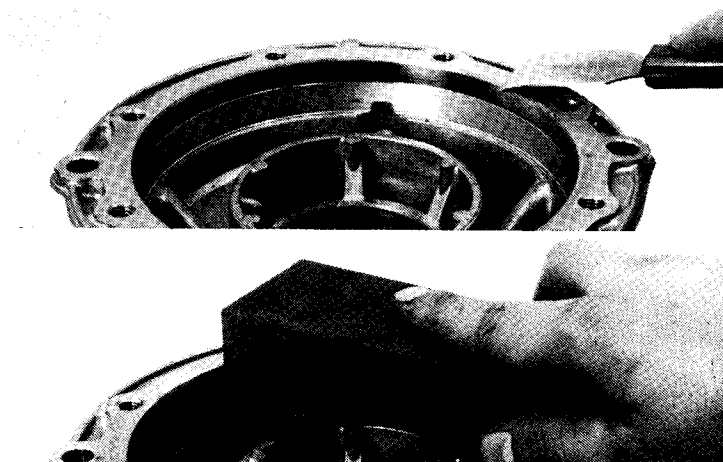


Remove the old sealant from the gear case and cover surfaces.

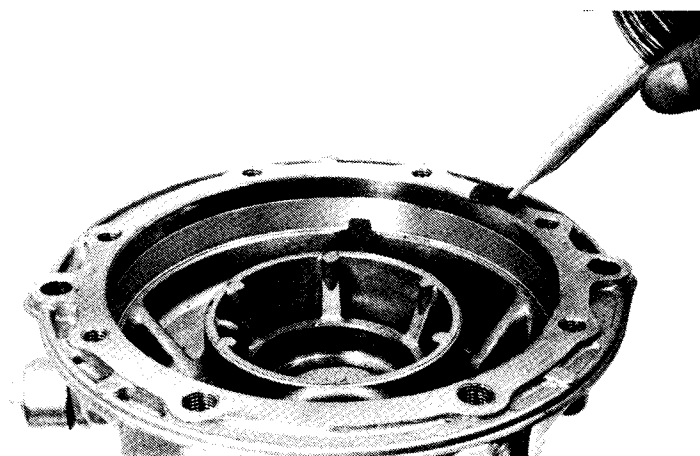
#### NOTE

- Keep the gear case clean.
- Be careful not to damage the gear case and cover mating surfaces.

Clean the gear case and cover mating surfaces with an oil stone.



Apply a liquid sealant to the gear case and cover mating surfaces.





Coat the gear case oil seal lips with gear oil.  
 Install the ring gear assembly, being careful not to damage or fold the oil seal lips.

RING GEAR ASSEMBLY

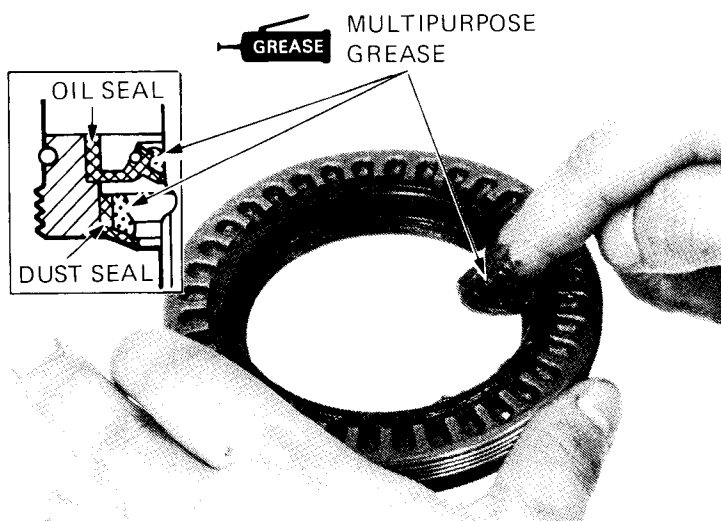
OIL SEAL

Fill the ring gear bearing retainer oil and dust seals with MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive).

**NOTE**

Lithium-based MULTIPURPOSE grease with MoS<sub>2</sub>-additive as follows:

- MOLYKOTE BR2-S manufactured by Dow Corning, U.S.A.
- MULTIPURPOSE M-2 manufactured by Mitsubishi Oil, Japan
- Other Lubricants of equivalent quality



Place the gear case cover onto the final gear case.

Insert the gear case cover bolts, positioning the three bolts with the symbol "⬆" in the photo at the locations shown. Alternately tighten these bolts with the symbol "⬆" until the gear case cover touches the gear case. Tighten all eight bolts in a crisscross pattern.

**TORQUE:**

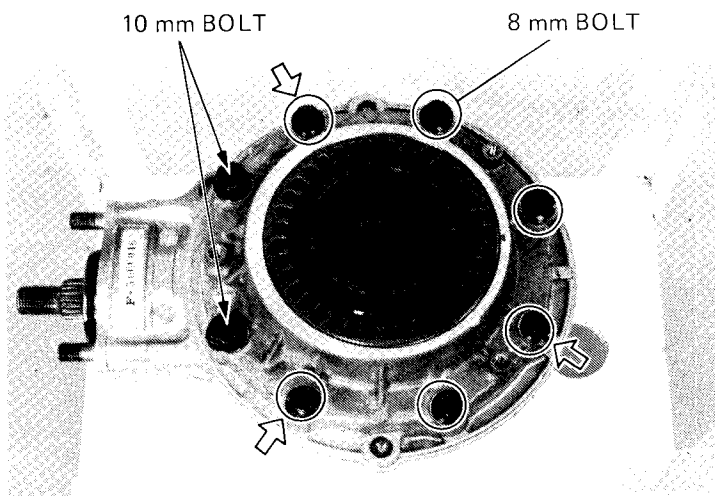
8 mm bolts: 2.3–2.8 kg-m (17–20 ft-lb)

10 mm bolts: 3.5–4.5 kg-m (25–33 ft-lb)

**NOTE**

After installing the gear case cover, do the following:

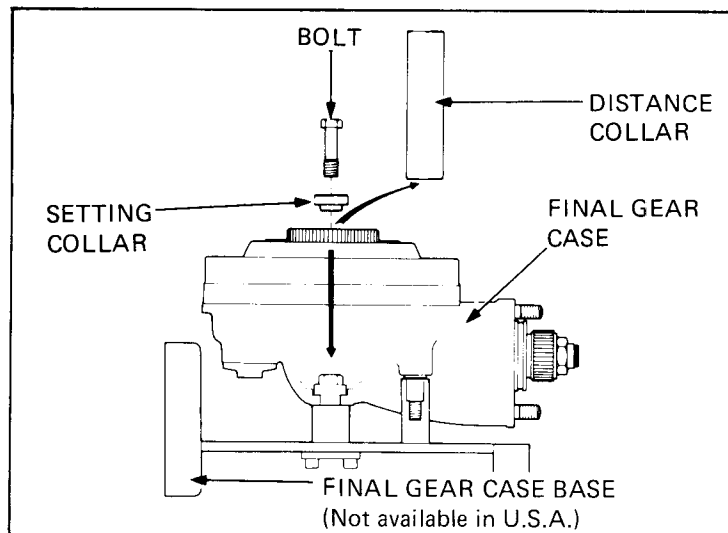
- Final gear assembly preload check (page 16-13).
- Backlash inspection (page 16-3).





### PINION GEAR RETAINER

Remove the final gear case assembly from the motorcycle (page 16-3).  
Remove the distance collar.



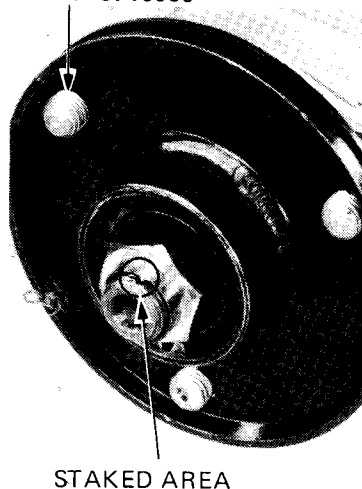
Install the preload inspection tool onto the pinion shaft.  
Remove the pinion shaft nut and washer.

#### NOTE

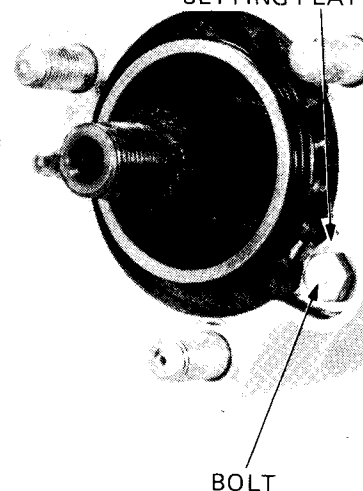
The nut can be removed without grinding off the staked areas.

Remove the inspection tool and pinion joint.  
Remove the retainer setting plate.

PRELOAD INSPECTION TOOL  
07924-3710000

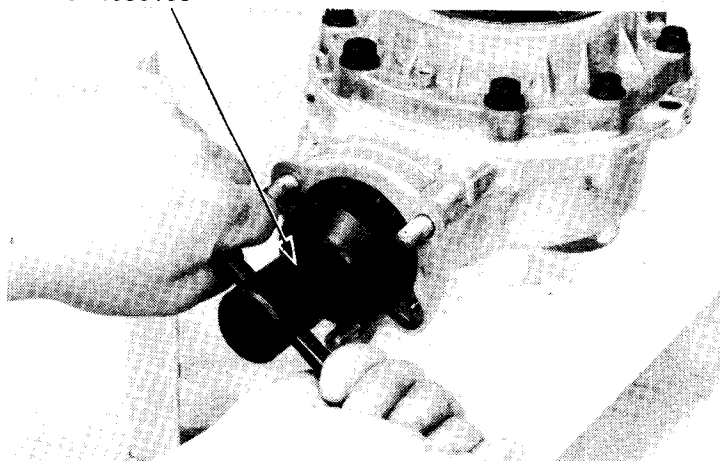


SETTING PLATE



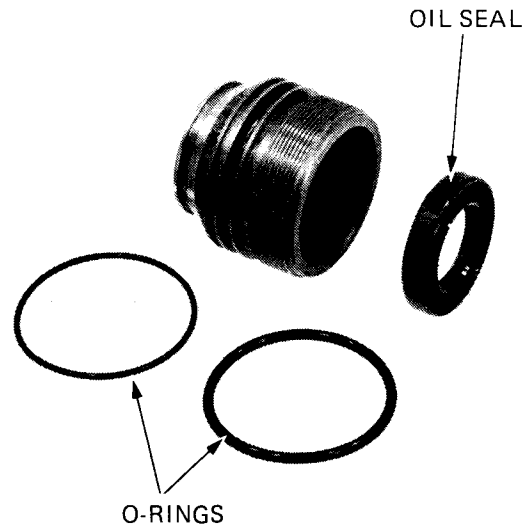
Remove the pinion retainer with the pinion gear retainer wrench.

RETAINER WRENCH B  
07910-4630100





Remove the retainer O-rings and oil seal.



Coat the new O-rings with MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive) and install them onto the retainer.

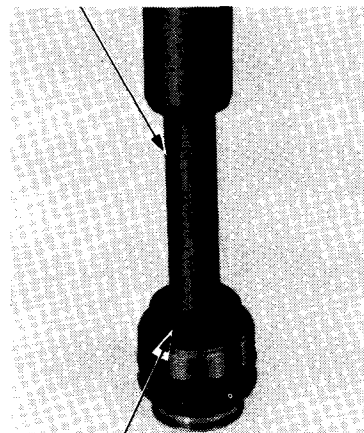
Fill the new oil seal groove with MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive).

Install the oil seal into the retainer with the oil seal driver.

BEARING DRIVER HANDLE A  
07749-0010000 OR 07949-6110000



MULTIPURPOSE GREASE

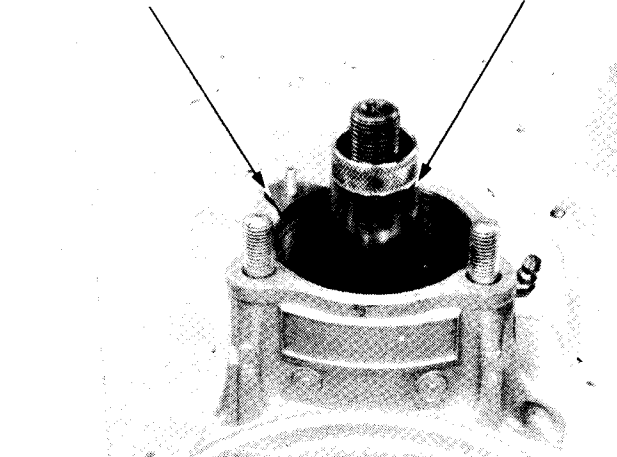


OIL SEAL DRIVER ATTACHMENT  
07946-6920100 OR 07946-9370100

Set the o-ring guide into the gear case cutout.  
Install the oil seal guide over the pinion shaft.

O-RING GUIDE  
07973-4630200

OIL SEAL GUIDE  
07973-4630100



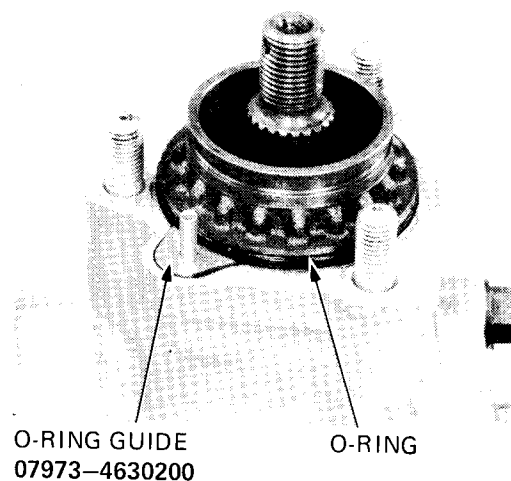


Push the retainer into place with the retainer wrench until the oil seal guide is contacted.

### CAUTION:

- Be careful not to damage the O-rings.
- The retainer has extra fine threads, and it is very easy to crossthread.

Remove the oil seal and O-ring guides when retainer B seats against the bearing outer.



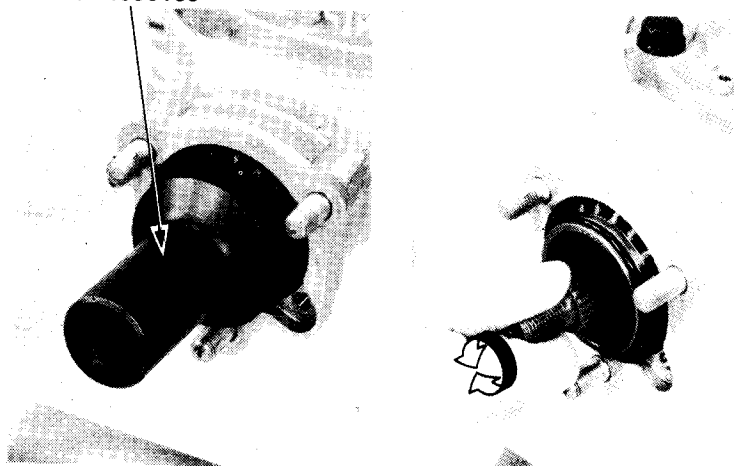
Thread the retainer into the case by hand. Turn the pinion shaft intermittently. Stop tightening the retainer when pinion shaft rotating resistance is felt. Do not overtighten the retainer.

### NOTE

- If the retainer is overtightened, it will cause excessive preload.
- A high amount of drag is normal because of the O-rings.

Check the pinion gear preload (below).

### RETAINER WRENCH B 07910-4630100



## PRELOAD ADJUSTMENT

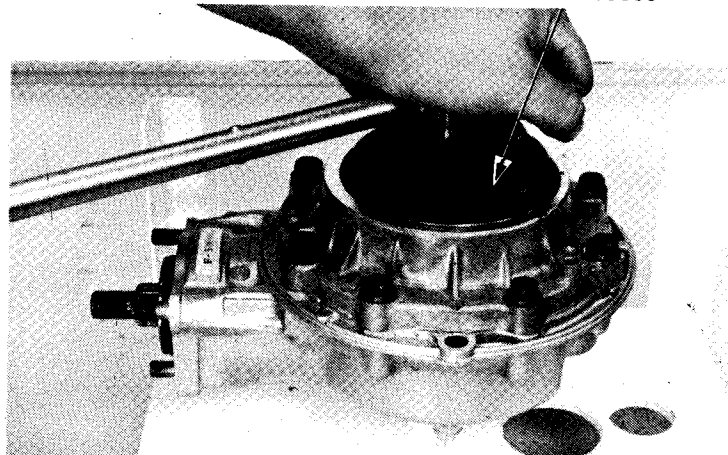
### PINION GEAR RETAINER

### NOTE

Use this procedure whenever the pinion gear retainer is removed.

Remove the dust guard plate.  
Remove the ring gear assembly (page 16-5, 16-6).

### RETAINER WRENCH 07910-3710000





**HONDA**  
**CB900C**

## 240 FINAL DRIVE

Install the preload inspection tool onto the pinion gear shaft.

Wind the wire around the tool groove and attach a spring scale. Measure the preload force needed to turn the pinion shaft in the normal direction of rotation.

**PRELOAD: Pinion gear**

1,000–1,200 g (2.2–2.7 lb)

5.0–6.0 kg-cm (4.3–5.2 in-lb)

Rotate the pinion shaft 50-60 turns if measurements are not even.

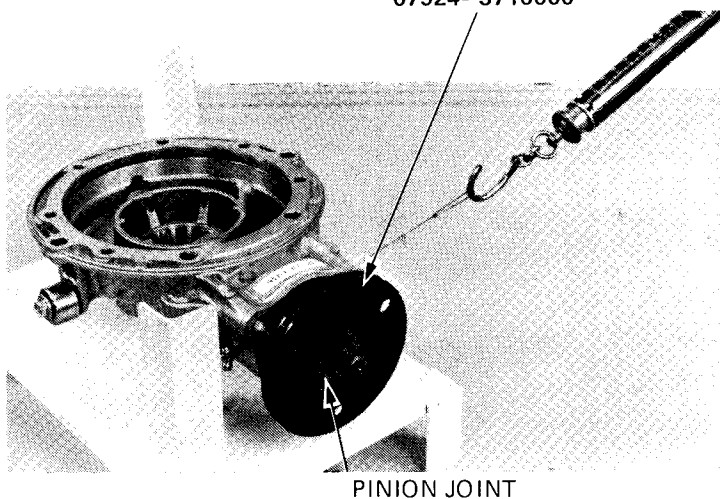
**NOTE**

Force required to begin movement may exceed preload specifications.

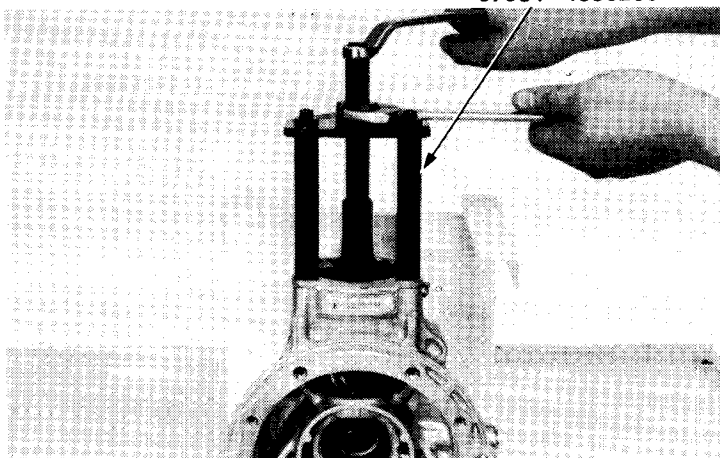
Tighten the retainer to increase preload.

Loosen the retainer and pull up on the pinion shaft with the special tool, if preload is excessive.

PRELOAD INSPECTION TOOL  
07924-3710000



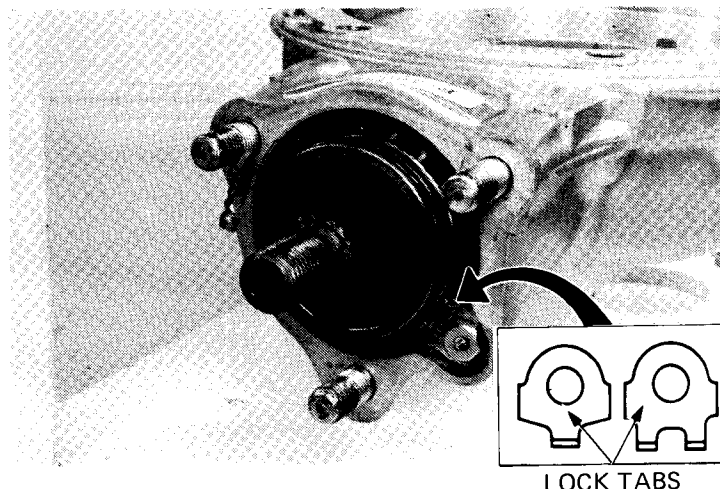
PINION GEAR  
DIS/ASSEMBLY TOOL  
07931-4630200



After adjustment, install the proper retainer lock tab. There are two types.

Install the ring gear assembly (page 16-7, 16-8).

Check the final gear assembly preload (page 16-13).







## RING GEAR RETAINER

### NOTE

Use this procedure whenever the ring gear bearing retainer is removed, or if final gear assembly preload is being checked.

Install the preload inspection tool onto the pinion gear shaft.

Wind the wire around the tool groove and attach a spring scale. Measure the preload force needed to turn the pinion shaft in the normal direction of rotation.

### PRELOAD:

1,800–2,300 g (4–5 lb)

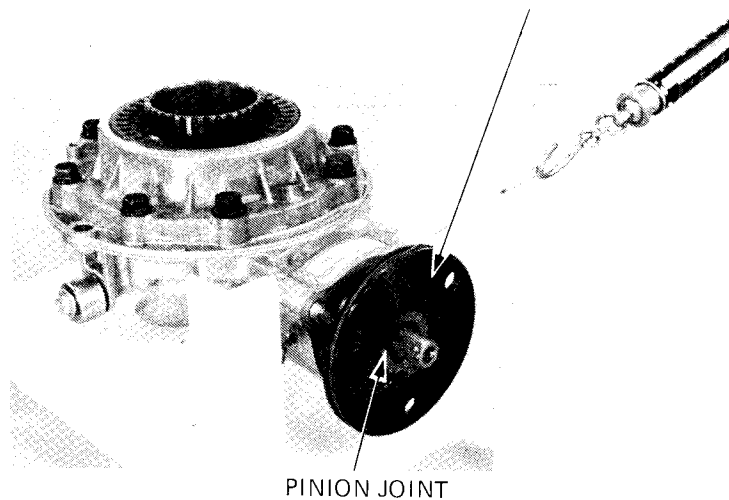
(9.0–11.5 kg-cm, 7.8–10.0 in-lb)

### NOTE

Force required to begin pinion movement may exceed preload specifications.

Remove the dust guard plate, if adjustment is necessary.

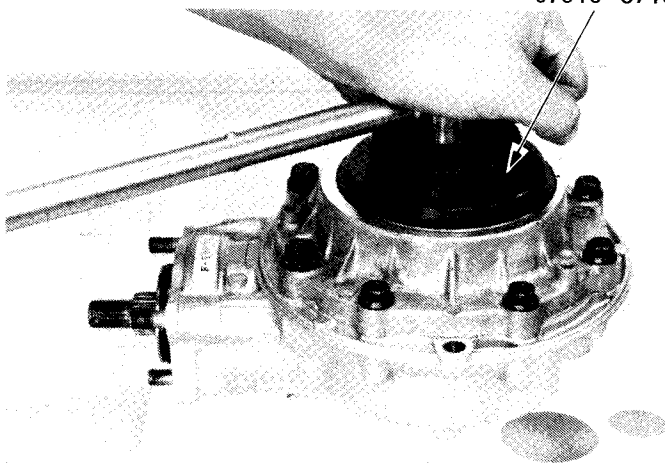
PRELOAD INSPECTION TOOL  
07924–3710000



Tighten or loosen the ring gear retainer as required to obtain the correct preload.

Remove the preload inspection tool.

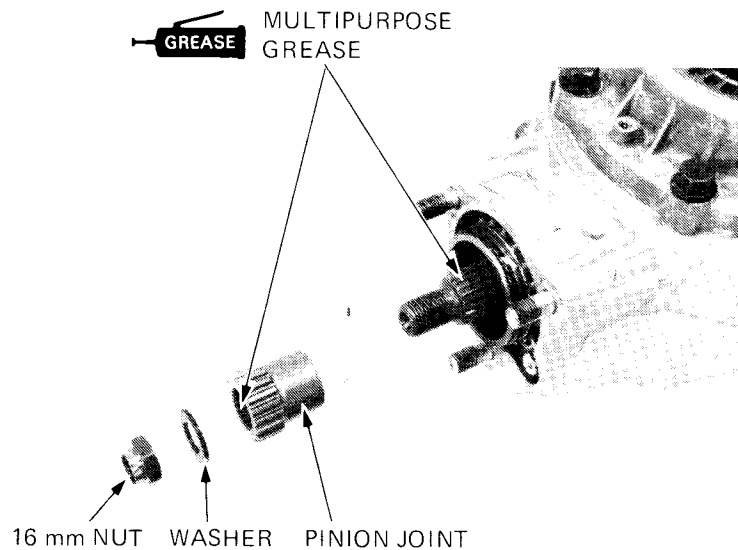
RETAINER  
WRENCH  
07910–3710000





Apply MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive) to the pinion shaft and inside of the pinion joint.

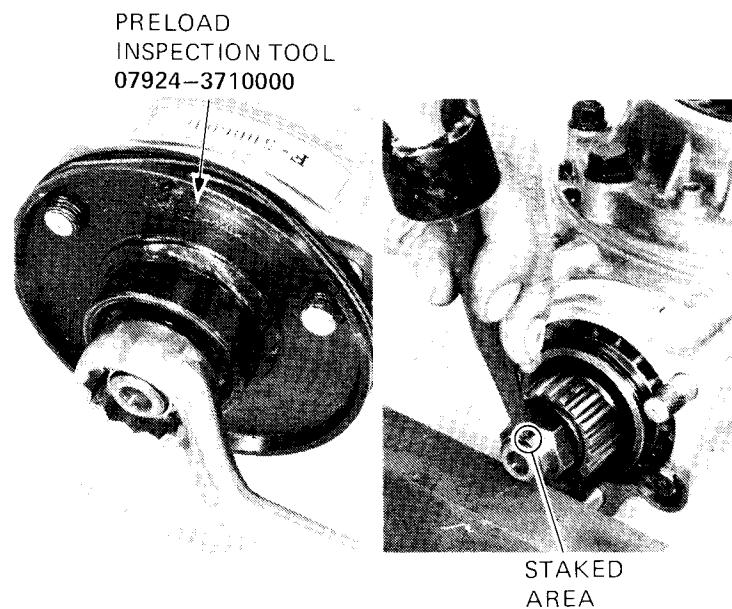
Install the pinion joint, washer and 16 mm nut.



Install the PRELOAD INSPECTION TOOL to hold the pinion shaft, and tighten the 16 mm nut.

**TORQUE: 4.0–5.0 kg-m (29–36 ft-lb)**

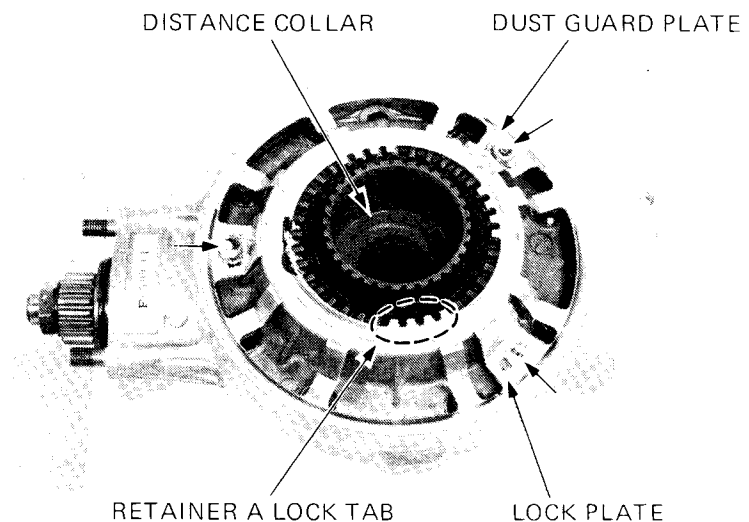
Stake the 16 mm nut to a minimum depth of 1 mm (0.04 in) at the two locations. Be careful not to damage the pinion shaft threads.



Install the dust guard plate and bend the three lock tabs up.

Bend one of the bearing retainer lock tabs down.

Remove the final gear case from the base, and insert the distance collar.





## FINAL GEAR CASE INSTALLATION

Apply MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive) to the drive and pinion shaft splines. Install the damper spring.

Be sure the special O-ring is on the pinion gear retainer and install the gear case on the swingarm loosely.

### NOTE

Do not tighten the gear case nuts until after the rear axle is inserted.

Apply MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive) to the final driven gear's inner surface and splines. Apply grease to the final driven gear flange splines.

Coat the rear axle with multipurpose grease and install the rear wheel (page 15-8). Do not tighten the axle at this time.

Tighten the final gear case nuts.

**TORQUE: 3.5–4.5 kg-m (25–33 ft-lb)**

Tighten the rear axle.

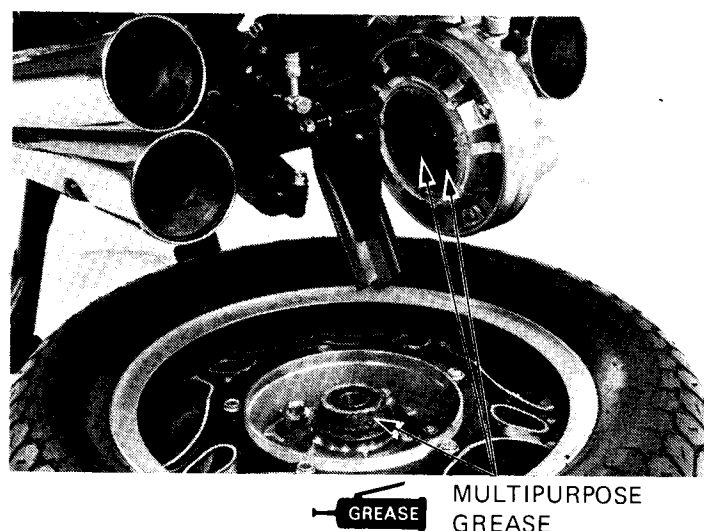
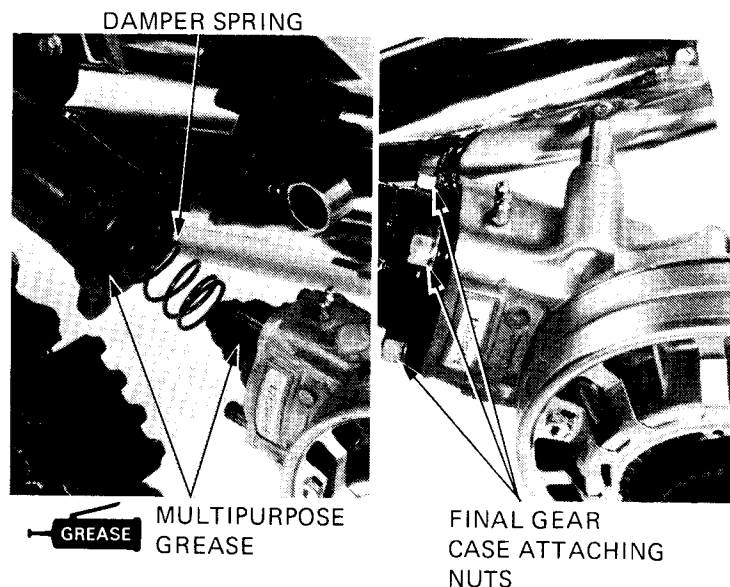
**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**

Tighten the axle pinch bolt.

**TORQUE: 2.4–2.9 kg-m (17–21 ft-lb)**

Install the rear shock absorbers.

**TORQUE: 3.0–4.0 kg-m (22–29 ft-lb)**



Apply MULTIPURPOSE NLGI No. 2 grease (MoS<sub>2</sub>-additive) to the drive shaft joint grease fitting.

**QUANTITY: 90 g approx. (at disassembly)**

Make sure the final drive gear case drain bolt is tight.

Remove the oil filler cap.

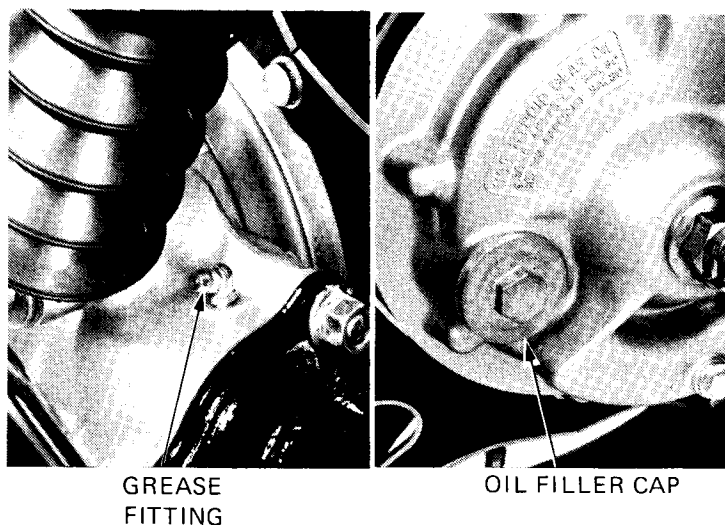
Add the recommended lubricant until it reaches the filler neck threads.

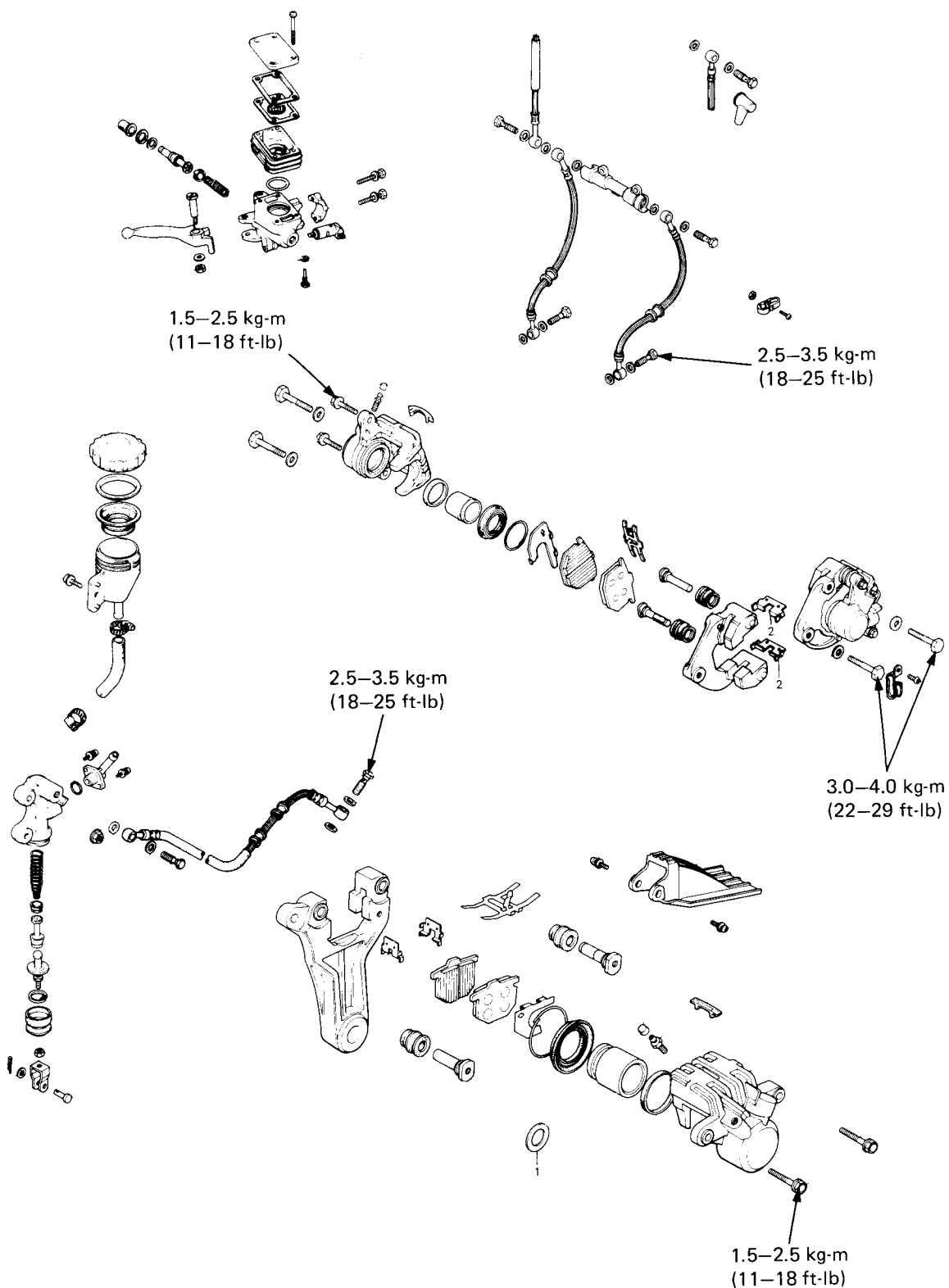
**RECOMMENDED OIL: HYPOID GEAR OIL  
API, GL-5**

**Above 5°C/41°F: SAE #90**

**Below 5°C/41°F: SAE #80**

**OIL CAPACITY: 140–160 cc  
(4.7–5.4 oz)**







|  |       |
|--|-------|
| SERVICE INFORMATION                      | 17- 1 |
| TROUBLESHOOTING                          | 17- 2 |
| BRAKE FLUID REPLACEMENT/<br>AIR BLEEDING | 17- 3 |
| BRAKE PAD/DISC                           | 17- 5 |
| FRONT MASTER CYLINDER                    | 17- 8 |
| FRONT BRAKE CALIPER                      | 17-11 |
| REAR MASTER CYLINDER                     | 17-14 |
| REAR BRAKE CALIPER                       | 17-17 |
| BRAKE PEDAL SHAFT                        | 17-20 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The front and rear brakes can be removed without disconnecting the hydraulic system.
- Once the hydraulic systems have been opened, or if the brakes feel spongy, the system must be bled.
- Do not allow foreign material to enter the system when filling the reservoirs.
- Avoid spilling brake fluid on painted surfaces or instrument lenses, as severe damage will result.
- Always check brake operation before riding the motorcycle.

### TOOL

Special

Snap ring pliers

07914-3230001

### TORQUE VALUES

|                             |                             |
|-----------------------------|-----------------------------|
| Brake hose bolt             | 2.5-3.5 kg-m (18-25 ft-lb)  |
| Front brake caliper bracket | 3.0-4.0 kg-m (22-29 ft-lb)  |
| Front brake caliper         | 1.5-2.5 kg-m (11-18 ft-lb)  |
| Rear brake caliper          | 1.5-2.5 kg-m (11-18 ft-lb)  |
| Rear master cylinder        | 3.0-4.0 kg-m (22-29 ft-lb)  |
| Rear brake torque rod nut   | 1.8-2.5 kg-m (13-18 ft-lb)  |
| Rear axle nut               | 8.0-10.0 kg-m (58-72 ft-lb) |

### SPECIFICATIONS

|                             | STANDARD                            | SERVICE LIMIT         |
|-----------------------------|-------------------------------------|-----------------------|
| Front disc thickness        | 4.8-5.2 mm (0.19-0.20 in)           | 4.0 mm (0.16 in)      |
| Front disc runout           | —                                   | 0.30 mm (0.012 in)    |
| Front master cylinder I.D.  | 15.870-15.913 mm (0.6248-0.6265 in) | 15.925 mm (0.6270 in) |
| Front master piston O.D.    | 15.827-15.854 mm (0.6231-0.6242 in) | 15.815 mm (0.6226 in) |
| Front caliper piston O.D.   | 38.098-38.148 mm (1.4999-1.5019 in) | 38.09 mm (1.500 in)   |
| Front caliper cylinder I.D. | 38.180-38.230 mm (1.5031-1.5051 in) | 38.24 mm (1.506 in)   |
| Rear master cylinder I.D.   | 14.000-14.043 mm (0.5512-0.5529 in) | 14.06 mm (0.553 in)   |
| Rear master piston O.D.     | 13.957-13.984 mm (0.5495-0.5506 in) | 13.95 mm (0.549 in)   |
| Rear caliper cylinder I.D.  | 42.85-42.90 mm (1.687-1.689 in)     | 42.9 mm (1.69 in)     |
| Rear caliper piston O.D.    | 42.772-42.822 mm (1.6939-1.6859 in) | 42.76 mm (1.684 in)   |
| Rear disc thickness         | 6.8-7.2 mm (0.27-0.28 in)           | 6.0 mm (0.24 in)      |
| Rear disc runout            | —                                   | 0.30 mm (0.012 in)    |



## TROUBLESHOOTING

### Brake Lever/Pedal Soft or Spongy

1. Air bubbles in hydraulic system
2. Low fluid level
3. Hydraulic system leaking

### Brake Lever/Pedal Too Hard

1. Sticking piston(s)
2. Clogged hydraulic system
3. Pads glazed or worn excessively

### Brakes Drag

1. Hydraulic system sticking
2. Incorrect adjustment of lever or pedal
3. Sticking piston(s)

### Brakes Grab or Pull to One Side

1. Pads contaminated
2. One side front brake faulty
3. Disc or wheel misaligned

### Brakes Chatter or Squeal

1. Pads contaminated
2. Excessive disc runout
3. Caliper installed incorrectly
4. Disc or wheel misaligned

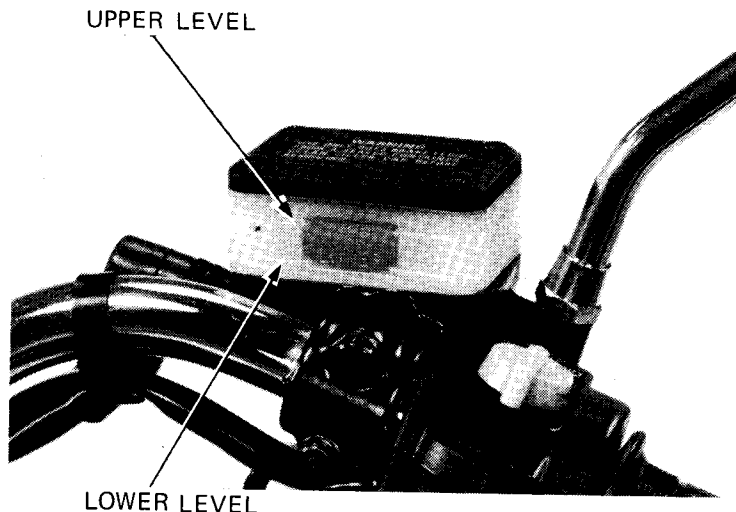


## BRAKE FLUID REPLACEMENT/ AIR BLEEDING

Check the fluid level with the fluid reservoir parallel to the ground.

### CAUTION:

- Install the diaphragm on the reservoir when operating the brake lever/pedal. Failure to do so will allow brake fluid to squirt out of the reservoir during brake operation.
- Avoid spilling fluid on painted surfaces. Place a rag over the fuel tank whenever the system is serviced.

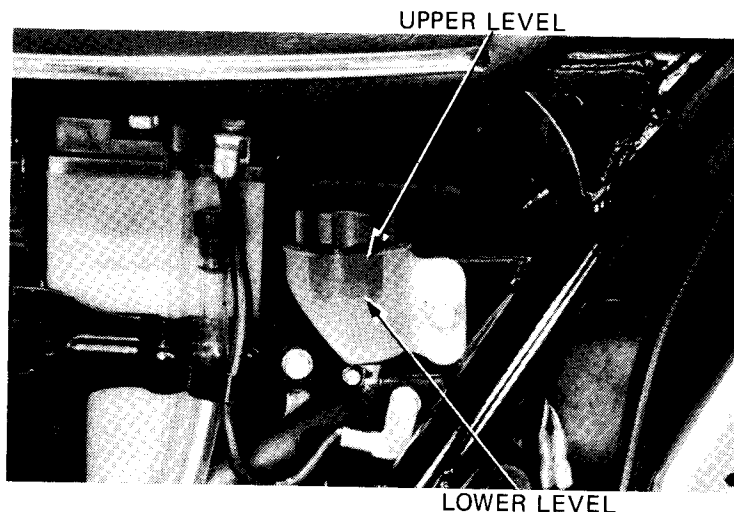


## BRAKE FLUID DRAINING

Connect a bleed hose to the bleeder valve.  
Loosen the caliper bleeder valve and pump the brake lever (or pedal).  
Stop operating the lever (or pedal) when no fluid flows out of the bleeder valve.

### WARNING

*A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.*



## BRAKE FLUID FILLING

### NOTE

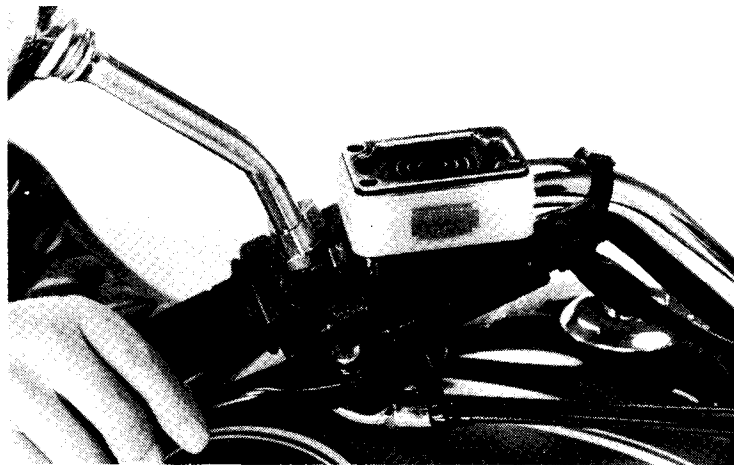
Do not mix different types of fluid since they may not be compatible.

Close the bleeder valve, fill the reservoir, and install the diaphragm.

To prevent piston overtravel and brake fluid seepage, keep a 20 mm (3/4 in) space to the handlebar grip when bleeding the front brake system. Pump up the system pressure with the lever until there are no air bubbles in the fluid flowing out of the reservoir small hole and lever (or pedal) resistance is felt.

**AIR BLEEDING****NOTE**

- Use this procedure for the front and rear brakes.
- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.
- Use only **SAE J1703** or **DOT 3** brake fluid from a sealed container.
- Do not mix brake fluid types and never re-use the contaminated fluid which has been pumped out during brake bleeding, because this will impair the efficiency of the brake system.



- i) Squeeze the brake lever (or depress the brake pedal), open the bleeder valve 1/2 turn then close the valve.

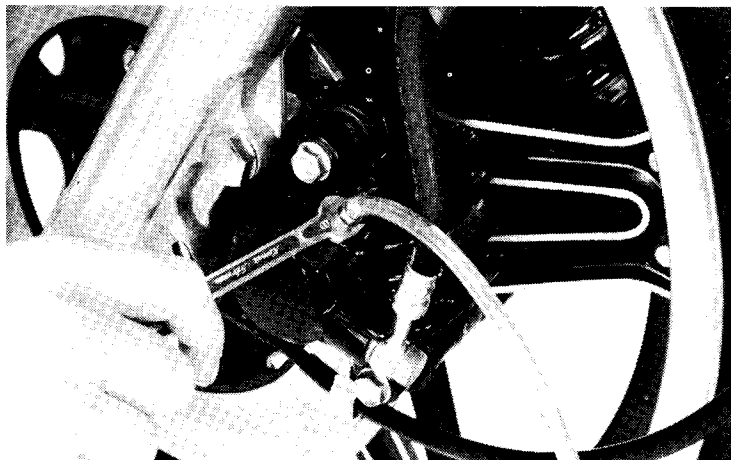
**NOTE**

Do not release the brake lever (or pedal) until the bleeder valve has been closed again.

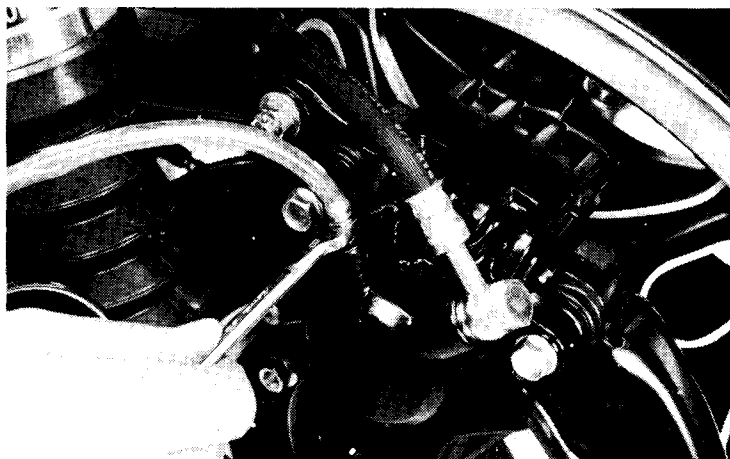
- ii) Release the brake lever (or pedal) slowly and wait several seconds after it reaches the end of its travel.

Repeat the above steps i) and ii) until bubbles cease to appear in the fluid at the end of the hose.

Fill the fluid reservoir to the upper level mark.

**WARNING**

*A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.*







## BRAKE PAD/DISC

### FRONT PAD REPLACEMENT

Replace the front brake pads if the red line on the top of the pads reaches the edge of the brake disc.

#### NOTE

Always replace the brake pads in pairs to assure even disc pressure.

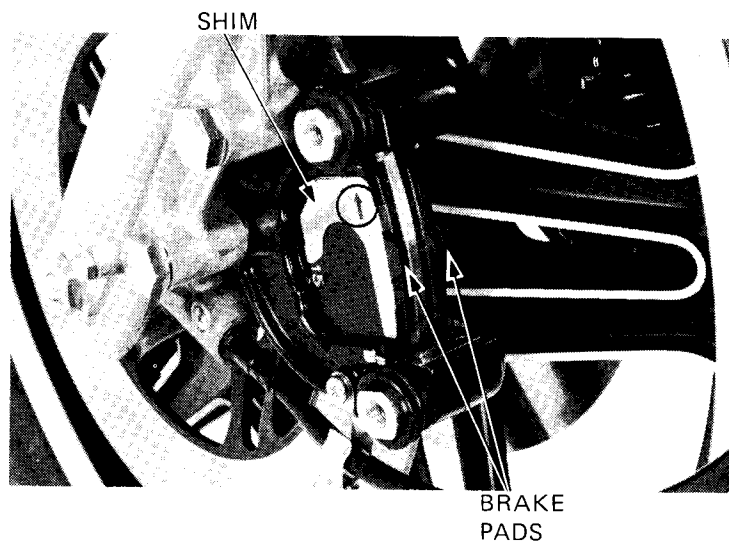
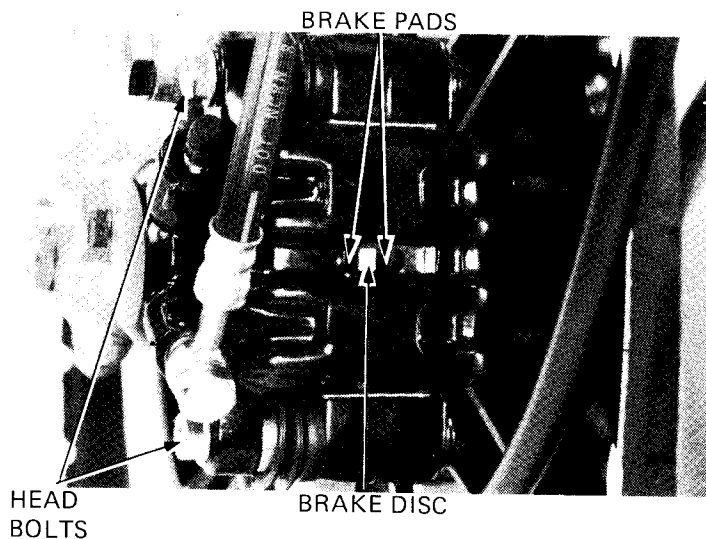
Remove the two caliper bolts.

Lift off the caliper and remove both brake pads and the shim.

Install the new brake pads and the shim.

#### NOTE

Install the shims with the mark "↑" facing up.



Inspect the piston boot for damage or deterioration.

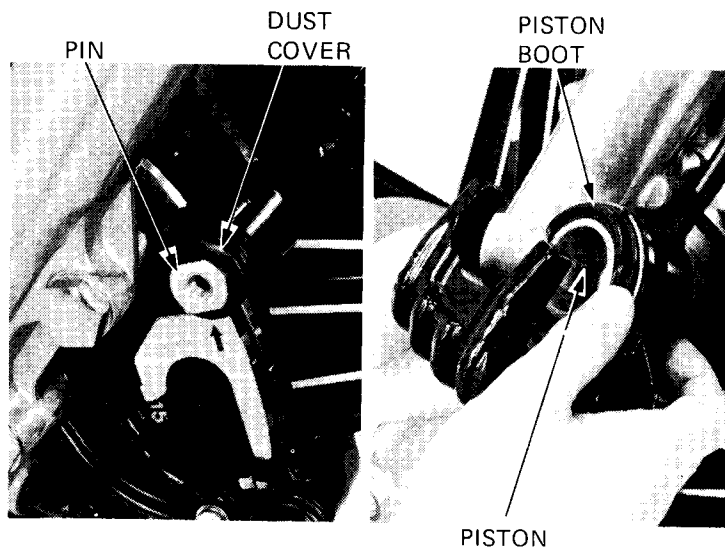
Push the brake caliper cylinder in all the way.

#### NOTE

Check the brake fluid level in the reservoir as this causes the level to rise.

Insert the caliper pin into the caliper bracket with the chamfered end facing as shown.

Inspect the dust cover condition.



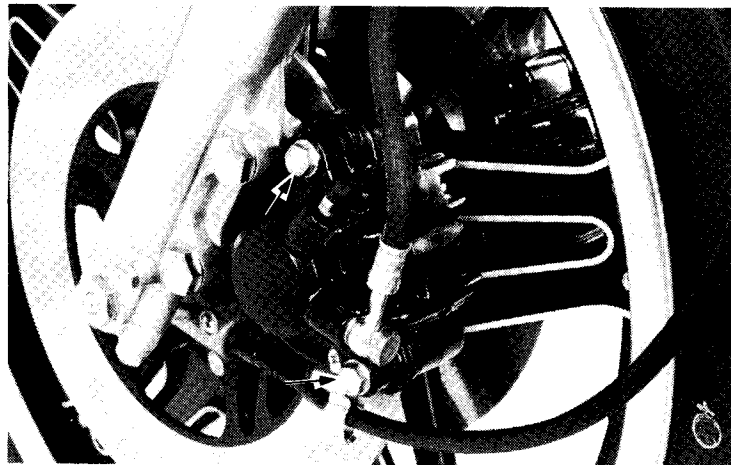


Install the brake caliper with the two bolts.

**TORQUE:** 1.5–2.5 kg-m, (11–18 ft-lb)

**NOTE**

Tighten the bolts evenly in 2-3 steps.



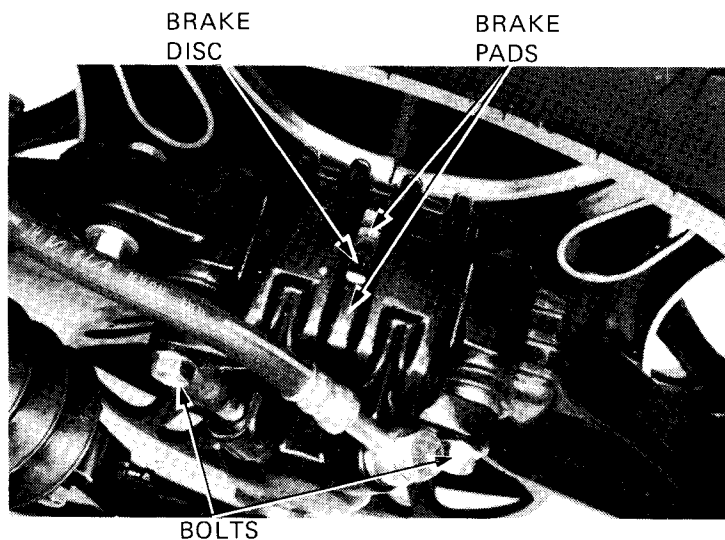
### REAR BRAKE PAD REPLACEMENT

Replace the rear brake pads if the red line on the top of the pads reaches the edge of the brake disc.

**NOTE**

Always replace both pads to assure even disc pressure.

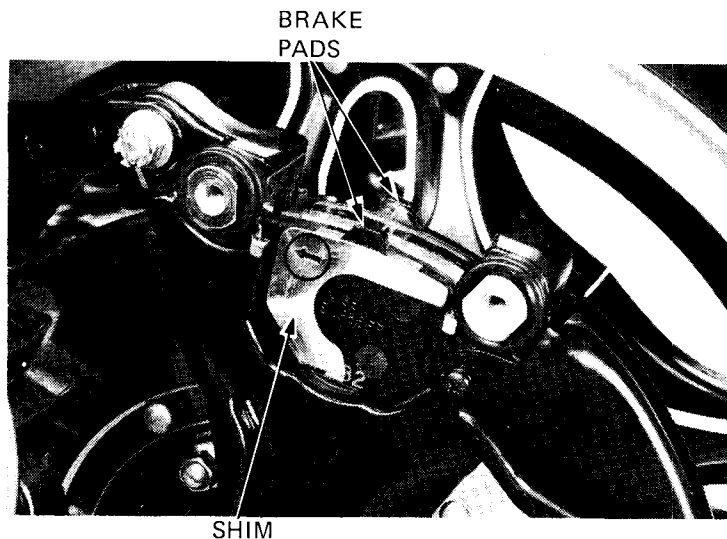
Remove the two caliper bolts.  
Lift the caliper off and remove both brake pads and shim.



Install new pads and the shims.

**NOTE**

- Always replace the brake pads in pairs to assure even disc pressure.
- Install the shim on the piston side with the "↑" in the direction of normal wheel rotation.



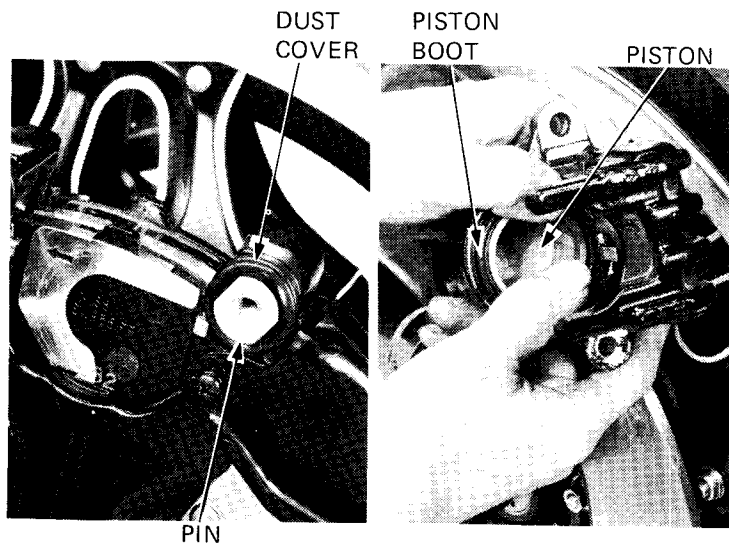


Press the piston back into the caliper. Check the brake fluid level in the brake master cylinder reservoir as this causes the level to rise.

Inspect the piston boot for damage or deterioration.

Insert the pin through the caliper bracket with the chamfered end facing as shown.

Inspect the condition of the dust covers.

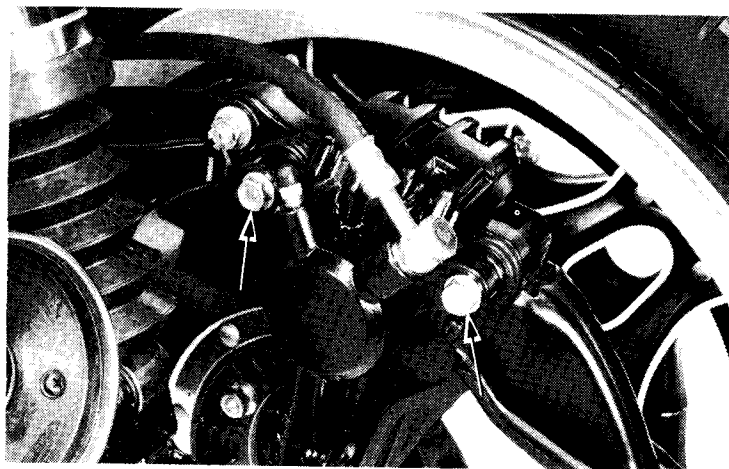


Install the brake caliper with the two bolts.

### NOTE

Tighten the bolts evenly in 2-3 steps.

**TORQUE:** 1.5–2.5 kg-m, (11–18 ft-lb)



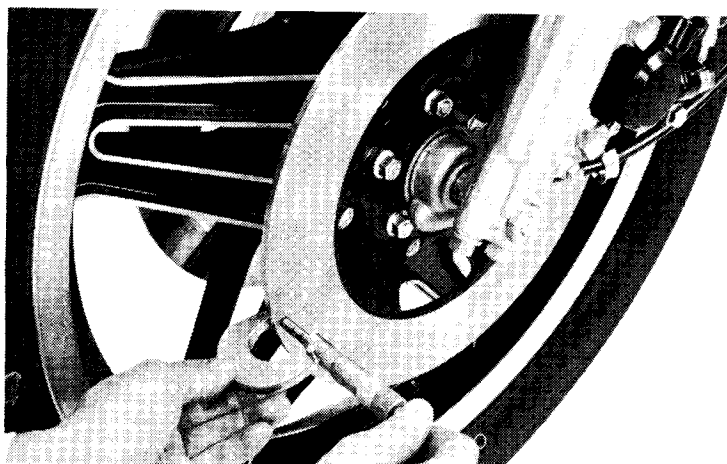
### DISC THICKNESS

Measure the disc thickness.

### SERVICE LIMIT:

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

**REAR:** 6.0 mm (0.24 in)

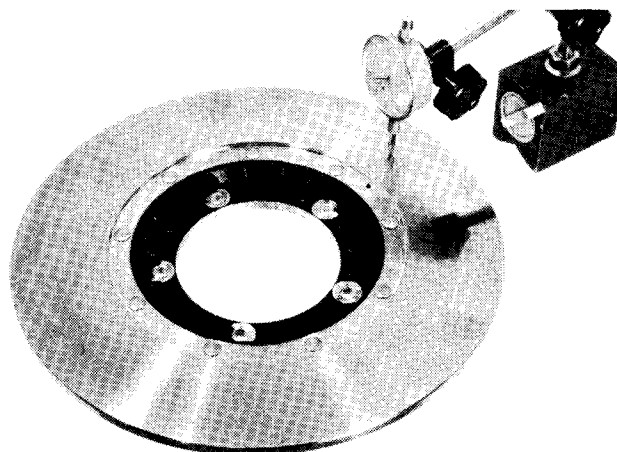




## BRAKE DISC WARPAGE

Measure brake disc warpage.

**SERVICE LIMIT: 0.3 mm (0.012 in)**



## FRONT MASTER CYLINDER

### DISASSEMBLY

Drain brake fluid from the hydraulic system. Remove the brake lever and rear view mirror from the master cylinder. Disconnect the brake hose.

#### CAUTION:

*Avoid spilling brake fluid on painted surfaces.  
Place a rag over the fuel tank whenever the brake system is serviced.*

#### NOTE

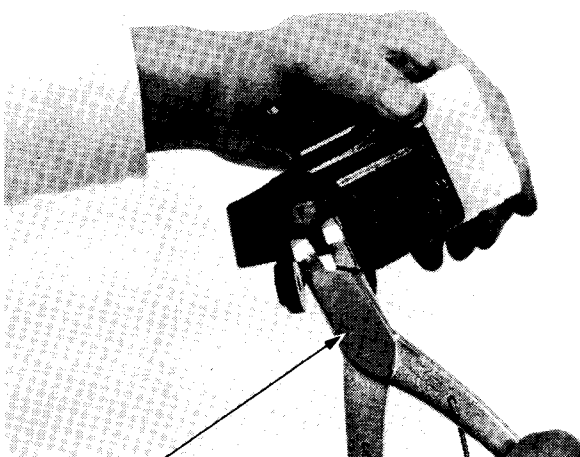
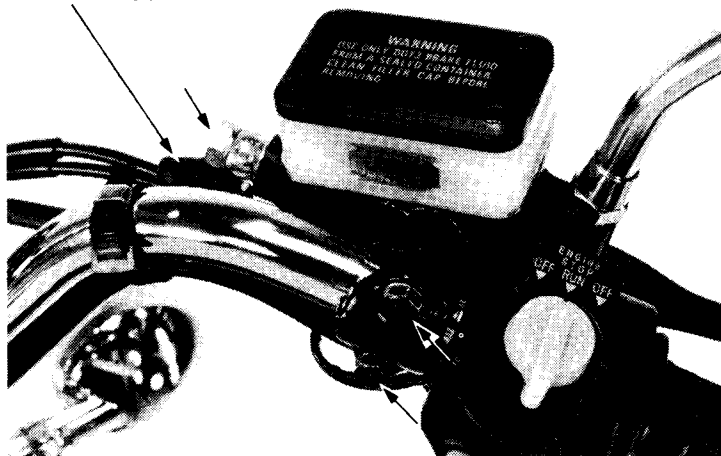
When removing the oil bolt, cover the end of the hose to prevent contamination and secure the hose.

Remove the master cylinder.

Remove the boot.

Remove the circlip from the master cylinder body.

BRAKE HOSE



SNAP RING PLIERS  
07914-323001

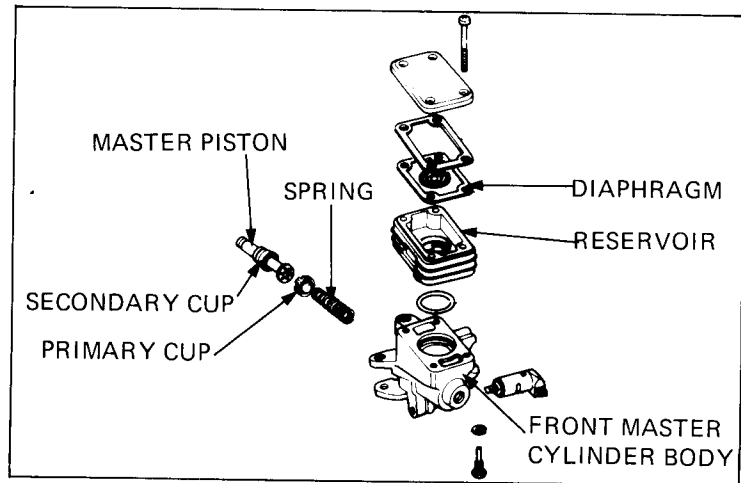


Remove the stop plate, secondary cup and master piston.

Then remove the primary cup and spring.

Remove the brake fluid reservoir from the master cylinder body, if necessary.

Clean the inside of the master cylinder and reservoir with brake fluid.

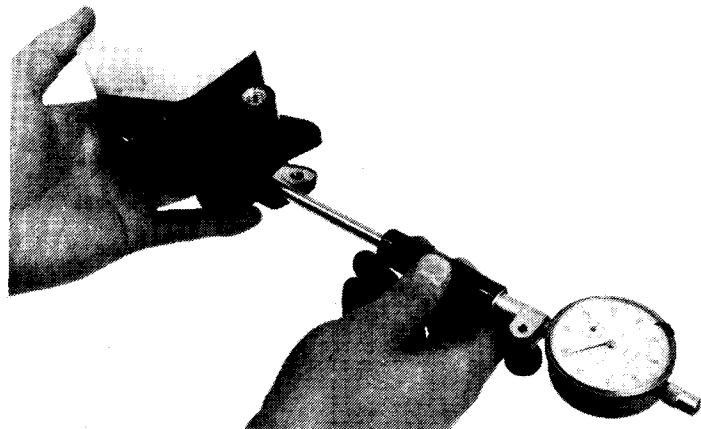


### FRONT MASTER CYLINDER I.D. INSPECTION

Measure the master cylinder I.D.

Check the master cylinder for scores, scratches or nicks.

**SERVICE LIMIT: 15.925 mm (0.6270 in)**

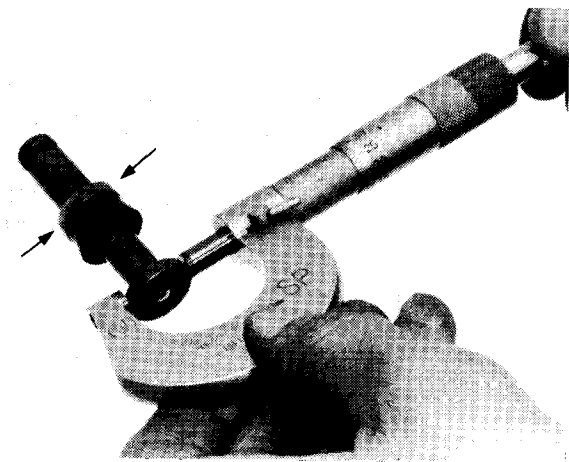


### FRONT MASTER PISTON O.D. INSPECTION

Measure the master piston O.D.

**SERVICE LIMIT: 15.815 mm (0.6226 in)**

Check the primary cup and secondary cup for damage before assembly.





## ASSEMBLY

### CAUTION:

*Handle the master cylinder piston, cylinder and spring as a set.*

Assemble the master cylinder. Coat all parts with clean brake fluid before assembly. Install the spring and valve together.

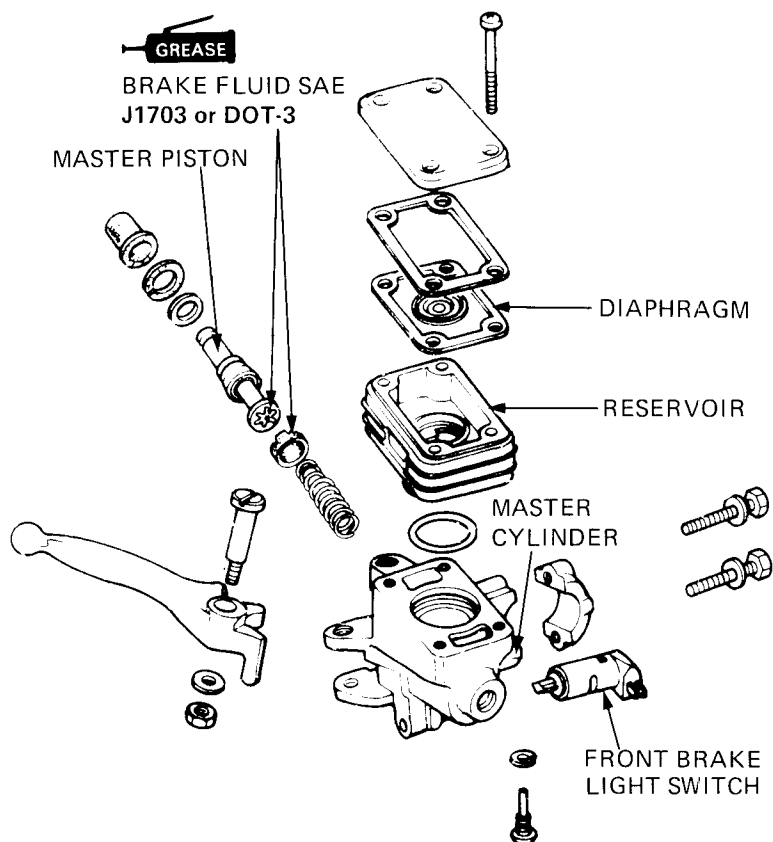
Dip the piston cup in brake fluid before assembly.

### CAUTION:

*When installing the cups, do not allow the lips to turn inside out. Be certain the circlip is seated firmly in the groove.*

Install the boot, washer and clip.

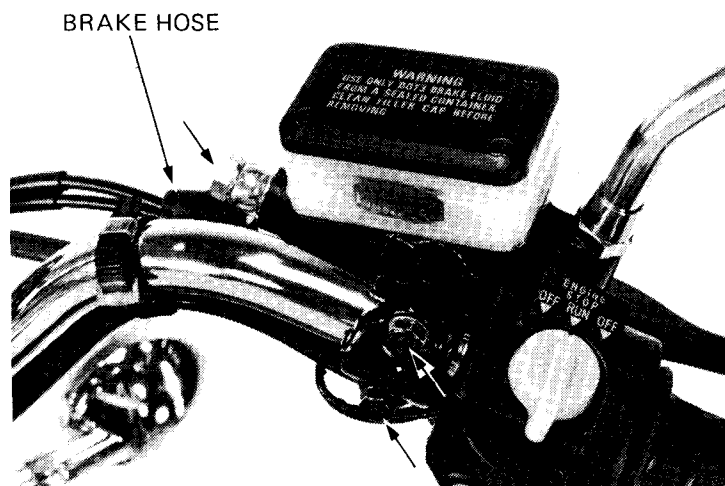
Install the reservoir on the master cylinder making sure that the O-ring is in good condition.



Place the master cylinder on the handlebar and install the holder and the two mounting bolts. Tighten the top bolt first. Install the oil hose with the bolt and its two sealing washers. Install the brake lever.

Before installing the lever nut, install the rubber tube from the bottom side of the cylinder, the plate, and nut.

Fill the reservoir to the upper level and bleed the brake system according to page 17-4.





## FRONT BRAKE CALIPER

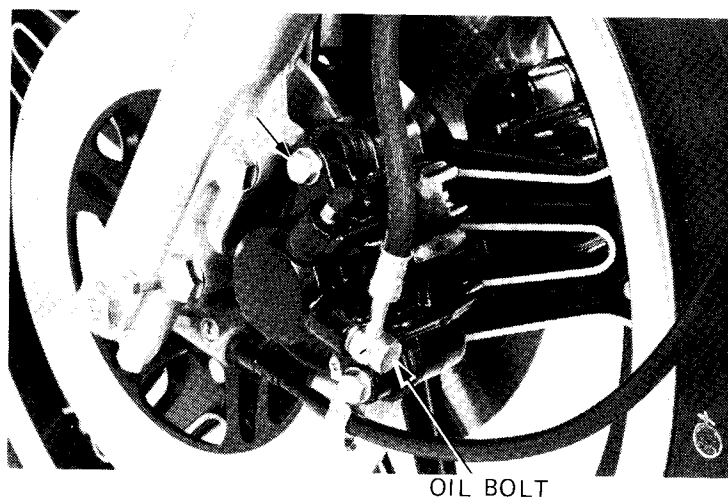
### DISASSEMBLY

Place a clean container under the caliper and disconnect the brake hose bolt.

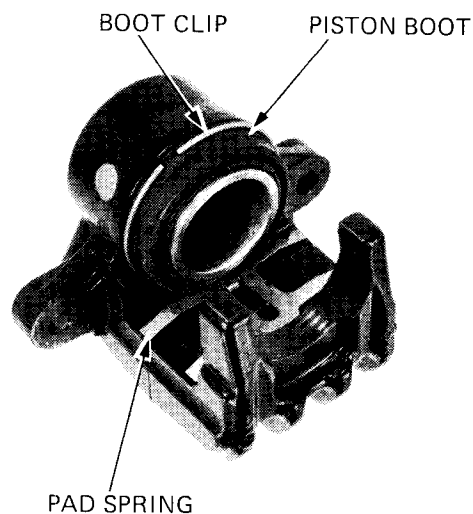
#### NOTE

Avoid spilling brake fluid on painted surfaces.

Remove the caliper.



Observe the position of the pad spring.  
Remove the piston boot and boot clip.

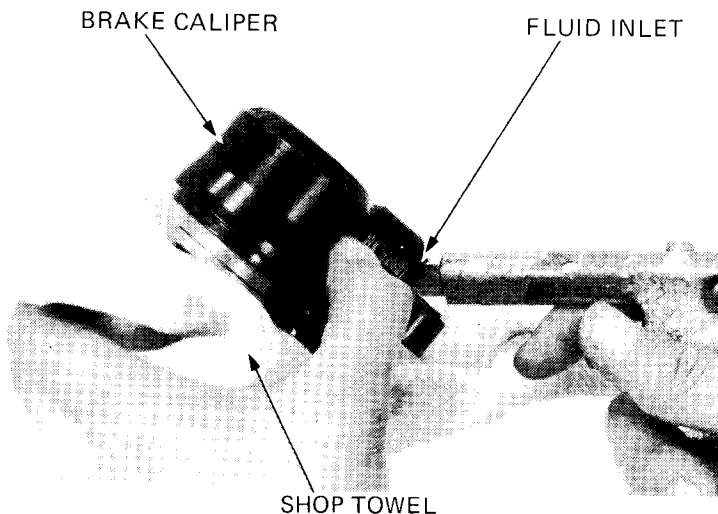


Place a shop towel over the piston to prevent the piston from coming out, and position the caliper with the piston down.  
Apply a small amount of air pressure to the fluid inlet.

#### **WARNING**

*Do not use high pressure air or bring the nozzle too close to the inlet.*

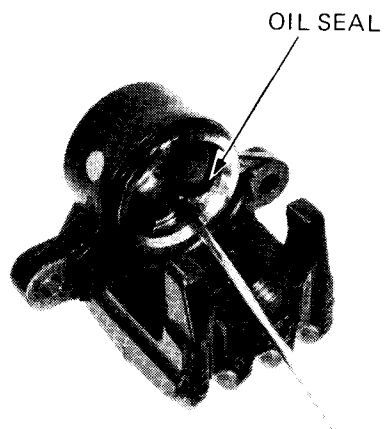
Examine the piston and cylinder for scoring or scratches and replace if necessary.





Remove the oil seal by first pushing it into the cylinder as shown.

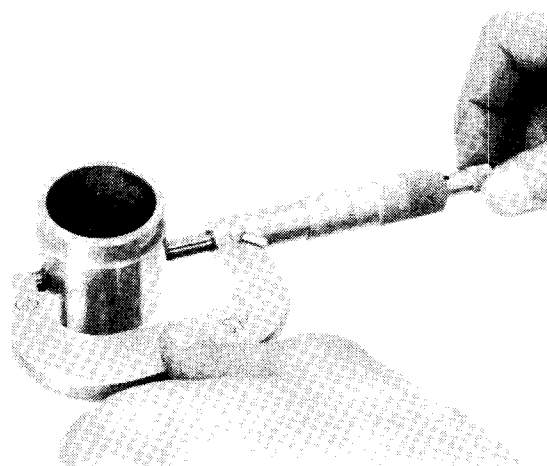
Clean the caliper grooves with brake fluid.



#### FRONT CALIPER PISTON O.D. INSPECTION

Check the piston for scoring or scratches. Measure the outside diameter of the piston with a micrometer.

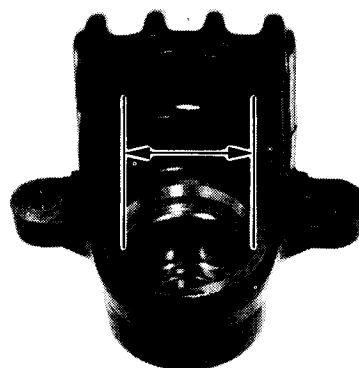
**SERVICE LIMIT:** 38.09 mm (1.500 in)



#### FRONT CALIPER CYLINDER I.D. INSPECTION

Check the caliper cylinder for scoring or scratches. Measure the inside diameter of the caliper cylinder bore.

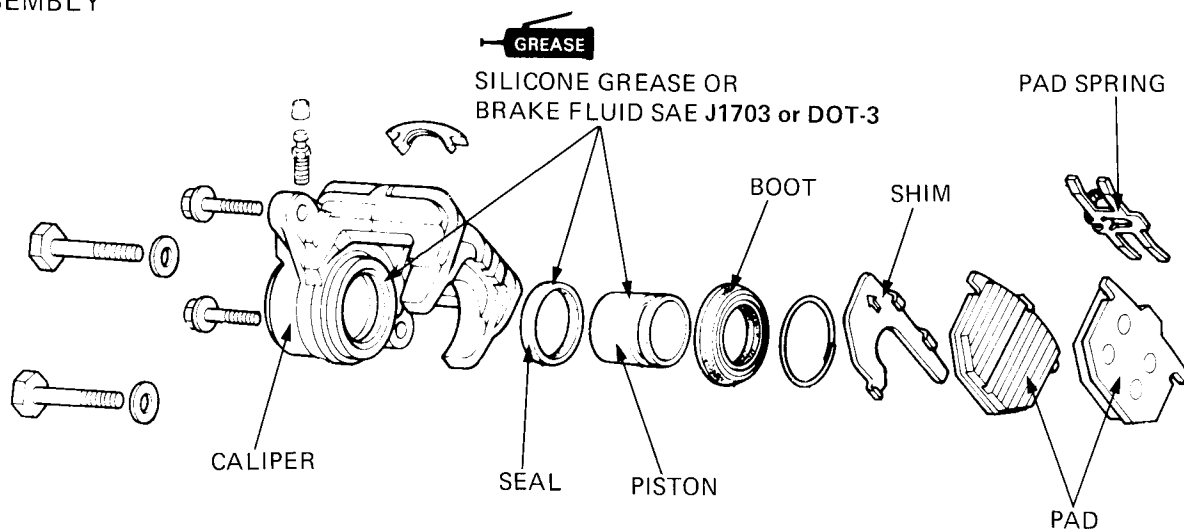
**SERVICE LIMIT:** 38.24 mm (1.506 in)







### ASSEMBLY



#### WARNING

*A contaminated brake disc or pad reduces stopping power. Do not allow grease on the brake pads.*

Assemble the caliper in the reverse order of disassembly. The oil seal must be replaced with a new one whenever removed. Lubricate the piston and seal with a medium grade of Hi-Temperature silicone grease or brake fluid before assembly.

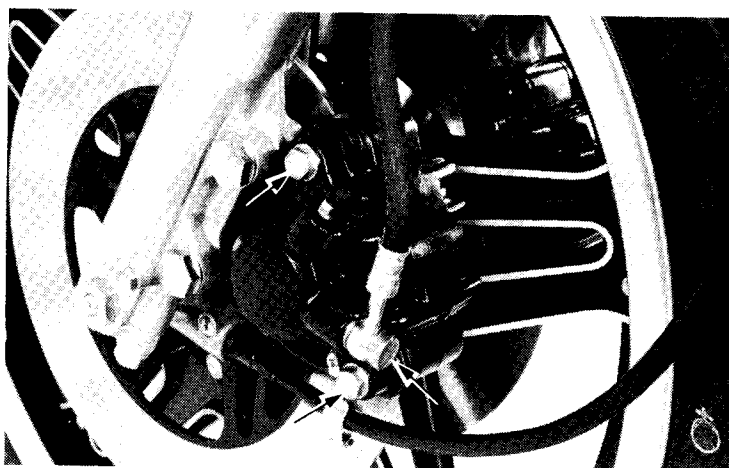
Be certain the piston seal is seated in the caliper groove.

Place the piston in the caliper with the boot lip facing out. Install the boot and clip on the piston.

Install the front brake caliper assembly (page 15-5).

Install the caliper holding bolts. Install the oil bolt and the two sealing washers.

Fill the brake fluid reservoir and bleed the front brake system (page 17-4).

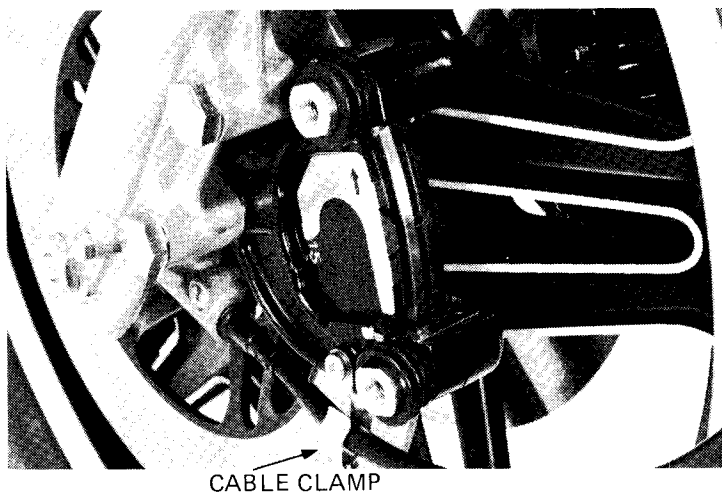


**FRONT CALIPER BRACKET  
DISASSEMBLY**

Remove the speedometer cable clamp.

Remove the two caliper bracket attaching bolts and remove the caliper bracket.

Remove the pins and dust covers from the caliper bracket, making sure that they are in good condition.

**FRONT CALIPER BRACKET  
ASSEMBLY**

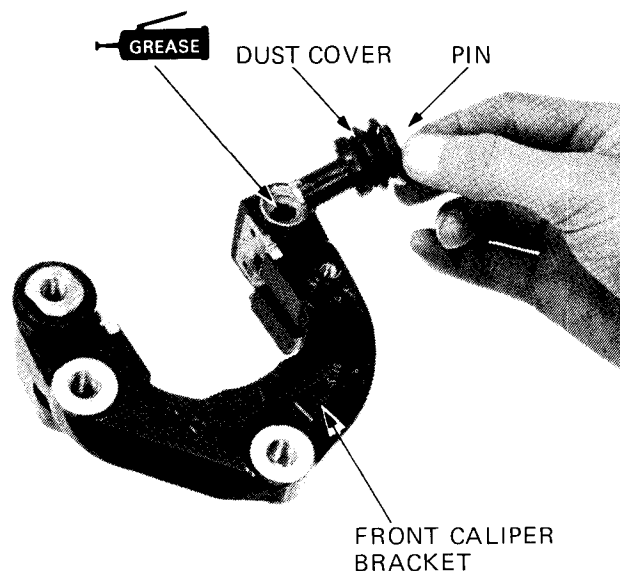
Wash all removed parts with brake fluid. Make sure that both pins move freely in and out of the caliper pin holes.

Lubricate both pins with a medium grade Hi-Temperature silicone grease before assembly.

Attach the caliper bracket to the front fork.

**TORQUE: 3.0–4.0 kg (22–29 ft-lb)**

Install the front caliper (page 17-5).

**REAR MASTER CYLINDER****REMOVAL**

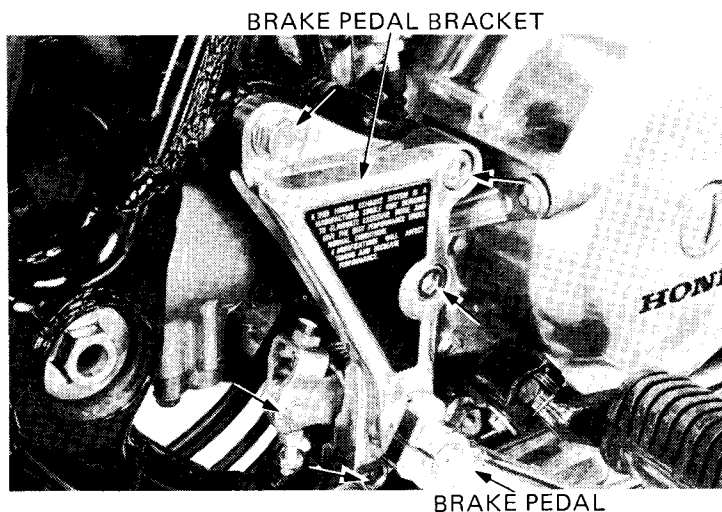
Remove the right side cover.

Remove the brake pedal.

Remove the master cylinder setting bolts.

Remove the brake pedal bracket.

Remove the cotter pin and joint pin.



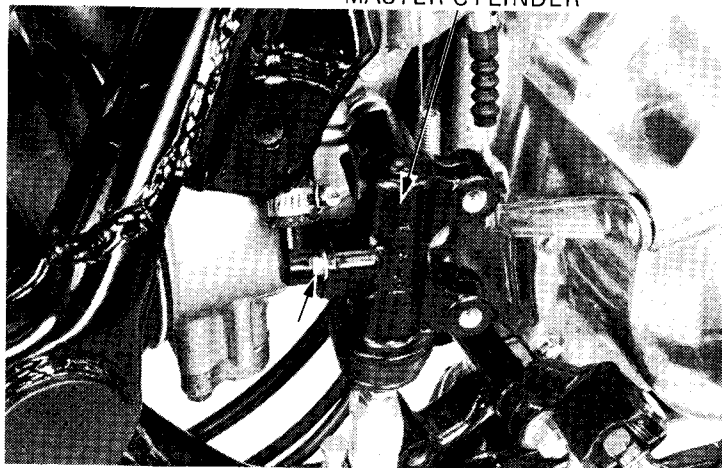


Place a clean drip pan under the brake line.  
Disconnect the brake line on the back of the  
master cylinder.

**CAUTION:**

*Avoid spilling brake fluid on painted  
surfaces.*

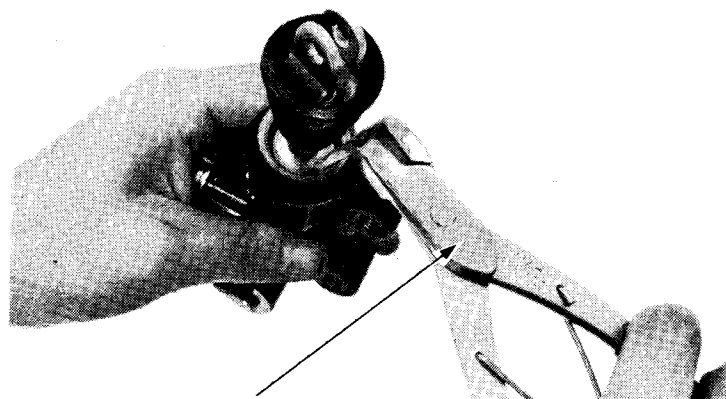
MASTER CYLINDER



**DISASSEMBLY**

Remove the rubber cover.

Remove the circlip and push rod from the  
master cylinder body.

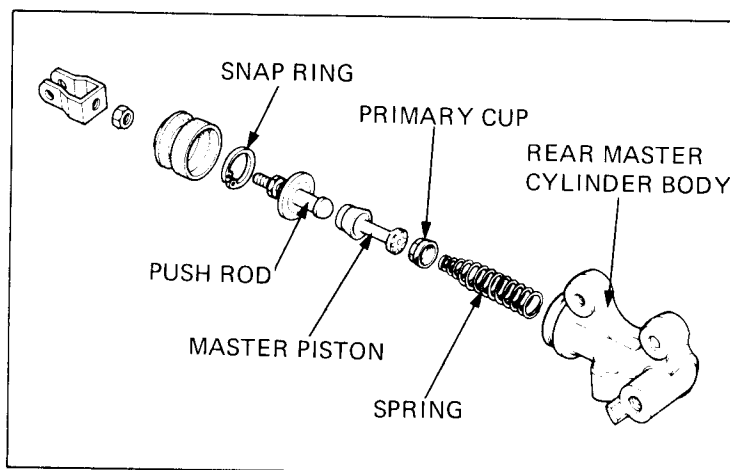


SNAP RING PLIERS  
07914-3230001

Remove the master piston, primary cup and  
spring.

It may be necessary to apply a small amount  
of air pressure to the fluid outlet to remove  
the master piston and primary cup.

Clean all parts with brake fluid.





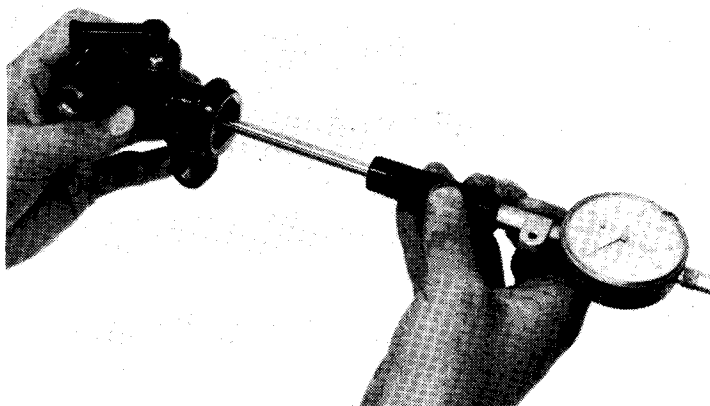
## 260 HYDRAULIC BRAKE

### REAR MASTER CYLINDER I.D. INSPECTION

Measure the inside diameter of the master cylinder bore.

**SERVICE LIMIT:** 14.06 mm (0.553 in)

Check for scores, scratches or nicks.

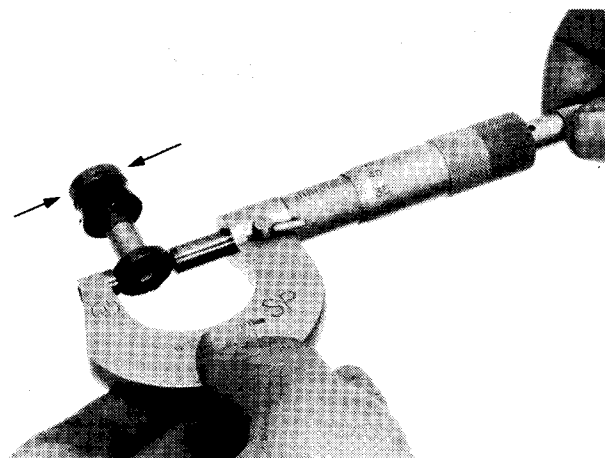


### REAR MASTER PISTON O.D. INSPECTION

Measure the master piston O.D.

**SERVICE LIMIT:** 13.95 mm (0.549 in)

Check the primary cup and secondary cup for damage before assembly.



### REAR MASTER CYLINDER ASSEMBLY

#### CAUTION:

*Handle the master cylinder piston, cylinder and spring as a set.*

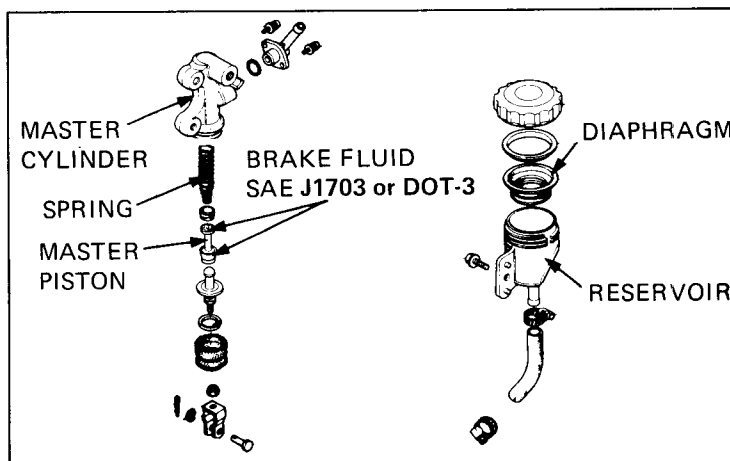
Assemble the master cylinder.  
Coat all parts with clean brake fluid.

Dip the piston cup in brake fluid before assembly.

#### CAUTION:

*When installing the cups, do not allow the lips to turn inside out. Be certain the snap ring is seated firmly in the groove.*

Install the primary cup and piston.  
Install the push rod and circlip.  
Install the boot, nut and rod eye.



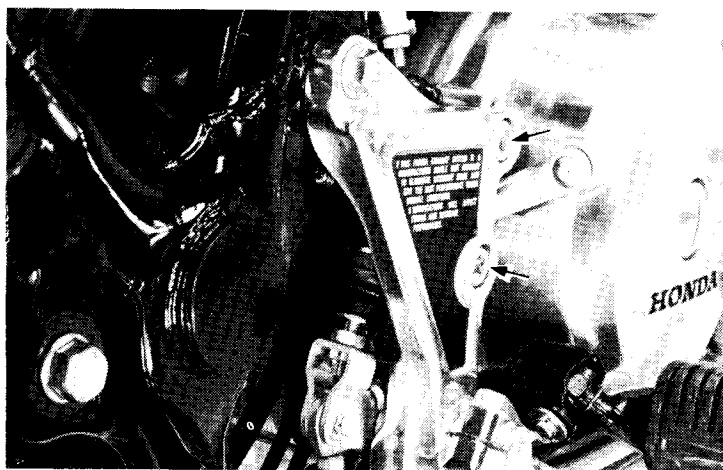


Install the master cylinder on the master cylinder bracket.

**TORQUE:** 3.0–4.0 kg-m (22–29 ft-lb)

Connect the brake hose and brake rod.

Bleed the brake hydraulic system after assembly. (page 17-4)



## REAR BRAKE CALIPER

### REMOVAL

Drain the brake hydraulic system.  
Disconnect the brake hose.

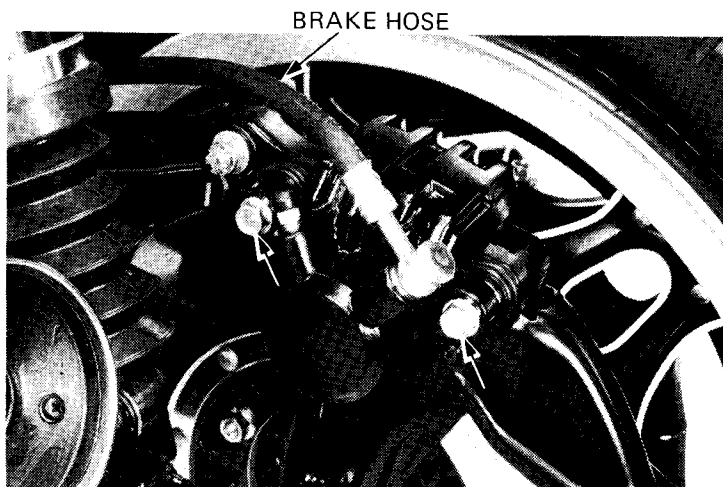
#### NOTE

Avoid spilling brake fluid on painted surfaces and the brake surfaces.

Remove the two brake caliper bolts and caliper.

### DISASSEMBLY

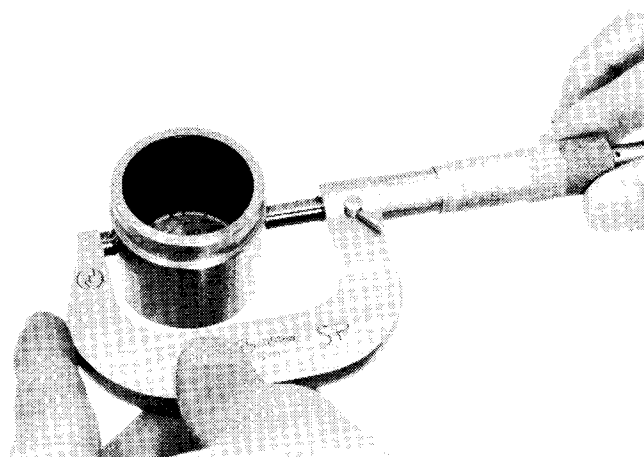
Refer to Front Brake Caliper. (Page 17-11)



### REAR BRAKE CALIPER PISTON O.D. INSPECTION

Check the piston for scoring or scratches.  
Measure the piston diameter.

**SERVICE LIMIT:** 42.76 mm (1.684 in)

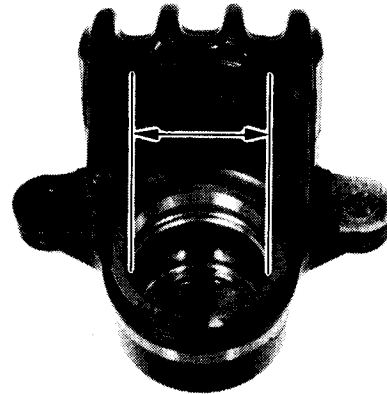


**REAR BRAKE CALIPER CYLINDER  
I.D. INSPECTION**

Check the caliper cylinder for scoring or scratches.

Measure the inside diameter of the caliper cylinder bore.

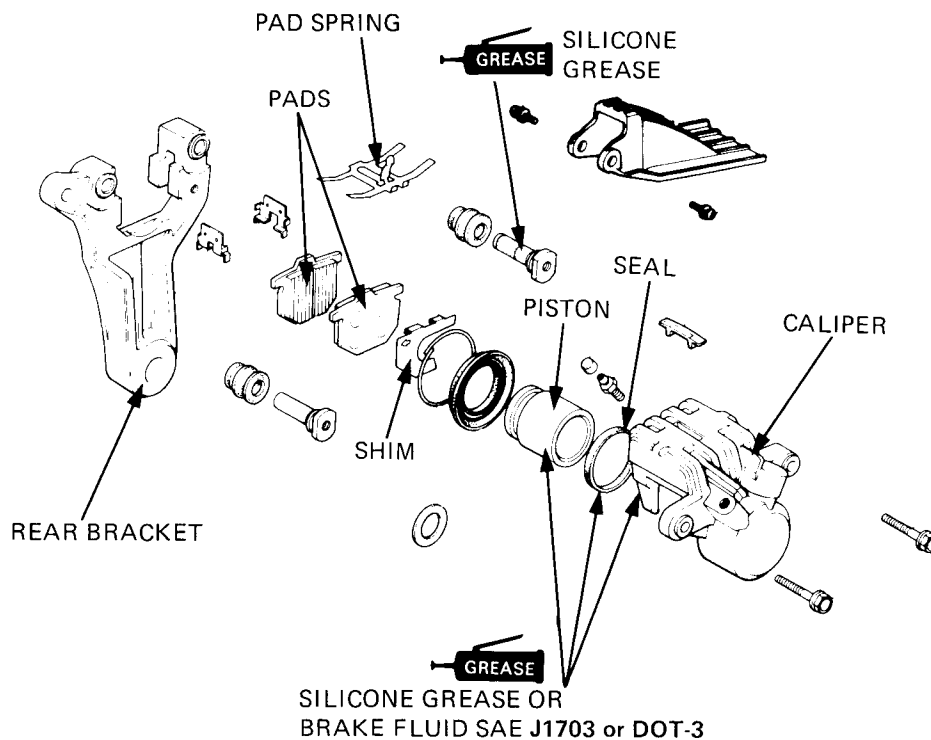
**SERVICE LIMIT: 42.9 mm (1.69 in)**

**ASSEMBLY**

Refer to the Front Brake Caliper (page 17-13).

**WARNING**

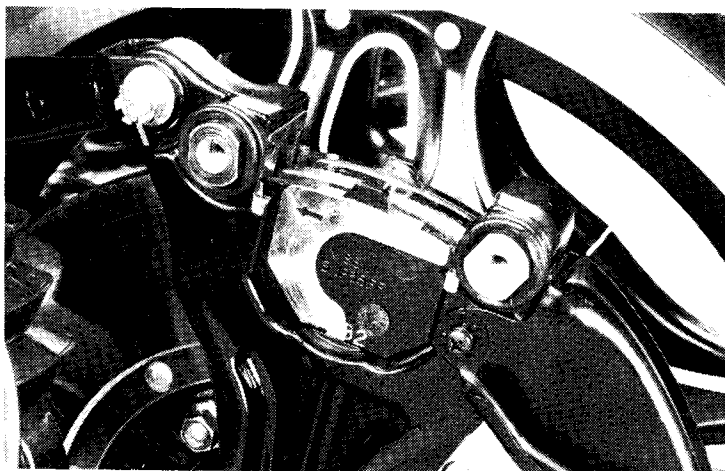
*A contaminated brake disc or pad reduces stopping power. Do not allow grease to contact pad faces.*





### REAR CALIPER BRACKET DISASSEMBLY

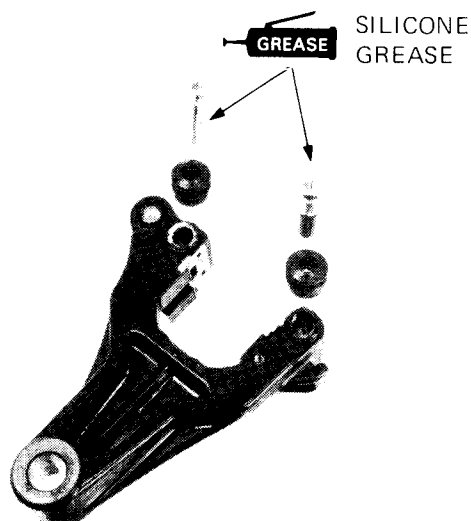
Remove the rear brake caliper (page 17-17).  
Remove the axle nut and rear axle (page 15-2).  
Remove the cotter pin and nut.  
Disconnect the brake torque link from the rear brake caliper bracket.  
Remove the rear caliper bracket.  
Remove the pins and dust cover and check for damage.



### REAR CALIPER BRACKET ASSEMBLY

Make sure that both pins move freely in and out of the caliper pin holes.  
Lubricate both pins with a medium grade Hi-Temperature Silicone grease before assembly.

Install the rear caliper bracket in the reverse order of removal.





## BRAKE PEDAL SHAFT

### REMOVAL/INSTALLATION

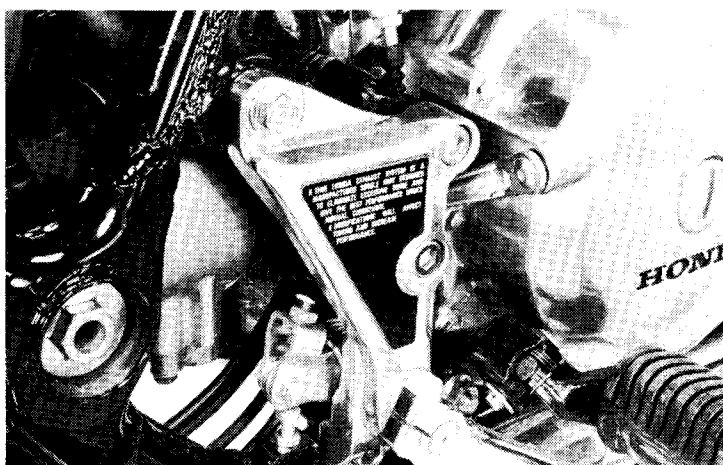
#### NOTE

The brake pedal shaft can be removed and installed without removing the muffler.

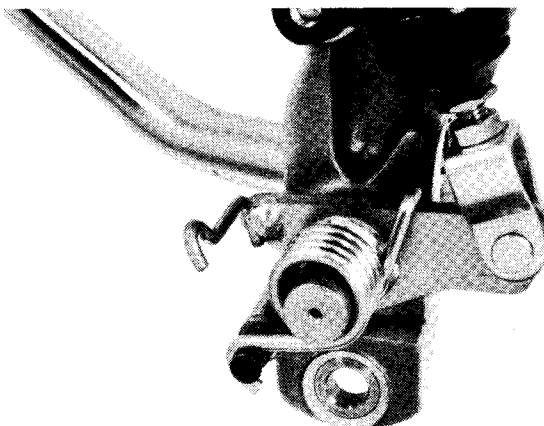
Remove the brake pedal.

Remove the allen head bolt and rod pin.  
Remove the rear master cylinder.

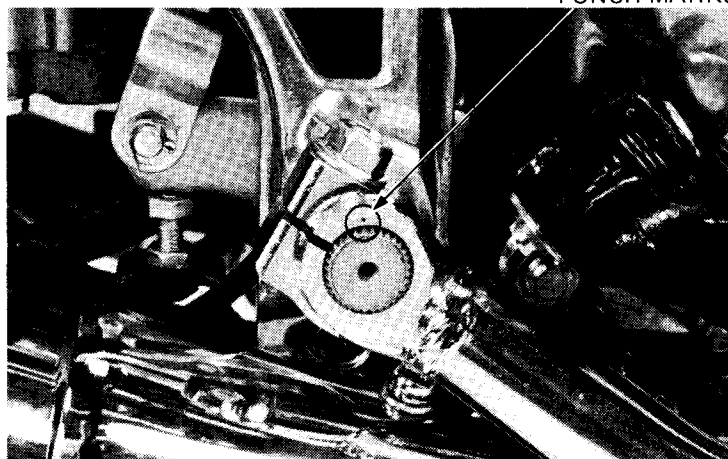
Remove the rear brakelight switch spring and rear brake pedal shaft.



Install the brake return spring as shown.



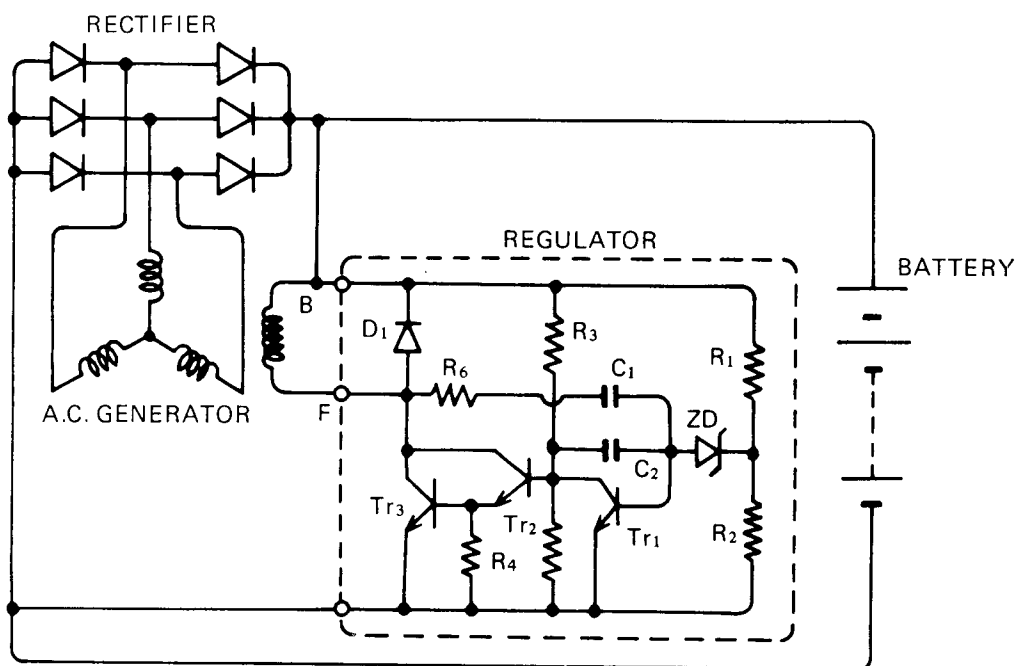
Align the punch marks and install the rear brake pedal.



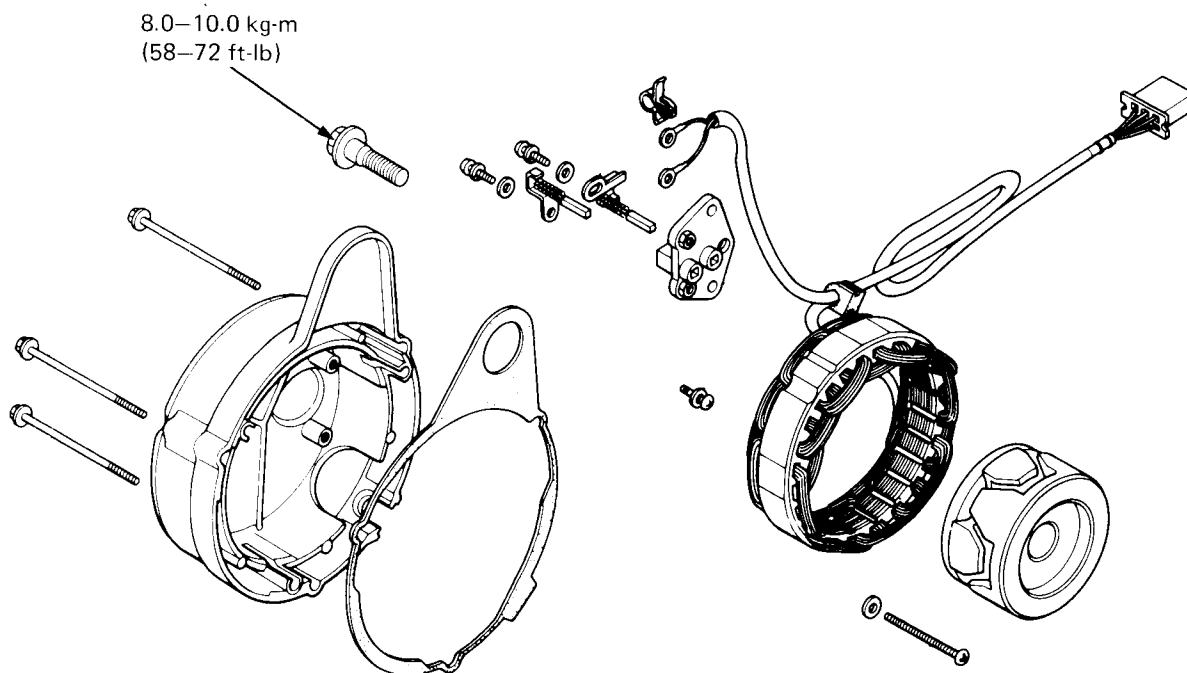




MEMO



BATTERY/CHARGING SYSTEM





|   |      |
|---|------|
| SERVICE INFORMATION                     | 18-1 |
| TROUBLESHOOTING                         | 18-2 |
| BATTERY                                 | 18-3 |
| CHARGING SYSTEM                         | 18-4 |
| A.C. GENERATOR REMOVAL/<br>INSTALLATION | 18-5 |
| STATOR/ROTOR                            | 18-7 |
| VOLTAGE REGULATOR/RECTIFIER             | 18-8 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Battery fluid level should be checked regularly. Fill with distilled water when necessary.
- Quick charge a battery, only in an emergency. Slow-charging is preferred.
- Remove the battery from the motorcycle for charging. If the battery must be charged on the motorcycle, disconnect the battery cables.

#### WARNING

*Do not smoke, and keep flames away from a charging battery. The gas produced by a battery will explode if a flame or spark is brought near.*

- All charging system components can be tested on the motorcycle.

### TOOL

Common  
Rotor puller

07933-4250000

### SPECIFICATIONS

|                   |                  |   |           |
|-------------------|------------------|---|-----------|
| Battery           | Capacity         | 12 V 14 AH                              |           |
|                   | Specific gravity | 1.280/20°C (68°F)                       |           |
|                   | Charging rate    | 1.4 amperes maximum                     |           |
| A C. generator    | Capacity         | 1,500 rpm                               | 5,000 rpm |
|                   |                  | 6.5A min                                | 18A min   |
| Voltage regulator |                  | Transistorized non-adjustable regulator |           |



## TROUBLESHOOTING

### No power — key turned on:

1. Dead battery
  - Low fluid level
  - Low specific gravity
  - Charging system failure
2. Disconnected battery cable
3. Main fuse burned out
4. Faulty ignition switch

### Low power — key turned on:

1. Weak battery
  - Low fluid level
  - Low specific gravity
  - Charging system failure
2. Loose battery connection

### Low power — engine running:

1. Battery undercharged
  - Low fluid level
  - One or more dead cells
2. Charging system failure

### Intermittent power:

1. Loose battery connection
2. Loose charging system connection
3. Loose starting system connection
4. Loose connection or short circuit in ignition system
5. Loose connection or short circuit in lighting system

### Charging system failure:

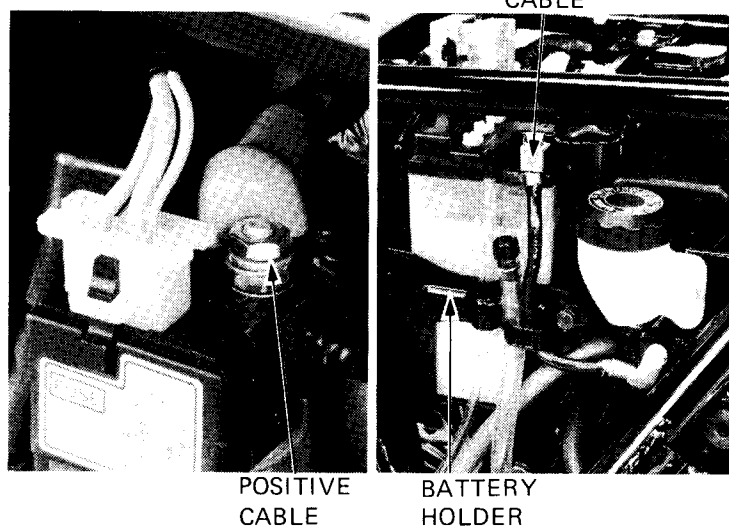
1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator/rectifier
3. Faulty A.C. generator



### BATTERY

#### REMOVAL

- Remove the right and left side covers.
- Remove the seat.
- Disconnect the ground cable at the battery terminal.
- Disconnect the positive cable at the starter relay switch terminal.
- Remove the battery holder.



#### TESTING SPECIFIC GRAVITY

Test each cell with a hydrometer.

SPECIFIC GRAVITY: 1.270–1.290  
(20°C, 68°F)

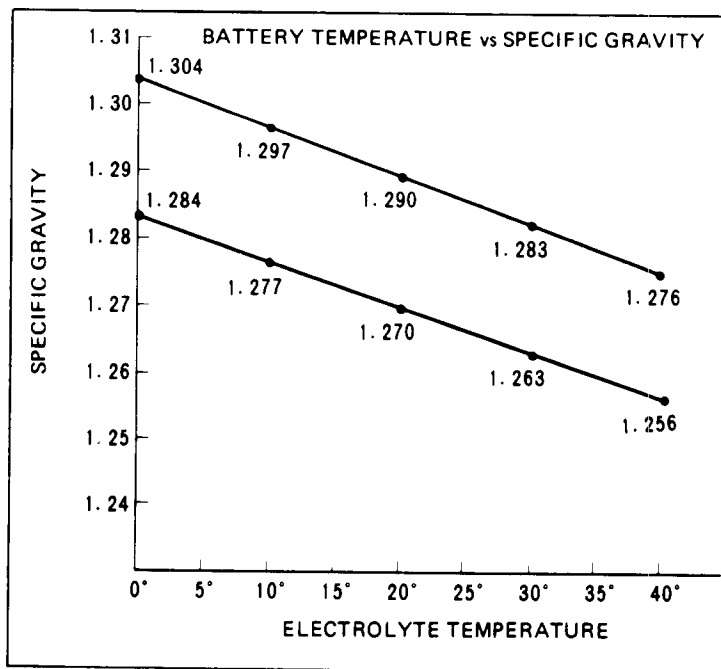
|             |               |
|-------------|---------------|
| 1.270–1.290 | Fully charged |
| Below 1.260 | Undercharged  |

#### NOTE

- The battery must be recharged if the specific gravity is below 1.230.
- The specific gravity varies with the temperature as shown in the accompanying table.
- Replace the battery if sulfation is evident or if the space below the cell plates is filled with sediment.

#### WARNING

*The battery contains sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote: Flush with water and get prompt medical attention.*



Specific gravity changes by 0.007 for every 10°C.



### CHARGING

Connect the charger positive (+) cable to the battery positive (+) terminal.

Connect the charger negative (–) cable to the battery negative (–) terminal.

#### Charging current:

1.4 amperes max.

#### Charging:

Charge the battery until specific gravity is 1.270–1.290 at 20°C (68°F).

#### WARNING

- Before charging a battery, remove the cap from each cell.
- Keep flames and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals.
- Discontinue charging if the electrolyte temperature exceeds 45°C (113°F).

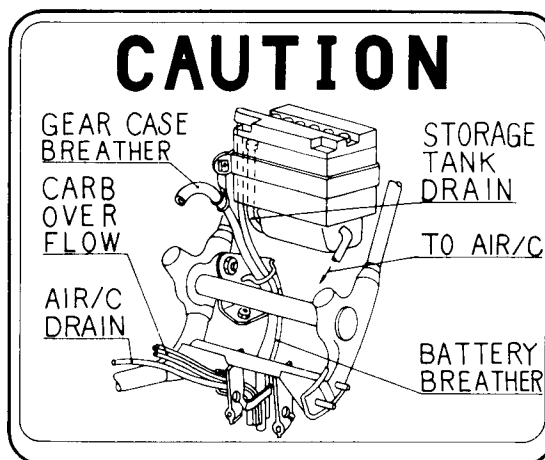
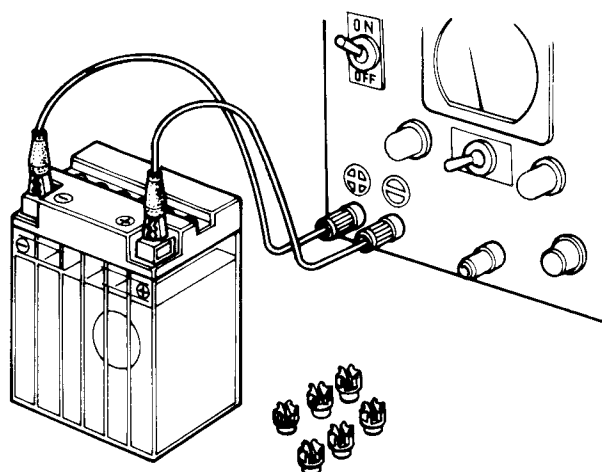
#### CAUTION:

Quick-charging should only be done in an emergency; slow-charging is preferred.

After installing the battery, coat the terminals with clean grease.

#### CAUTION:

Route the breather tube as shown on the battery caution label.



## CHARGING SYSTEM

### Current Test

#### NOTE

Be sure the battery is in good condition before performing this test.

Warm up the engine.

Remove the frame left side cover.

Turn headlight high beam on.

Run engine above 2,000 rpm.

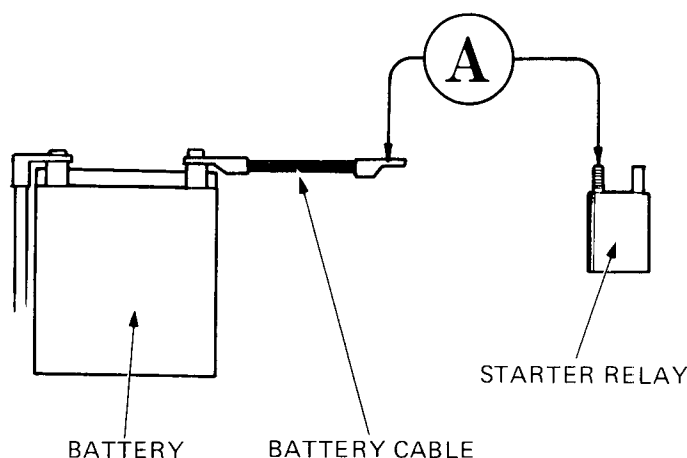
Disconnect the battery positive cable at the starter relay and connect an ammeter between the battery cable and terminal.

Allow engine to idle.

Increase engine speed slowly.

Charging amperage should begin by 1,700 rpm and should be a minimum of 8 amperes at 5,000 rpm.

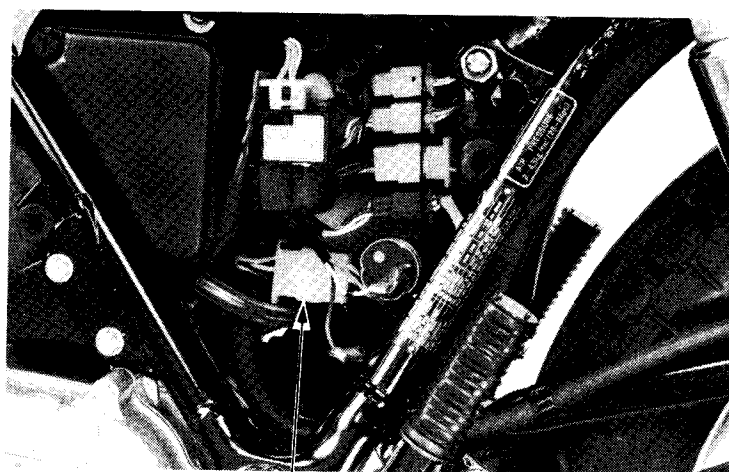
Check the stator (page 18-7) and then the regulator/rectifier (page 18-8), if the charging specifications are not met.





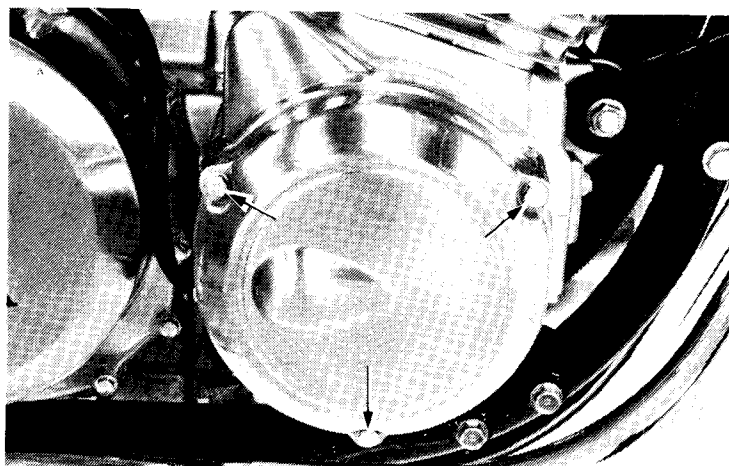
## A. C. GENERATOR REMOVAL/ INSTALLATION

Remove the right side cover and disconnect the A.C. generator coupler.

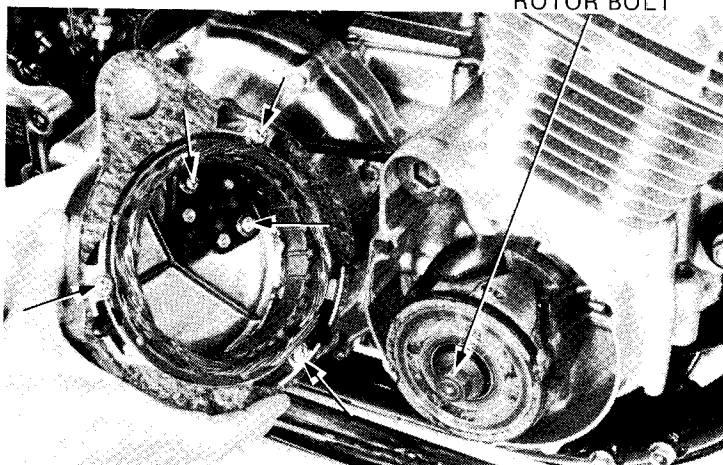


GENERATOR  
COUPLER

Remove the A.C. generator cover by loosening three bolts.



Remove the generator stator with the brush holder by loosening five screws.  
Shift the transmission into gear and apply the rear brake.  
Remove the generator rotor bolt.

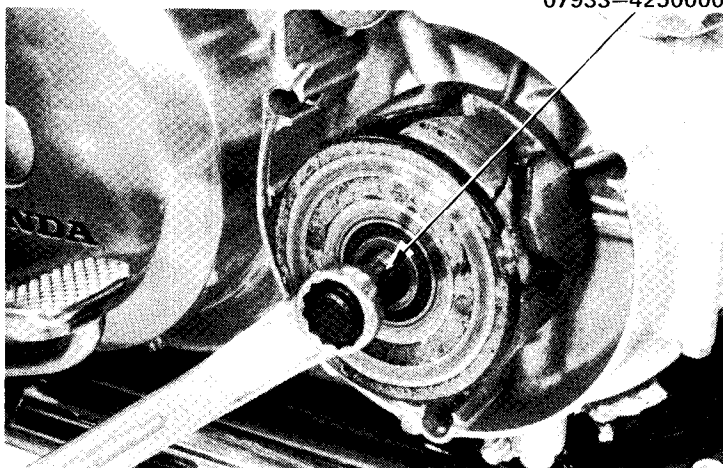


GENERATOR  
ROTOR BOLT



Remove the generator rotor while applying the rear brake.

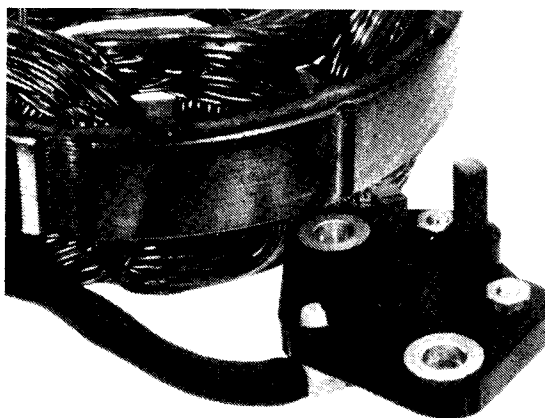
ROTOR PULLER  
07933-4250000



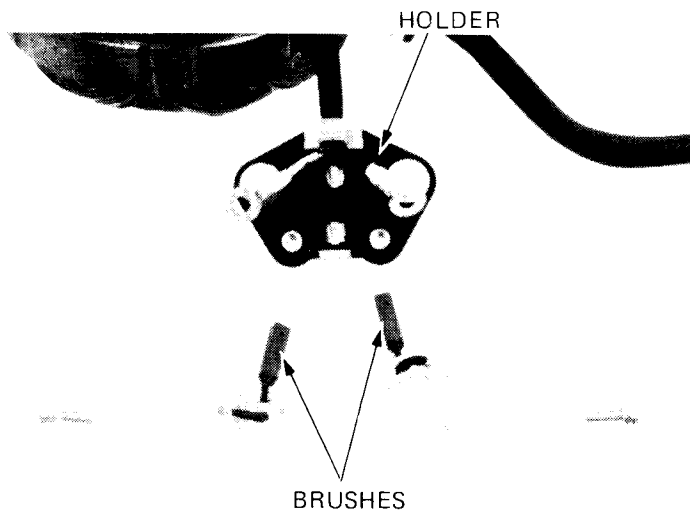
### INSPECTION

Inspect the length of each brush as shown.  
If it shows wear to the scribed service limit line, replace the brush.

**SERVICE LIMIT:** Scribed line



Remove and replace the brush by removing the mounting screws.





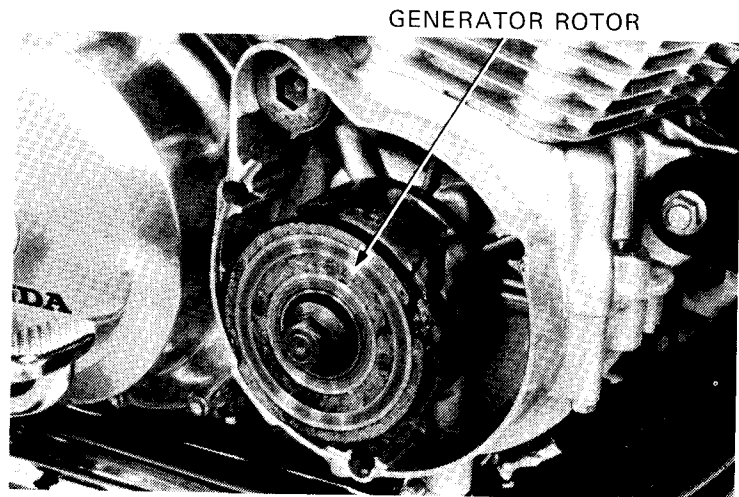


### INSTALLATION

Install the generator rotor.

**TORQUE:** 8.0–10.0 kg-m (58–72 ft-lb)

Route the generator leads properly.



### STATOR/ROTOR

#### INSPECTION

Remove the frame right and left side covers.  
Turn the ignition switch on.

Measure battery voltage.

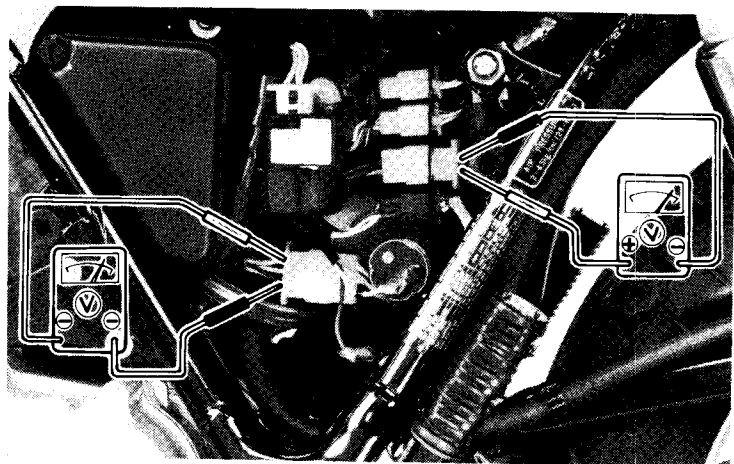
Connect a DC voltmeter to regulator R/W wire and ground. Read the voltage, it should be equal to the battery voltage. Check wire and battery cable connections, if not.

Connect a DC voltmeter to the stator six pole connector B and W wires, without disconnecting them. Read the voltage, it should be equal to the battery voltage. Check the wire and battery cable connections (photo), if battery voltage is not equal.

Disconnect the DC voltmeter.

Warm up the engine. Disconnect the stator six pole connector.

Connect an AC voltmeter leads to any two Y wire leads. You should read 8-10 volts. Move one lead to the remaining Y wire. You should read 8-10 volts. Replace the stator if voltage output is not within specifications.



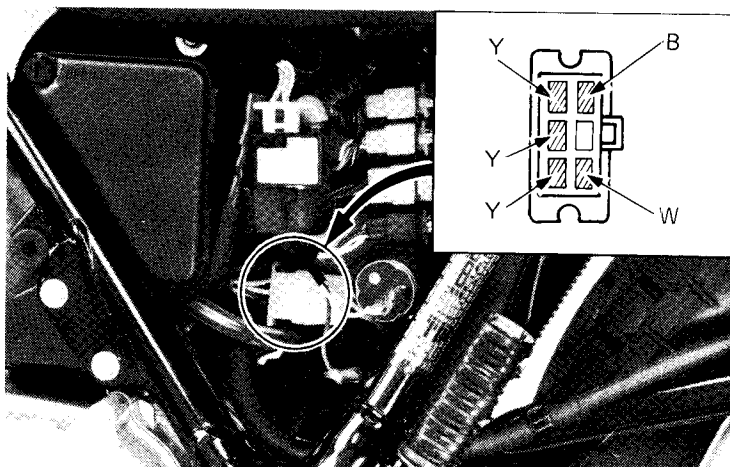
**STATOR CONTINUITY TEST**

Warm up the engine.  
Stop the engine.  
Remove the frame right side cover.  
Check the resistance of the stator six pole connector wires.

Use the R x 1 ohmmeter scale.

**B - W: 10-12  $\Omega$**   
**Y - Y: 0.4-0.5  $\Omega$**   
**Y - ground:  $\infty$**

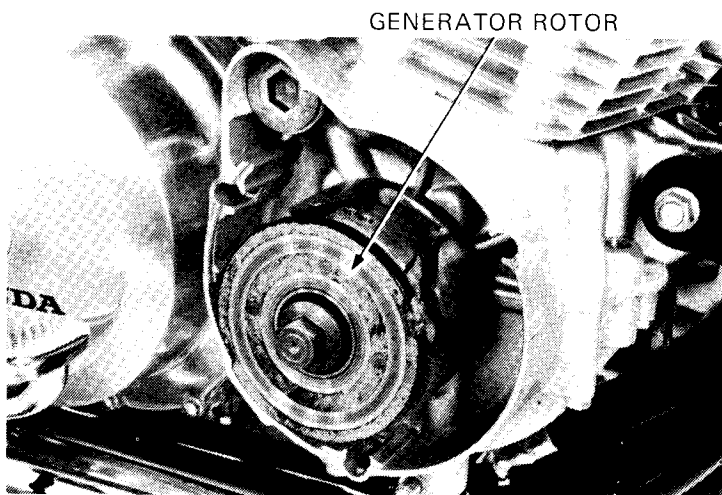
Replace the stator if not within specifications.

**ROTOR CONTINUITY TEST**

Remove the generator cover.  
Remove the brush assembly.  
Check the resistance between the two rotor slip rings.

**SLIP RING - TO - SLIP RING: 3.6-4.4  $\Omega$**

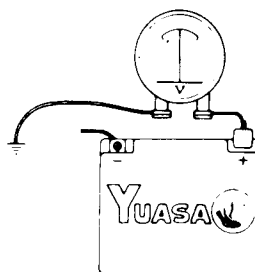
Replace the rotor, if not within specifications.

**VOLTAGE REGULATOR/RECTIFIER****VOLTAGE REGULATOR TEST**

Remove the frame left side cover.  
Start the engine.  
Connect a DC voltmeter; positive lead to battery positive and negative lead to a frame ground.  
Increase engine speed to 3,000 rpm.

**MAXIMUM VOLTAGE: 14-15 V**

Replace the voltage regulator, if not within specifications.





### RECTIFIER TEST

Check the resistance between the leads with an ohmmeter.

#### RESISTANCE IN NORMAL DIRECTION:

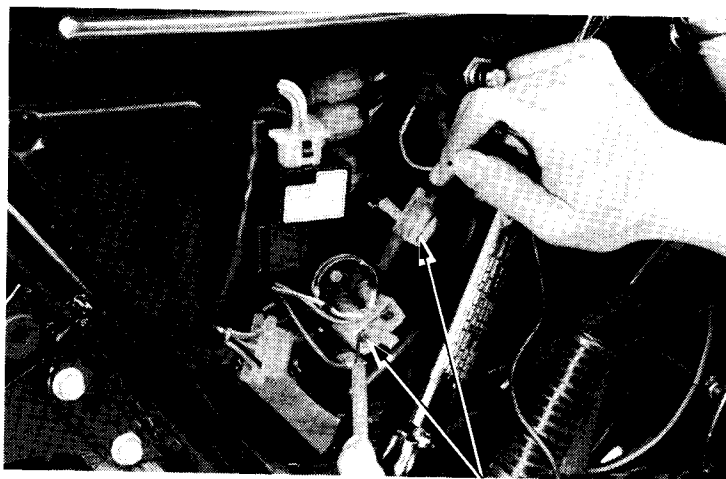
Green and any yellow: 5–40  $\Omega$

Red/white and any yellow: 5–40  $\Omega$

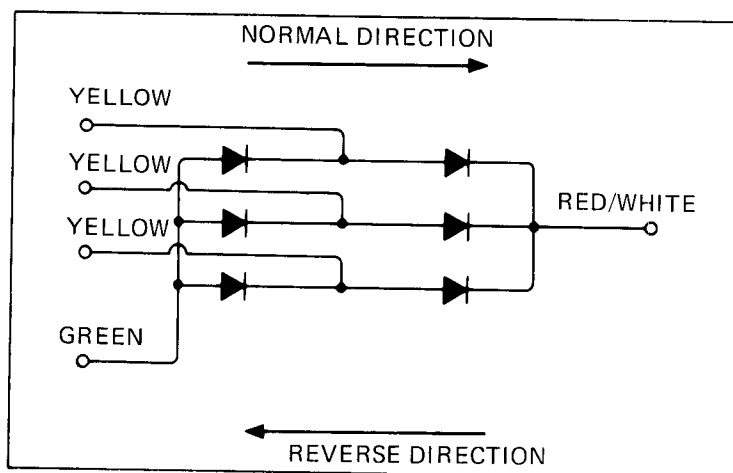
#### RESISTANCE IN REVERSE DIRECTION:

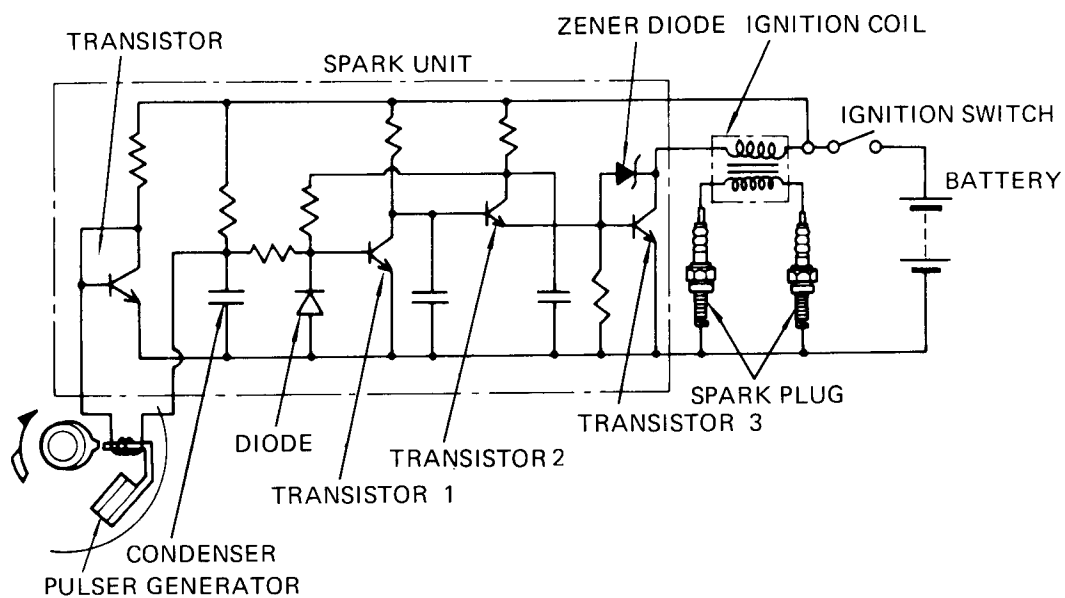
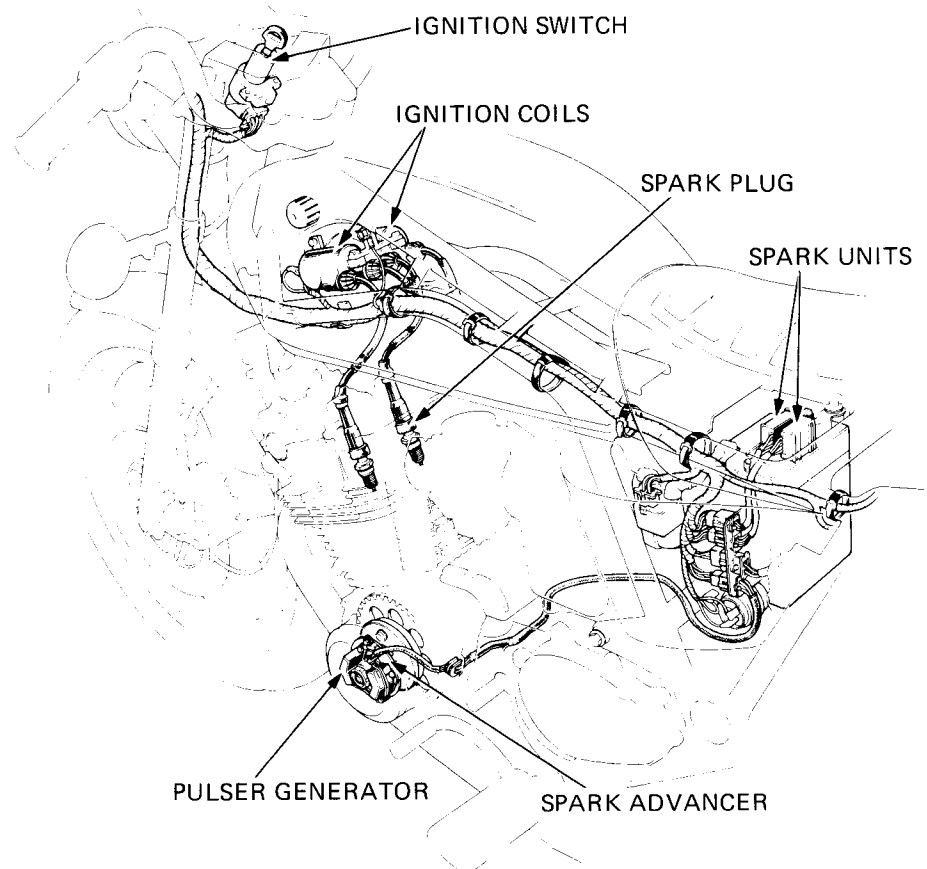
Red/white and any yellow: 2000  $\Omega$  min.

Green and any yellow: 2000  $\Omega$  min.



REGULATOR/  
RECTIFIER  
COUPLER







|   |      |
|---|------|
| SERVICE INFORMATION   | 19-1 |
| TROUBLESHOOTING   | 19-2 |
| IGNITION COIL   | 19-3 |
| TRANSISTORIZED IGNITION<br>SYSTEM<br>(Pulser Generator, Spark Unit) | 19-3 |
| SPARK ADVANCER  | 19-5 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- A TRANSISTORIZED IGNITION SYSTEM is used and no adjustments are to be made unless the pulser generator screws are loosened. If these screws are loosened, ignition timing for either the No. 1 or No. 4 cylinder must be adjusted.
- For spark plug information, see page 3-3.

### SPECIFICATIONS

[Canada Model]

|                 |     |                                      |                             |                       |
|-----------------|-----|--------------------------------------|-----------------------------|-----------------------|
| Spark plug      | ND  | Standard                             | X27ES-U                     | [X27ESR-U]            |
|                 |     | For cold climate<br>Below 5°C (41°F) | X24ES-U                     | [X24ESR-U]            |
|                 | NGK | Standard                             | D9EA                        | [DR8ES]               |
|                 |     | For cold climate<br>Below 5°C (41°F) | D8EA                        | [DR8ES-L]             |
| Spark plug gap  |     |                                      | 0.6–0.7 mm (0.024–0.028 in) |                       |
| Ignition timing |     |                                      | At idle                     | 10° (BTDC)            |
|                 |     |                                      | Full advance                | 38.5° BTDC/3,100 rpm  |
| Ignition coil   |     |                                      | 3-point spark test          | 6 mm (1/4 in) minimum |



## TROUBLESHOOTING

The ignition system has two sub-systems; one for the No. 1 and No. 4 cylinders and one for No. 2 and No. 3 cylinders. Determine which sub-system is faulty, then proceed to the detailed tests below.

### Engine cranks but will not start

- Engine stop switch OFF
- No spark at plugs
- Faulty transistorized spark unit
- Faulty pulser generator

### No spark at plug

- Engine stop switch OFF
- Poorly connected, broken or shorted wires
  - Between ignition switch and engine stop switch
  - Between spark unit and engine stop switch
  - Between spark unit and ignition coil
  - Between ignition coil and plug
  - Between spark unit and pulser generator
- Faulty ignition coil
- Faulty ignition switch
- Faulty spark unit
- Faulty pulser generator

### Engine starts but runs poorly

- Ignition primary circuit
  - Faulty ignition coil
  - Loose or bare wire
  - Intermittent short circuit
- Secondary circuit
  - Faulty plug
  - Faulty high tension wire

### Timing advance incorrect

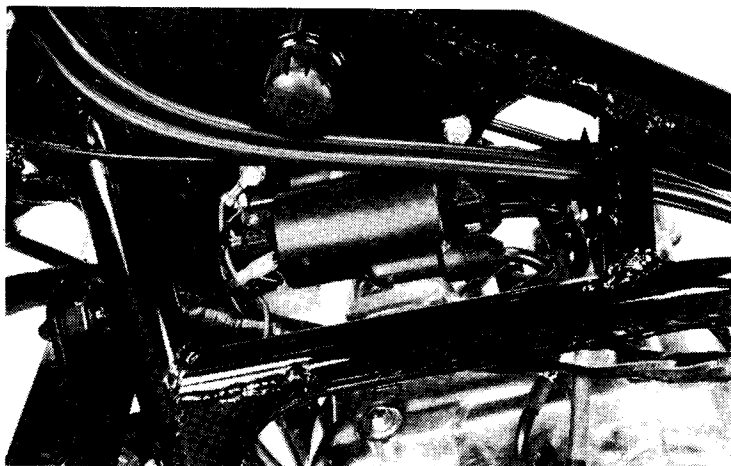
- Centrifugal advancer faulty



## IGNITION COIL

### REMOVAL

Remove the fuel tank.  
Disconnect the wire leads.  
Remove the coils by removing the attaching bolts.



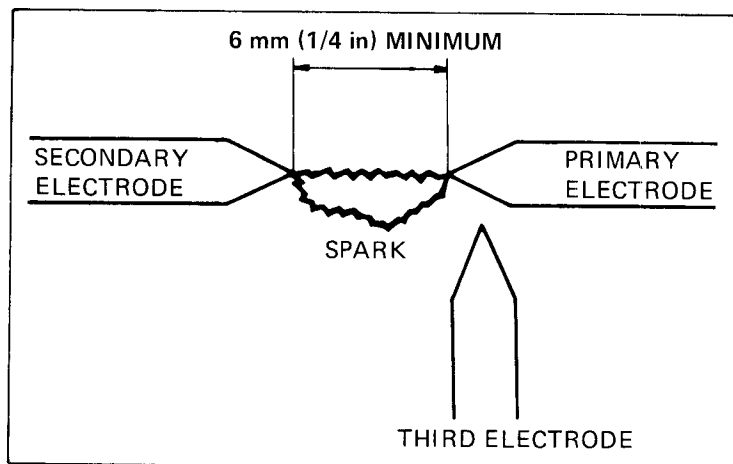
### PERFORMANCE TEST

Perform the 3-point spark test with a coil tester.

**SERVICE LIMIT:** 6 mm (1/4 in) min.

#### NOTE

Follow the coil tester manufacturers instructions.

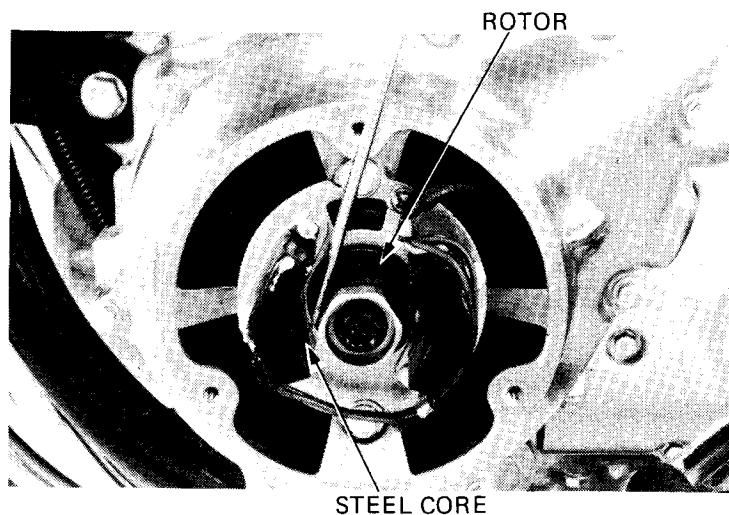


## TRANSISTORIZED IGNITION SYSTEM

### INSPECTION

#### System

Disconnect the No. 1 and 2 plugs.  
Hold each plug against any convenient engine ground.  
Remove the pulser generator cover.  
Turn the ignition switch on.  
Touch the end of a screwdriver to the rotor and one pulser generator steel core.  
Repeat this operation several times.  
A good spark to the plug means that the ignition system for that cylinder is in good shape.  
Repeat the above for the other pulser coil.



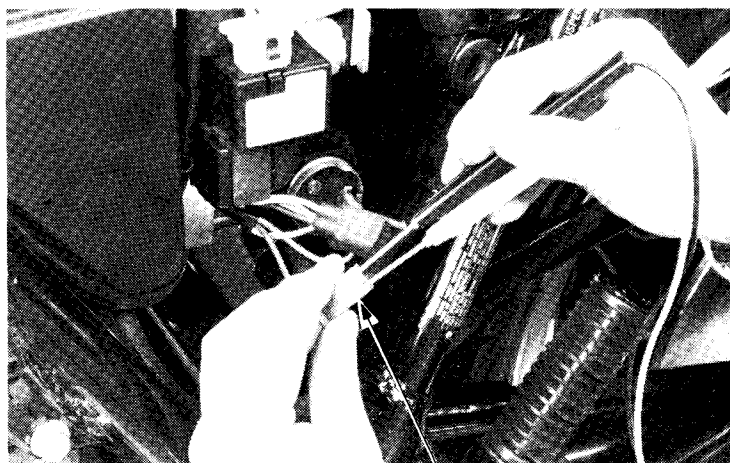
**Pulser generator**

Measure the coil resistance.

**COIL RESISTANCE:**  $530 \pm 50\Omega$  (20°C, 68°F)

Between yellow leads (2, 3 cylinders)

Between blue leads (1, 4 cylinders)

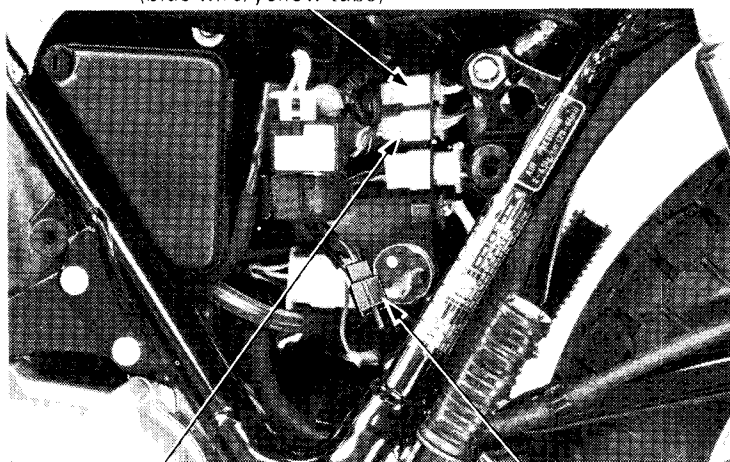


PULSER  
COIL COUPLER

**Spark unit**

Disconnect the red coupler. Turn the ignition switch on. Set voltmeter to the 0–25V DC scale.

COUPLER A  
(blue wire/yellow tube)

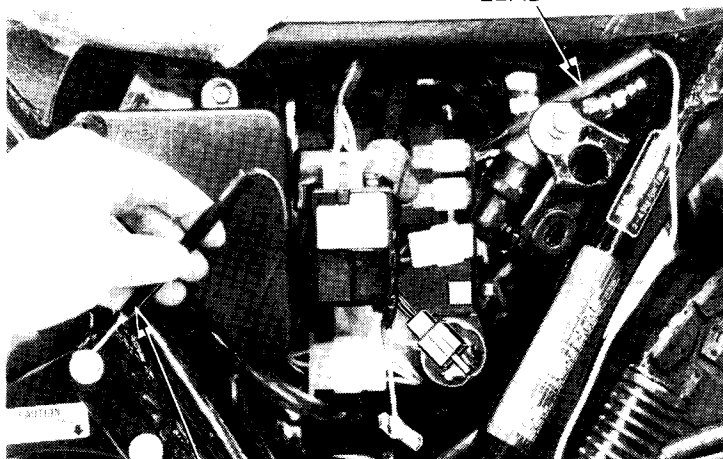


COUPLER B  
(YELLOW WIRE)

RED COUPLER  
(Spark unit side)

Touch the positive meter lead to the blue wire (with yellow tube) of coupler A; ground the negative lead. The meter should read 12V (battery voltage).

POSITIVE  
LEAD



NEGATIVE  
LEAD



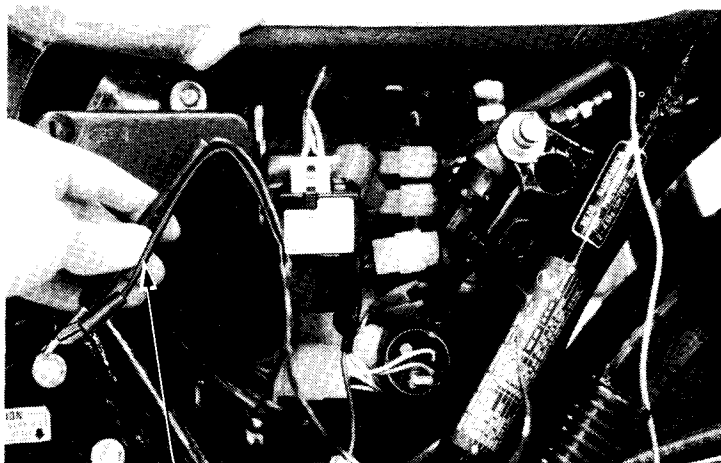


With the voltmeter leads in place, use a jumper wire to ground the blue wire (with white tube) terminal on the male (spark unit) side of the red coupler. Voltage should drop to 0–2V DC.

Move the positive voltmeter lead to the yellow wire of coupler B. Voltage should be 12V DC.

Move the jumper lead from the blue wire (with white tube) to the yellow wire (with white tube) terminal of the red coupler. Voltage should drop to 0–2V DC.

Replace the spark units if they are faulty.



JUMPER  
WIRE

## PULSER REPLACEMENT

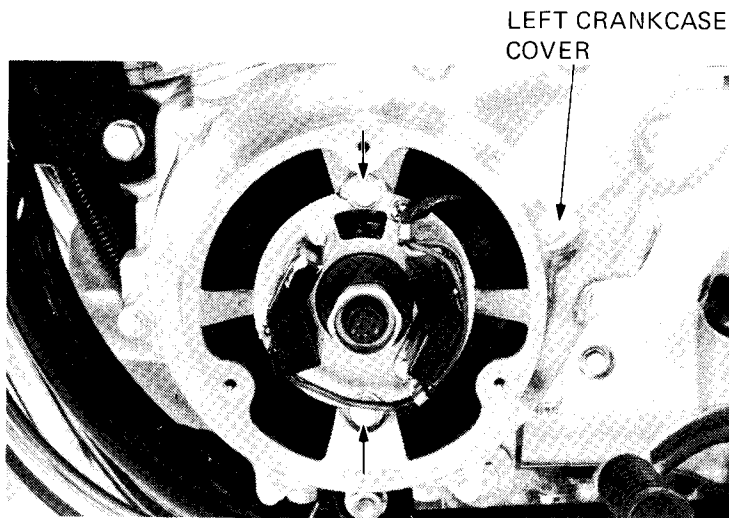
If pulser replacement is necessary, loosen the two pulser base plate screws.

Remove the left crankcase cover.

Remove the left rear crankcase cover.

Replace the pulser generator assembly.

Adjust the ignition timing (Page 3-4).



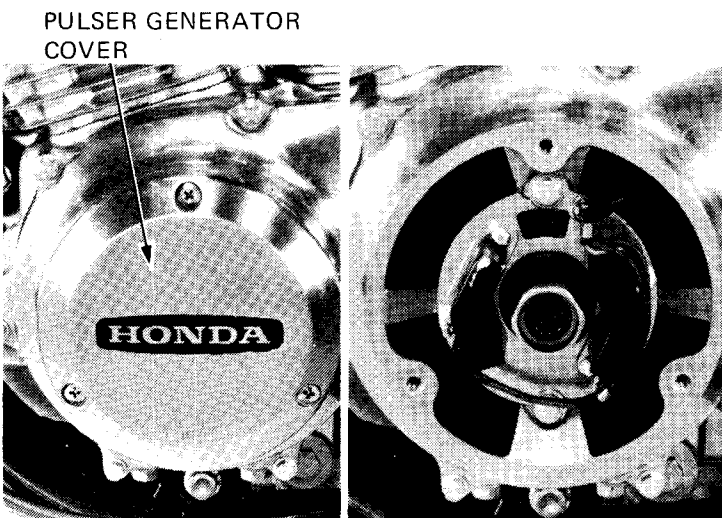
LEFT CRANKCASE  
COVER

## SPARK ADVANCER

For advancer function test, see Page 3-13.

Remove the pulser generator cover screws and cover.

Remove the left crankcase cover screws and cover.



PULSER GENERATOR  
COVER

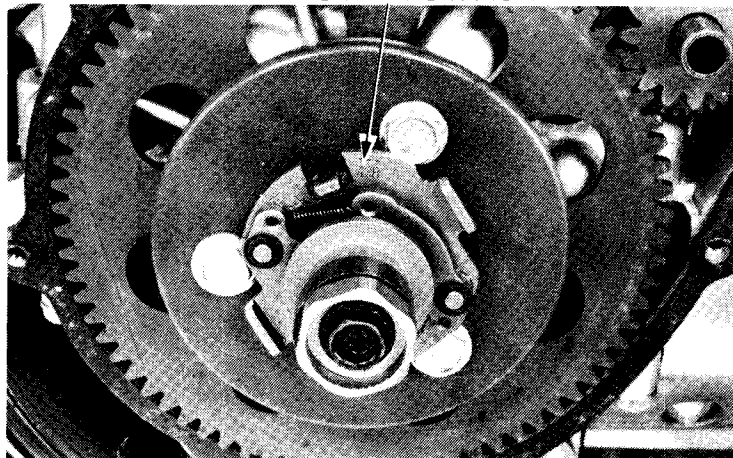


### ADVANCER VISUAL INSPECTION

Check the mechanical advancer cam for sticking.

Lubricate the sliding surfaces, and check the spring for loss of tension and advancer pin for excessive wear if the advancer fails to return.

SPARK ADVANCER

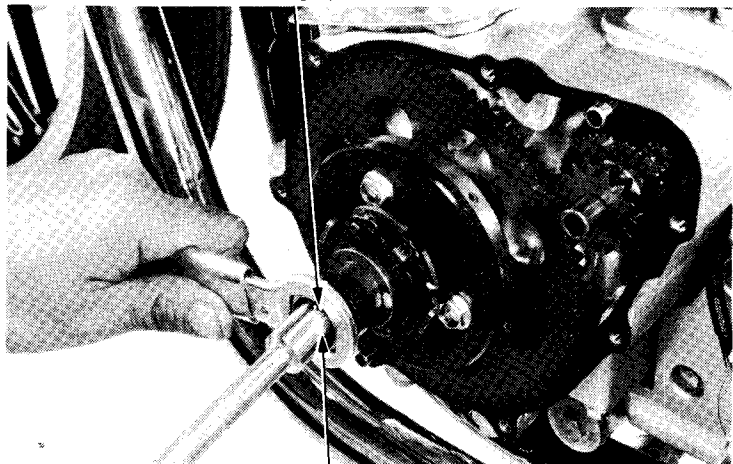


### ADVANCER REPLACEMENT

Remove the bolt by holding the spacer.

Remove the advancer.

SPACER



ALLEN HEAD BOLT

Align the rotor tooth with the "O" mark on the advancer.

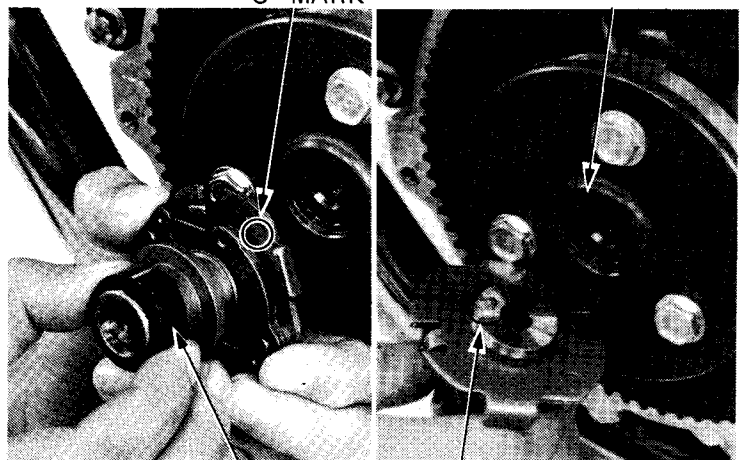
Align the pin on the advancer with the slot in the crankshaft.

Tighten the hex. head bolt.

**TORQUE: 3.3–3.7 kg-m, (24–27 ft-lb)**

"O" MARK

SLOT



ROTOR TOOTH

PIN



|                      |      |
|----------------------|------|
| SERVICE INFORMATION  | 20-1 |
| TROUBLESHOOTING      | 20-1 |
| STARTER MOTOR        | 20-2 |
| STARTER RELAY SWITCH | 20-5 |

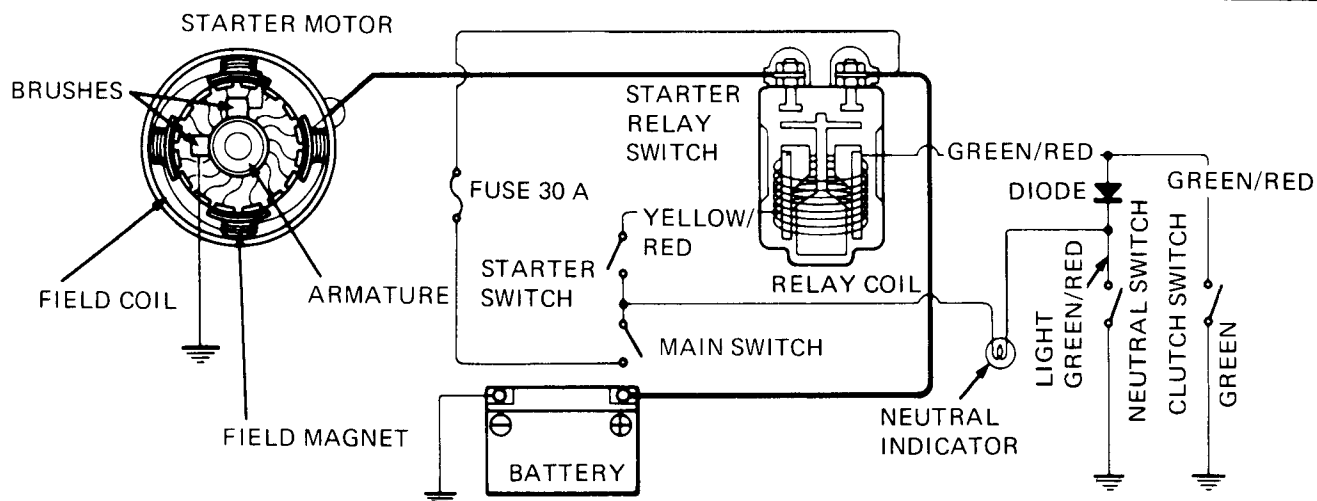
## SERVICE INFORMATION

### GENERAL INSTRUCTION

- The starter motor can be removed with the engine in the frame.

### SPECIFICATIONS

| Starter motor |  | STANDARD             | SERVICE LIMIT                |
|---------------|--|----------------------|------------------------------|
|               |  | Brush spring tension | 560 g—680 g (19.75—23.89 oz) |
|               |  | Brush length         | 12.0—13.0 mm (0.47—0.51 in)  |
|               |  |                      | 7.5 mm (0.30 in)             |



## TROUBLESHOOTING

### Starter motor will not turn:

- Battery discharged
- Faulty ignition switch
- Faulty starter switch
- Faulty neutral switch
- Faulty starter relay switch
- Loose or disconnected wire or cable
- Neutral diode open

### Starter motor turns engine slowly

- Low specific gravity
- Excessive resistance in circuit
- Binding in starter motor

### Starter motor turns, but engine does not turn:

- Faulty starter clutch
- Faulty starter motor gears
- Faulty starter motor or idle gear

### Starter motor and engine turns, but engine does not start

- Faulty ignition system
- Engine problems



## STARTER MOTOR

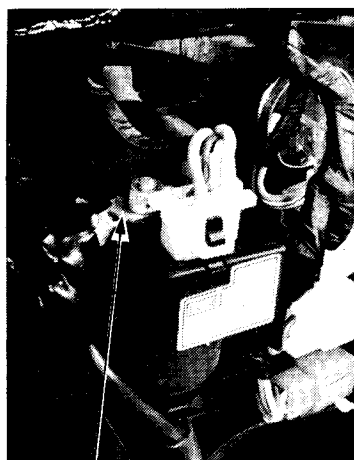
### REMOVAL

#### **WARNING**

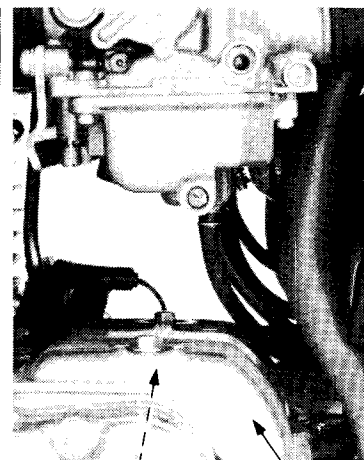
*With the ignition switch OFF, remove the negative cable at the battery before servicing the starter motor.*

Remove the right side cover and disconnect the starter cable at the starter relay switch.

Remove the starter motor cover and starter motor.

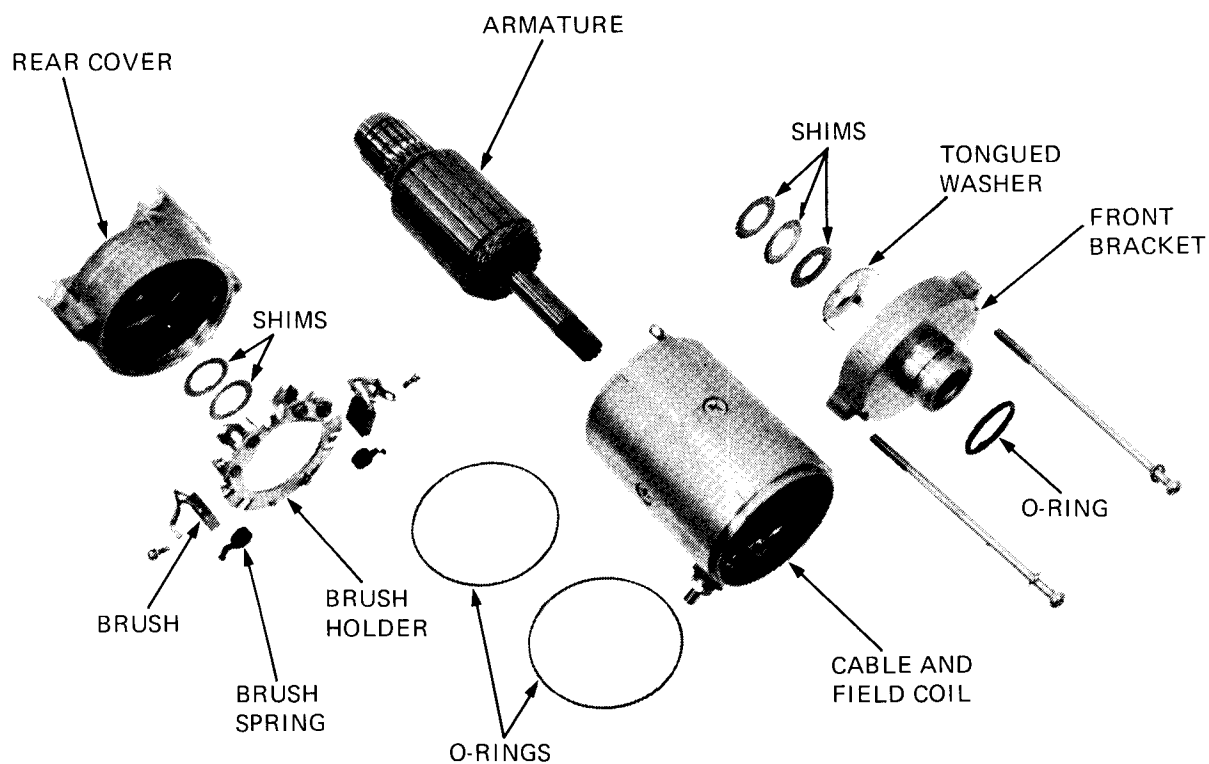


STARTER  
CABLE



STARTER  
MOTOR

COVER



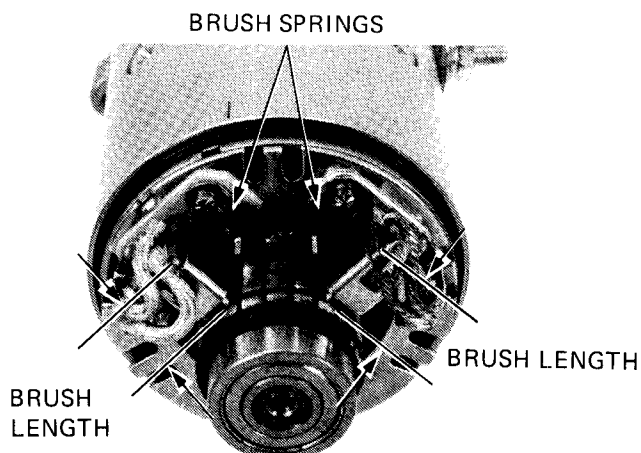


### BRUSH INSPECTION

Remove the starter motor case screws.  
Inspect the brushes and measure the brush length.  
Measure brush spring tension with a spring scale.

#### SERVICE LIMITS:

Brush length: 7.5 mm (0.30 in)  
Brush spring tension: 560 g (19.75 oz)



### COMMUTATOR INSPECTION

Remove the starter motor case.

#### NOTE

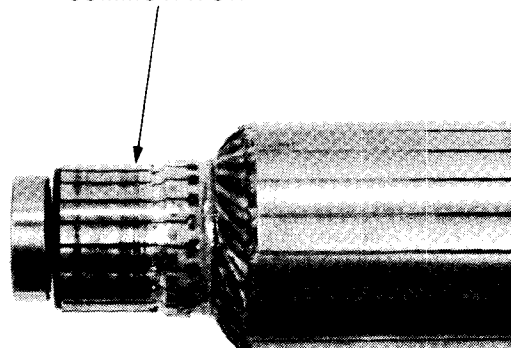
Record the location and number of thrust washers.

Inspect the commutator bars for discoloration.  
Bars discolored in pairs indicate grounded armature coils.

#### NOTE

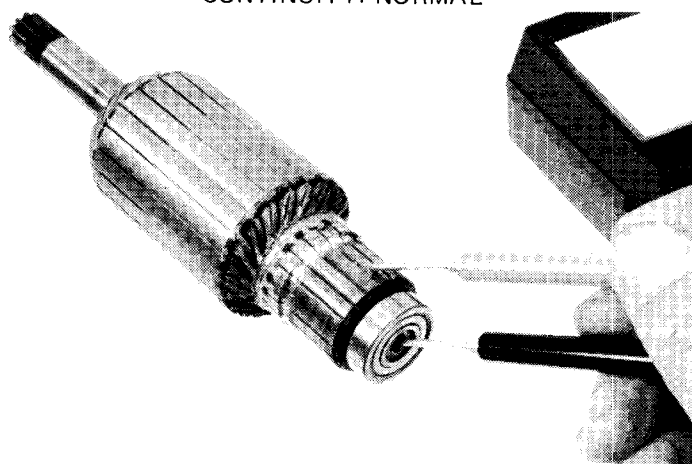
Do not use emery or sand paper on the commutator.

#### COMMUTATOR



Check for continuity between pairs of commutator bars, and also between commutator bars and armature shaft.

COMMUTATOR BAR PAIRS  
CONTINUITY: NORMAL



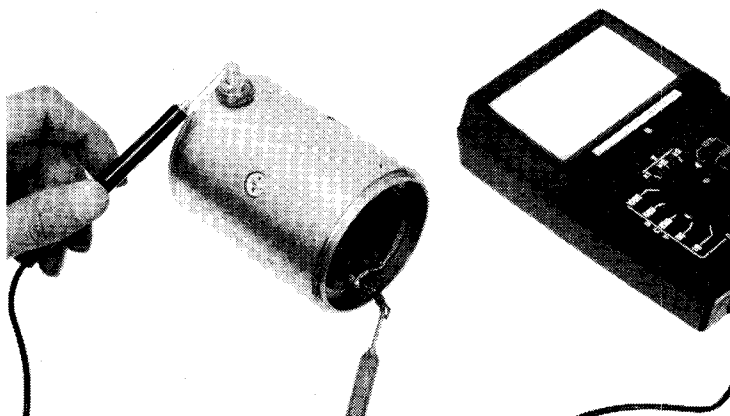
ARMATURE-SHAFT  
NO CONTINUITY: NORMAL

**FIELD COIL INSPECTION**

Check for continuity from the cable terminal to the motor case and from the cable terminal to the brush wire.

Replace the starter motor if the field coil is not continuous or if it is shorted to the motor case.

CABLE TERMINAL—MOTOR CASE  
NO CONTINUITY: NORMAL

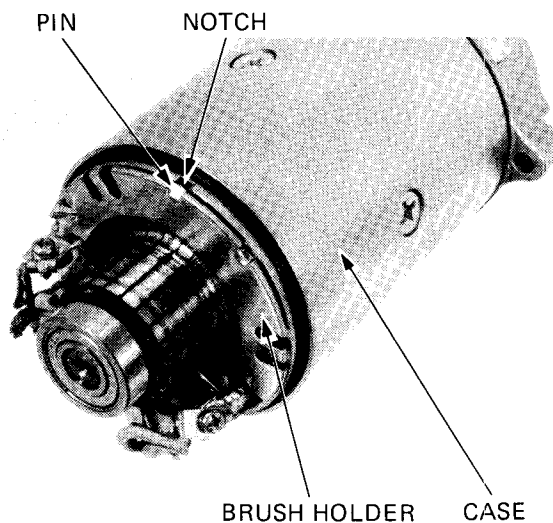


CABLE TERMINAL—BRUSH WIRE  
CONTINUITY: NORMAL

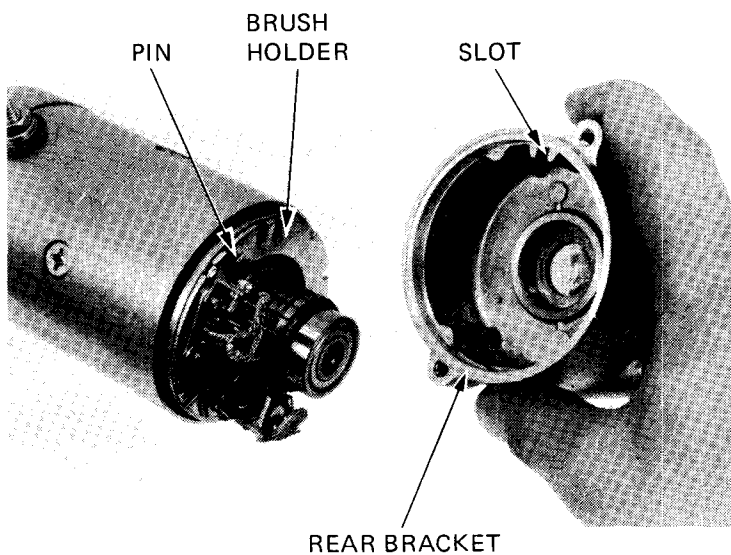
**ASSEMBLY/INSTALLATION**

Assemble the starter motor.

Align the case notch with the brush holder pin.



Install the rear cover aligning its slot with the brush holder pin.





## STARTER RELAY SWITCH

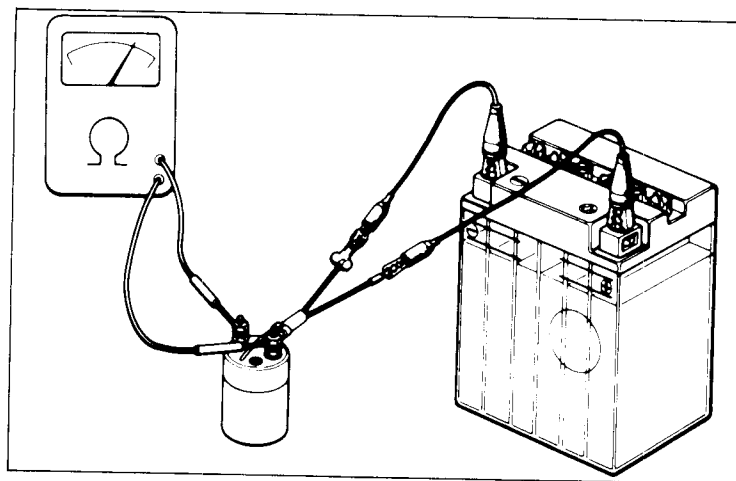
### INSPECTION

Depress the starter switch button with the ignition ON.  
The coil is normal if the starter relay switch clicks.

Connect an ohmmeter to the starter relay switch terminals.

Connect a 12 V battery to the switch cable terminals.

The switch is normal if there is continuity.





## MEMO





|                             |      |                                |      |
|-----------------------------|------|--------------------------------|------|
| SERVICE INFORMATION         | 21-1 | HANDLEBAR SWITCHES             | 21-3 |
| OIL PRESSURE WARNING SWITCH | 21-2 | IGNITION SWITCH                | 21-5 |
| BRAKE SWITCHES              | 21-2 | CLUTCH SWITCH                  | 21-5 |
| NEUTRAL SWITCH              | 21-2 | REAR SUSPENSION WARNING SYSTEM | 21-6 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Some wires have different colored bands around them near the connector. These are connected to other wires which correspond with the band color.
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.
- The following color codes used are indicated throughout this section and on the wiring diagram.

B = Blue  
Bk = Black  
Br = Brown

G = Green  
Gr = Grey  
LB = Light Blue

LG = Light Green  
O = Orange  
P = Pink

R = Red  
W = White  
Y = Yellow

- To isolate an electrical failure, check the continuity of the electrical path through the part. A continuity check can usually be made without removing the part from the motorcycle. Simply disconnect the wires and connect a continuity tester or volt-ohmmeter to the terminals or connections.
- A continuity tester is useful when checking to find out whether or not there is an electrical connection between the two points. An ohmmeter is needed to measure the resistance of a circuit, as when there is a specific coil resistance involved, or when checking for high resistance by corroded connections.

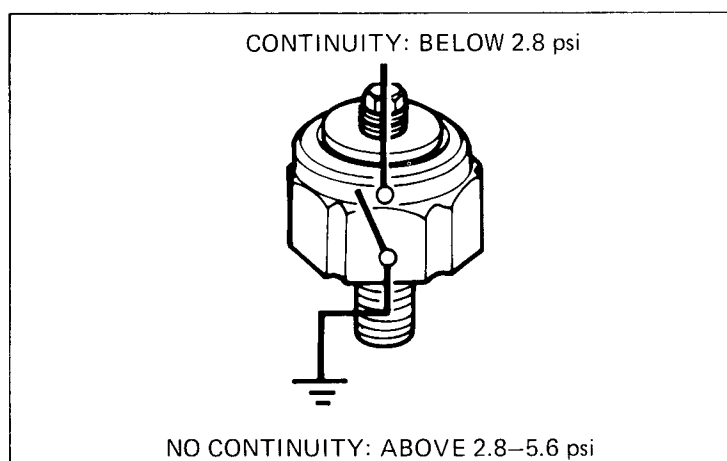


## OIL PRESSURE WARNING SWITCH

Check for continuity while applying pressure to the switch.

Replace the switch if necessary.

Apply a liquid sealant to the switch threads.

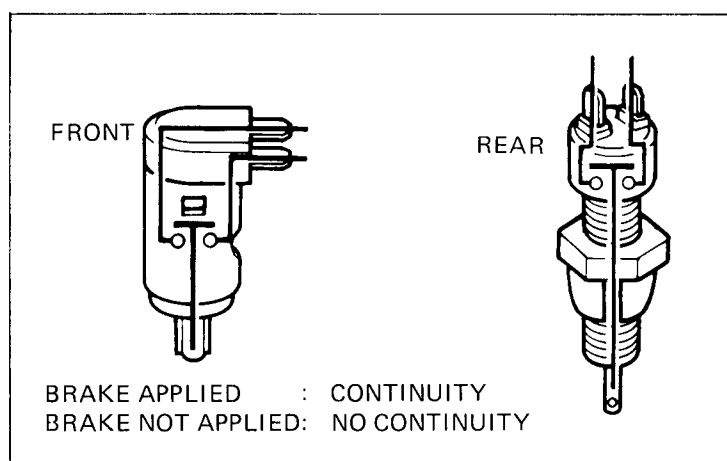


## BRAKE SWITCHES

Check the rear brakelight switch for continuity with the rear brake applied.

Check the front brakelight switch for continuity with the front brake applied.

Replace the switches if necessary.

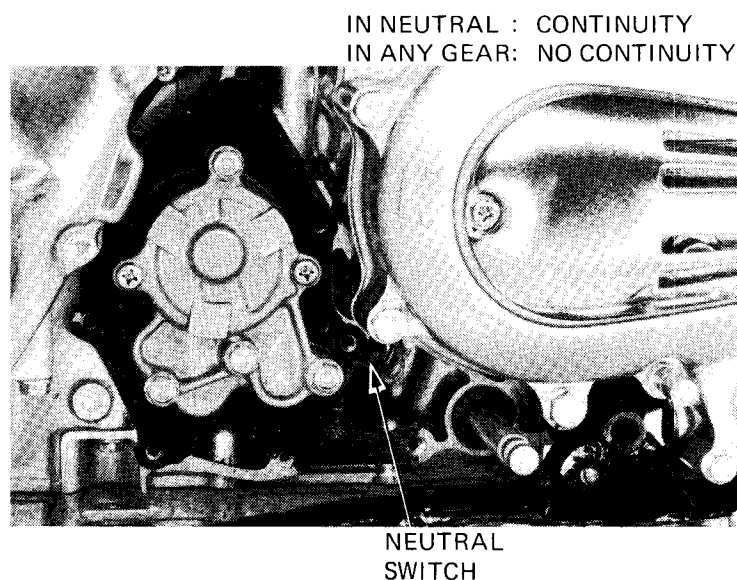


## NEUTRAL SWITCH

Remove the foot pegs, gearshift pedal and left rear crankcase cover.

Check the switch for continuity between the switch terminal (wire removed) and ground with the transmission in neutral and with the transmission in any gear.

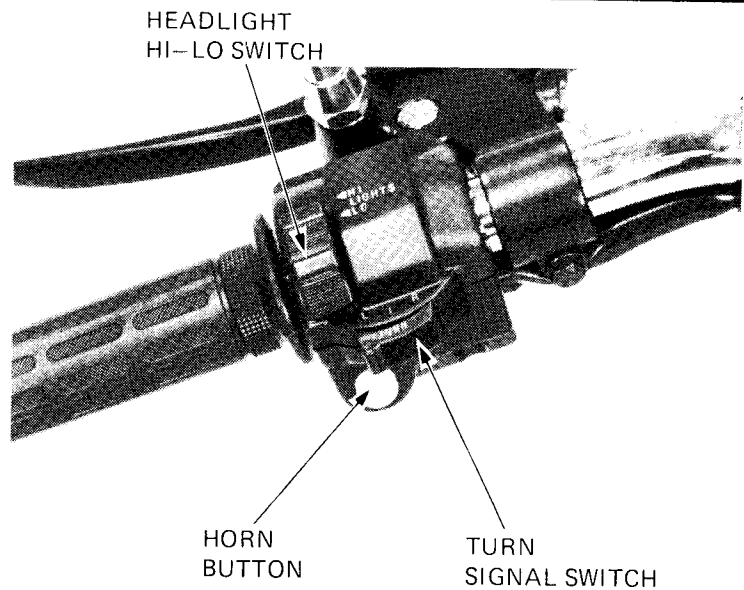
Replace the neutral switch if necessary.





## HANDLEBAR SWITCHES

The handlebar cluster switches (lights, turn signals, horn) must be replaced as assemblies. Continuity tests for the components of the handlebar cluster switches follow: Continuity should exist between the color coded wires on each chart.



### HEADLIGHT HI-LOW SWITCH

HI: B/W to B  
MIDDLE (N): B/W to W to B  
LO: B/W to W

Headlight Hi-Low Switch

|            | HL  | Hi | Lo |
|------------|-----|----|----|
| Hi         |     |    |    |
| (N)        |     |    |    |
| Lo         |     |    |    |
| Code color | B/W | B  | W  |

### TURN SIGNAL SWITCH

LEFT: Gr to O, Br/W to LB/W  
OFF: No continuity  
RIGHT: Gr to LB, Br/W to O/W

Turn Signal Switch

|            | W  | L | R  |
|------------|----|---|----|
| LEFT       |    |   |    |
| OFF        |    |   |    |
| RIGHT      |    |   |    |
| Code color | Gr | O | LB |

### HORN BUTTON

LG to G with button depressed  
No continuity with button released

Horn Button

|            | Ho | E |
|------------|----|---|
|            |    |   |
| Code color | LG | G |

**STARTER BUTTON**

Bk to Y/R with button depressed

**Starter Button**

|            | BAT <sub>2</sub> | ST  |
|------------|------------------|-----|
| FREE       |                  |     |
| START      |                  |     |
| Code color | Bk               | Y/R |

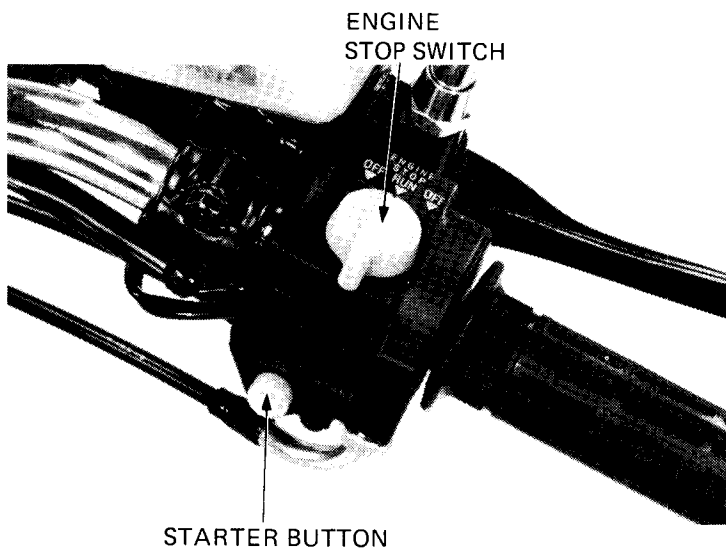
**ENGINE STOP SWITCH**

RUN: Bk to Bk/w

OFF: No continuity

**Engine Stop Switch**

|            | BAT <sub>2</sub> | IG   |
|------------|------------------|------|
| OFF        |                  |      |
| RUN        |                  |      |
| OFF        |                  |      |
| Code color | Bk               | Bk/W |





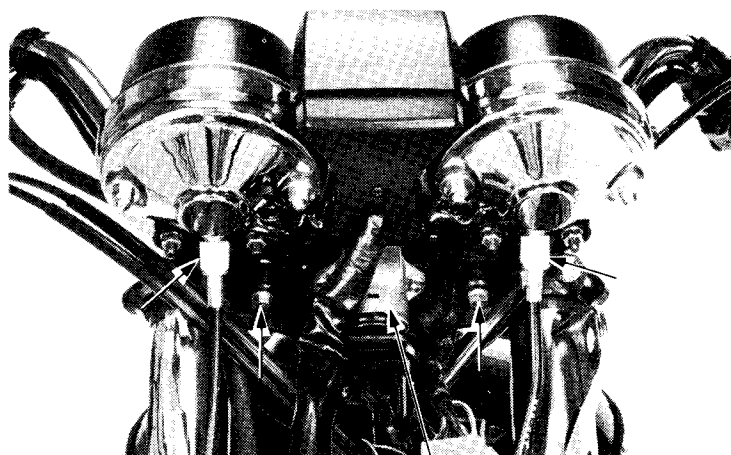
## IGNITION SWITCH

Remove the instrument cluster and disconnect the coupler.

Remove the ignition switch.

### NOTE

Identify the wire colors at the connector. There are no colors on the switch.



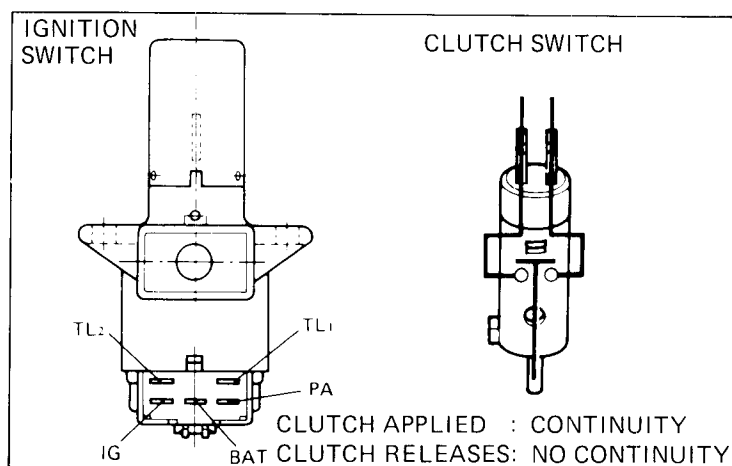
IGNITION SWITCH

Check continuity of terminals on the ignition switch in each switch position.

### SWITCH POSITION

**LOCK:** No continuity  
**OFF:** No continuity  
**ON:** BAT1 to IG, TL1 to TL2  
**PARK:** PA to BAT1

| Terminal Position | PA  | BAT1 | IG | TL1 | TL2 |
|-------------------|-----|------|----|-----|-----|
| P                 | ○—○ |      |    |     |     |
| ON                |     | ○—○  |    | ○—○ |     |
| OFF               |     |      |    |     |     |
| LOCK              |     |      |    |     |     |



## CLUTCH SWITCH

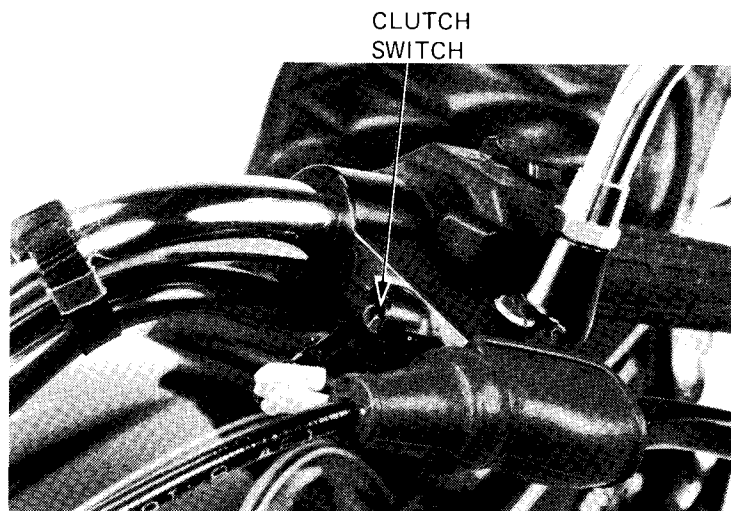
Check continuity of the clutch lever (safety) switch with the clutch released and applied.  
 Replace if necessary.

### REMOVAL

Unplug the wires.  
 Remove the clutch lever and cable.  
 Remove the switch.

### NOTE

The switch case has a small protrusion that must point toward the handlebar when installed.



CLUTCH SWITCH



## REAR SUSPENSION WARNING SYSTEM

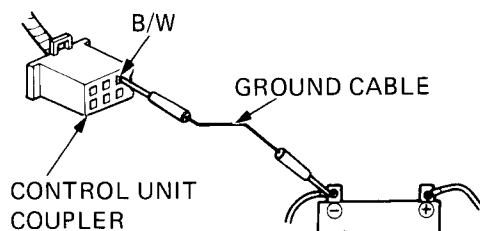
### TROUBLESHOOTING

The rear suspension air pressure warning light will light during running if there are any abnormalities in the system. If this happens, observe the following:

Stop the motorcycle, support it on the side stand and turn the ignition switch OFF.

Again turn the ignition switch ON to see if the warning lamp will light.

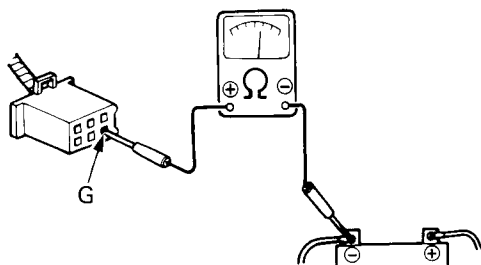
- A. If warning lamp still remains OFF, disconnect coupler from control unit and connect B/W terminal to battery negative (–) terminal with a ground cable.



If lamp fails to come ON:

- Blown bulb
- Blown fuse
- Loose or damaged connector
- Open circuit in wire harness (between coupler and bulb, and fuse and bulb)

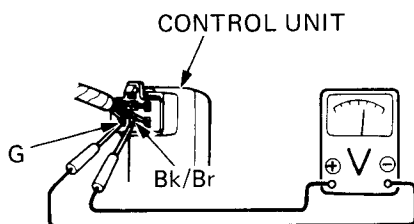
If lamp comes ON: Check continuity between terminal G and battery negative (–) terminal.



No Continuity:

- Loose or damaged connector
- Open circuit in wire harness (between terminal G and battery negative (–) terminal)

Continuity: Connect coupler to control unit and check voltage across terminal G and Bk/Br terminal.



Below 8V:

- Loose or damaged connector
- Open circuit in wire harness (between Bk/Br and fuse)

Over 8V: Replace control unit.

- B. If lamp lights, but goes OUT within 3 seconds, replace control unit.

C.D.



→ C. If lamp lights, but goes OUT after 3-7 seconds:

Support motorcycle on main stand and check air pressure in rear shock absorbers.

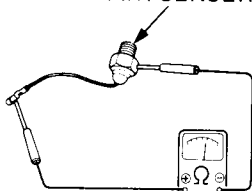
**AIR PRESSURE: 2.0–4.5 kg/cm<sup>2</sup> (28–64 psi)**

Disconnect air sensor connector, adjust air pressure and check switch operation. Replace if faulty.

**Compression is Low**

- Leaky air hoses or connectors.
- Faulty shock absorber.

AIR SENSER



**Below 2.0 kg/cm<sup>2</sup> (28 psi): No continuity**

**Above 3.2 kg/cm<sup>2</sup> (45 psi): Continuity**

Disconnect coupler from control unit and check for continuity between LB terminal and air sensor terminal.

**Below 2.0 (28 psi):**

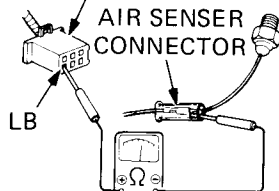
**Continuity**

**Above 3.2 (45 psi):**

**No continuity**

- Faulty air pressure sensor

CONTROL UNIT COUPLER



**No continuity:**

- Loose or damaged connector
- Open circuit in wire harness (between terminal LB and air sensor)

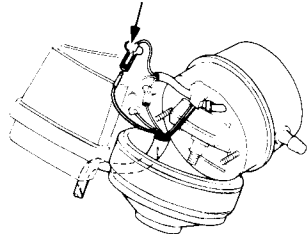
**If there is continuity:** Disconnect P wire connector at back of speedometer.

Disconnect air sensor LB terminal wire.

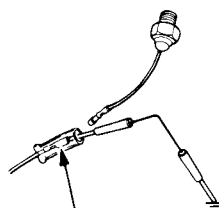
Ground LB terminal wire to frame ground.

Measure time required for lamp to come on after disconnecting ground.

P WIRE CONNECTOR



AIR SENSER CONNECTOR



Replace control unit if lamp comes ON within 4 seconds.

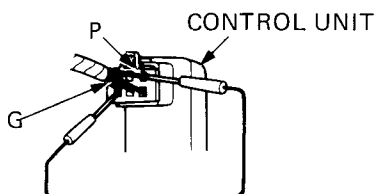
Replace air sensor if lamp comes ON after 4-8 seconds.

D.



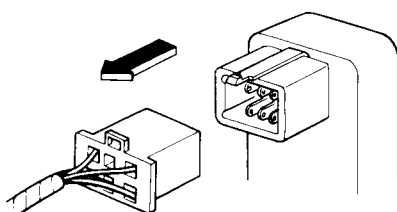
→ D. If lamp is kept ON:

Connect control unit coupler P and G terminals with a jumper cable.



→ If lamp remains ON: Disconnect control unit coupler.

DISCONNECT



→ Lamp OFF: Replace control unit.

Lamp ON: Open circuit in wire harness (between lamp and B/W terminal)

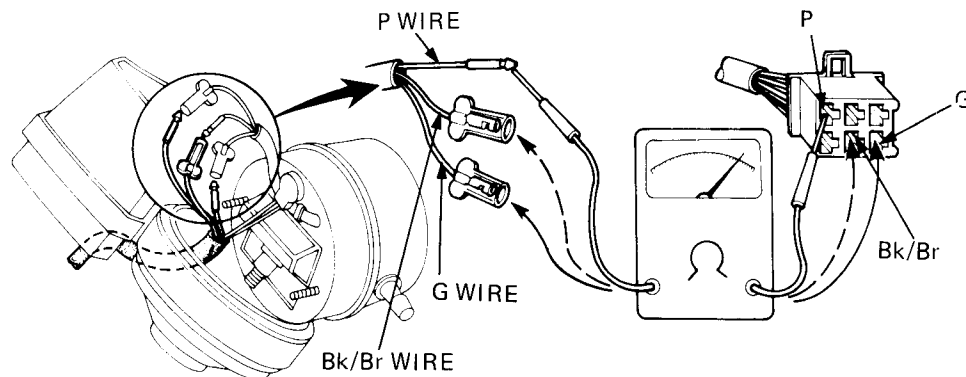
→ Lamp goes OUT within 8 seconds:

Remove cover from back of meter cluster and disconnect P, Bk/Br and G wire connectors from speedometer, and check for continuity between terminals:

Control unit coupler P terminal and meter harness P terminal

Control unit coupler Bk/Br terminal and meter harness Bk/Br terminal

Control unit coupler G terminal and meter harness G terminal



→ Continuity: Replace speedometer

No continuity:

- Loose or damaged connector
- Open circuit





**HONDA**  
**CB900C**

# 22. TECHNICAL FEATURES

297

OIL COOLER, OIL PUMP 22-2

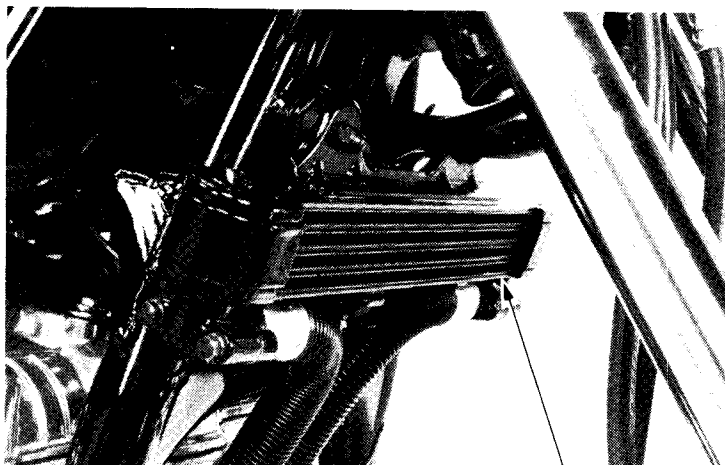
DUAL RANGE SUBTRANSMISSION 22-3

SHAFT DRIVE 22-5



## OIL COOLER, OIL PUMP

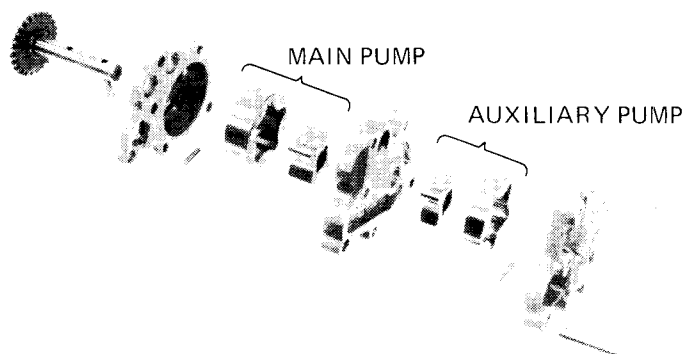
The engine uses a wet sump lubrication system in which the oil reservoir (sump) is the bottom of engine.



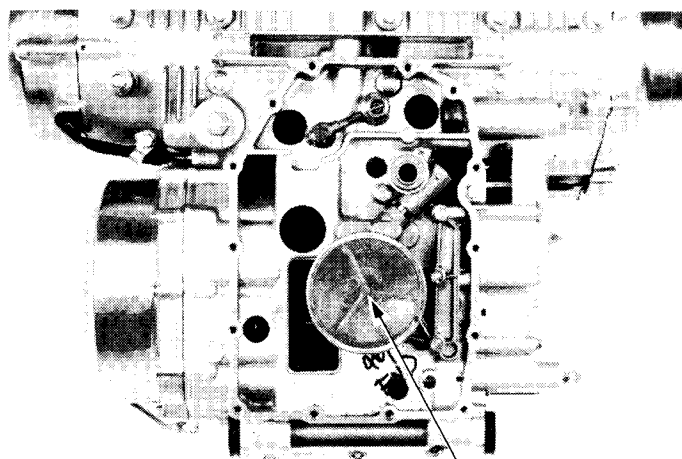
OIL COOLER

A tandem trocoid pump supplies oil to the bearings and other moving parts of the engine. Oil from the sump is forced by the main pump into the crankshaft and cylinder head. The auxiliary pump feeds oil to the primary shaft and transmission. The oil cooler is in the auxiliary pump circuit and cools the oil drawn from the sump by the auxiliary pump.

The oil damper in the primary chain receives oil from this pump circuit.



Oil from the sump must pass through a strainer before it enters the pumps.



OIL STRAINER



## DUAL RANGE SUBTRANSMISSION

Power from the main transmission countershaft is transmitted to the drive shaft as follows: Reduction drive gears (43T, 47T) — Reduction driven gears (31T, 30T) — Damper lifter - Final drive gear — Final driven gear — Drive shaft.

The dual transmission has two speed ranges, high (Ratio: 0.638), and low (Ratio: 0.721). Gear selection is by means of a foot pedal.

Low range (LO) — Winding mountain roads or sporty riding where extra power and acceleration are desired.

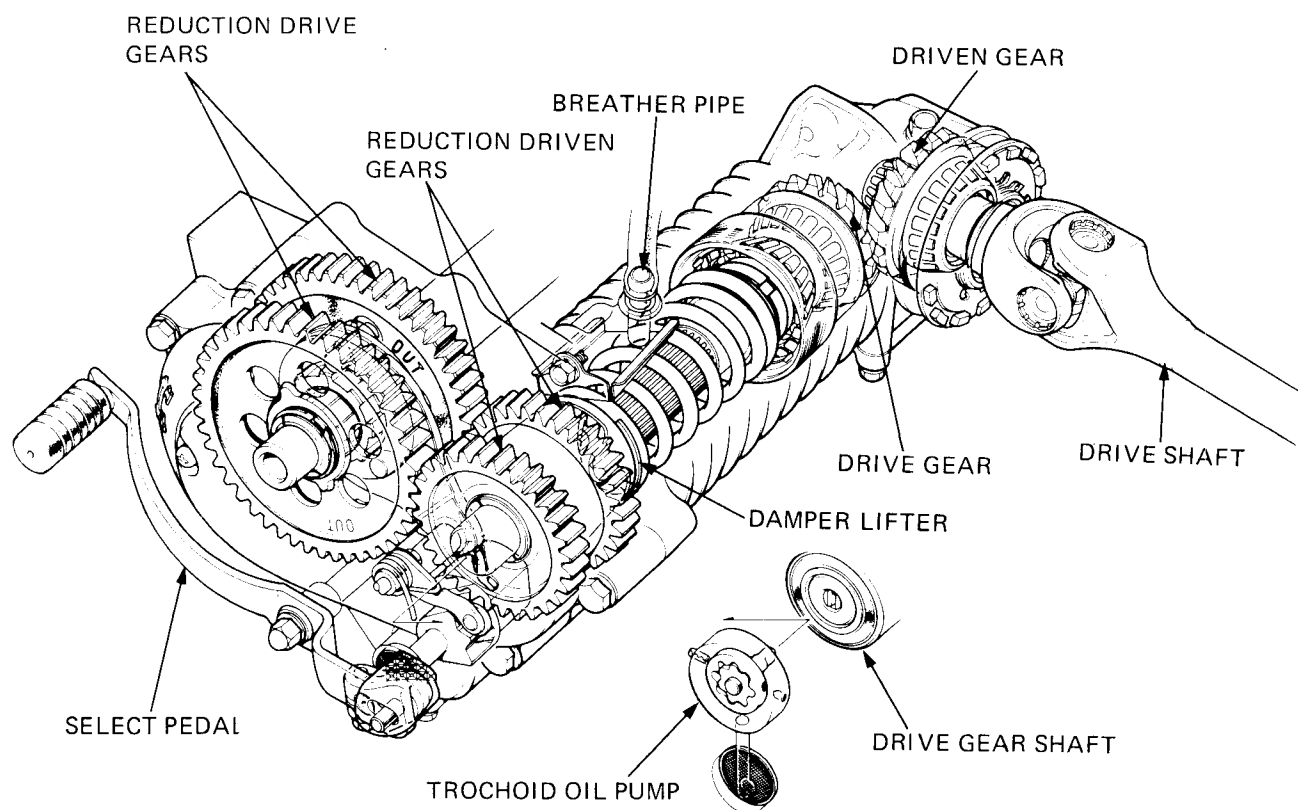
High range (HI) — Highway riding and for good fuel economy.

Power from the reduction driven gear is transmitted to the drive shaft by means of bevel gears. The gears are spiral type and run on two tapered roller bearings.

The gear case is filled with hypoid gear oil.

A part of the oil is directed under pressure through the passage in the drive gear shaft to the driven gear by means of a trochoid pump.

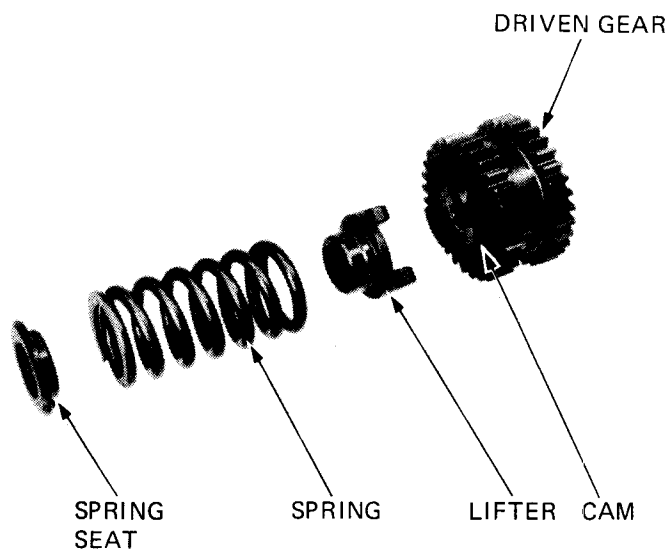
A breather controls the oil pressure within the case.





The damper uses a lifter, spring and cam which is integrated with the reduction driven gear. The lifter and reduction driven gear fit on the end of the shaft. The reduction gear is free wheeling and the lifter is splined. It is held against the cam by means of the spring.

During acceleration or deceleration, the lifter rides over the cam, compressing the spring. The relative movement between the lifter and cam, relieves the shock imposed on the driveline components.

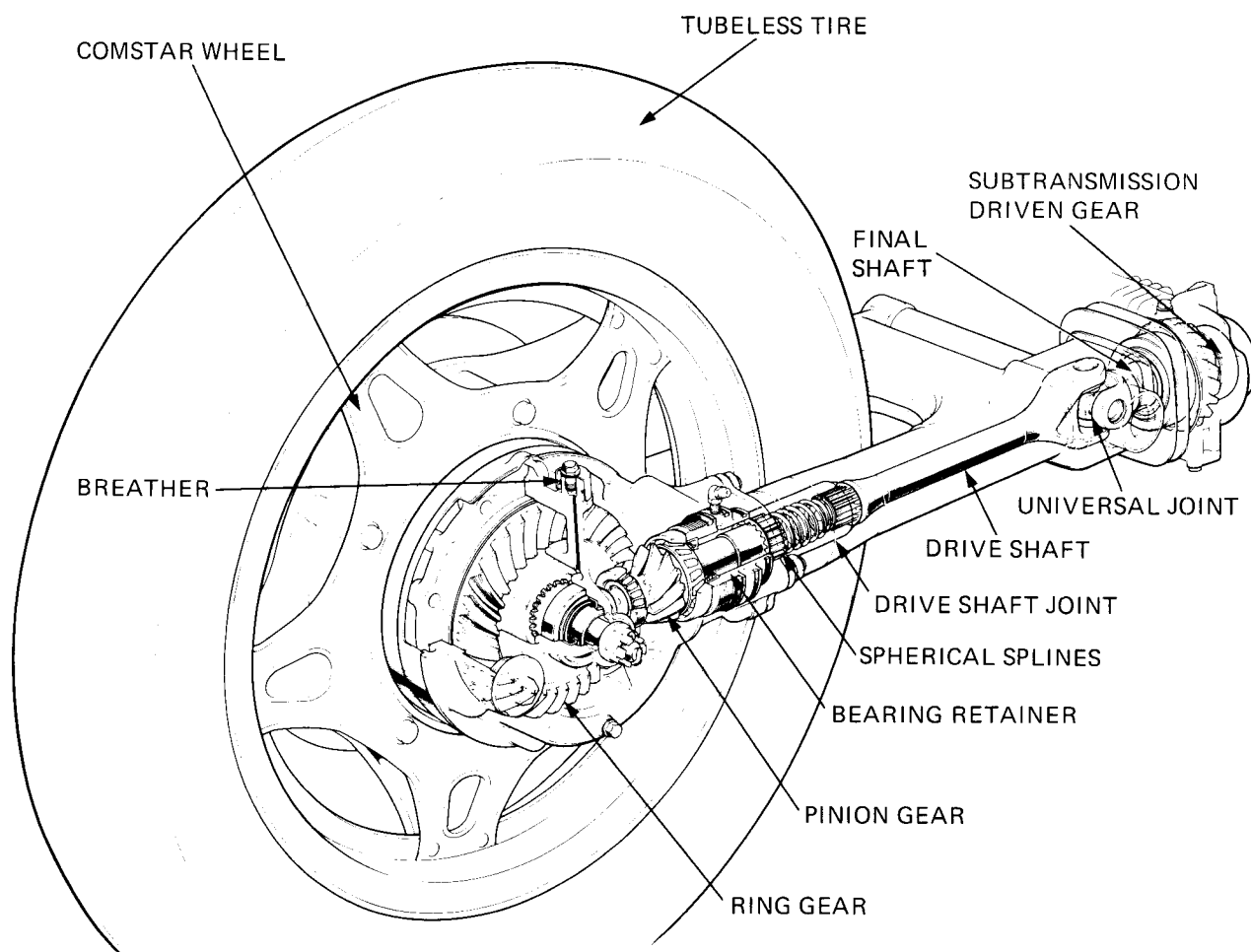




## SHAFT DRIVE

The power transmitting system uses a shaft drive. Power is transmitted by way of:

Final shaft — Universal joint — Drive shaft — Drive shaft joint — Pinion gear — Ring gear — Driven flange — Rear wheel. The pinion gear uses spherical splines to allow relative movement between the drive shaft and this gear when the rear wheel moves up and down. The final gear case is filled with hypoid gear oil and is equipped with a breather. The pinion gear bearing retainer is packed with special grease.

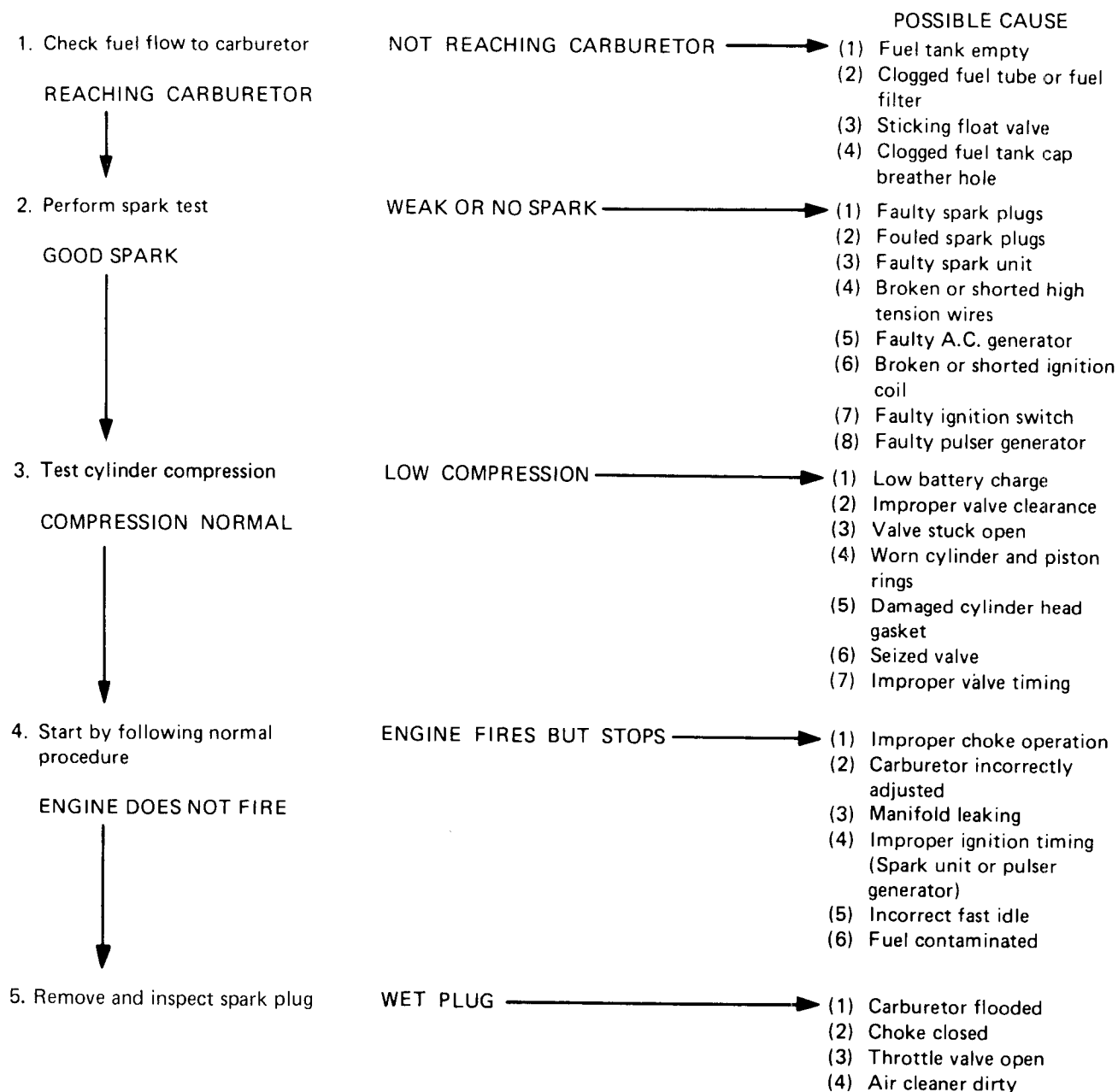




## MEMO



## ENGINE DOES NOT START OR IS HARD TO START





## 304 TROUBLESHOOTING

### ENGINE LACKS POWER

1. Raise wheels off ground and spin by hand

WHEEL SPINS FREELY



2. Check tire pressure

PRESSURE NORMAL



3. Accelerate rapidly from low to second

ENGINE SPEED LOWERED WHEN CLUTCH IS RELEASED



4. Accelerate lightly

ENGINE SPEED INCREASES



5. Check ignition timing

CORRECT



6. Check valve clearance

CORRECT



7. Test cylinder compression

NORMAL



8. Check carburetor for clogging

NOT CLOGGED



9. Remove spark plug

NOT FOULED OR DISCOLORED



10. Check oil level and condition

CORRECT



11. Remove cylinder head cover and inspect lubrication

VALVE TRAIN LUBRICATED PROPERLY



12. Check for engine overheating

NOT OVERHEATING



13. Accelerate or run at high speed

ENGINE DOES NOT KNOCK

WHEELS DO NOT SPIN FREELY

### POSSIBLE CAUSE

- (1) Brake dragging
- (2) Worn or damaged wheel bearings
- (3) Wheel bearing needs lubrication
- (4) Final gear bearing damaged

PRESSURE LOW

- (1) Punctured tire
- (2) Faulty tire valve

ENGINE SPEED CHANGED WHEN CLUTCH IS RELEASED

- (1) Clutch slipping
- (2) Worn clutch disc/plate
- (3) Warped clutch disc/plate

ENGINE SPEED NOT INCREASED

- (1) Carburetor choke closed
- (2) Clogged air cleaner
- (3) Restricted fuel flow
- (4) Clogged fuel tank breather tube
- (5) Clogged muffler

INCORRECT

- (1) Faulty spark unit
- (2) Faulty pulser generator
- (3) Faulty ignition advancer

INCORRECT

- (1) Improper valve adjustment
- (2) Worn valve seat

TOO LOW

- (1) Valve stuck open
- (2) Worn cylinder and piston rings
- (3) Leaking head gasket
- (4) Improper valve timing

CLOGGED

- (1) Carburetor not serviced frequently enough

FOULED OR DISCOLORED

- (1) Plugs not serviced frequently enough
- (2) Spark plug with incorrect heat range

INCORRECT

- (1) Oil level too high
- (2) Oil level too low
- (3) Contaminated oil

VALVE TRAIN NOT LUBRICATED PROPERLY

- (1) Clogged oil passage
- (2) Clogged oil control orifice

OVERHEATING

- (1) Excessive carbon build-up in combustion chamber
- (2) Use of poor quality fuel
- (3) Clutch slipping

ENGINE KNOCKS

- (1) Worn piston and cylinder
- (2) Wrong type of fuel
- (3) Excessive carbon build-up in combustion chamber
- (4) Ignition timing too advanced (Faulty spark unit or advancer)





## POOR PERFORMANCE AT LOW AND IDLE SPEEDS

|  |                            |   |  |
|--|----------------------------|---|--|
| 1. Check ignition timing and valve clearance | INCORRECT                  | → | POSSIBLE CAUSE<br>(1) Improper valve clearance<br>(2) Improper ignition timing (Faulty spark unit or spark advancer)                                       |
| CORRECT<br>↓                                 |                            |   |  |
| 2. Check carburetor pilot screw adjustment   | INCORRECT                  | → | See Fuel System Section  |
| CORRECT<br>↓                                 |                            |   |  |
| 3. Check for leaking manifold                | LEAKING                    | → | (1) Deteriorated insulator O-ring<br>(2) Loose carburetor  |
| NO LEAK<br>↓                                 |                            |   |  |
| 4. Perform spark test                        | WEAK OR INTERMITTENT SPARK | → | (1) Faulty, carbon or wet fouled spark plug<br>(2) Faulty spark unit<br>(3) A.C. generator faulty<br>(4) Faulty ignition coil<br>(5) Faulty spark advancer |
| GOOD SPARK                                   |                            |   |  |

## POOR PERFORMANCE AT HIGH SPEED

|  |                      |   |   |
|--|----------------------|---|---|
| 1. Check ignition timing and valve clearance   | INCORRECT            | → | (1) Improper valve clearance<br>(2) Faulty spark unit<br>(3) Faulty pulser generator<br>(4) Faulty spark advancer |
| CORRECT<br>↓                                   |                      |   |   |
| 2. Disconnect fuel tube at carburetor          | FUEL FLOW RESTRICTED | → | (1) Lack of fuel in tank<br>(2) Clogged fuel line<br>(3) Clogged fuel tank breather hole<br>(4) Clogged fuel cock |
| FUEL FLOWS FREELY<br>↓                         |                      |   |   |
| 3. Remove carburetor and check for clogged jet | CLOGGED              | → | (1) Clean   |
| NO CLOG<br>↓                                   |                      |   |   |
| 4. Check valve timing                          | INCORRECT            | → | (1) Cam sprocket not installed properly   |
| CORRECT<br>↓                                   |                      |   |   |
| 5. Check valve spring tension                  | WEAK                 | → | (1) Faulty spring   |
| NOT WEAKENED                                   |                      |   |   |

## POOR HANDLING → Check tire pressure

|  |   |  |
|--|---|--|
| 1. If steering is heavy                | → | (1) Steering top thread nut too tight<br>(2) Damaged steering head bearings  |
| 2. If either wheel is wobbling         | → | (1) Excessive wheel bearing play<br>(2) Distorted rim<br>(3) Improperly installed wheel hub<br>(4) Swing arm pivot bearing excessively worn<br>(5) Distorted frame<br>(6) Swing arm pivot adjusting bolt too tight |
| 3. If the motorcycle pulls to one side | → | (1) Faulty shock absorber<br>(2) Front and rear wheels not aligned<br>(3) Bent front fork<br>(4) Bent swing arm  |

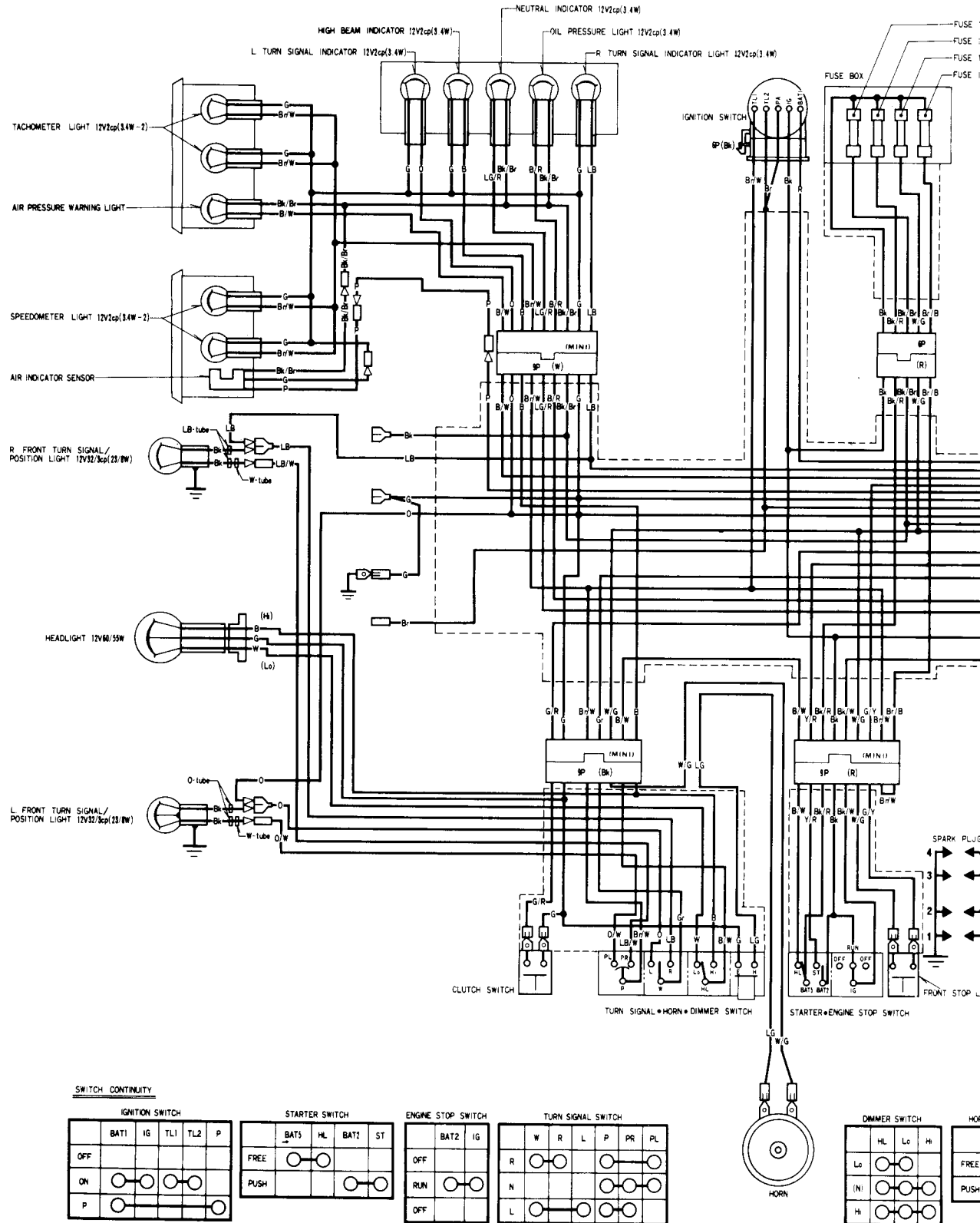


## MEMO



# HONDA CB900C

## WIRING DIAGRAM

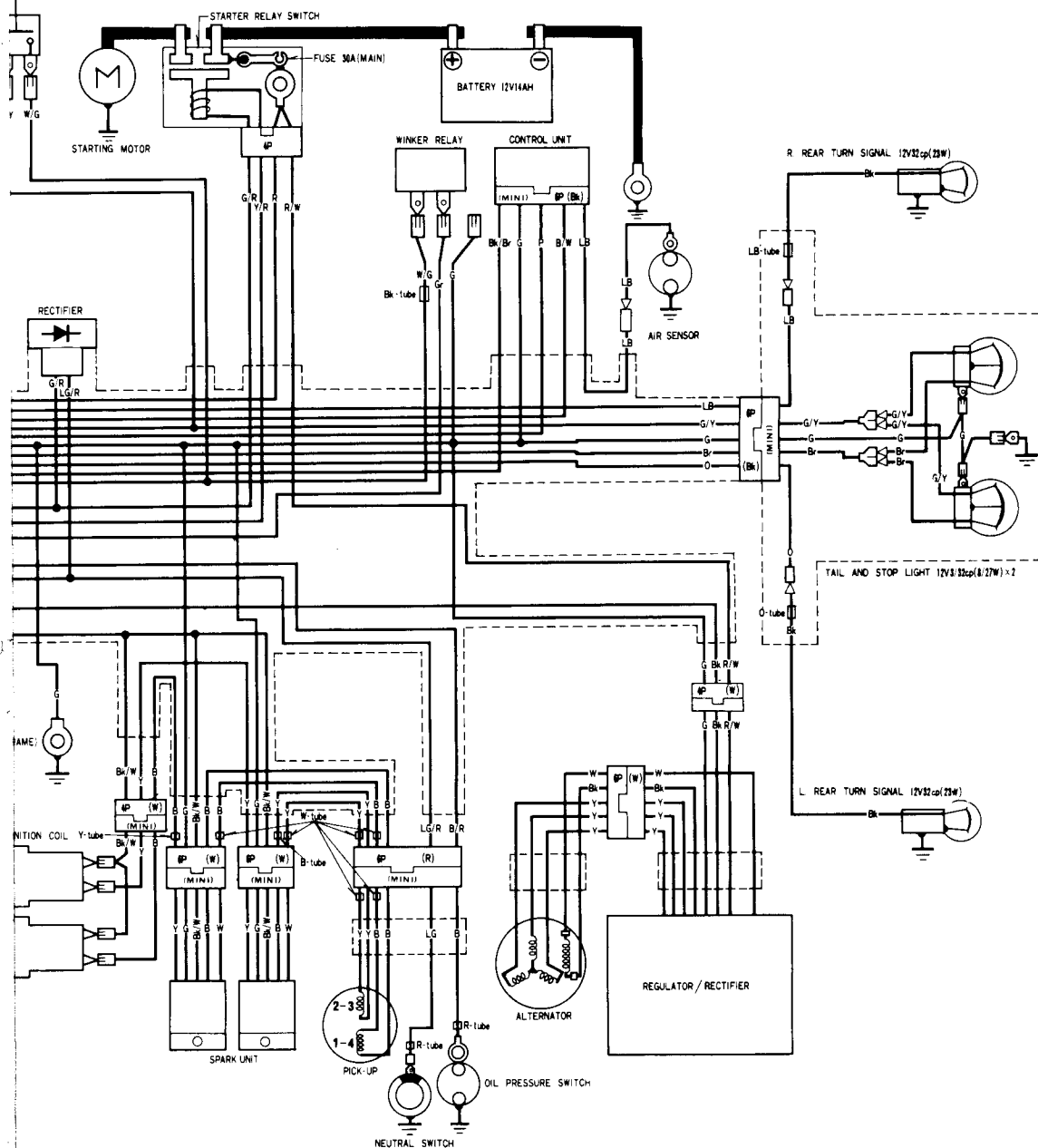


# WIRING DIAGRAM

HL - SUSPENSION

IL - FRONT, REAR BRAKE - HORN  
ITION - METER LIGHT - TAIL

P. LIGHT SWITCH



|    |             |    |            |
|----|-------------|----|------------|
| Bk | Brown       | Y  | Yellow     |
| Bk | Black       | B  | Blue       |
| W  | White       | Gr | Grey       |
| LG | Light Green | LB | Light Blue |
| R  | Red         | O  | Orange     |
| G  | Green       | P  | Pink       |

0030Z-461-6700



## INTRODUCTION

This addendum contains information for the 1981 CB900C. Refer to the base shop manual for service procedures and data not included in this addendum.

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## 1. GENERAL INFORMATION

New specifications for the 1981 CB900C are listed below. See page 1-2, 1-3, and 1-4 for all other specifications and torque values.

## SPECIFICATIONS

| ITEM       |                                |   |                       |                 |                       |
|------------|--------------------------------|---|-----------------------|-----------------|-----------------------|
| DIMENSIONS | Overall height                 | 1,165 mm (45.9 in)                                    |                       |                 |                       |
|            | Wheelbase                      | 1,585 mm (62.4 in)                                    |                       |                 |                       |
|            | Foot peg height                | 325 mm (12.8 in)                                      |                       |                 |                       |
|            | Ground clearance               | 140 mm ( 5.5 in)                                      |                       |                 |                       |
| FRAME      | Front brake, lining swept area | Double disc brake 1,200 cm <sup>2</sup> (186.0 sq in) |                       |                 |                       |
|            | Rear brake, lining swept area  | Single disc brake 653 cm <sup>2</sup> (101.2 sq in)   |                       |                 |                       |
|            | Fuel capacity                  | 16.5 liters (4.4 US gal, 3.6 Imp gal)                 |                       |                 |                       |
|            | Fuel reserve capacity          | 3.0 liters (0.79 US gal, 0.60 Imp gal)                |                       |                 |                       |
|            | Caster angle                   | 61°30'  |                       |                 |                       |
|            | Trail                          | 114 mm (4.1 in)                                       |                       |                 |                       |
|            | Front fork oil capacity        | 290 ± 2.5 cc (9.8 ± 0.08 ozs)                         |                       |                 |                       |
| ELECTRICAL | Full advance                   | 38.5° BTDC at 3,200 rpm                               |                       |                 |                       |
|            | Spark plug                     |   |                       |                 |                       |
|            | [ ] : Canada model             |   |                       |                 |                       |
|            | USA optional                   |   |                       |                 |                       |
|            |                                | For cold climate<br>below<br>5°C (41°F)               |                       | Standard        |                       |
|            |                                | NGK   | ND                    | NGK             | ND                    |
|            |                                | D8EA<br>[DR8ES-L]                                     | X24ES-U<br>[X24ESR-U] | D9EA<br>[DR8ES] | X27ES-U<br>[X27ESR-U] |
|            | Fuse/Main fuse                 | 15A/30A   |                       |                 |                       |

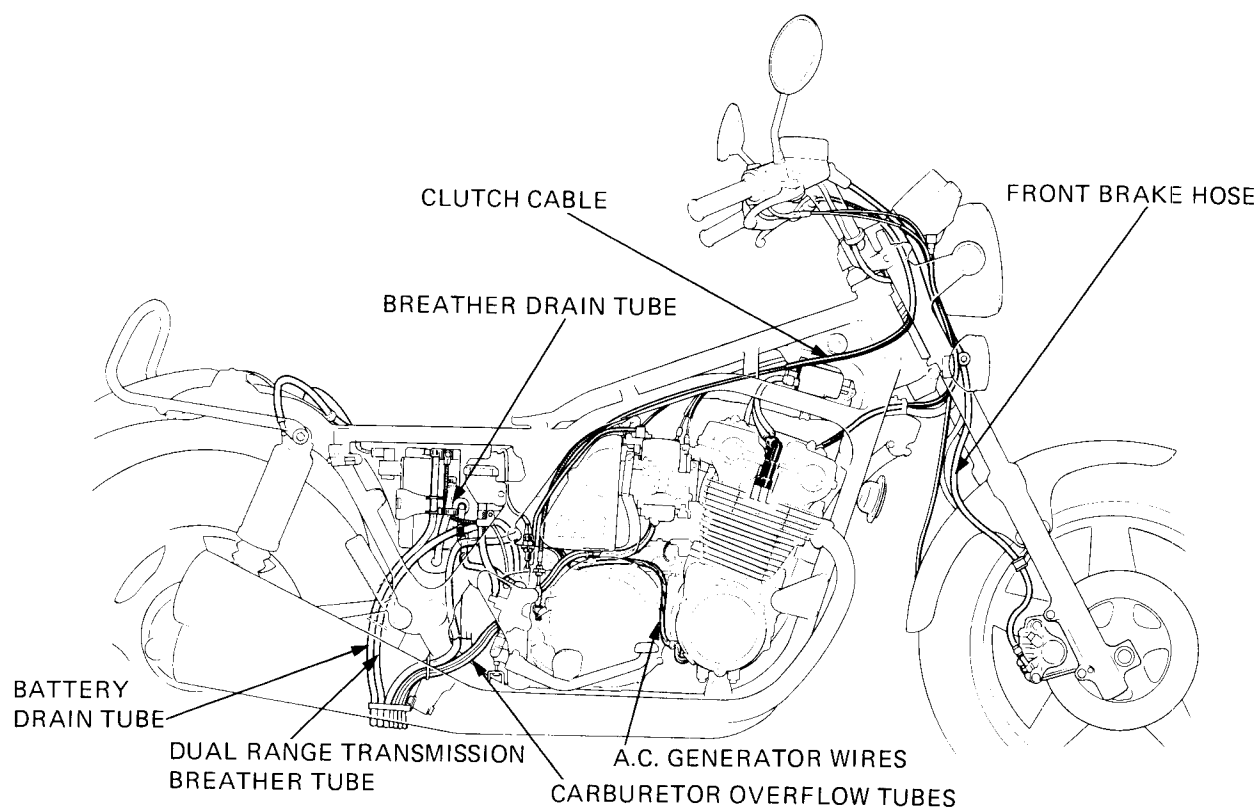
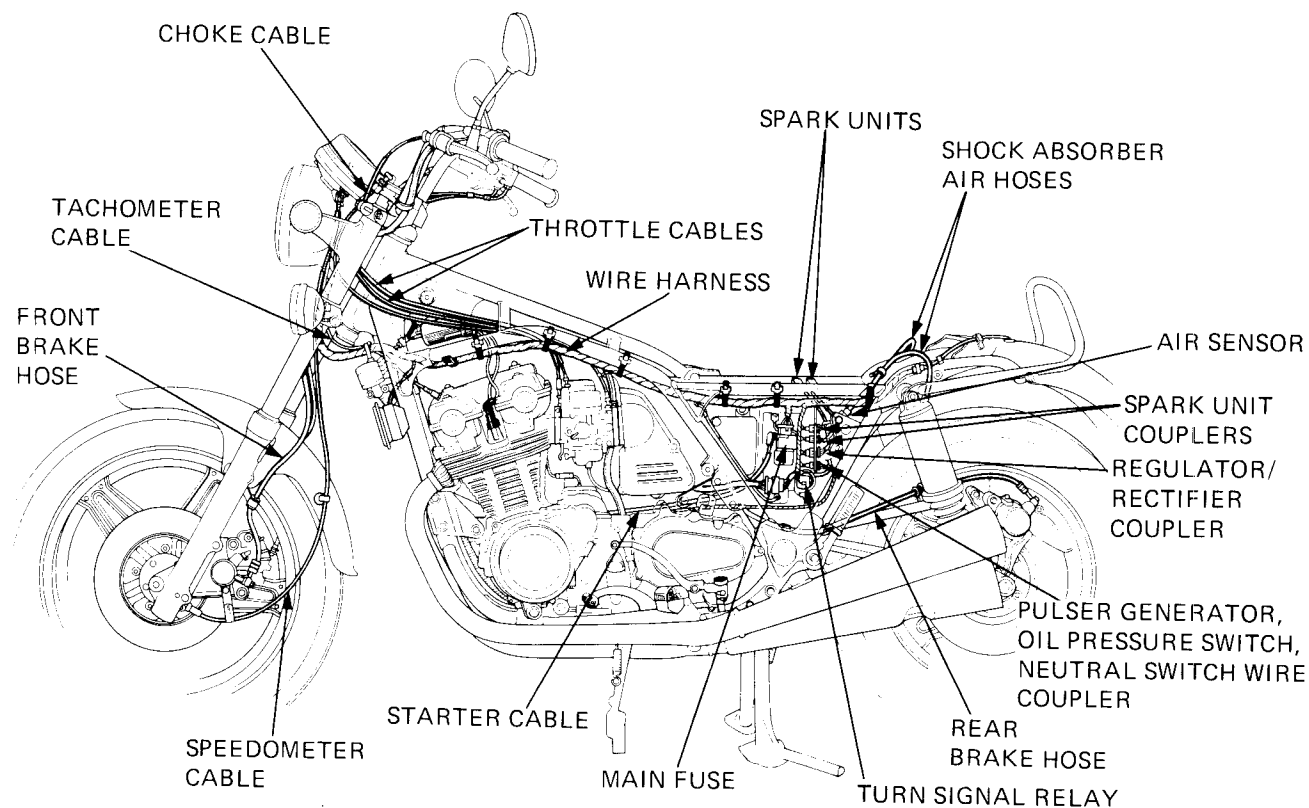
## TORQUE VALUES

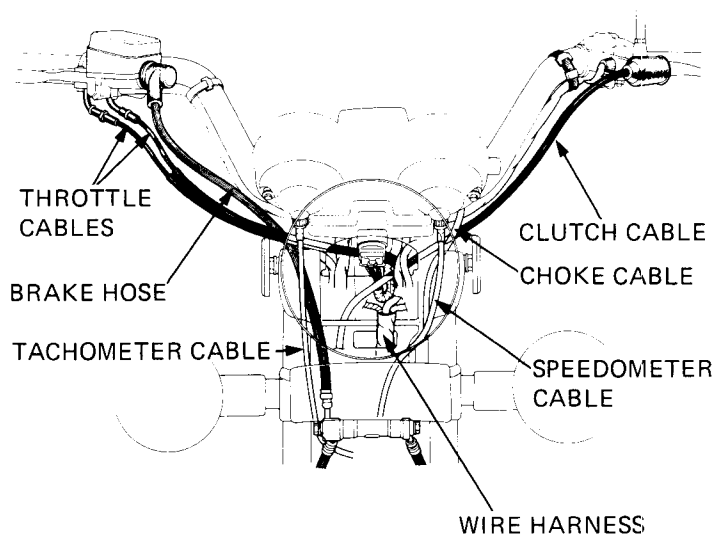
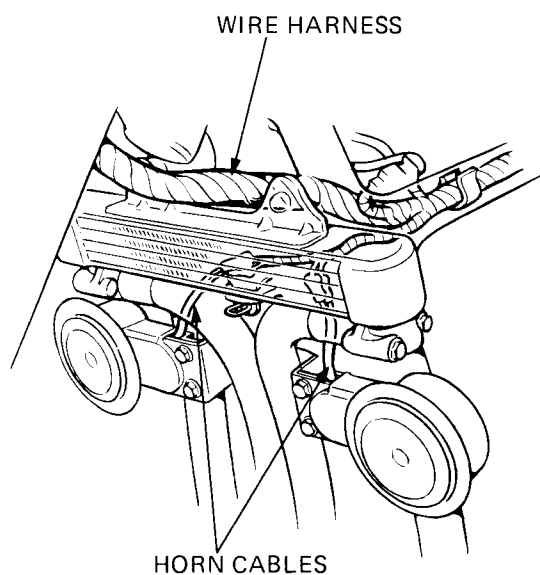
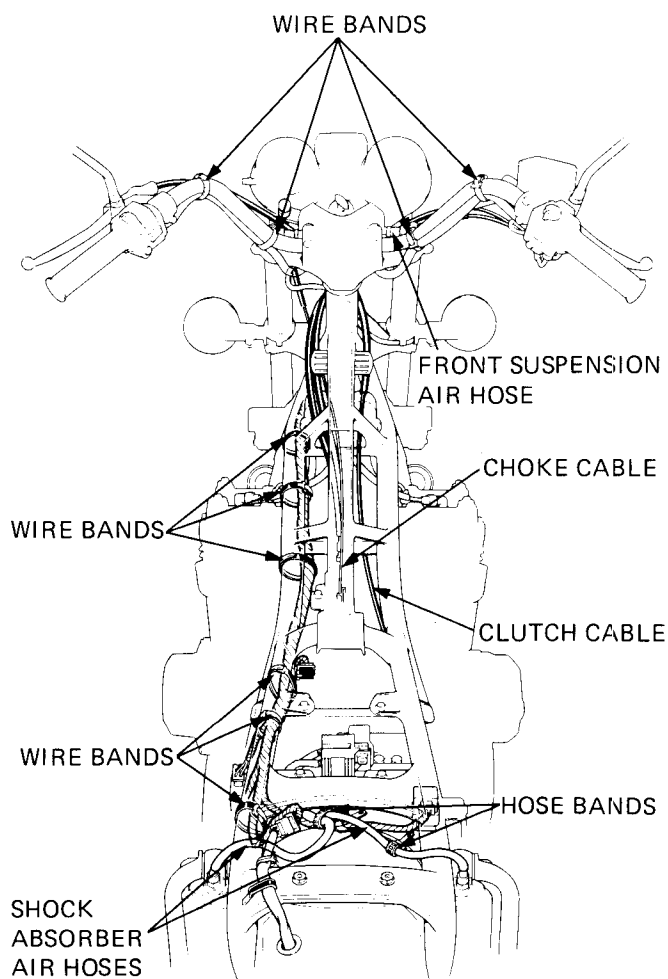
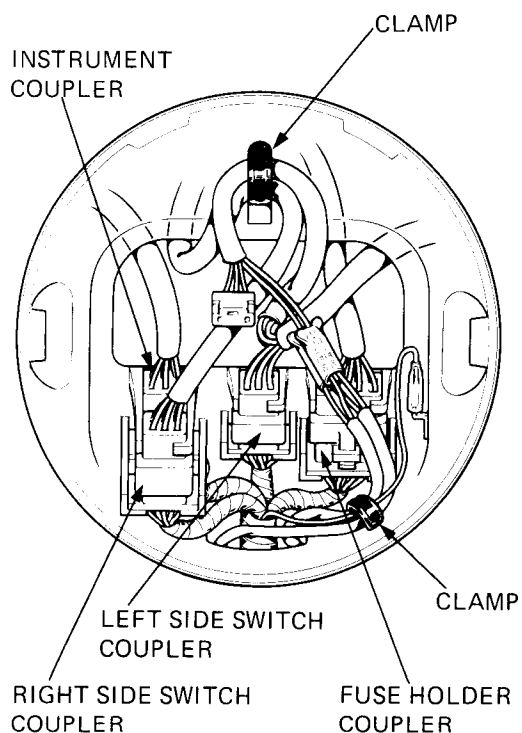
### • CHASSIS

| Item                   | Q'ty | Thread Dia (mm) | Torque kg-m (ft-lb) |
|------------------------|------|-----------------|---------------------|
| Front axle             | 1    | 12              | 5.5–6.5 (40–47)     |
| Front axle holding nut | 1    | 8               | 1.5–2.5 (11–18)     |



## CABLE & HARNESS ROUTING









### 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

| ITEM                       |                             | FREQUENCY           | WHICHEVER<br>COMES<br>FIRST<br>↓ | ODOMETER READING (NOTE 3) |                        |                         |                          |                          |                          |                          |           |
|----------------------------|-----------------------------|---------------------|----------------------------------|---------------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
|                            |                             |                     |                                  | 600 mi<br>(1,000 km)      | 4,000 mi<br>(6,400 km) | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) | 24,000 mi<br>(38,400 km) | Refer to  |
| EMISSION RELATED ITEMS     | * FUEL LINES                |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-3  |
|                            | * THROTTLE OPERATION        |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-3  |
|                            | * CARBURETOR-CHOKE          |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-4  |
|                            | AIR CLEANER                 | NOTE 1              |                                  | C                         | R                      | C                       | R                        | C                        | R                        |                          | Page 3-4  |
|                            | CRANKCASE BREATHER          | NOTE 2              |                                  | C                         | C                      | C                       | C                        | C                        | C                        |                          | Page 3-5  |
|                            | SPARK PLUGS                 |                     |                                  | R                         | R                      | R                       | R                        | R                        | R                        |                          | Page 3-5  |
|                            | * VALVE CLEARANCE           |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-6  |
|                            | ENGINE OIL                  | YEAR                |                                  | R                         | R                      | R                       | R                        | R                        | R                        | R                        | Page 2-3  |
|                            | ENGINE OIL FILTER           | YEAR                |                                  | R                         | R                      | R                       | R                        | R                        | R                        | R                        | Page 2-3  |
|                            | * CAM CHAIN TENSION         |                     |                                  | A                         | A                      | A                       | A                        | A                        | A                        | A                        | Page 24-6 |
|                            | * CARBURETOR-SYNCHRONIZE    |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-10 |
|                            | * CARBURETOR-IDLE SPEED     |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-11 |
| NON-EMISSION RELATED ITEMS | * DRIVE SHAFT JOINT         |                     |                                  |                           |                        | L                       |                          | L                        |                          | L                        | Page 2-12 |
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|                            | FINAL DRIVE OIL             |                     |                                  |                           | I                      |                         | I                        |                          |                          | R                        | Page 2-12 |
|                            | BATTERY                     | MONTH               |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-14 |
|                            | BRAKE FLUID                 | MONTH<br>2 YEARS* R |                                  | I                         | I                      | I                       | *R                       | I                        | I                        | *R                       | Page 3-14 |
|                            | BRAKE PAD WEAR              |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-15 |
|                            | BRAKE SYSTEM                |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 24-7 |
|                            | * BRAKE LIGHT SWITCH        |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-16 |
|                            | * HEADLIGHT AIM             |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-16 |
|                            | CLUTCH                      |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-17 |
|                            | SIDE STAND                  |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-18 |
|                            | * SUSPENSION                |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-19 |
|                            | * NUTS, BOLTS, FASTENERS    |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-20 |
|                            | ** WHEELS                   |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-20 |
|                            | ** STEERING HEAD BEARING    |                     |                                  | I                         | I                      | I                       | I                        | I                        | I                        | I                        | Page 3-21 |

\* SHOULD BE SERVICED BY AN AUTHORIZED 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 AN AUTHORIZED HONDA DEALER.

NOTES : 1. SERVICE MORE FREQUENTLY WHEN RIDING IN DUSTY AREAS.

2. SERVICE MORE FREQUENTLY WHEN RIDING IN RAIN OR AT FULL THROTTLE. (U.S.A. ONLY)

3. FOR HIGHER ODOMETER READINGS, REPEAT AT THE FREQUENCY INTERVAL ESTABLISHED HERE.



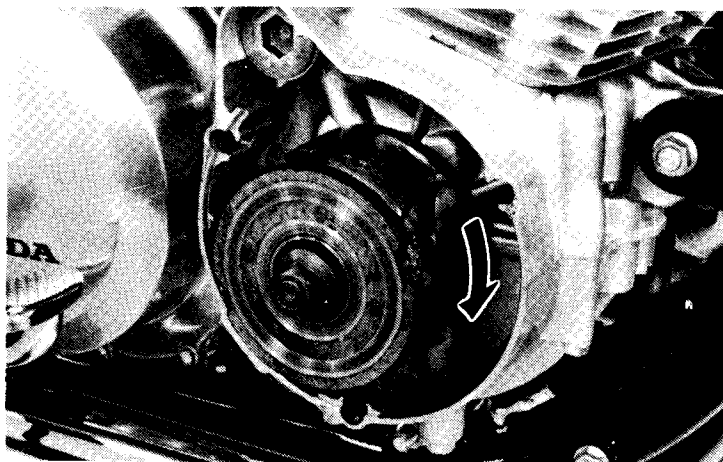
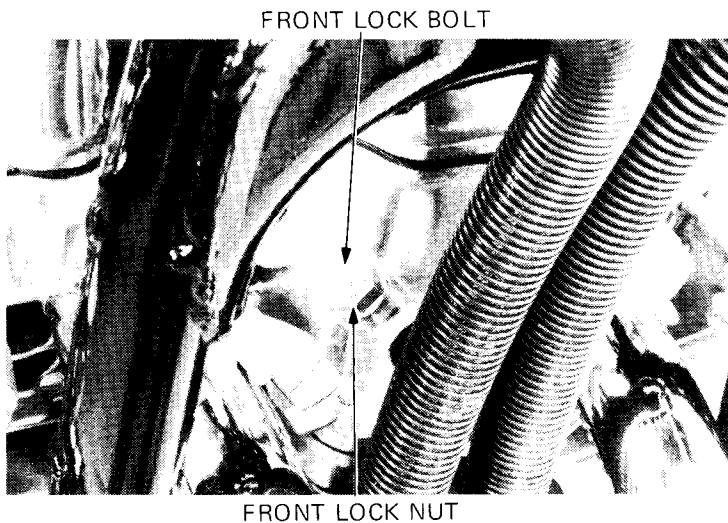
## 2. INSPECTION AND ADJUSTMENT

### CAM CHAIN TENSION

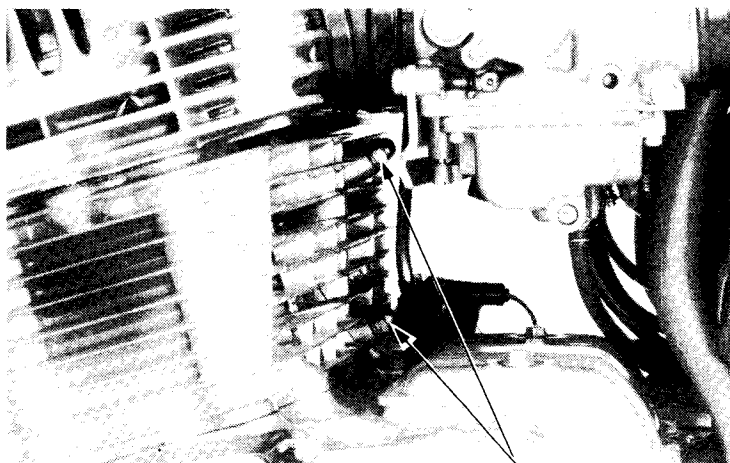
#### NOTE

Adjust cam chain tension while the engine is cold.

Remove the A.C. generator cover.  
Loosen the front cam chain tensioner lock nut and bolt.  
Tighten the bolt while rotating the crankshaft clockwise.  
Tighten the lock nut.



Loosen both top and bottom lock nuts on the rear cam chain tensioner.  
Tighten the lock nuts while rotating the crankshaft clockwise.  
When the tensioner front lock bolt and rear lock nuts are loosened, the tensioners will provide the correct tension.



REAR LOCK NUTS



## BRAKE SYSTEM

Check that there is no deterioration, damage or leaks in brake lines or fittings.

### REAR BRAKE PEDAL HEIGHT

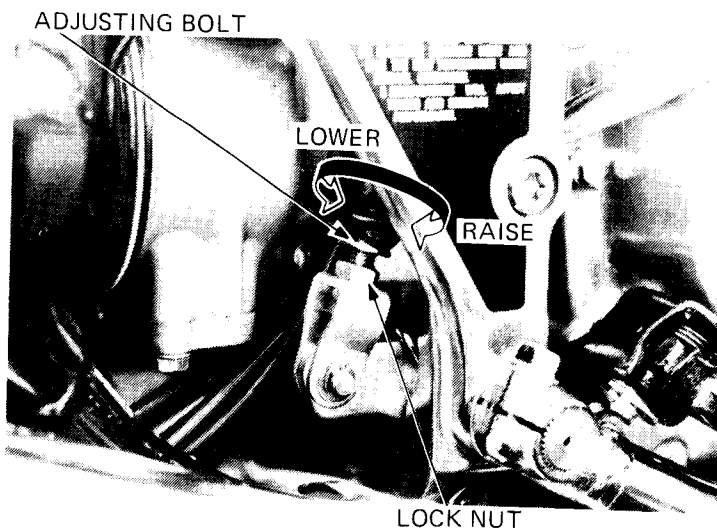
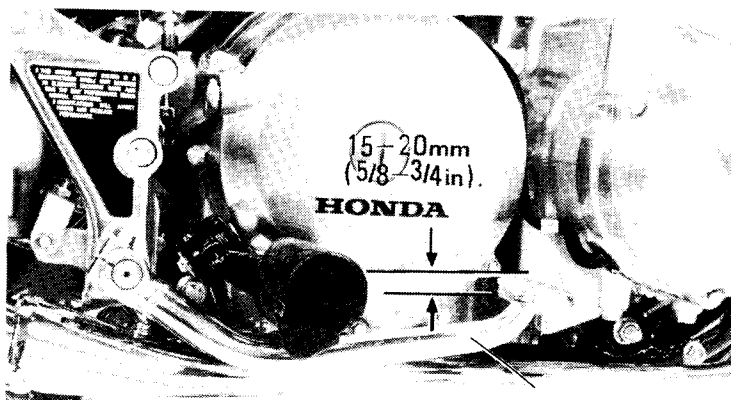
Adjust the pedal height so that the distance between the pedal and upper face of the footpeg is correct.

#### CAUTION:

*Improper brake pedal height adjustment can cause brake drag.*

**PEDAL HEIGHT: 15–20 mm**  
(5/8–3/4 in)

Adjust as follows;  
Loosen the adjusting bolt lock nut.  
Turn the adjusting bolt until the correct pedal height is obtained.  
Tighten the lock nut securely.  
After adjusting pedal height, adjust the brake light switch (See page 3-16).





### 3. FUEL SYSTEM

#### SERVICE INFORMATION

##### GENERAL INSTRUCTIONS

- The carburetors are equipped with a fuel line diaphragm. After carburetor overhaul, it is necessary to crank the engine for 2-3 seconds, three times with the throttle fully closed to fill the float chambers.
- Refer to section 4 for carburetor adjustments.
- The pilot screws are factory pre-set and should not be removed unless the carburetor is overhauled.

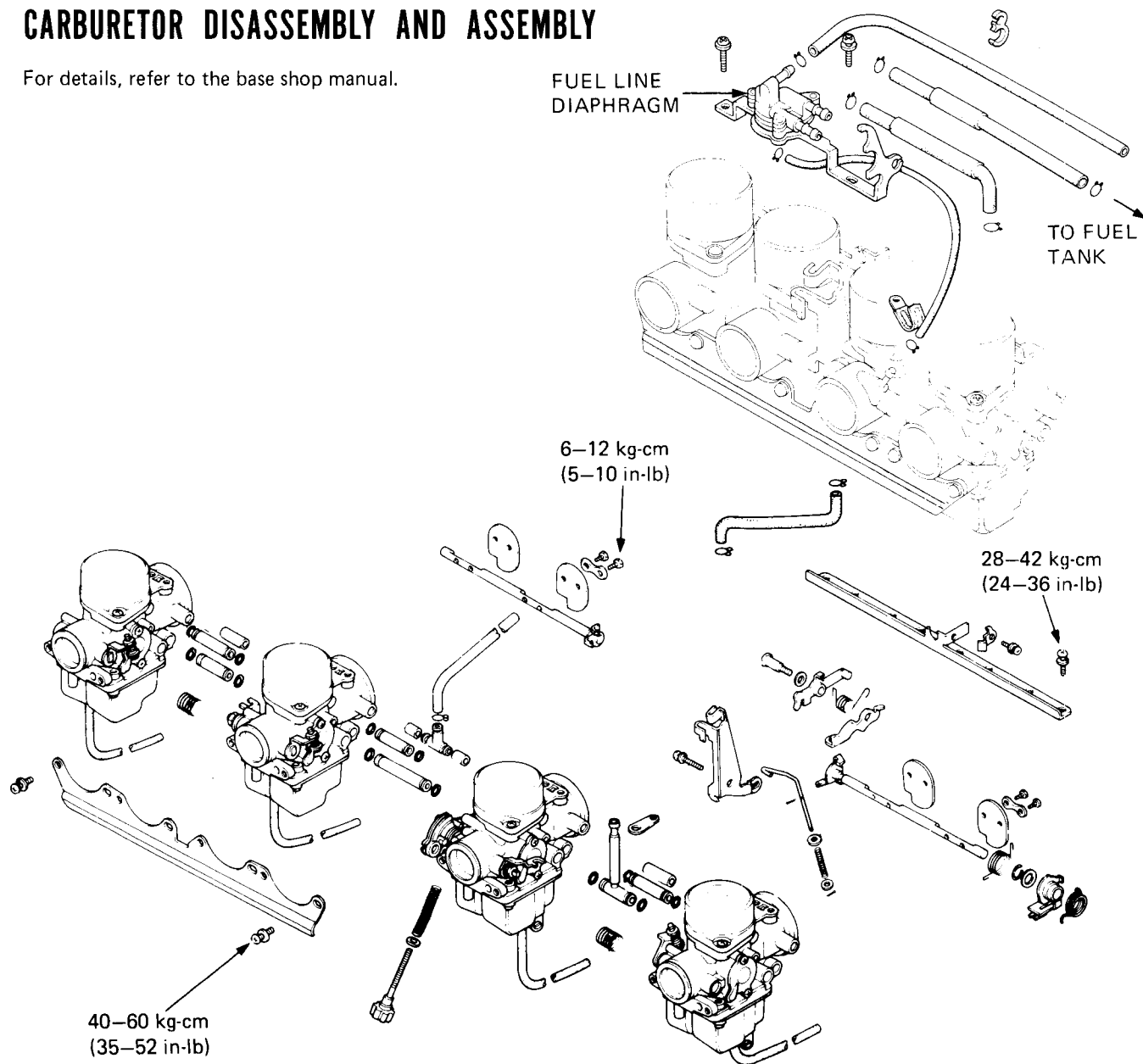
#### TROUBLESHOOTING

Fuel line diaphragm.

- Fuel not reaching carburetors
  1. Fuel line diaphragm vent tube clogged.
  2. Fuel line diaphragm vacuum tube clogged.
  3. Clogged fuel line diaphragm.
  4. Clogged fuel line diaphragm check valve.

#### CARBURETOR DISASSEMBLY AND ASSEMBLY

For details, refer to the base shop manual.





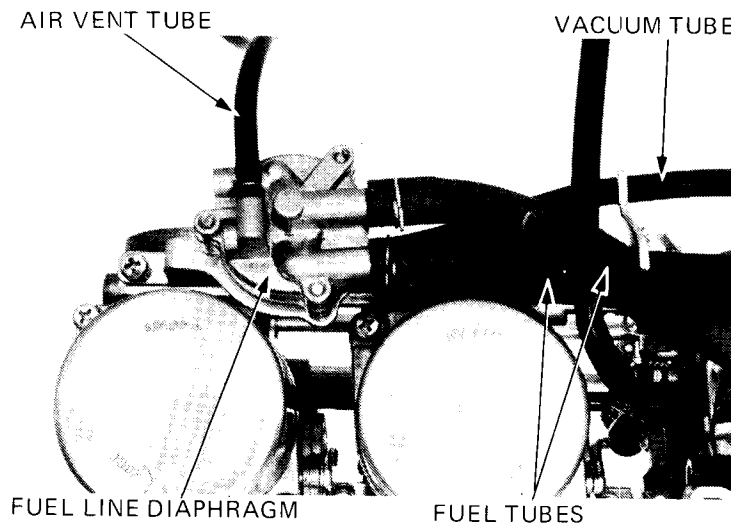
## FUEL LINE DIAPHRAGM

### REMOVAL

Turn the fuel valve off. Remove the seat and fuel tank.

Disconnect the fuel tube, vacuum tube and air vent tube.

Unscrew the screws attaching the fuel line diaphragm to the carburetors. Remove the fuel line diaphragm.



### INSPECTION

Remove the fuel line diaphragm (see above).

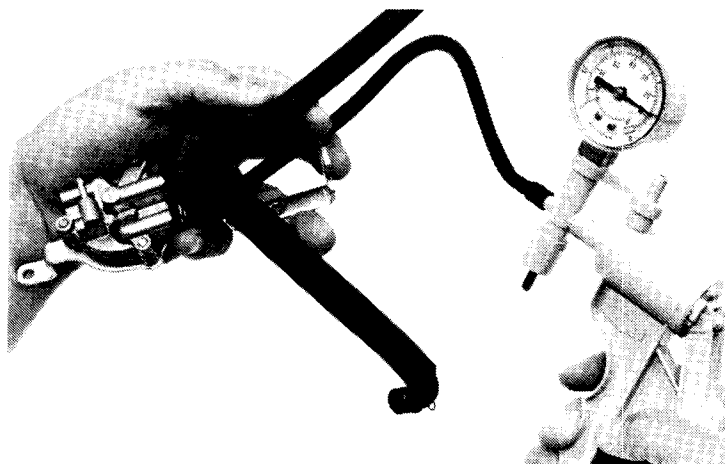
Disconnect the inlet fuel tube from the diaphragm, and connect a longer tube to the fuel tank.

Place a suitable drainage container under the outlet fuel tube.

Turn the fuel valve on. Fuel should not flow from the outlet tube.

Connect a vacuum gauge to the diaphragm vacuum outlet. Fuel should flow out from the outlet tubes when 10–20 mm Hg (0.4–0.8 in Hg) of vacuum is applied.

If the flow is restricted, replace the fuel line diaphragm.



### INSTALLATION

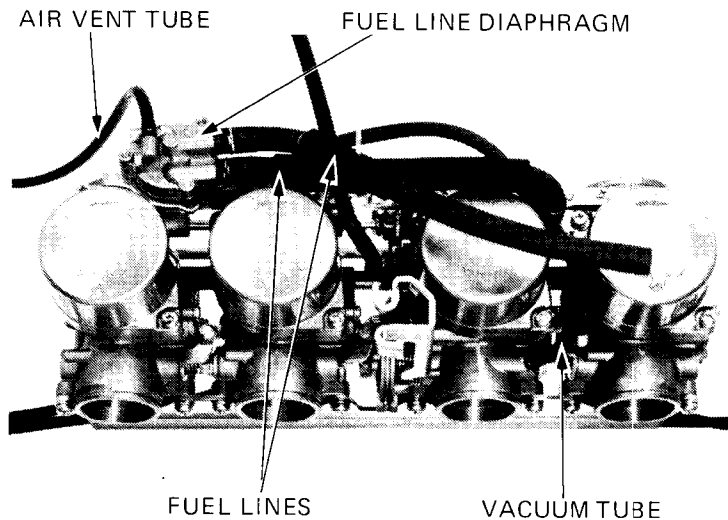
Installation of the fuel line diaphragm is the reverse of removal.

#### NOTE

Check that air or gasoline is not leaking past the fuel tube joints or connections.

## CARBURETOR TUBE ROUTING

Route the carburetor tubes as shown.





## PILOT SCREW ADJUSTMENT

### IDLE DROP PROCEDURE

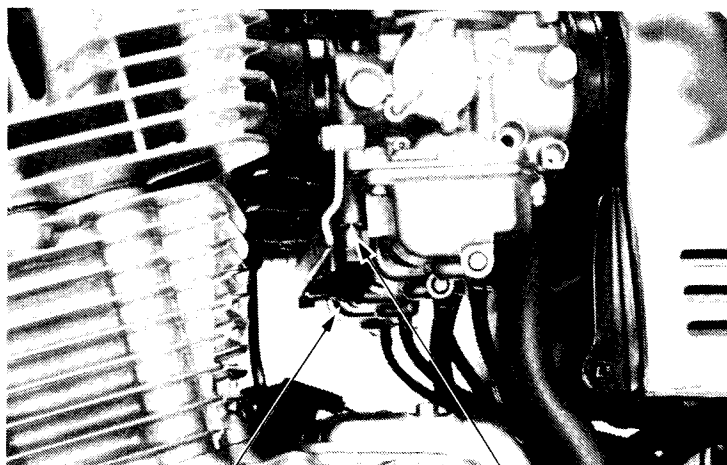
Adjust the pilot screws using the procedure on page 4-17.

Use 2 1/2 turns out for the pilot screw initial opening for the 1981 model.

After adjustment, cement the limiter cap over the pilot screw, using Loctite ® 601 or equivalent. The limiter cap should be placed against its stop, preventing further adjustment that would enrich the fuel mixture (limiter cap position permits clockwise rotation and prevents counterclockwise rotation).

#### NOTE

- Do not turn the pilot screws when installing the limiter caps.
- A pilot screw limiter cap must be installed. It prevents misadjustment that could cause poor performance and increase exhaust emissions.



THROTTLE STOP SCREW

PILOT SCREW WITH  
LIMITER CAP



## 4. FRONT WHEEL/SUSPENSION

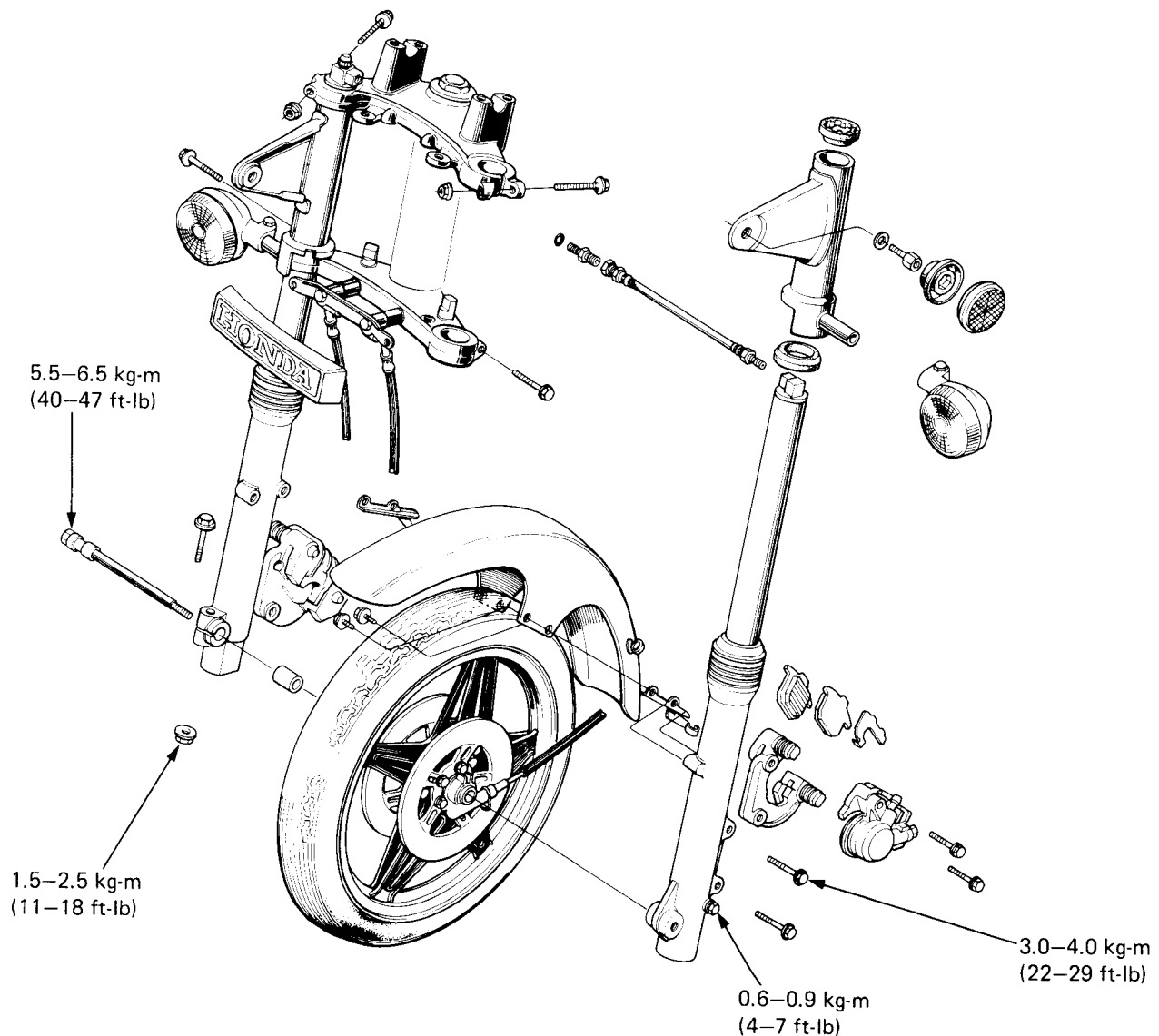
### SERVICE INFORMATION

#### SPECIFICATIONS

|                           | STANDARD                     | SERVICE LIMIT       |
|---------------------------|------------------------------|---------------------|
| Fork spring free length   | 585.1 mm (23.04 in)          | 573.4 mm (22.57 in) |
| Front fork fluid capacity | 290 ± 2.5 cc (9.8 ± 0.08 oz) | —                   |

#### TORQUE VALUES

|                        |                            |
|------------------------|----------------------------|
| Front axle             | 5.5–6.5 kg-m (40–47 ft-lb) |
| Front axle pinch bolt  | 1.5–2.5 kg-m (11–18 ft-lb) |
| Caliper mounting bolts | 3.0–4.0 kg-m (22–29 ft-lb) |



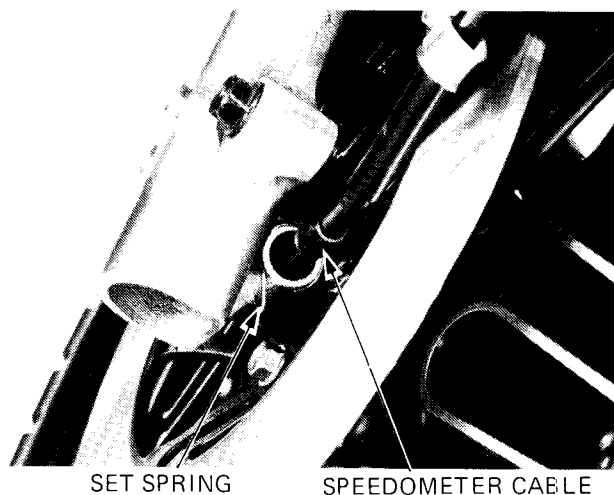


## FRONT WHEEL

### REMOVAL

Raise the front wheel off the ground by jacking up the engine.

Disconnect the speedometer cable by expanding the set spring.



SET SPRING

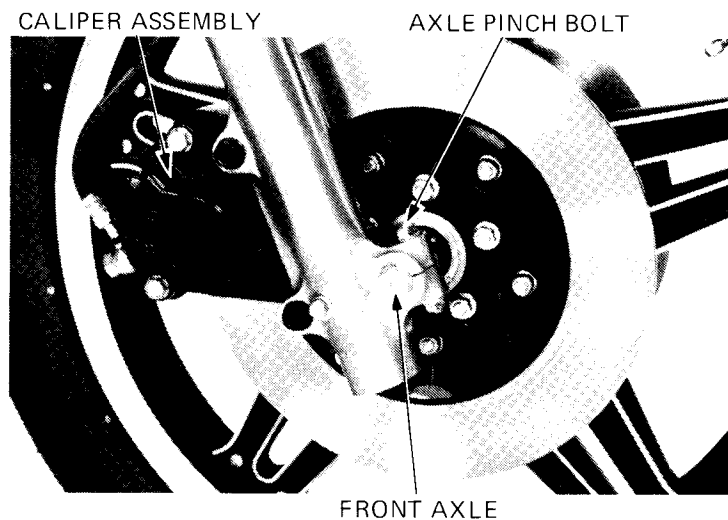
SPEEDOMETER CABLE

Remove the right or left side caliper assemblies by loosening the bolts.

#### NOTE

Do not operate the front brake lever after removing the front wheel. To do so will cause difficulty in fitting the brake disc between the brake pads.

Remove the front axle pinch bolt.  
Remove the front axle and front wheel.



CALIPER ASSEMBLY

AXLE PINCH BOLT

FRONT AXLE

### INSTALLATION

Install the wheel assembly by inserting the axle through the right fork leg and wheel hub. Screw the axle into the left fork leg.

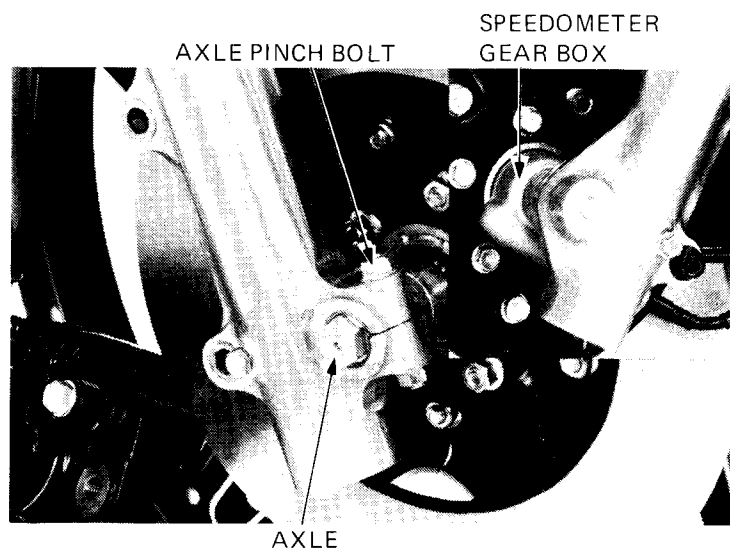
#### NOTE

Make sure the speedometer gear box is perpendicular to the left fork leg.

Tighten the axle to the specified torque.

**Torque: 5.5–6.5 kg-m (40–47 ft-lb)**

Install the axle pinch bolt and loosely tighten the nut.



AXLE PINCH BOLT

SPEEDOMETER  
GEAR BOX

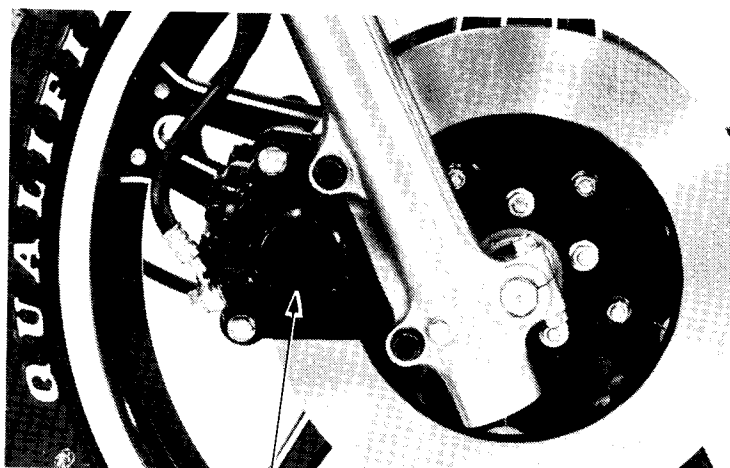
AXLE





Fit the calipers over the discs, taking care not to damage the brake pads. Install the caliper mounting bolts.

**TORQUE:** 3.0–4.0 kg-m (22–29 ft-lb)



CALIPER ASSEMBLY

Measure the clearance between outside surface of the right brake disc and the rear of the right caliper holder with a 0.7 mm (0.028 in) feeler gauge.

If the gauge cannot be inserted, pull the right fork out until the gauge can be inserted.

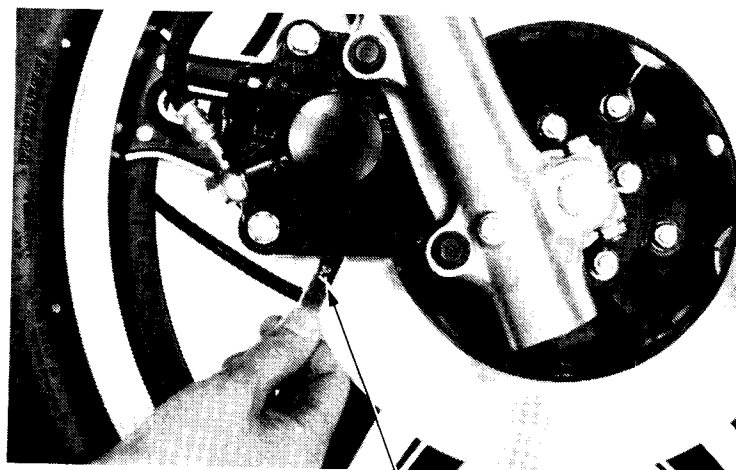
Tighten the axle pinch bolt to the specified torque.

**TORQUE:** 1.5–2.5 kg-m (11–18 ft-lb)

There should be at least 0.7 mm (0.028 in) clearance between the caliper holder and disc.

**CAUTION:**

*After installing the wheel, apply the brakes several times and recheck the clearance on both sides. Failure to provide clearance will damage the brake discs and affect braking efficiency.*



FEELER GAUGE

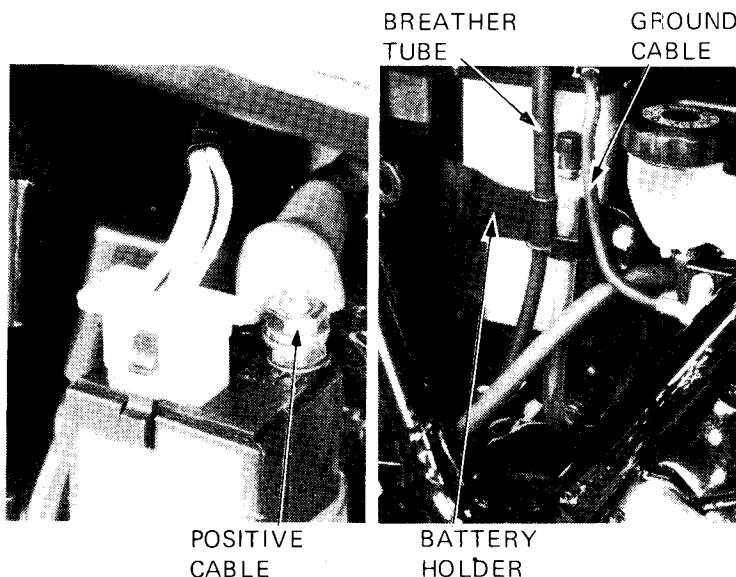


## 5. BATTERY/CHARGING SYSTEM

### BATTERY

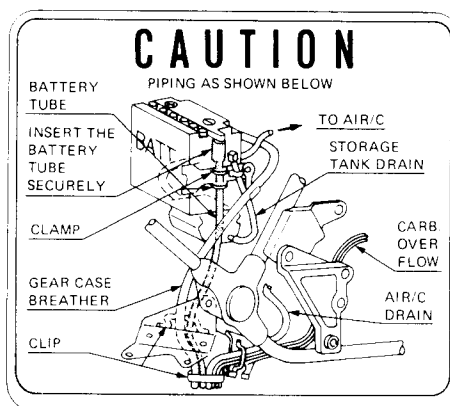
#### REMOVAL

Remove the right and left side covers.  
 Remove the seat.  
 Disconnect the ground cable at the battery terminal.  
 Disconnect the breather tube from the battery breather outlet.  
 Disconnect the positive cable at the starter relay switch.  
 Remove the battery holder.  
 After installing the battery, coat the terminals with clean grease.



#### CAUTION:

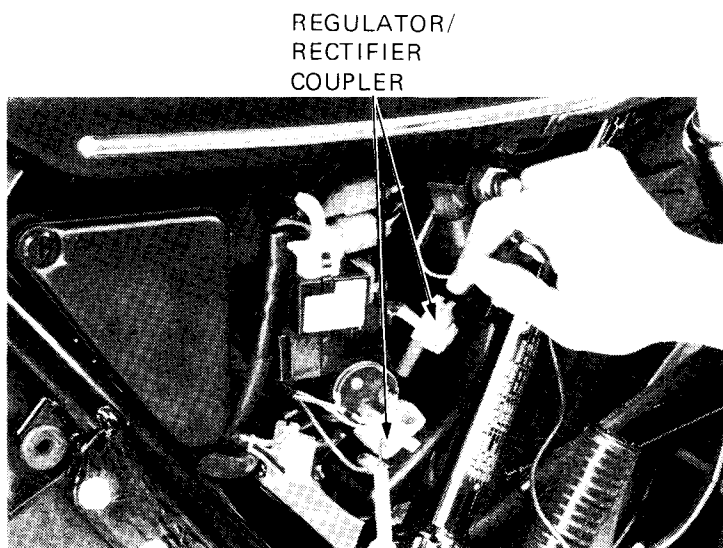
- Make sure the battery breather tube is connected to the battery breather outlet.
- Route the battery breather tube as shown on the battery caution label.



## VOLTAGE REGULATOR/RECTIFIER

#### INSPECTION

Disconnect the regulator/rectifier couplers.  
 Check the resistance between the leads.  
 Replace the regulator/rectifier unit if the readings do not fall within the limits shown in the tables (page 24-15).





### NOTE

- A high quality ohmmeter is recommended for accurate test results.
- The test chart is for a positive ground tester, so you may have to reverse your tester leads to obtain the specification given.

The resistances shown in the table indicate those to be read on the tester, not of specific circuits or parts.

### RECTIFIER

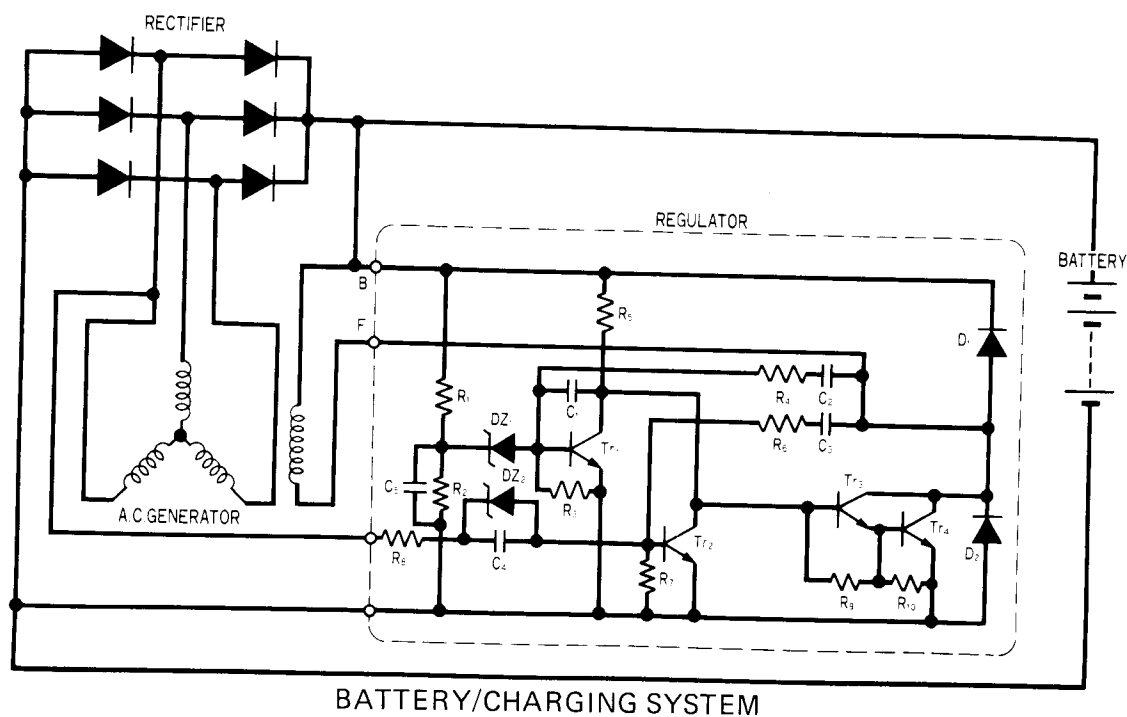
UNIT : k $\Omega$

| Probe (+)<br>Probe (-) | Red/<br>White | Green    | Yellow 1 | Yellow 2 | Yellow 3 |
|------------------------|---------------|----------|----------|----------|----------|
| Red/White              |               | $\infty$ | $\infty$ | $\infty$ | $\infty$ |
| Green                  | 0.5~50        |          | 0.5~50   | 0.5~50   | 0.5~50   |
| Yellow 1               | 0.5~50        | $\infty$ |          | $\infty$ | $\infty$ |
| Yellow 2               | 0.5~50        | $\infty$ | $\infty$ |          | $\infty$ |
| Yellow 3               | 0.5~50        | $\infty$ | $\infty$ | $\infty$ |          |

### REGULATOR

UNIT : k $\Omega$

| Probe (+)<br>Probe (-) | Black  | White  | Green  |
|------------------------|--------|--------|--------|
| Black                  |        | 1 ~50  | 0.5~20 |
| White                  | 0.5~30 |        | 1 ~50  |
| Green                  | 0.5~20 | 0.5~30 |        |



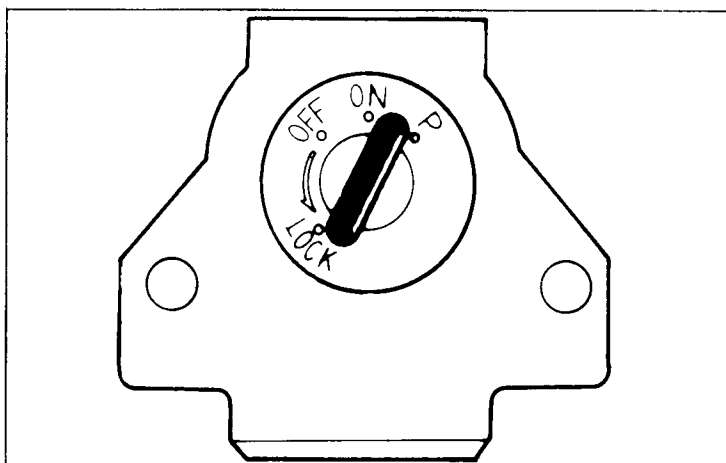


## 6. SWITCHES

### IGNITION SWITCH DISASSEMBLY

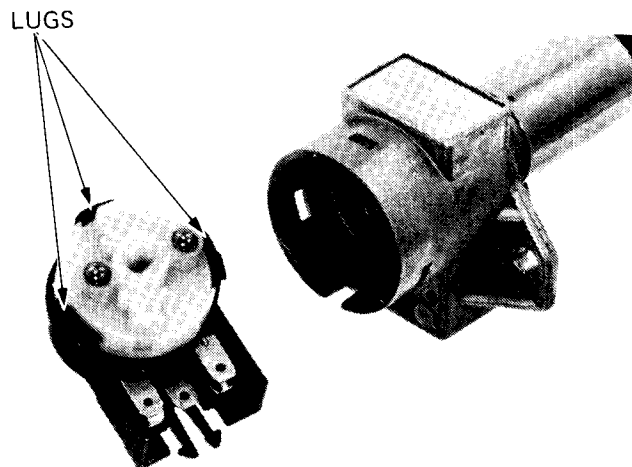
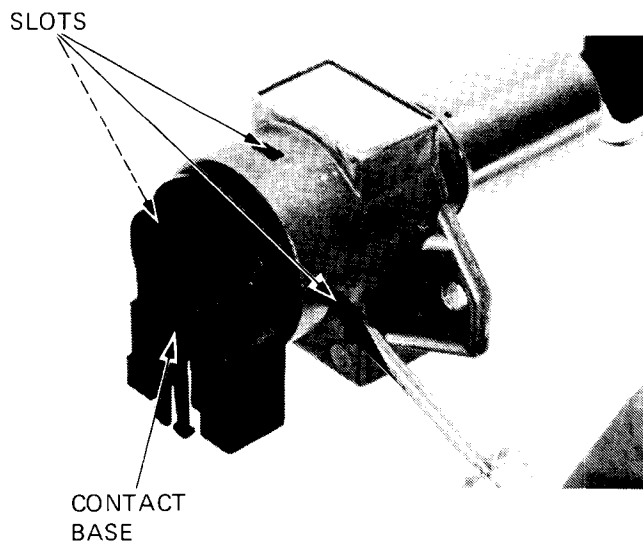
Remove the ignition switch, see page 21-5.

Insert the key and position it in the middle of "ON" and "P" positions.



Push the lugs from the slots and remove the contact base.

Assembly is the reverse of removal.

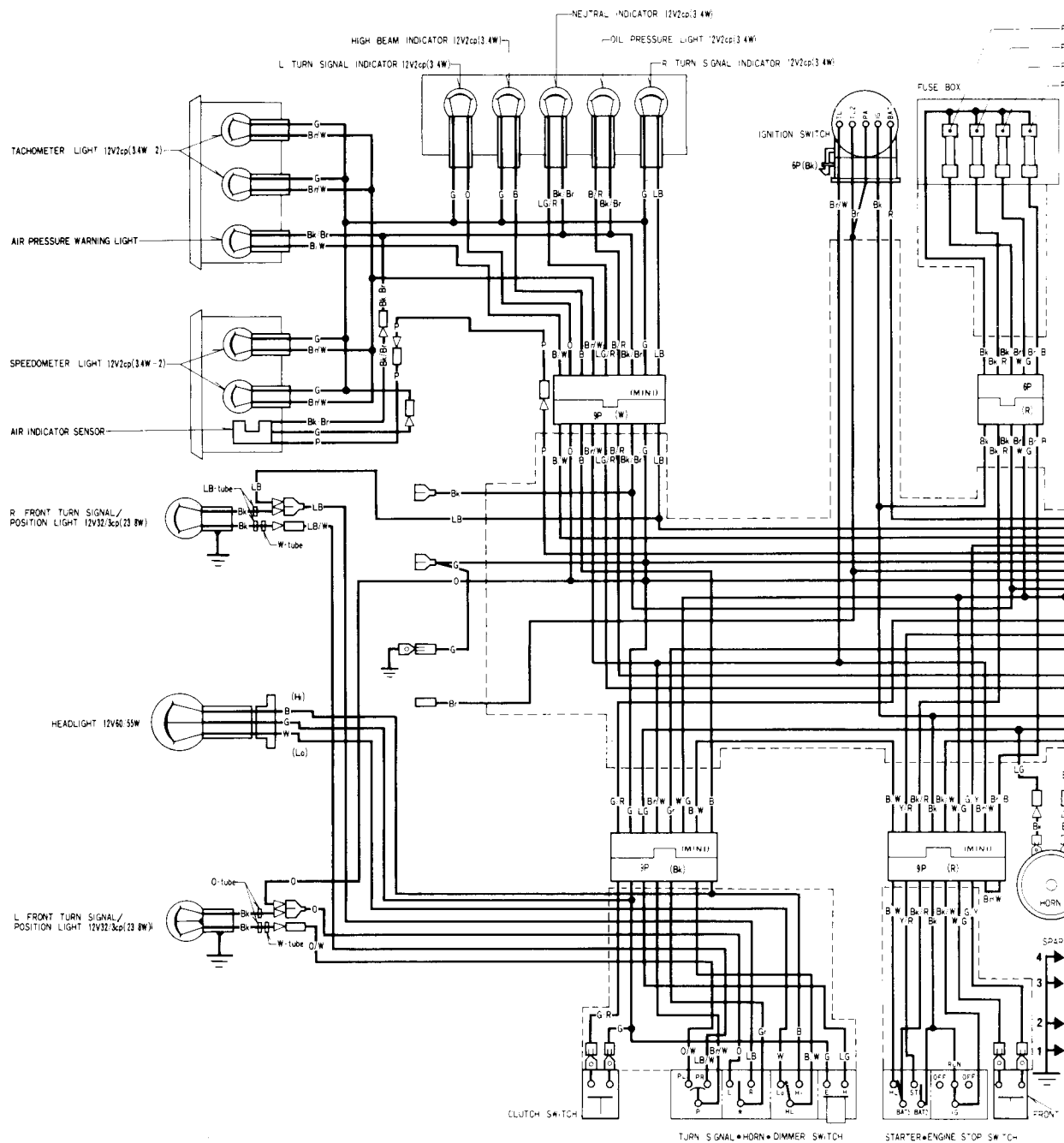




**HONDA**  
**CB900C**

'81 ADDED

## 7. WIRING DIAGRAM



### SWITCH CONTINUITY

| IGNITION SWITCH |      |    |     |     |
|-----------------|------|----|-----|-----|
|                 | BAT1 | IG | TL1 | TL2 |
| OFF             |      |    |     |     |
| ON              |      |    |     |     |
| P               |      |    |     |     |

| STARTER SWITCH |      |    |      |
|----------------|------|----|------|
|                | BAT1 | HL | BAT2 |
| FREE           |      |    |      |
| PUSH           |      |    |      |

| ENGINE STOP SWITCH |      |
|--------------------|------|
|                    | BAT2 |
| OFF                |      |
| RUN                |      |
| OFF                |      |

| TURN SIGNAL SWITCH |   |   |   |   |    |
|--------------------|---|---|---|---|----|
|                    | W | R | L | P | PR |
| R                  |   |   |   |   |    |
| N                  |   |   |   |   |    |
| L                  |   |   |   |   |    |

| DIMMER SWITCH |    |    |
|---------------|----|----|
|               | HL | LO |
| Lo            |    |    |
| N             |    |    |
| HL            |    |    |

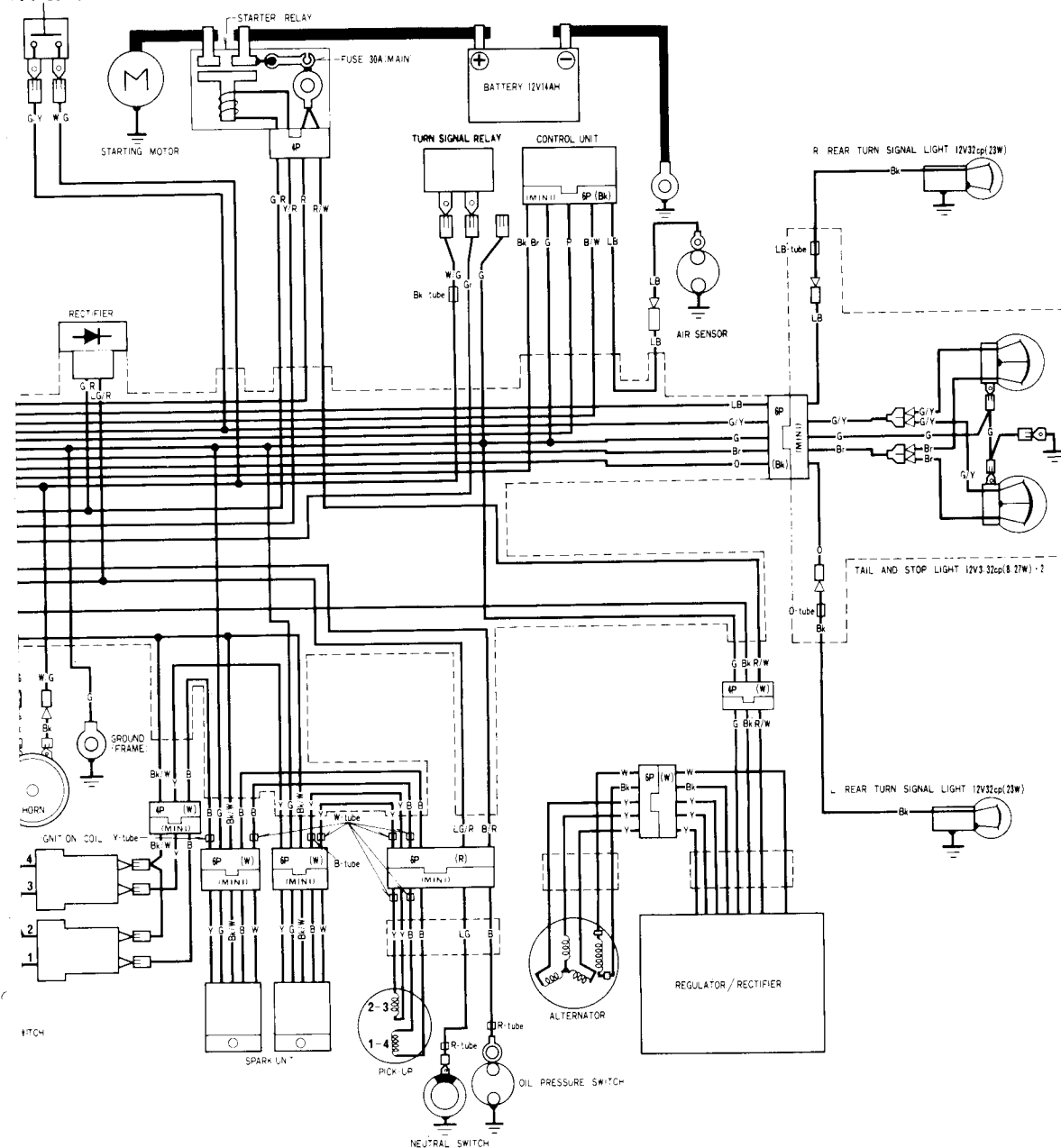
TAL - OIL - SUSPENSION

LIGHT

SIGNAL - FRONT - REAR BRAKE - HORN

P - POSITION - METER LIGHT - TAIL

STOP LIGHT SWITCH



|    |             |    |            |
|----|-------------|----|------------|
| Br | Brown       | Y  | Yellow     |
| Bk | Black       | B  | Blue       |
| W  | White       | Gr | Grey       |
| LG | Light Green | LB | Light Blue |
| R  | Red         | O  | Orange     |
| G  | Green       | P  | Pink       |

0030Z-461<sup>L</sup>-7700



## INTRODUCTION

This addendum contains information for the 1981 CB900F. Refer to the base Shop Manual for service procedures and data not included in this manual.

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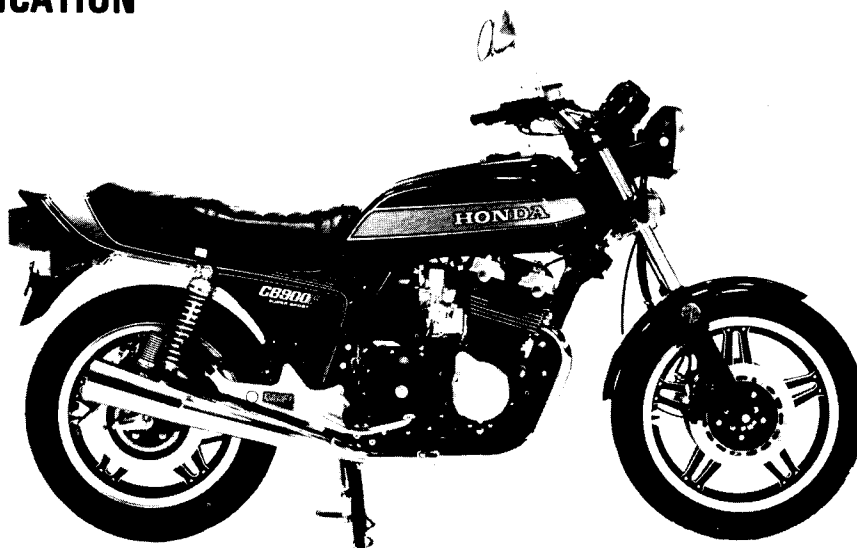
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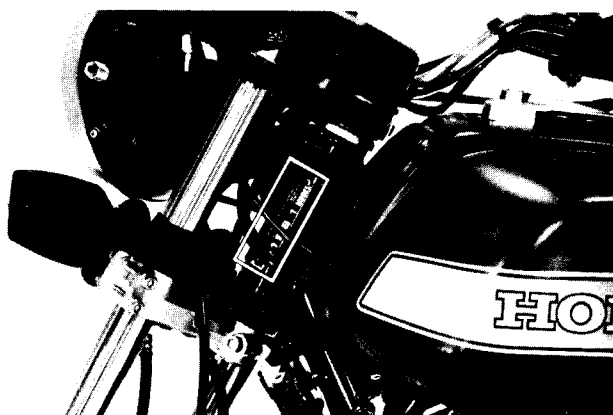
## MODEL IDENTIFICATION



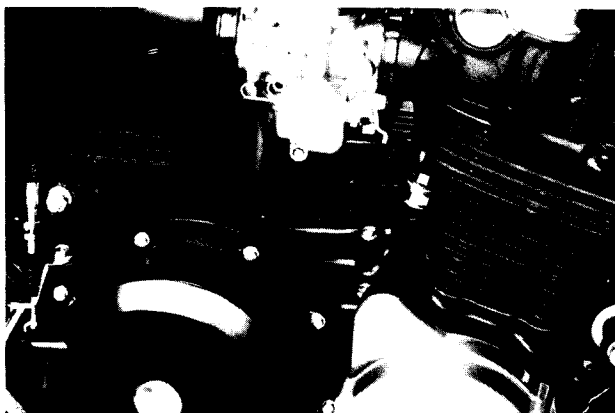
BEGINNING WITH F No. SC010-000021



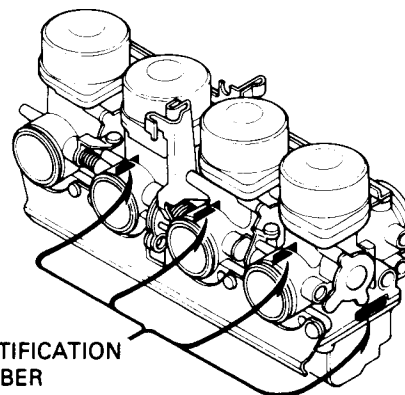
The frame serial number is stamped on the steering head right side.



The vehicle identification number (VIN) is on the steering head left side.



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



IDENTIFICATION  
NUMBER

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





# 1. GENERAL INFORMATION

## SPECIFICATIONS

| Item       |                                |  |
|------------|--------------------------------|--|
| DIMENSIONS | Overall length                 | 2,195 mm (86.4 in)   |
|            | Overall width                  | 850 mm (33.5 in)   |
|            | Overall height                 | 1,145 mm (45.1 in)   |
|            | Wheelbase                      | 1,515 mm (59.6 in)   |
|            | Seat height                    | 815 mm (32.1 in)   |
|            | Foot peg height                | 350 mm (13.8 in)   |
|            | Ground clearance               | 150 mm ( 5.9 in)   |
|            | Dry weight                     | 242 kg (533 lb)  |
|            | Curb weight                    | 263 kg (580 lb)  |
| FRAME      | Type                           | Double cradle  |
|            | Front suspension, travel       | Telescopic air forks 160 mm (6.3 in)                               |
|            | Rear suspension, travel        | Swing arm/Shock absorber 110 mm (4.3 in)                           |
|            | Gross vehicle weight rating    | 451 kg (995 lb)  |
|            | Vehicle capacity load          | 188 kg (415 lb)  |
|            | Front tire size                | 3.50 V19-4PR Universal pattern                                     |
|            | Rear tire size                 | 4.25 V18-4PR Universal pattern                                     |
|            | Cold tire pressures            | Up to 90 kg (200 lbs) load Front 2.25 kg/cm <sup>2</sup> (32 psi)  |
|            |                                | Rear 2.25 kg/cm <sup>2</sup> (32 psi)                              |
|            |                                | Up to vehicle capacity load Front 2.25 kg/cm <sup>2</sup> (32 psi) |
|            |                                | Rear 2.8 kg/cm <sup>2</sup> (40 psi)                               |
|            | Front brake, lining swept area | Double disc brake 952 cm <sup>2</sup> (147.6 sq in)                |
|            | Rear brake, lining swept area  | Single disc brake 516 cm <sup>2</sup> (80.0 sq in)                 |
|            | Fuel capacity                  | 20 liters (5.3 US gal, 4.4 Imp gal)                                |
|            | Fuel reserve capacity          | 2.5 liters (0.7 US gal, 0.6 Imp gal)                               |
|            | Caster angle                   | 62°30'   |
|            | Trail                          | 110 mm (4.3 in)  |
|            | Front fork oil capacity        | 345 cc (12.3 ozs)  |
| ENGINE     | Type                           | Air cooled 4-stroke  |
|            | Cylinder arrangement           | Vertical in-line four  |
|            | Bore and stroke                | 64.5 x 69.0 mm (2.54 x 2.72 in)                                    |
|            | Displacement                   | 902 cm <sup>3</sup> (55.0 cu in)                                   |
|            | Compression ratio              | 8.8:1  |
|            | Valve train                    | Chain driven DOHC 4 Valves per cylinder                            |
|            | Maximum horsepower             | 89 BHP/9,000 rpm   |
|            | Maximum torque                 | 7.8 kg-m (56.4 ft-lb)/7,500 rpm                                    |
|            | Oil capacity                   | 4.5 liters (4.8 US qt, 4.0 Imp qt) after disassembly               |
|            |                                | 3.5 liters (3.7 US qt, 3.0 Imp qt) after draining                  |
|            | Lubrication system             | Wet sump   |
|            | Air filtration                 | Paper  |
|            | Cylinder compression           | 12.0 ± 2.0 kg/cm <sup>2</sup> (170 ± 28 psi)                       |
|            | Intake valve                   | Opens 10° (BTDC) at 1 mm lift, 63° (BTDC) at 0 lift                |
|            |                                | Closes 35° (ABDC) at 1 mm lift, 98° (ABDC) at 0 lift               |
|            | Exhaust valve                  | Opens 40° (BBDC) at 1 mm lift, 93° (BBDC) at 0 lift                |
|            |                                | Closes 5° (ATDC) at 1 mm lift, 70° (ATDC) at 0 lift                |
|            | Valve clearance (Cold)         | IN: } 0.06 – 0.13 mm (0.002 – 0.005 in)                            |
|            |                                | EX: }  |
|            | Engine weight                  | 92 kg (203 lb)   |
|            | Idle speed                     | 1,000 ± 100 rpm  |



| Item        |                                 |  |                 |                       |    |
|-------------|---------------------------------|--|-----------------|-----------------------|----|
| CARBURETION | Carburetor type                 | VB, 32 mm (1.26 in) venturi bore                 |                 |                       |    |
|             | Identification number           |  |                 |                       |    |
|             | Pilot screw initial setting     | See page 4-17, Initial opening 2 1/2             |                 |                       |    |
|             | Float level                     | 15.5 mm (0.16 in)                                |                 |                       |    |
| DRIVE TRAIN | Clutch                          | Wet, multi-plate                                 |                 |                       |    |
|             | Transmission                    | 5-speed constant-mesh                            |                 |                       |    |
|             | Primary reduction               | 1.000/2.041                                      |                 |                       |    |
|             | Final reduction                 | 2.588  |                 |                       |    |
|             | Gear ratio I                    | 2.533  |                 |                       |    |
|             | Gear ratio II                   | 1.789  |                 |                       |    |
|             | Gear ratio III                  | 1.391  |                 |                       |    |
|             | Gear ratio IV                   | 1.160  |                 |                       |    |
|             | Gear ratio V                    | 1.000  |                 |                       |    |
|             | Gearshift pattern               | Left foot operated return system, 1-N-2-3-4-5    |                 |                       |    |
|             | Drive chain                     | D.I.D. 50ZL or RK 50LO                           |                 |                       |    |
| ELECTRICAL  | Ignition                        | Transistorized                                   |                 |                       |    |
|             | Ignition timing "F-1" mark      | 10° BTDC at idle                                 |                 |                       |    |
|             | Full advance                    | 38.5° BTDC at 3,100 rpm                          |                 |                       |    |
|             | Starting system                 | Starting motor                                   |                 |                       |    |
|             | Generator                       | Three phase A.C. generator 260W/5,000 rpm        |                 |                       |    |
|             | Battery capacity                | 12V-14AH   |                 |                       |    |
|             | Spark plug                      |  |                 |                       |    |
|             | [    ]: Canada model            |  |                 |                       |    |
|             |                                 | For cold climate<br>below<br>5° C (41° F)        |                 | Standard              |    |
|             |                                 | NGK  | ND              | NGK                   | ND |
|             | D8EA<br>[DR8ES-L]               | X24ES-U<br>[X24ESR-U]                            | D9EA<br>[DR8ES] | X27ES-U<br>[X27ESR-U] |    |
|             | 0.6 – 0.7 mm (0.024 – 0.028 in) |  |                 |                       |    |
|             | 1-2-4-3                         |  |                 |                       |    |
|             | 10A/30A                         |  |                 |                       |    |
| LIGHTS      | Headlight (high/low beam)       | 60/55W H4 BULB (Phillips 12342/99 or equivalent) |                 |                       |    |
|             | Tail/stoplight                  | 8/27W  | 3/32 cp         | SAE NO. 1157          |    |
|             | Front turn signal/running light | 23/8W  | 32/3 cp         | SAE NO. 1034          |    |
|             | Rear turn signal                | 23W  | 32 cp           | SAE NO. 1073          |    |
|             | Speedometer light               | 3.4W   | 2 cp            | SAE NO. 57            |    |
|             | Tachometer light                | 3.4W   | 2 cp            | SAE NO. 57            |    |
|             | Neutral indicator               | 3.4W   | 2 cp            | SAE NO. 57            |    |
|             | Turn signal indicator           | 3.4W   | 2 cp            | SAE NO. 57            |    |
|             | High beam indicator             | 3.4W   | 2 cp            | SAE NO. 57            |    |
|             |                                 |  |                 |                       |    |



## TORQUE VALUES

### ● ENGINE

| Item                   | Qty | Thread Dia (mm) | Torque N·m<br>(kg-m, ft-lb) | Remarks  |
|------------------------|-----|-----------------|-----------------------------|--|
| Cylinder head cover    | 8   | 6               | 8-12 (0.8-1.2, 6-9)         | Apply engine oil to threads and underside of nuts  |
| Cam holder             | 24  | 6               | 12-16 (1.2-1.6, 9-12)       |  |
| Cylinder head          | 12  | 10              | 36-40 (3.6-4.0, 26-29)      |  |
| Cam sprocket           | 4   | 7               | 18-20 (1.8-2.0, 13-15)      |  |
| Spark plug             | 4   |                 | 12-19 (1.2-1.9, 9-14)       | Apply engine oil to threads and underside of bolts |
| Crankcase              |     | 8               | 21-25 (2.1-2.5, 15-18)      |  |
| A.C. generator         | 1   | 12              | 80-100 (8.0-10.0, 58-72)    |  |
| Primary shaft          | 1   | 12              | 80-100 (8.0-10.0, 58-72)    |  |
| Mainshaft              | 1   | 16              | 38-42 (3.8-4.2, 28-30)      | Apply liquid sealant                               |
| Drive sprocket         | 1   | 10              | 45-55 (4.5-5.5, 33-40)      |  |
| Connecting rod nut     | 8   |                 | 32 (3.2, 23)                |  |
| Oil filter center bolt | 1   |                 | 28-32 (2.8-3.2, 20-23)      |  |
| Oil pressure switch    | 1   |                 | 15-20 (1.5-2.0, 11-14)      | Apply LOCTITE® 271 to the threads                  |
| Neutral switch         | 1   |                 | 16-20 (1.6-2.0, 12-14)      |  |
| Oil drain plug         | 1   | 14              | 35-40 (3.5-4.0, 25-29)      |  |
| Oil hose               | 2   | 10              | 21-25 (2.1-2.5, 15-18)      |  |
| Spark advancer         | 1   | 8               | 33-37 (3.3-3.7, 24-27)      | Apply LOCTITE® 271 to the threads                  |
| Starting clutch        | 3   | 8               | 26-30 (2.6-3.0, 19-22)      |  |

### ● CHASSIS

| Item                      | Qty | Thread Dia (mm) | Torque N·m<br>(kg-m, ft-lb) | Remarks |
|---------------------------|-----|-----------------|-----------------------------|---------|
| Steering stem nut         | 1   | 24              | 80-120 (8.0-12.0, 58-87)    |         |
| Steering top thread nut   | 1   | 26              | 14-16 (1.4-1.6, 10-12)      |         |
| Handlebar holder          | 4   | 8               | 18-25 (1.8-2.5, 13-18)      |         |
| Front fork bridge         | 2   | 7               | 9-13 (0.9-1.3, 7-9)         |         |
| Front fork cap bolt       | 2   | 31              | 15-30 (1.5-3.0, 11-22)      |         |
| Steering stem pinch bolts | 2   | 10              | 45-55 (4.5-5.5, 33-40)      |         |
| Front axle holder         | 4   | 10              | 30-40 (3.0-4.0, 22-29)      |         |
| Front axle nut            | 1   | 12              | 55-65 (5.5-6.5, 40-47)      |         |
| Front fork socket bolt    | 2   | 8               | 15-25 (1.5-2.5, 11-18)      |         |
| Front fork drain bolt     | 2   | 6               | 6-9 (0.6-0.9, 4.3-7)        |         |
| Front fork hose joint (R) | 1   | 10              | 15-20 (1.5-2.0, 11-14)      |         |
| Front fork hose joint (L) | 1   | 8               | 4-7 (0.4-0.7, 2.9-5.1)      |         |
| Front fork hose connector | 1   | 8               | 4-7 (0.4-0.7, 2.9-5.1)      |         |
| Front fork air valve      | 1   | 8               | 4-7 (0.4-0.7, 2.9-5.1)      |         |



| Item                   | Qty | Thread Dia (mm) | Torque N·m<br>(kg-m, ft-lb) | Remarks |
|------------------------|-----|-----------------|-----------------------------|---------|
| Front/rear brake disc  | 5   | 8               | 27-33 (2.7-3.3, 20-24)      | UBS     |
| Brake caliper carrier  | 2   | 10              | 30-40 (3.0-4.0, 22-29)      |         |
| Caliper bolt           | 1   | 8               | 22-25 (2.2-2.5, 16-18)      |         |
| Caliper pivot bolt     | 1   | 10              | 25-30 (2.5-3.0, 18-22)      |         |
| Rear axle nut          | 1   | 18              | 80-100 (8.0-10.0, 58-72)    |         |
| Final driven sprocket  | 4   | 12              | 80-100 (8.0-10.0, 58-72)    | UBS     |
| Swing arm pivot nut    | 1   | 14              | 60-70 (6.0-7.0, 43-51)      |         |
| Rear brake torque link | 1   | 8               | 18-25 (1.8-2.5, 13-18)      |         |
| Rear shock absorber    | 4   | 10              | 30-40 (3.0-4.0, 22-29)      |         |
| Engine hanger bolt     | 3   | 10              | 35-45 (3.5-4.5, 25-33)      |         |
|                        | 2   | 10              | 40-50 (4.0-5.0, 29-36)      |         |

Torque specifications listed above are for important fasteners. Others should be tightened to standard torque values below.

● STANDARD TORQUE VALUES

| Item               | Torque N·m (kg-m, ft-lb) | Item                      | Torque N·m (kg-m, ft-lb) |
|--------------------|--------------------------|---------------------------|--------------------------|
| 5 mm bolt and nut  | 4-6 (0.4-0.6, 3-4)       | 5 mm screw                | 3-5 (0.3-0.5, 3-4)       |
| 6 mm bolt and nut  | 8-12 (0.8-1.2, 6-9)      | 6 mm screw                | 7-11 (0.7-1.1, 5-8)      |
| 8 mm bolt and nut  | 18-25 (1.8-2.5, 13-18)   | 6 mm flange bolt and nut  | 10-14 (1.0-1.4, 7-10)    |
| 10 mm bolt and nut | 35-40 (3.5-4.0, 22-29)   | 8 mm flange bolt and nut  | 20-30 (2.0-3.0, 14-22)   |
| 12 mm bolt and nut | 50-60 (5.0-6.0, 36-43)   | 10 mm flange bolt and nut | 30-40 (3.0-4.0, 22-29)   |

**TOOLS**

## ● SPECIAL

| Tool Name                         | Tool No.      | Qty | Ref. Page    |
|-----------------------------------|---------------|-----|--------------|
| Vacuum gauge set                  | 07404-0020000 | 1   | 3-10         |
| Oil pressure gauge                | 07506-3000000 | 1   | 2-5          |
| Oil pressure gauge attachment     | 07510-4220100 | 1   | 2-4          |
| Primary gear holder               | 07924-4250000 | 1   | 8-5, 8-6     |
| Rotor puller                      | 07933-4250000 | 1   | 18-6         |
| Bearing race remover              | 07953-4250002 | 1   | 15-24        |
| Carburetor adjusting wrench       | 07908-4220100 | 1   | 3-11         |
| Carburetor pilot screw wrench     | 07908-4220201 | 1   | 3-17         |
| Snap ring pliers                  | 07914-3230001 | 1   | 17-8, 17-15  |
| Steering stem socket              | 07916-3710100 | 1   | 14-25        |
| 6 mm hex wrench                   | 07917-3230000 | 1   | 14-16, 14-19 |
| Bearing race remover              | 07946-3710500 | 1   | 14-24        |
| Steering stem driver              | 07946-3710600 | 1   | 14-23        |
| Bearing driver attachment         | 07946-3710700 | 1   | 14-24        |
| Piston base                       | 07958-3000000 | 2   | 7-8          |
| Valve decompressor                | -             | 1   | 25-16        |
| Valve lifter holder               | -             | 1   | 25-16        |
| Valve guide reamer 5.5 mm         | 07984-2000000 | 1   | 6-14, 6-15   |
| Piston ring compressor            | 07954-4220000 | 2   | 7-8          |
| Valve lifter bore protector       | 07999-4220000 | 1   | 6-11         |
| Socket bit 10 mm                  | 07917-3710000 | 1   | 8-6          |
| Clutch adjusting wrench           | 07908-3230000 | 1   | 3-18         |
| Valve seat cutter, 24.5 mm        | 07780-0010100 | 1   | 6-16         |
| Valve seat cutter, 27.5 mm        | 07780-0010200 | 1   |              |
| Valve seat flat cutter, 28 mm     | 07780-0012100 | 1   |              |
| Valve seat flat cutter, 30 mm     | 07780-0012200 | 1   |              |
| Valve seat interior cutter, 30 mm | 07780-0014000 | 1   |              |
| Valve seat cutter holder, 5.5 mm  | 07781-0010100 | 1   |              |
| Bearing driver                    | 07946-6340000 | 1   | 14-24        |
| Clutch center holder              | 07923-3710000 | 1   | 8-3, 8-8     |
| Swingarm bearing driver           | 07936-4250100 | 1   | 25-48        |
| Needle bearing driver attachment  | 07946-4250100 | 1   | 25-48        |
| Driver handle                     | 07949-6110000 | 1   | 25-48        |
| Fork seal driver                  | 07947-4630100 | 1   | 25-37        |



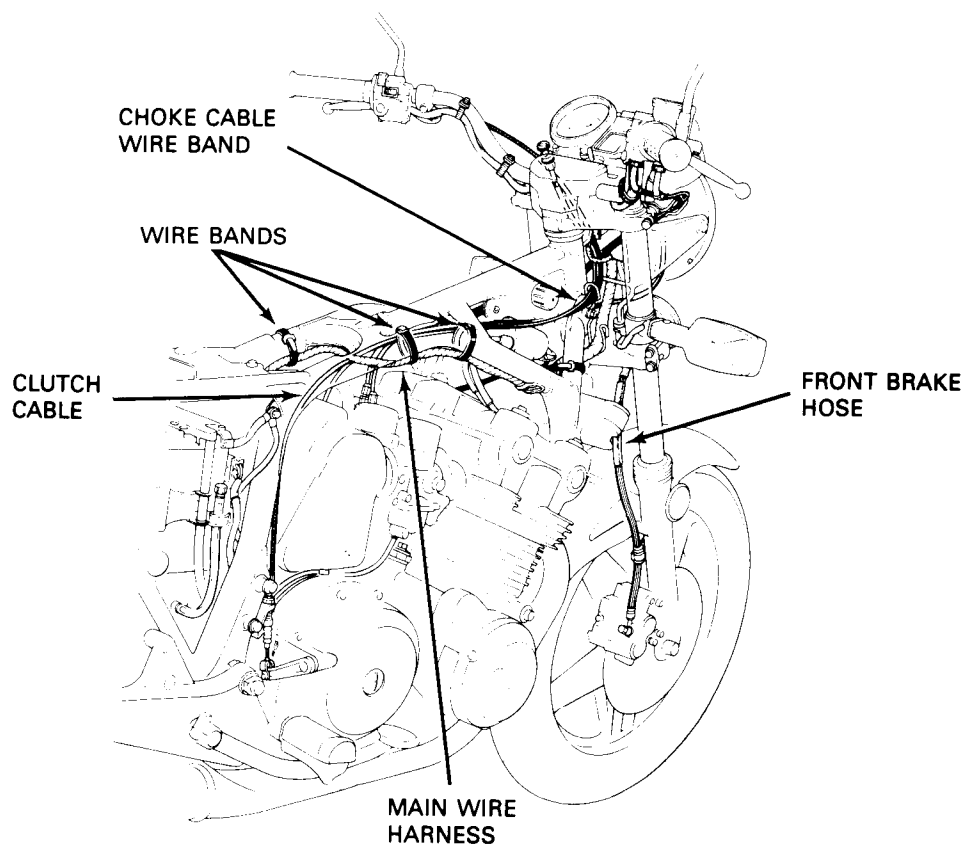
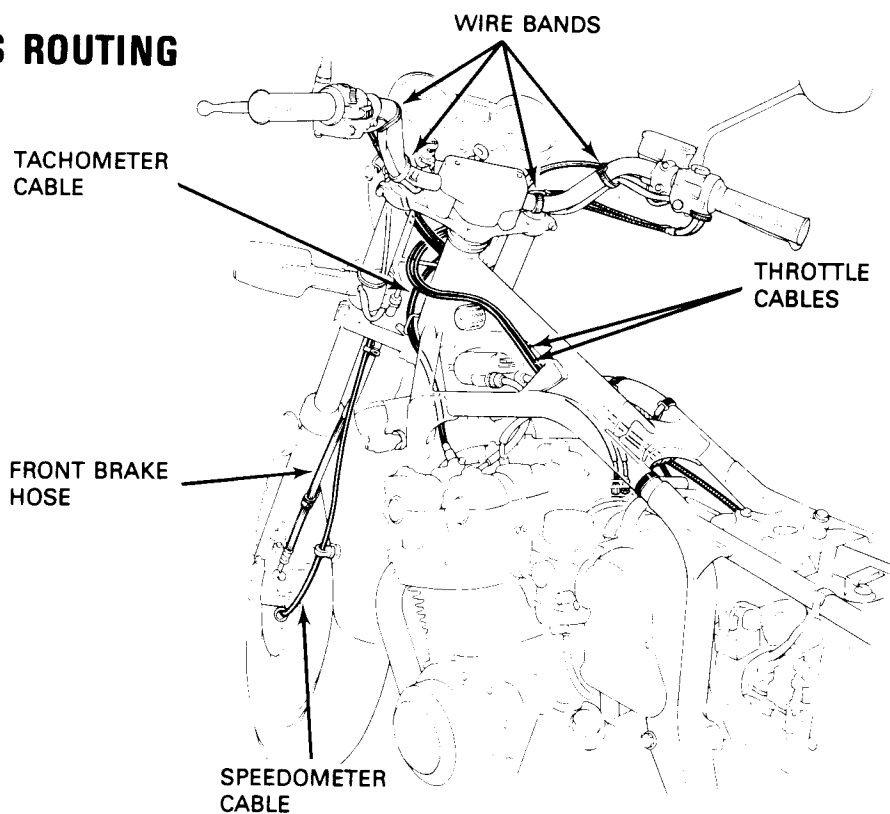
## TOOLS

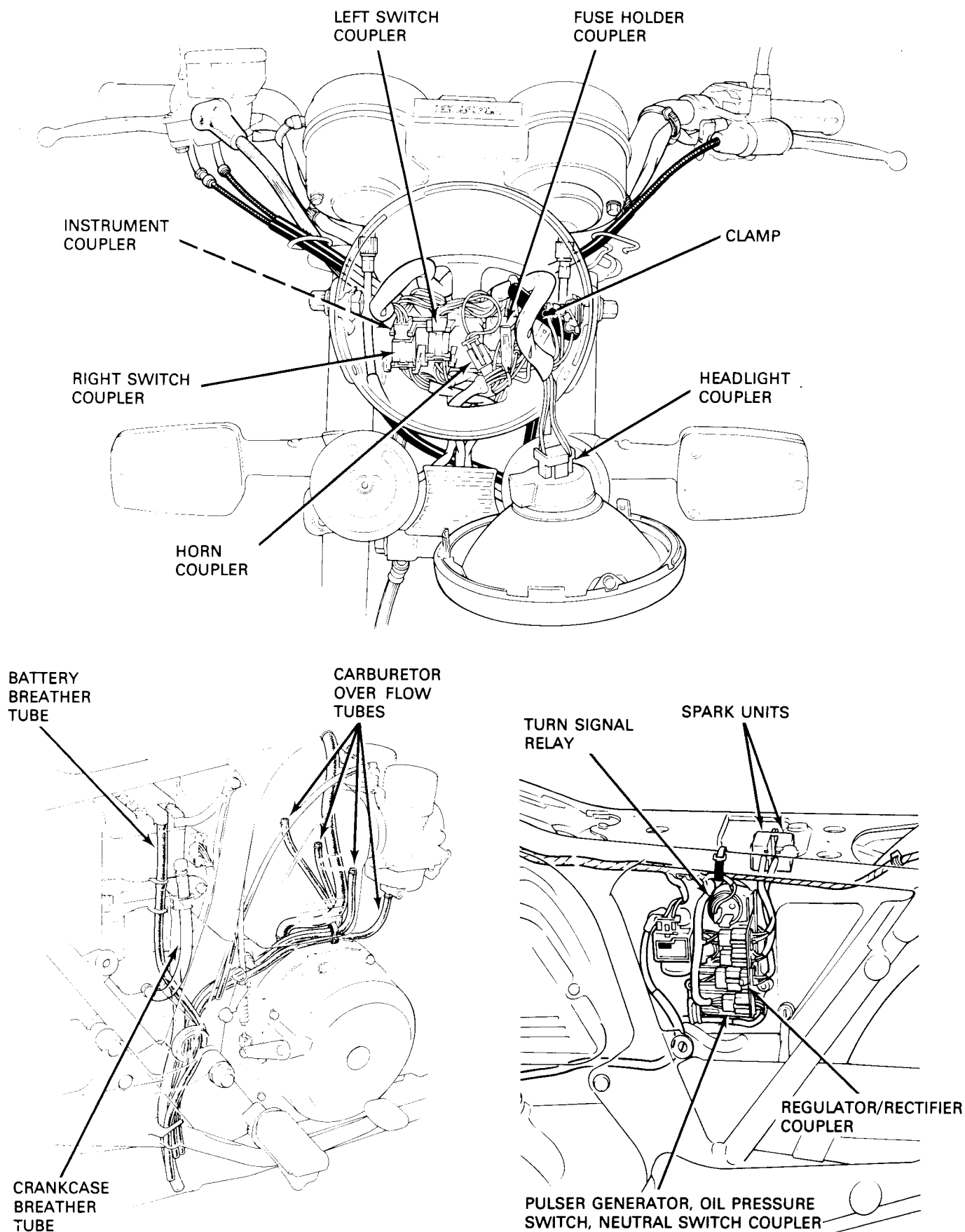
### • COMMON

| Tool Name                          | Part No.      | Qty | Alternate Tool           | Part No.                             | Ref. Page          |
|------------------------------------|---------------|-----|--------------------------|--------------------------------------|--------------------|
| Float level gauge                  | 07401-0010000 | 1   |                          |                                      | 4-8                |
| Retainer wrench A                  | 07710-0010100 | 1   | Bearing retainer wrench  | 07910-2830000                        | 25-38              |
| Retainer wrench B                  | 07710-0010200 | 1   | Bearing retainer wrench  | 07920-3230101<br>or<br>07920-3600000 | 14-11, 14-13       |
| Retainer wrench body               | 07710-0010401 | 1   |                          |                                      | 14-11, 14-13, 15-3 |
| Lock nut wrench<br>20 x 24 mm      | 07716-0020100 | 1   |                          |                                      | 8-3, 8-8           |
| Extension bar                      | 07716-0020500 | 1   |                          |                                      | 8-3, 8-8           |
| Valve guide remover<br>5.5 mm      | 07742-0010100 | 1   | Valve guide driver       | 07942-3290100                        | 6-15               |
| Valve guide driver B               | 07742-0020200 | 1   | Valve guide driver       | 07942-3290200                        | 6-15               |
| Bearing driver outer<br>42 x 47 mm | 07746-0010300 | 1   | Bearing driver           | 07945-3330100                        | 25-43, 14-13       |
| Bearing driver outer<br>52 x 55 mm | 07746-0010400 | 1   | Bearing driver           | 07946-9370100<br>or<br>07946-3290000 | 2-11, 15-6         |
| Bearing driver outer<br>62 x 68 mm | 07746-0010500 | 1   | Bearing driver           | 07946-3600000                        | 25-43              |
| Bearing driver handle<br>outer A   | 07749-0010000 | 1   | Driver handle attachment | 07949-6110000                        | 25-43, 14-13       |
| Bearing driver handle<br>outer B   | 07746-0020100 | 1   | Bearing driver           | 07945-3230201                        | 13-12, 13-13       |
| Bearing driver handle<br>outer C   | 07746-0030100 | 1   |                          |                                      |                    |
| Bearing driver inner<br>25 mm      | 07746-0030200 | 1   | Bearing driver           | 07945-3710200                        | 12-8               |
| Valve spring compressor            | 07757-0010000 | 1   | Valve spring compressor  | 07957-3290001                        | 6-11               |
| Driver pilot 15 mm                 | 07746-0040300 | 1   |                          |                                      | 14-13              |
| Driver pilot 20 mm                 | 07746-0040400 | 1   |                          |                                      | 25-43              |
| Driver pilot 25 mm                 | 07746-0040600 | 1   | Bearing driver           | 07946-3600000                        | 25-43              |
| Shock absorber<br>compressor       | 07959-3290001 | 1   |                          |                                      | 25-44              |



## CABLE & HARNESS ROUTING









## 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

|                            |    | ITEM                   | FREQUENCY             | WHICHEVER COMES FIRST<br>↓ | ODOMETER READING (NOTE 3)     |                         |                          |                          |                          |                          |    |       | Refer to Page |
|----------------------------|----|------------------------|-----------------------|----------------------------|-------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----|-------|---------------|
|                            |    |                        | EVERY                 | 600 mi<br>(1,000 km)       | 4,000 mi<br>(6,400 km)        | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) | 24,000 mi<br>(38,400 km) |    |       |               |
| EMISSION RELATED ITEMS     | *  | FUEL LINES             |                       |                            |                               | I                       | I                        | I                        | I                        | I                        | I  | 3-3   |               |
|                            | *  | THROTTLE OPERATION     |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-3   |               |
|                            | *  | CARBURETOR-CHOKE       |                       |                            |                               | I                       | I                        | I                        | I                        | I                        | I  | 3-4   |               |
|                            |    | AIR CLEANER            | NOTE 1                |                            |                               | C                       | R                        | C                        | R                        | C                        | R  | 3-4   |               |
|                            |    | CRANKCASE BREATHER     | NOTE 2                |                            |                               | C                       | C                        | C                        | C                        | C                        | C  | 3-5   |               |
|                            |    | SPARK PLUGS            |                       |                            |                               | R                       | R                        | R                        | R                        | R                        | R  | 3-5   |               |
|                            | *  | VALVE CLEARANCE        |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 25-15 |               |
|                            |    | ENGINE OIL             | YEAR                  |                            | R                             | R                       | R                        | R                        | R                        | R                        | R  | 2-3   |               |
|                            |    | ENGINE OIL FILTER      | YEAR                  |                            | R                             | R                       | R                        | R                        | R                        | R                        | R  | 2-3   |               |
|                            | *  | CAM CHAIN TENSION      |                       |                            | A                             | A                       | A                        | A                        | A                        | A                        | A  | 25-18 |               |
|                            | *  | CARBURETOR-SYNCHRONIZE |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-10  |               |
|                            | *  | CARBURETOR-IDLE SPEED  |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-11  |               |
| NON-EMISSION RELATED ITEMS |    | DRIVE CHAIN            |                       |                            | I, L EVERY<br>300 mi (500 km) |                         |                          |                          |                          |                          |    |       | 25-18         |
|                            |    | BATTERY                | MONTH                 |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-14  |               |
|                            |    | BRAKE FLUID            | MONTH I<br>2 YEARS* R |                            | I                             | I                       | I                        | *R                       | I                        | I                        | *R | 3-14  |               |
|                            |    | BRAKE PAD WEAR         |                       |                            |                               | I                       | I                        | I                        | I                        | I                        | I  | 25-20 |               |
|                            |    | BRAKE SYSTEM           |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-15  |               |
|                            | *  | BRAKE LIGHT SWITCH     |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-16  |               |
|                            | *  | HEADLIGHT AIM          |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-16  |               |
|                            |    | CLUTCH                 |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-17  |               |
|                            |    | SIDE STAND             |                       |                            |                               | I                       | I                        | I                        | I                        | I                        | I  | 3-18  |               |
|                            | *  | SUSPENSION             |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-19  |               |
|                            | *  | NUTS, BOLTS, FASTENERS |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-20  |               |
|                            | ** | WHEELS                 |                       |                            | I                             | I                       | I                        | I                        | I                        | I                        | I  | 3-20  |               |
|                            | ** | STEERING HEAD BEARINGS |                       |                            | I                             |                         | I                        |                          | I                        |                          | I  | 3-21  |               |

\* SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

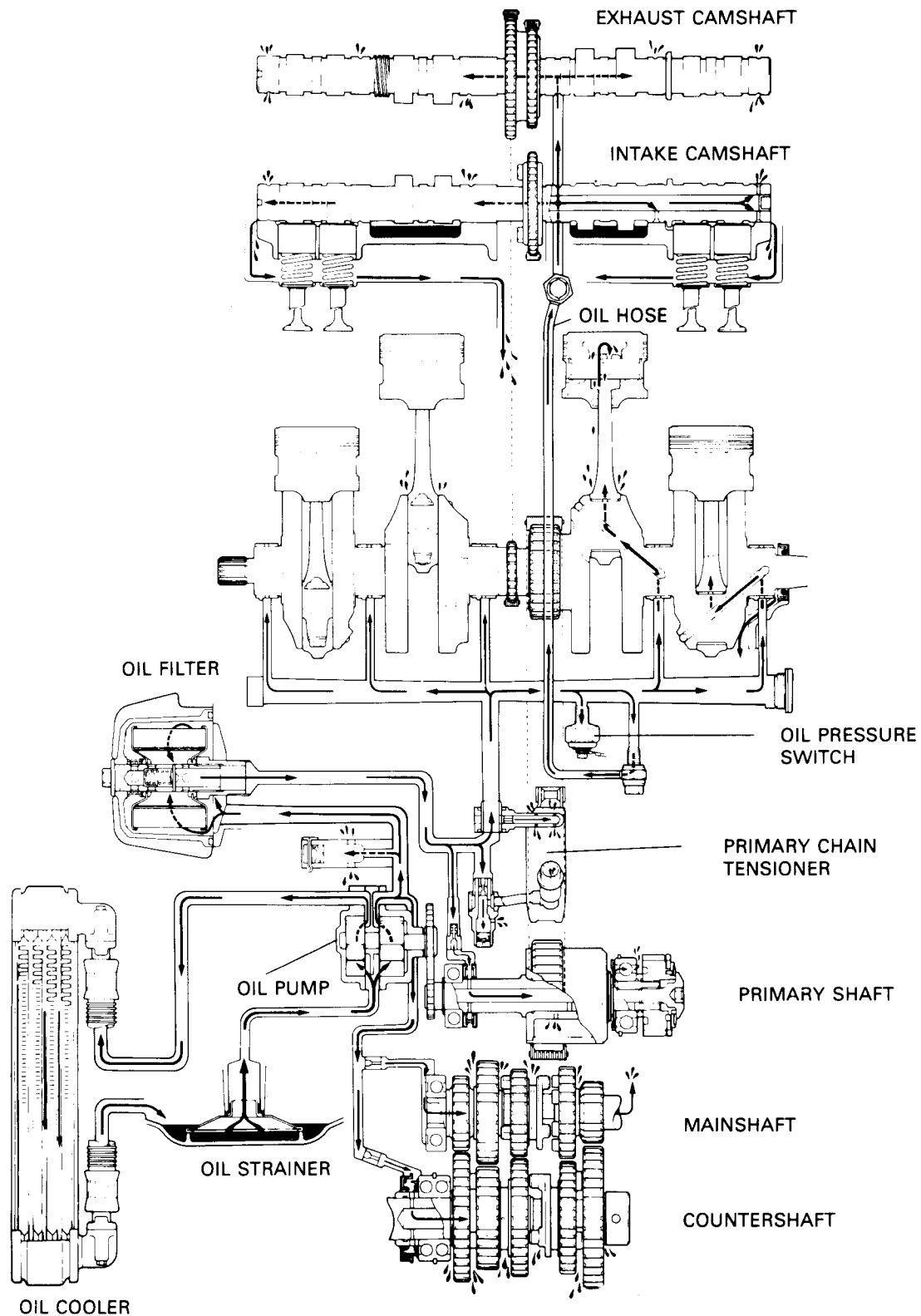
\*\*IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTES: 1. SERVICE MORE FREQUENTLY WHEN RIDING IN DUSTY AREAS.  
2. SERVICE MORE FREQUENTLY WHEN RIDING IN RAIN OR AT FULL THROTTLE (U.S.A. ONLY).  
3. FOR HIGHER ODOMETER READINGS, REPEAT AT THE FREQUENCY INTERVAL ESTABLISHED HERE.



## 2. LUBRICATION

### ENGINE LUBRICATION DIAGRAM





## OIL PUMP

### REMOVAL

#### NOTE

The oil pump can be removed with the engine mounted in the frame.

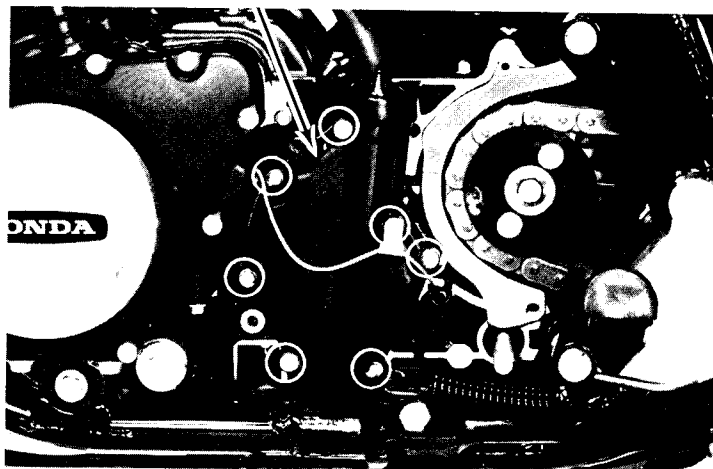
Drain the engine oil.

Remove the gearshift pedal.

Remove the left crankcase rear cover.

Remove the oil pump cover.

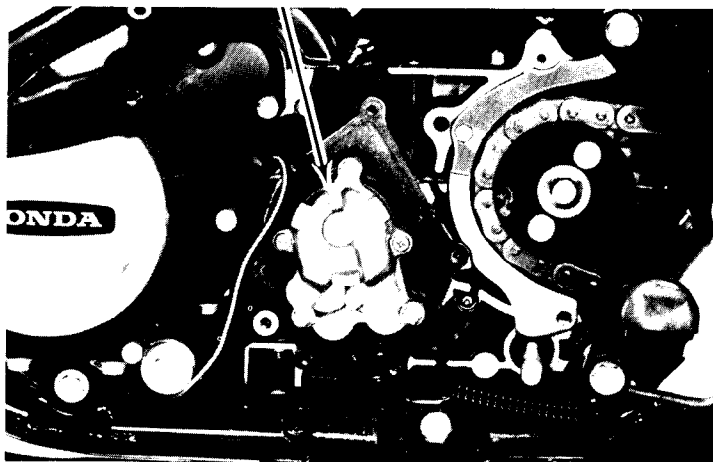
OIL PUMP COVER



Remove the oil pump.

Refer to pages 2-6 and 2-7 for disassembly and inspection.

OIL PUMP



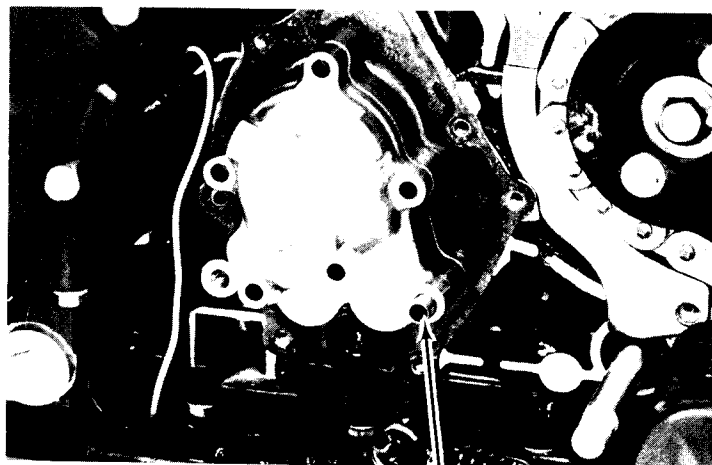
### INSTALLATION

Install a new gasket

Engage the oil pump drive and driven gears.

Install the dowel pin.

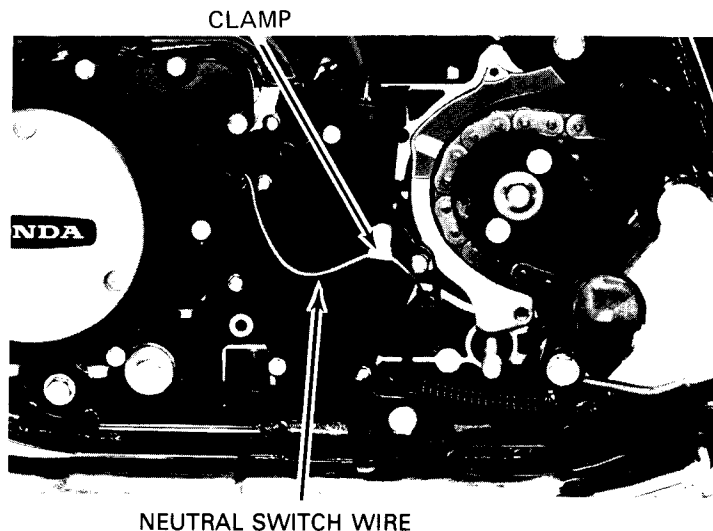
Tighten the oil pump mounting bolts.



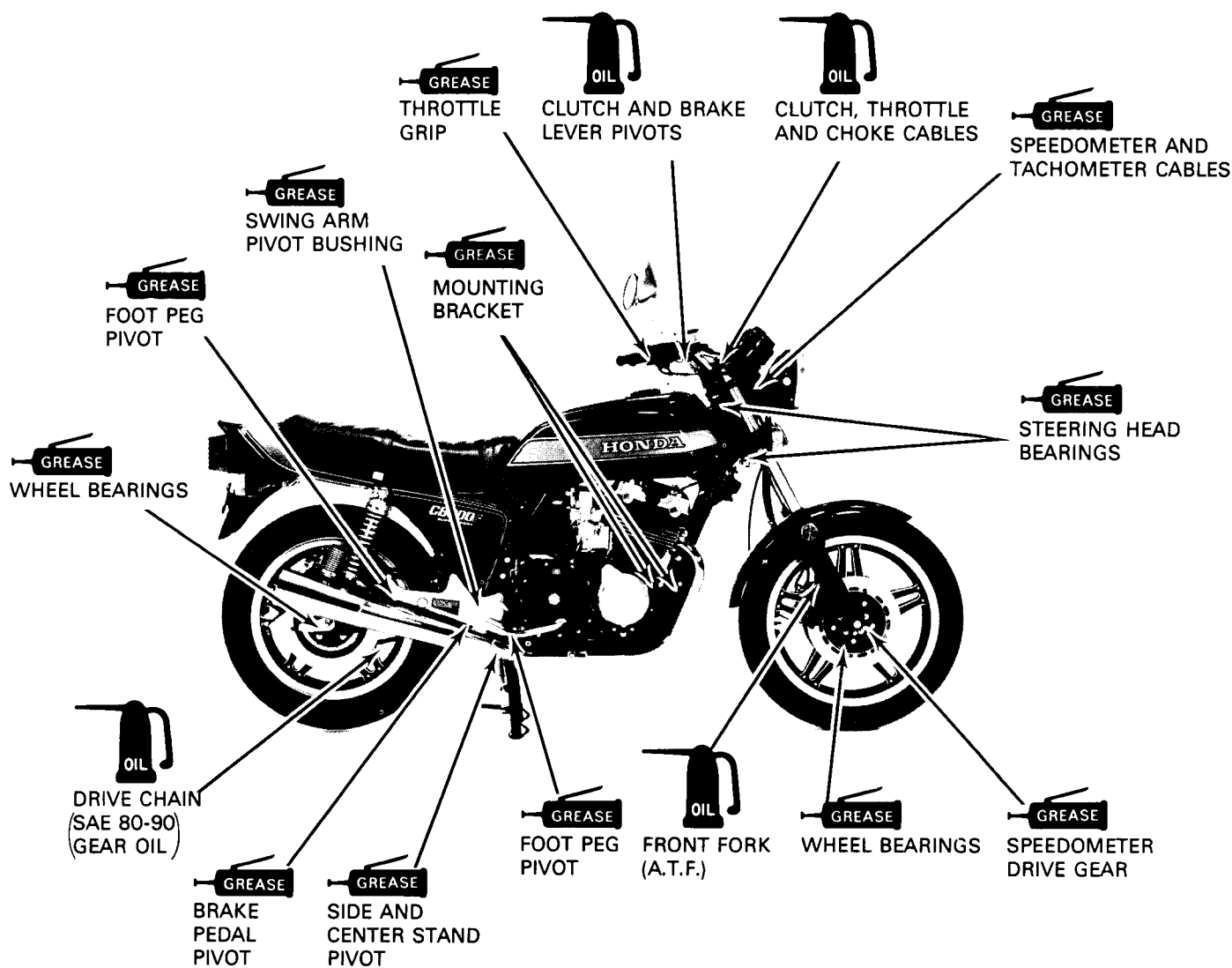
DOWEL PIN



Install the oil pump cover.  
 Tighten the oil pump cover bolts.  
 Route the neutral switch wire as shown.  
 Install the left crankcase rear cover and gearshift pedal.



## LUBRICATION POINTS





### 3. INSPECTION AND ADJUSTMENT VALVE CLEARANCE

#### NOTE

- Inspect and adjust valve clearance while the engine is cold. (Below 35° C, 95° F).
- Lean the motorcycle right and left to drain residual oil from the cylinder head.

Remove the frame right and left side covers and seat.

Turn the fuel valve OFF and remove the fuel tube and fuel tank.

Remove the tachometer cable.

Remove the spark plug caps.

Remove the cylinder head cover bolts and cylinder head cover.

#### INSPECTION

Measure intake and exhaust valve clearances by inserting a feeler gauge between the camshaft and valve lifter shim.

#### VALVE CLEARANCE:

0.06—0.13 mm (0.002—0.005 in)

Rotate the crankshaft clockwise (from the right side) and align the index mark on the exhaust camshaft right end with the front cylinder head mating surface.

Check and record the valve clearance of the :

No. 1 EX. and No. 3 EX.

Rotate the camshaft 90° clockwise (via the crankshaft 180°) and check the :

No. 1 IN. and No. 3 IN.

Rotate the camshaft 90° clockwise and check the:

No. 2 EX. and No. 4 EX.

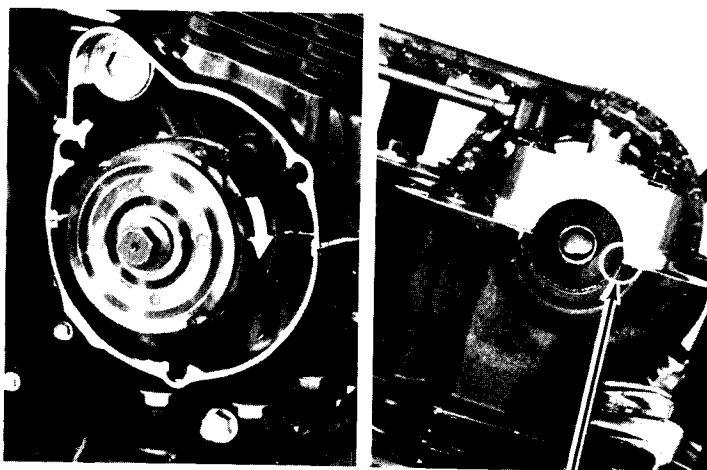
Rotate the camshaft 90° clockwise and check the:

No. 2 IN. and No. 4 IN.

TACHOMETER CABLE

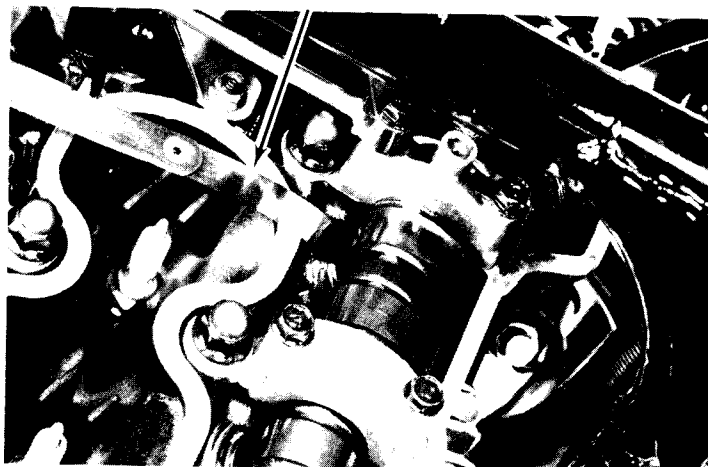


CYLINDER HEAD COVER



INDEX MARK

FEELER GAUGE





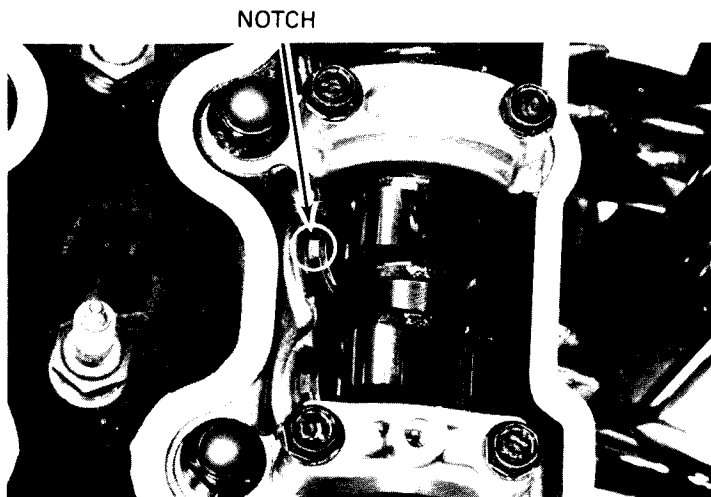
## ADJUSTMENT

### NOTE

- Adjustment shims are available in 0.05 mm increments, from 2.30 to 3.50 mm.
- The No. 2 EX. shim must be removed from the front.

Select a replacement shim to achieve the specified valve clearance, using the following procedures.

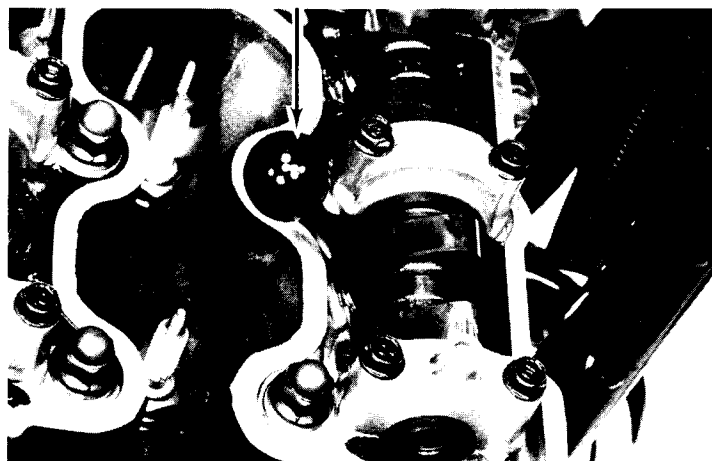
Rotate the valve lifter until the notch is facing the spark plug.



Rotate the crankshaft so that the cam lobe faces away from the valve lifter.

Insert the Valve Depressor between the cam and shim.

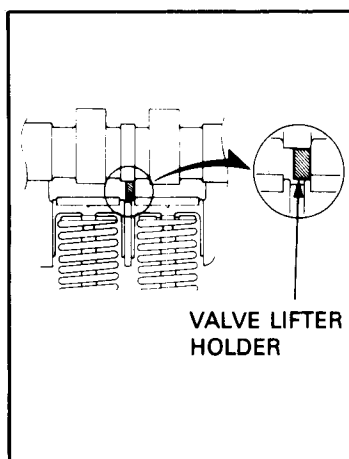
VALVE DEPRESSOR



### CAUTION:

*Use the Depressor as a wedge, not as a pry bar, or the lifter and camshaft will be damaged.*

Position the end of the valve lifter holder under the camshaft so it rests on the edge of the depressed lifter and contacts the side of the adjacent lifter. Do not let the lifter holder contact the shim or you will not be able to remove it.



VALVE LIFTER HOLDER



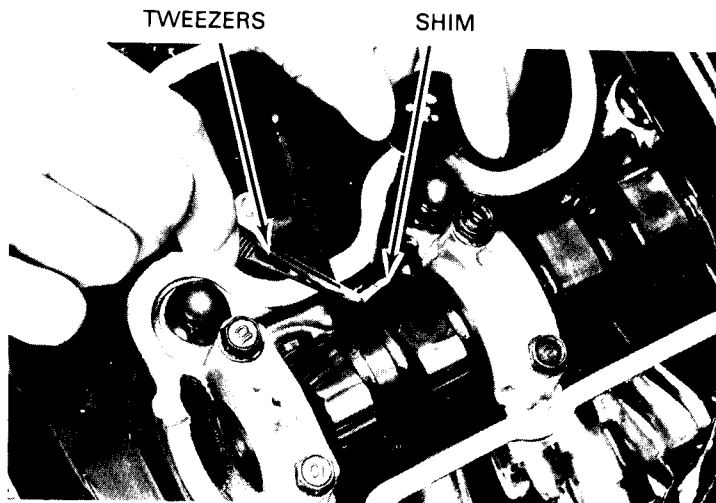
Pull out the VALVE DEPRESSOR and remove the shim with tweezers or a magnet.

**NOTE**

If more clearance is needed to remove the shim, reinsert the valve depressor and invert the valve lifter holder. Pull out the valve depressor and remove the shim.

**CAUTION:**

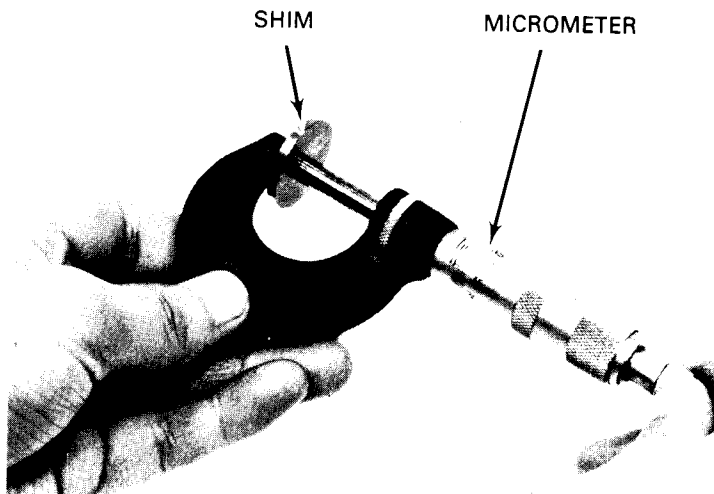
*If the valve lifter holder is inverted, don't let it damage the cylinder head cover mating surface.*



Measure the thickness of the removed shim with a micrometer.

Select a replacement shim using the chart on page 3-9.

Insert the replacement shim.



To remove the Valve Lifter Holder, reinstall the Valve Depressor. First remove the Holder and then remove the depressor.

Rotate the crankshaft 2-3 revolutions to fully seat the replacement shims and recheck the valve clearance.



## CAM CHAIN TENSION

### NOTE

Adjust cam chain tension while the engine is cold.

Remove the A.C. generator cover.

Loosen the front cam chain tensioner lock nut and bolt.

Tighten the bolt while rotating the crankshaft clockwise.

Tighten the lock nut.

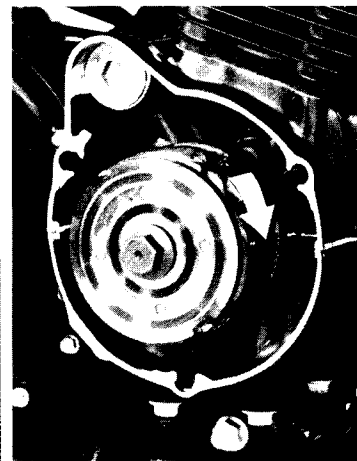
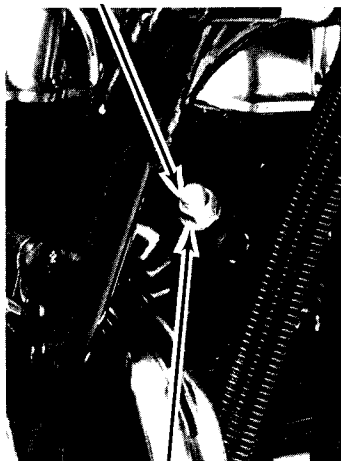
Loosen both top and bottom lock nuts on the rear cam chain tensioner.

Tighten the lock nuts while rotating the crankshaft clockwise.

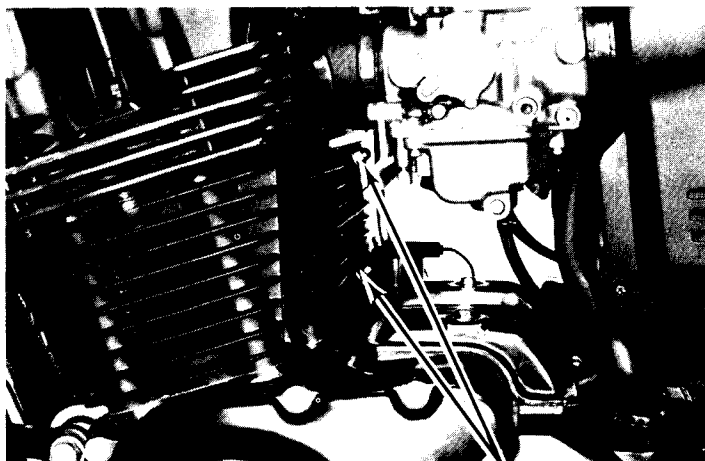
When the tensioner front lock bolt and rear lock nuts are loosened, the tensioners will provide the correct tension.

Tighten the lock nuts.

FRONT LOCK BOLT



FRONT LOCK NUT



REAR LOCK NUTS

## DRIVE CHAIN

Turn the engine off, place the motorcycle on its center stand and shift the transmission into neutral. Check slack in the lower drive chain run midway between the sprockets.

**SLACK:** 10-20 mm (3/8-3/4 in)

### CAUTION:

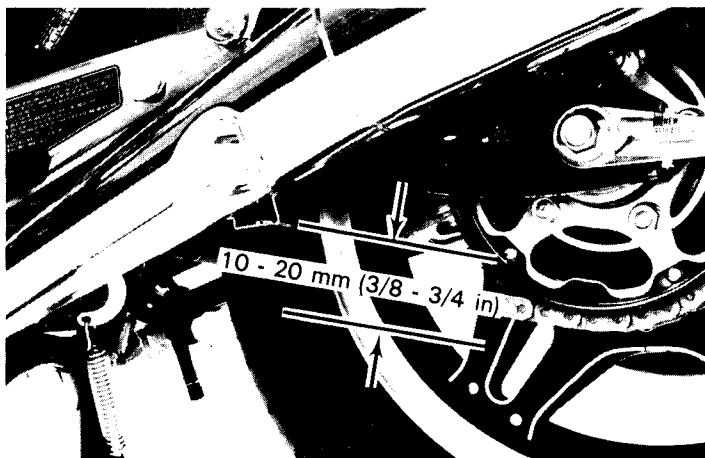
*Excessive chain slack, 40 mm (1 1/2 in) or more, may damage the frame.*

Adjust as follows:

Remove the cotter pin from the rear axle nut, and loosen the nut.

Loosen the lock nuts on both adjusting bolts.

Turn both adjusting bolts an equal number of turns until the correct drive chain slack is obtained.







**CAUTION:**

*Make sure the chain adjuster index marks align with the corresponding scale graduation on both sides of the swingarm.*

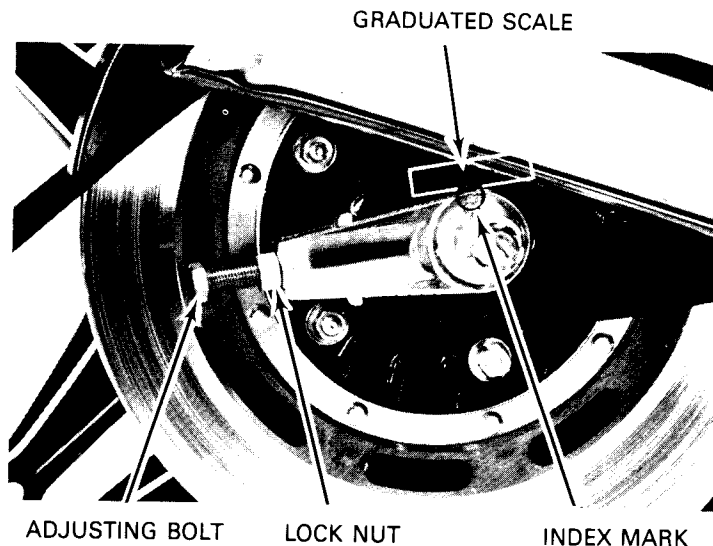
Tighten the adjusting bolt lock nuts.

Tighten the rear axle nut and install a new cotter pin.

**TORQUE:** 80–100 N·m  
(8.0–10.0 kg-m, 58–72 ft-lb)

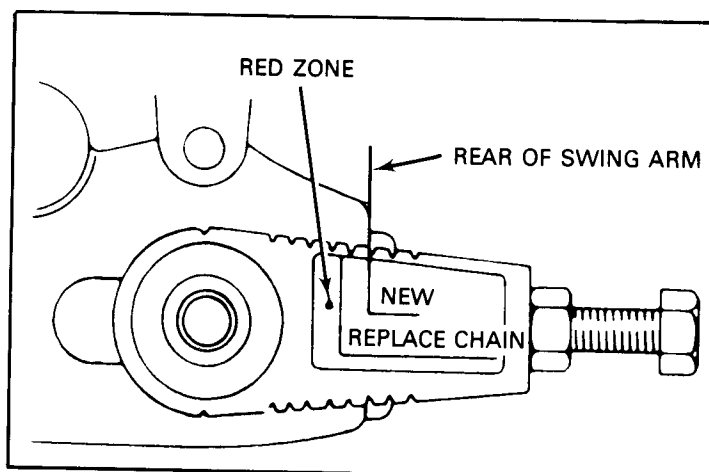
Recheck chain slack and free wheel rotation.

Lubricate the drive chain with SAE 80 or 90 gear oil.



Check the chain wear label. If the red zone on the label aligns with the rear of the swingarm after the chain has been adjusted to 10-20 mm (3/8-3/4 in) slack, the chain must be replaced.

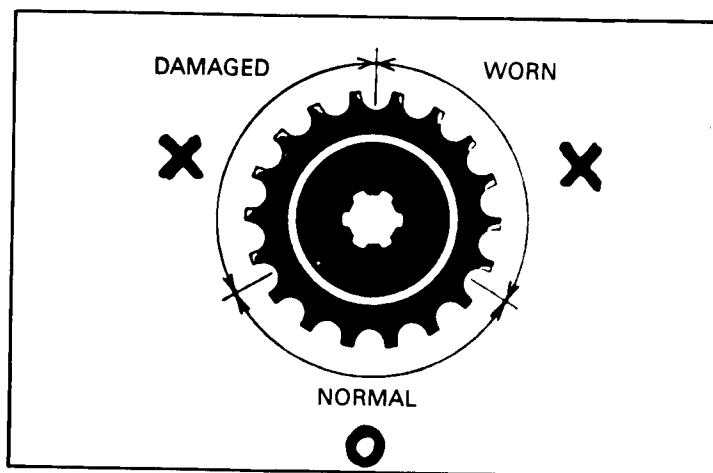
**REPLACEMENT CHAIN:** D.I.D. 50ZL or  
RK 50L0



Inspect the drive chain and sprockets for damage or wear. A drive chain with damaged rollers, loose pins, or missing O-rings must be replaced. Replace any sprocket which is damaged or excessively worn.

**NOTE**

*Never install a new drive chain on worn sprockets or worn drive chain on new sprockets. Both chain and sprockets must be in good condition or the replacement chain or sprockets will wear rapidly.*





## BRAKE PAD WEAR

Check the brake pads for wear by looking through the slot pointed to by the cast arrow on the caliper assembly.

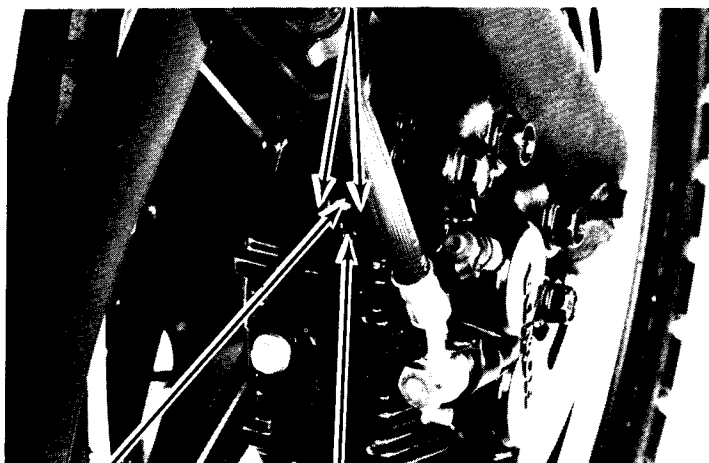
Replace the brake pads if the pads are worn to the wear line. (Refer to page 25-49).

### CAUTION:

*Always replace the brake pads in pairs to assure even disc pressure.*

BRAKE PADS

(FRONT)

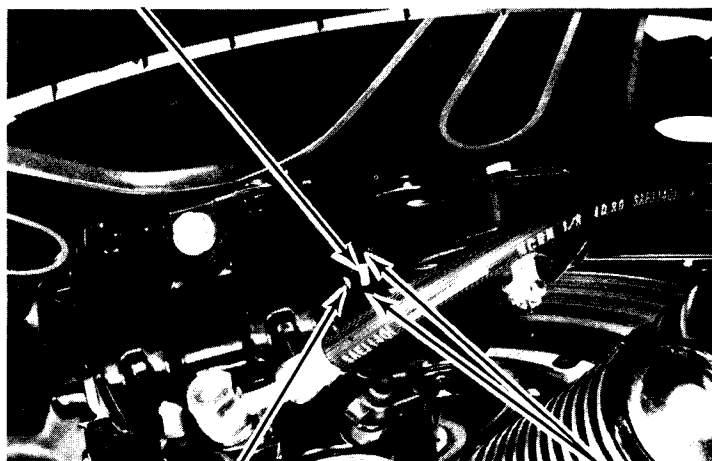


BRAKE DISC

ARROW

BRAKE DISC

(REAR)



ARROW

BRAKE PADS



## 4. ENGINE REMOVAL/INSTALLATION

### GENERAL INFORMATION

The following parts or components can be serviced with the engine installed in the frame:

- Clutch
- Gearshift linkage
- Camshaft
- A.C. generator
- Starter motor
- Carburetor

### SPECIFICATIONS

Engine dry weight

92 kg (203 lb)

Oil capacity

4.5 lit (4.7 US qt) at engine assembly

3.5 lit (3.7 US qt) at change

### TORQUE VALUES

Engine mounting bolt

10 mm bolt (1)

35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)

10 mm bolt (2)

40–50 N·m (4.0–5.0 kg-m, 29–36 ft-lb)

Rear axle nut

80–100 N·m (8.0–10.0 kg-m, 58–72 ft-lb)

Swingarm pivot nut

60–70 N·m (6.0–7.0 kg-m, 43–51 ft-lb)

Rear brake master cylinder mounting bolt

30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb)

Exhaust pipe flange nuts

30–35 N·m (3.0–3.5 kg-m, 22–25 ft-lb)

Exhaust pipe oil pan mount bolts

50–52 N·m (5.0–5.2 kg-m, 36–37 ft-lb)

Rear muffler mounting bolts

35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)

Exhaust pipe connecting band bolts

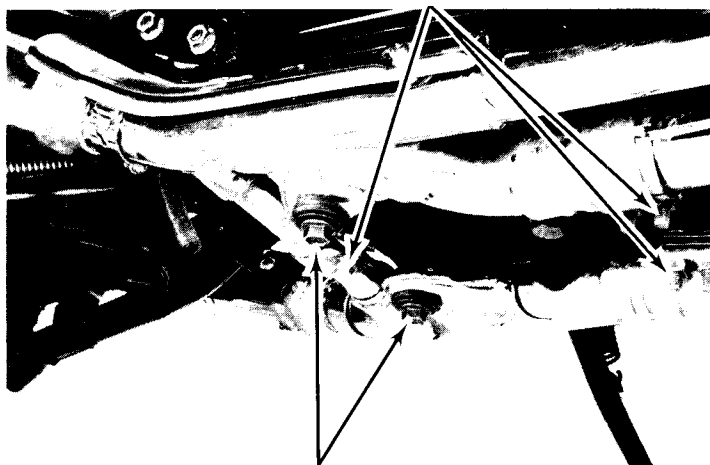
20–24 N·m (2.0–2.4 kg-m, 14–17 ft-lb)



## ENGINE REMOVAL

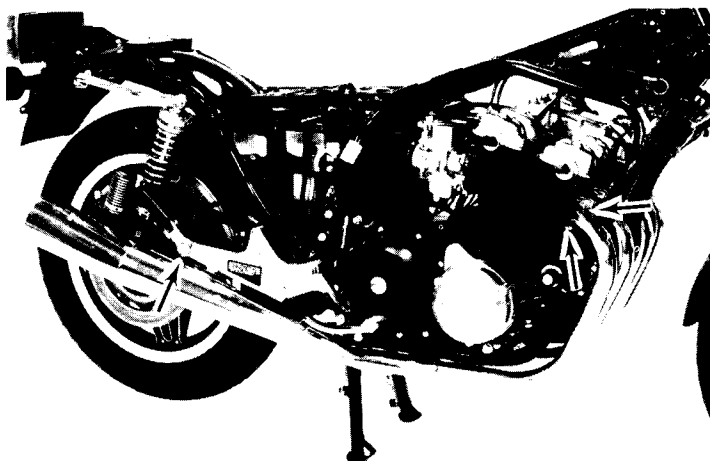
Place the motorcycle on its center stand.  
Drain the engine oil.  
Remove the seat and fuel tank.  
Remove the left and right side covers.  
Remove the exhaust pipe-to-oil-pan mounting bolts.  
Loosen the exhaust pipe connecting band bolts.

CONNECTING BAND BOLTS



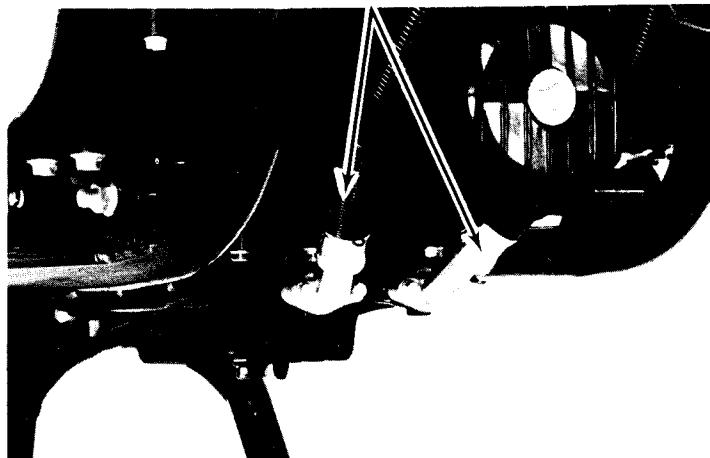
EXHAUST-TO-OIL-PAN BOLTS

Remove the exhaust pipe flange nuts.  
Remove the muffler rear mounting bolts and remove the exhaust system.



OIL COOLER HOSES

Disconnect the oil cooler hoses from the engine.





Disconnect the ground cable from the battery and frame.

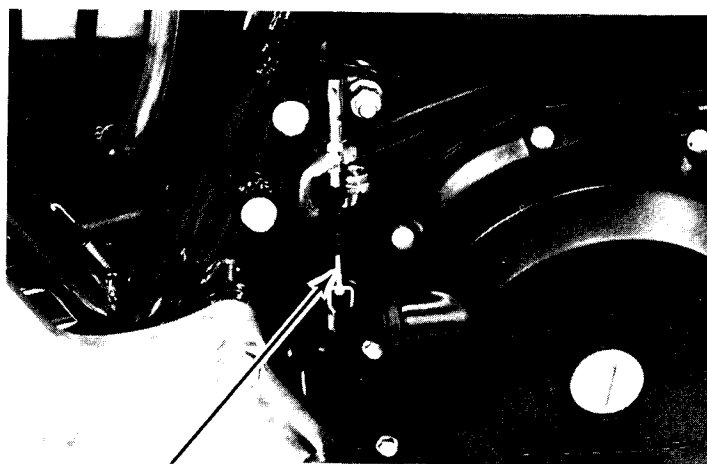
Disconnect the A.C. generator coupler.

GROUND CABLE



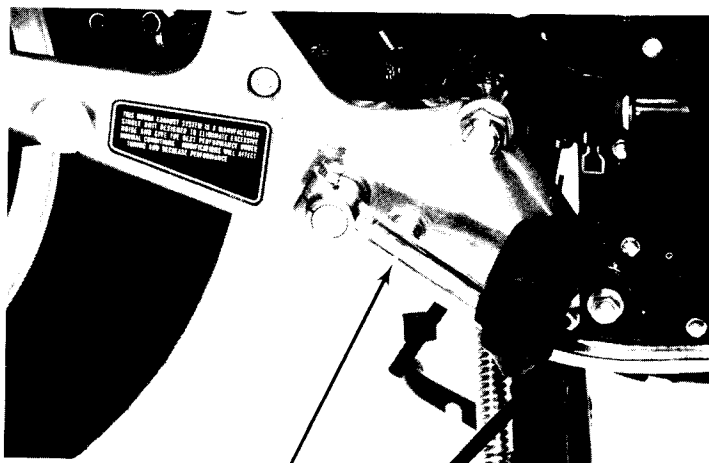
A.C. GENERATOR COUPLER

Disconnect the clutch cable at its lower end.



CLUTCH CABLE

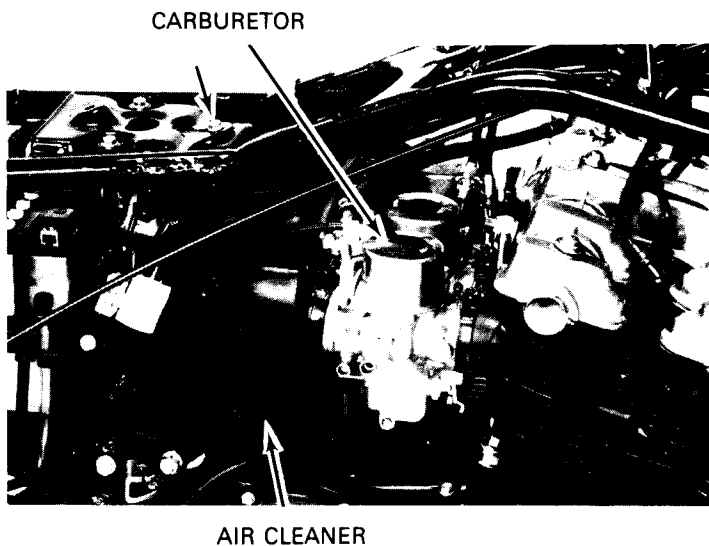
Remove the brake pedal.



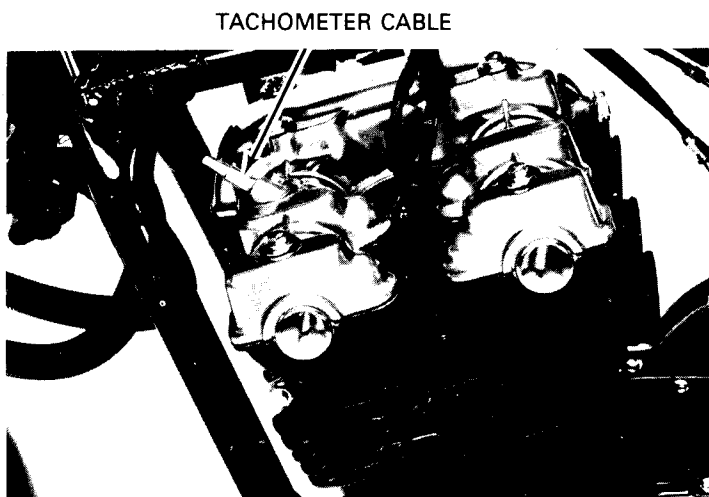
BRAKE PEDAL



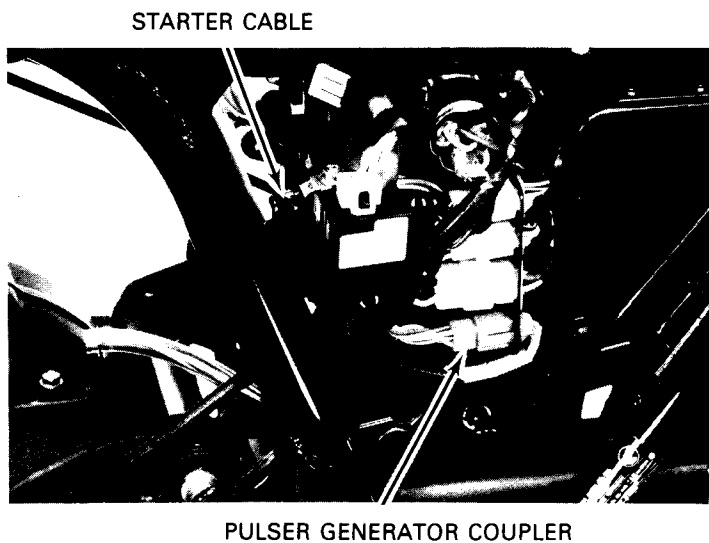
Remove the air cleaner assembly and carburetors.



Disconnect the tachometer cable and spark plug caps.

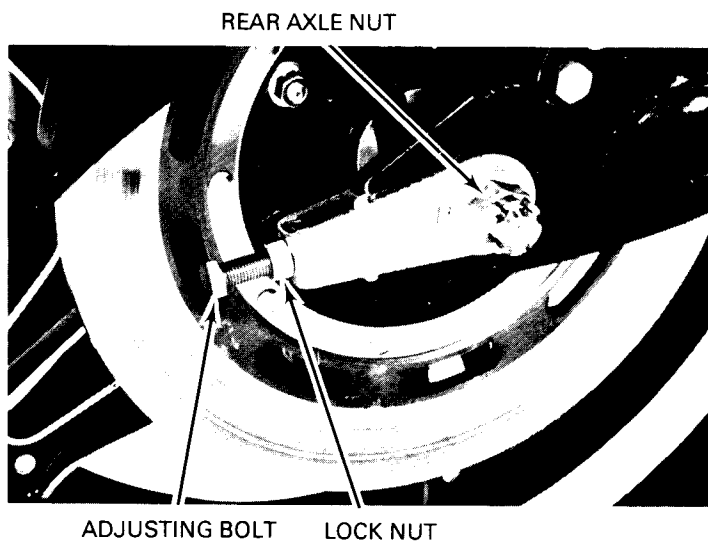


Disconnect the starter motor cable and pulser generator coupler.

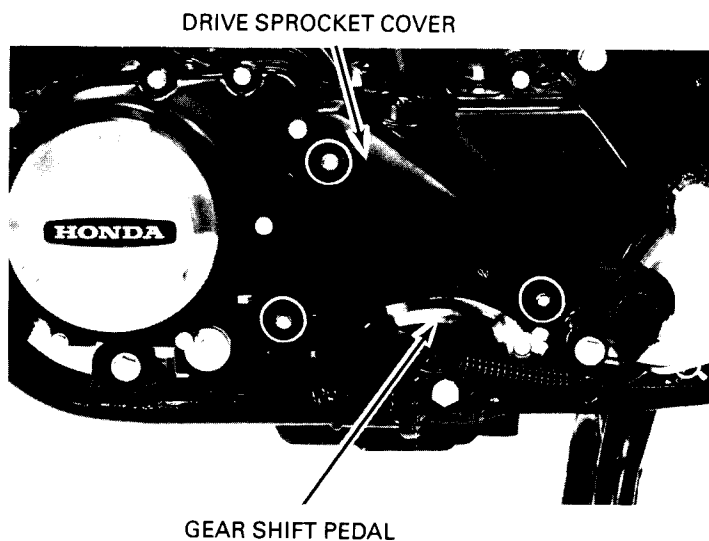




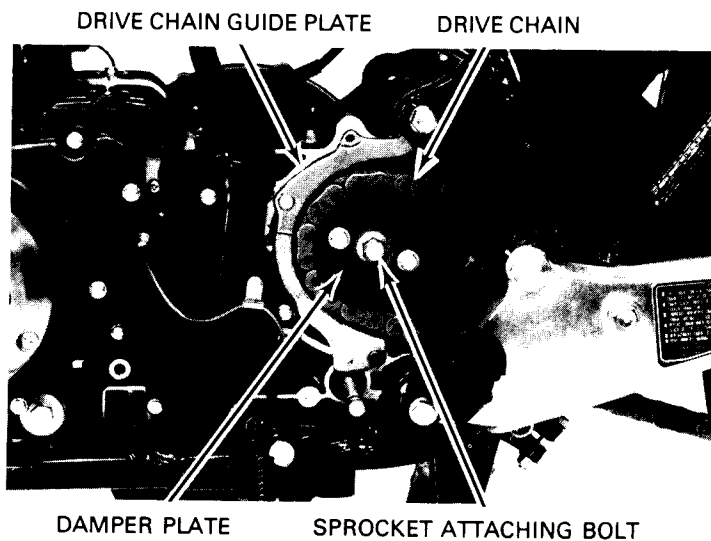
Loosen the drive chain adjusting bolt lock nuts and bolts.  
Remove the cotter pin and loosen the rear axle nut.  
Push the adjusters down and push the rear wheel forward.



Remove the gearshift pedal.  
Remove the drive sprocket cover.



Remove the drive chain guide plate.  
Remove the sprocket damper mounting bolts, damper plate and damper rubber.  
Remove the sprocket attaching bolt and sprocket.





Remove the rear brake master cylinder mounting socket bolts.

Remove the brake pedal bracket mounting bolt and swingarm pivot bolt.

Place a jack under the engine.

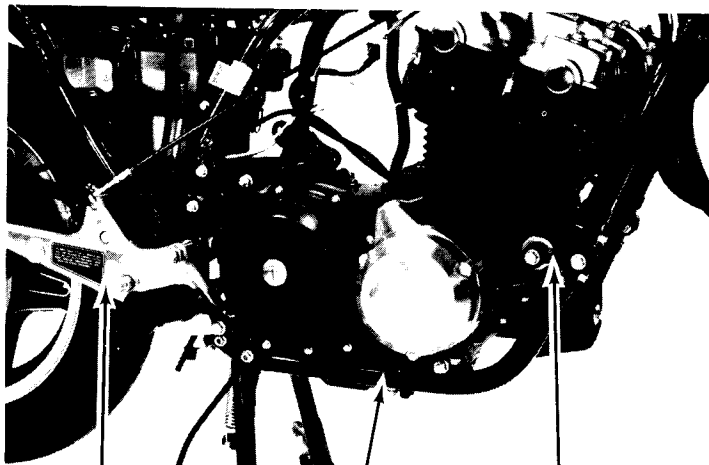
Remove the right and left front engine mounting brackets.

Remove the lower front and rear engine mounting bolts. Note the position of the outer damper plates.

Remove the rear engine mounting bolt.

Remove the lower right frame tube.

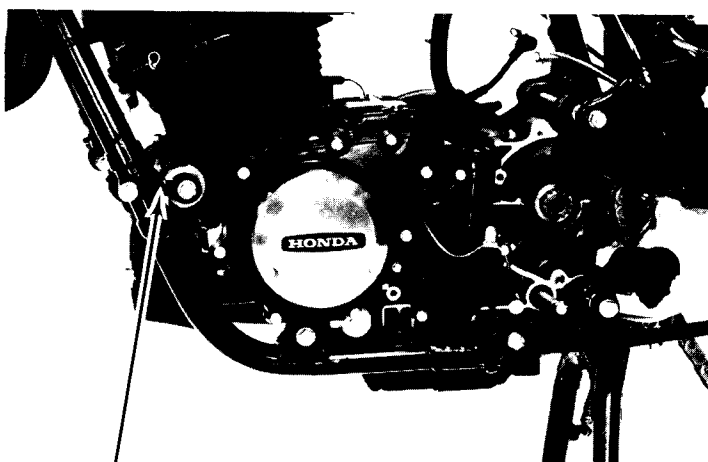
Remove the engine from the right side.



BRAKE PEDAL  
BRACKET

LOWER RIGHT  
FRAME TUBE

RIGHT FRONT  
ENGINE MOUNTING  
BRACKET



LEFT FRONT ENGINE  
MOUNTING BRACKET

## ENGINE INSTALLATION

Check the engine mounting rubbers for damage and replace if necessary.



MOUNTING RUBBERS





Install the engine into the frame. Installation is essentially the reverse order of removal with these exceptions:

Position the lower front and rear engine mount outer damper plates as noted during removal. They must be positioned correctly for low vibration levels.

#### TORQUE:

##### Engine hanger bolts:

10 mm bolt (1): 35–45 N·m  
(3.5–4.5 kg-m, 25–33 ft-lb)

10 mm bolt (2): 40–50 N·m  
(4.0–5.0 kg-m, 29–36 ft-lb)

8 mm bolt: 24–30 N·m  
(2.4–3.0 kg-m, 17–22 ft-lb)

Swingarm pivot: 60–70 N·m  
(6.0–7.0 kg-m, 43–51 ft-lb)

Master cylinder bolt: 30–40 N·m  
(3.0–4.0 kg-m, 22–25 ft-lb)

Check the drive sprocket o-ring and rubber damper for damage and replace if necessary. Then install the drive sprocket as shown.

Assemble exhaust system keeping 120 mm ( 4 3/4 in) between the right and left oil pan mounting holes.

Install the exhaust system loosely.

Tighten the following in the order listed:

– exhaust to cylinder head flange nuts.

TORQUE: 30–35 N·m

(3.0–3.5 kg-m, 22–25 ft-lb)

– exhaust pipe to oil pan mounting bolts.

TORQUE: 50–52 N·m

(5.0–5.2 kg-m, 36–37 ft-lb)

– rear muffler mounting bolts.

TORQUE: 35–45 N·m

(3.5–4.5 kg-m, 25–38 ft-lb)

– no. 2 and no. 3 exhaust pipe connecting band bolts.

TORQUE: 20–24 N·m

(2.0–2.4 kg-m, 14–17 ft-lb)

Route all wires and cables properly (page 25-9).

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

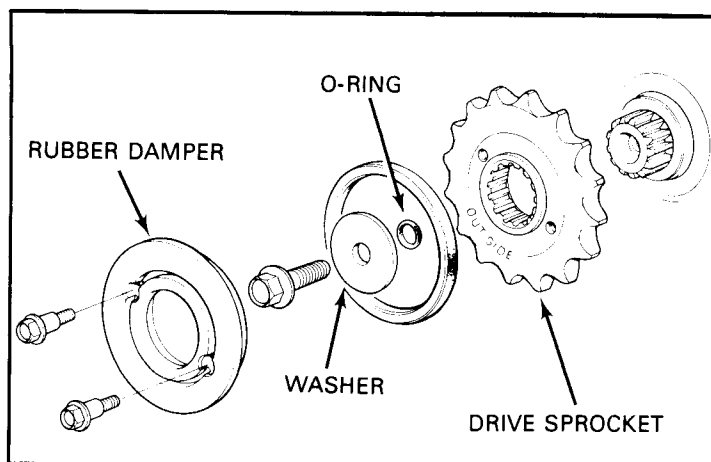
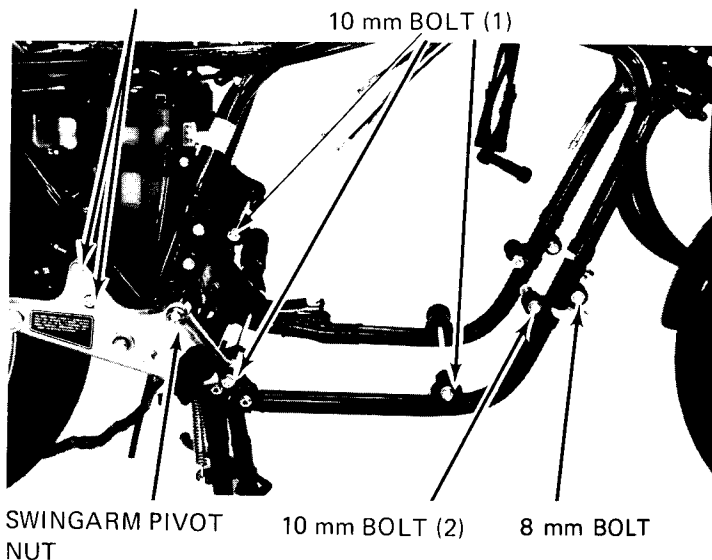
Perform the following inspections and adjustments:

Throttle operation (page 3-3).

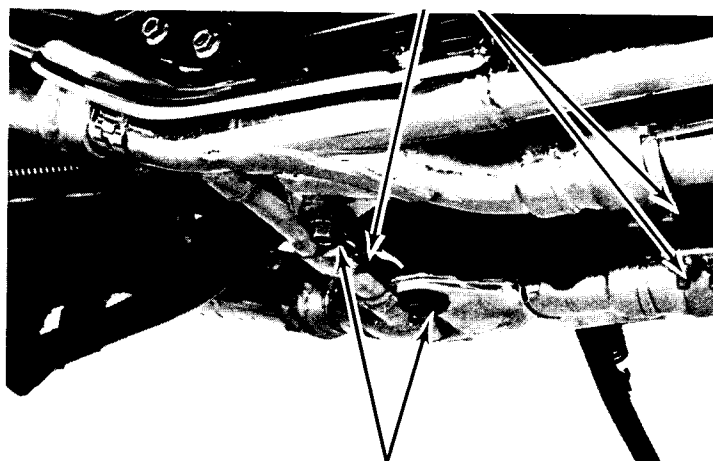
Clutch (page 3-17).

Drive chain (page 25-18).

#### MASTER CYLINDER BOLTS



#### CONNECTING BAND BOLTS

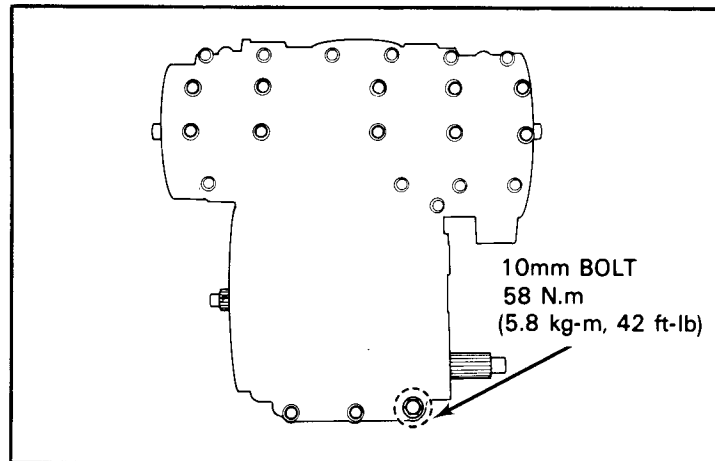




## 5. CRANKCASE ASSEMBLY

Assemble the crankcase halves, aligning the shift fork claws with the gears.

Apply engine oil to the 10 mm bolt and tighten all bolts in the sequence shown on page 11-4. Tighten the 10 mm bolt to 58 N·m (5.8 kg-m, 42 ft-lb).



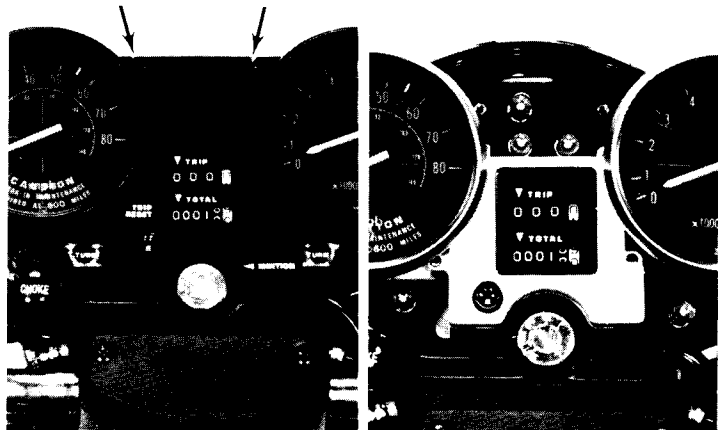
## 6. FRONT WHEEL/SUSPENSION INSTRUMENTS

### INDICATOR LIGHT BULB REPLACEMENT

Remove the indicator light panel screws and panel.

Replace the bulb.

If a replacement bulb does not light, check the wiring for a short, open circuit, or loose connection.



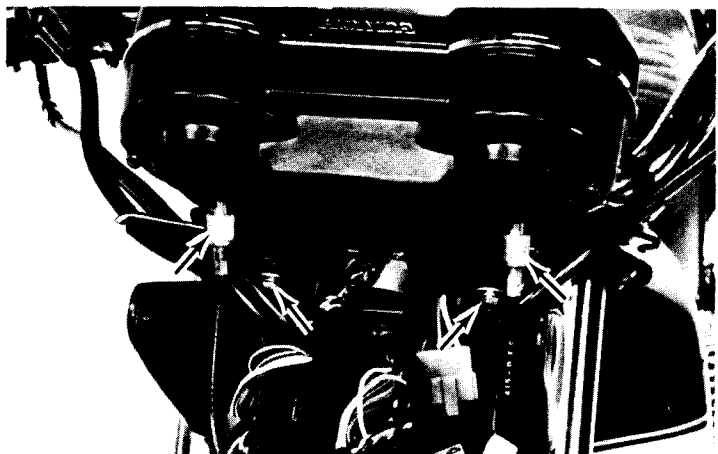
### REMOVAL

Remove the headlight (14-3).

Disconnect the speedometer and tachometer cables from the instruments.

Remove the instrument mounting nuts.

Remove the instruments.



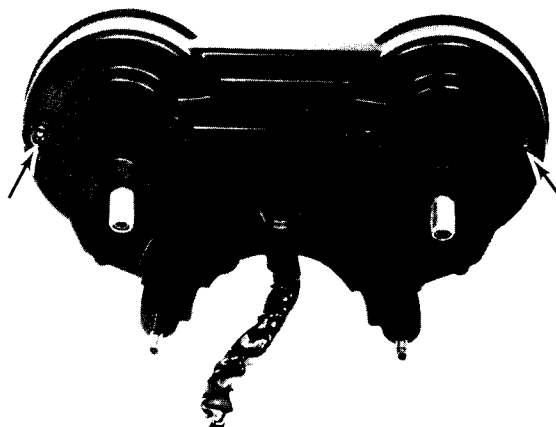


### METER BULB REPLACEMENT

Remove the indicator light panel.  
Remove the instruments' lower cover nuts and lower cover.

#### CAUTION:

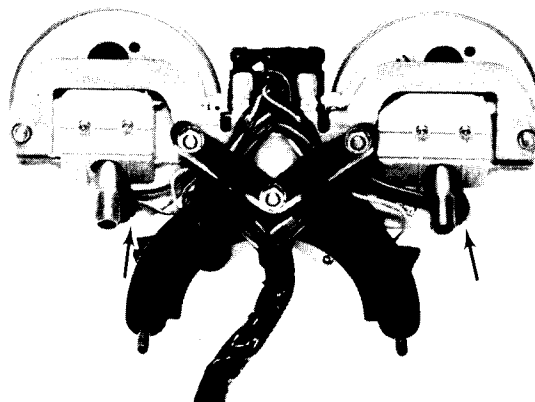
*Do not leave the instruments upside down or oil will leak onto the lens.*



Replace the bulb.

After installing a new bulb, check for continuity. If the bulb does not light, inspect the wiring for an open or short circuit.

Lubricate the speedometer and tachometer cables before reconnecting.



### INSTALLATION

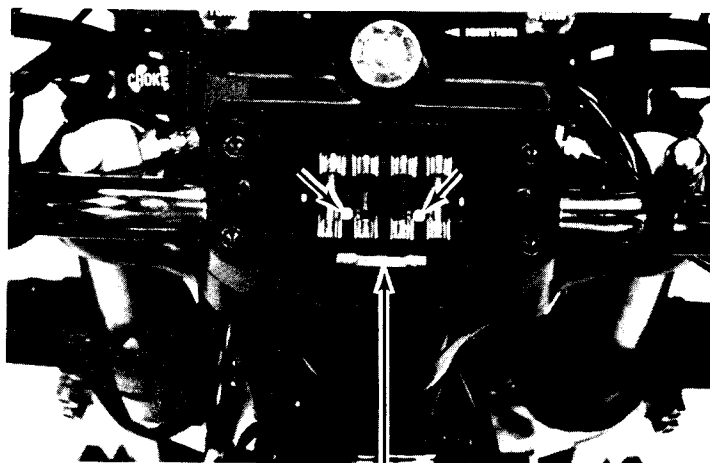
Install the instruments in the reverse order of removal.

### FUSE HOLDER REPLACEMENT

Remove the fuse cover.  
Unscrew the screws holding the fuse holder.  
Remove the headlight. (page 14-3)  
Disconnect the wire connector.  
Remove the fuse holder.

#### NOTE

Before removing the fuse holder, tie a string to the holder wires. This string can be used as a draw cord when installing a new holder.



FUSE HOLDER



## FRONT WHEEL

### REMOVAL

Remove the speedometer cable set screw and the speedometer cable.

Remove the left caliper assembly from the fork leg by removing the mounting bolts.

### CAUTION:

*Support the caliper assembly so it does not hang by the hose.*

Remove the left and right axle holders. Jack up the engine until the forks clear the front axle and remove the front wheel.

### NOTE

*Do not operate the front brake lever after removing the front wheel. To do so will cause difficulty in fitting the brake disc between the brake pads.*

### INSTALLATION

Position the wheel between the fork legs. Lower the engine so the fork legs rest on the top of the axle.

### CAUTION:

*When installing the wheel, fit the right brake disc carefully between the brake pads to avoid damaging the pads.*

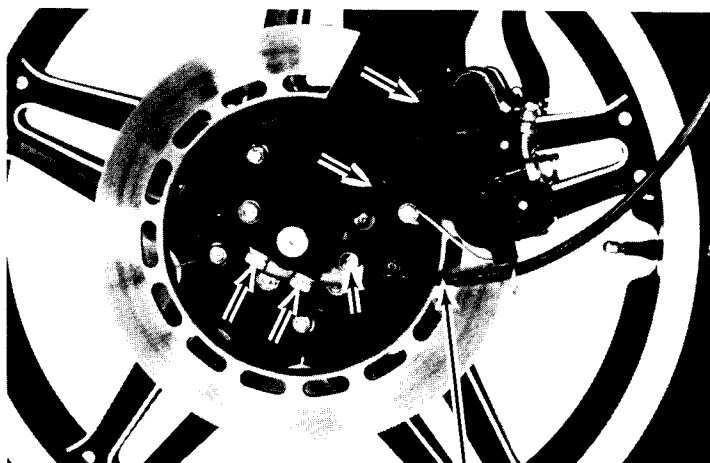
Position the tang on the speedometer gear box against the lug on the left fork leg.

Install the axle holders with the "↑" mark forward. Tighten the forward axle holder nuts lightly.

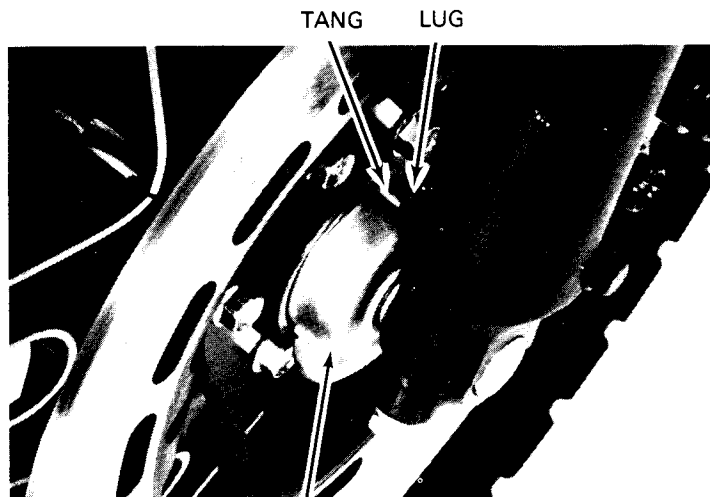
Fit the left caliper over the disc and tighten the mounting bolts.

**TORQUE:** 30–40 N·m  
(3.0–4.0 kg·m, 22–29 ft·lb)

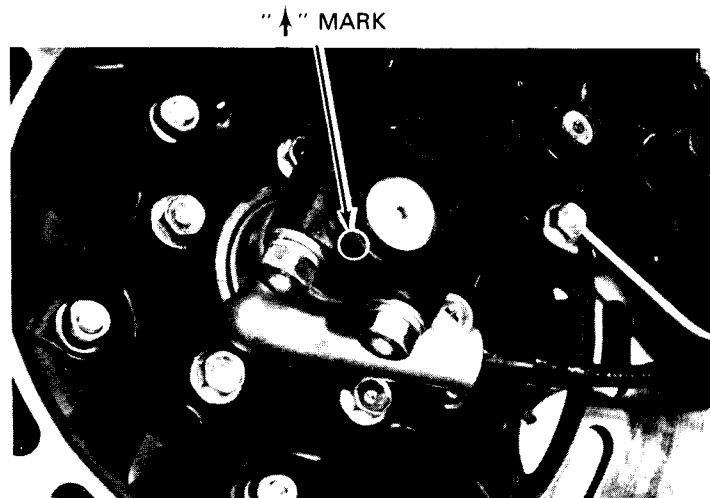
Tighten the right axle holder nuts starting with the forward nut.



SPEEDOMETER CABLE



SPEEDOMETER GEAR BOX





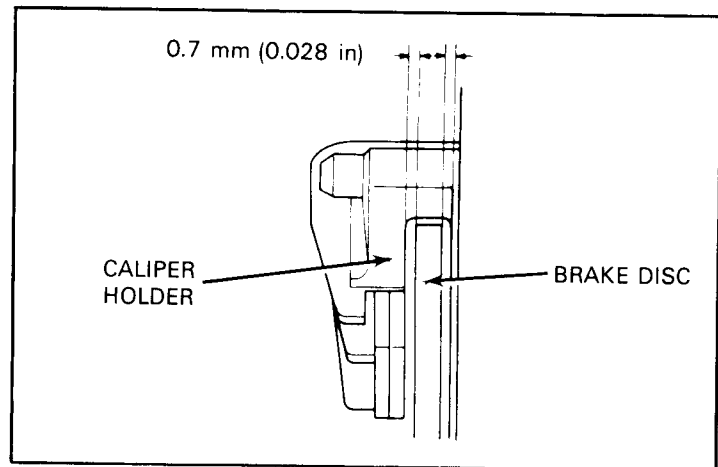
Measure the clearance between each surface of the left brake disc and the left caliper holder with a 0.7 mm (0.028 in) feeler gauge. If gauge inserts easily, tighten the forward axle nut to the specified torque, then tighten the rear nut.

If the feeler gauge cannot be inserted easily, pull the left fork out or push in until the gauge can be inserted.

After installing the wheel, apply the brake several times then recheck both discs for caliper holder to disc clearance.

**WARNING**

*Failure to provide adequate disc to caliper holder clearance may damage the brake disc and impair brake efficiency.*

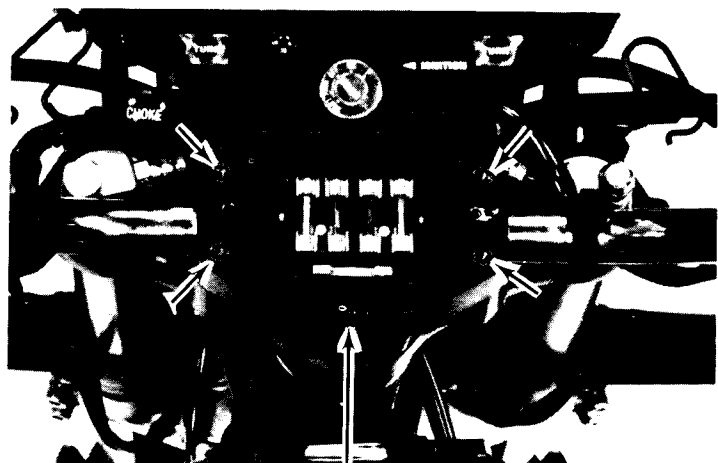
**FRONT FORK****SPECIFICATIONS**

|                           | STANDARD  | SERVICE LIMIT        |
|---------------------------|---|----------------------|
| Fork spring free length   | 532.2 mm (20.95 in)   | 521 mm (20.51 in)    |
| Front fork tube O.D.      | 38.950~38.975 mm (1.533~1.534 in)                               | 38.900 mm (1.531 in) |
| Front fork fluid capacity | 345 ± 2.5 cc (11.66 ± 0.085 oz)                                 | —                    |
| Front fork air pressure   | 90 ± 10 kPa<br>(0.9 ± 0.1 kg/cm <sup>2</sup> , 12.8 ± 1.42 psi) | —                    |

**SPECIAL TOOLS:** FORK SEAL DRIVER 07947-4630100

**REMOVAL**

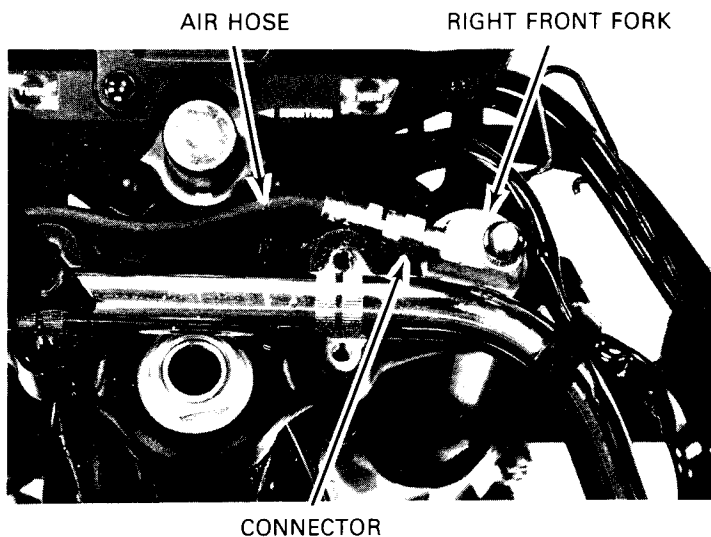
Remove the handlebar upper holder.



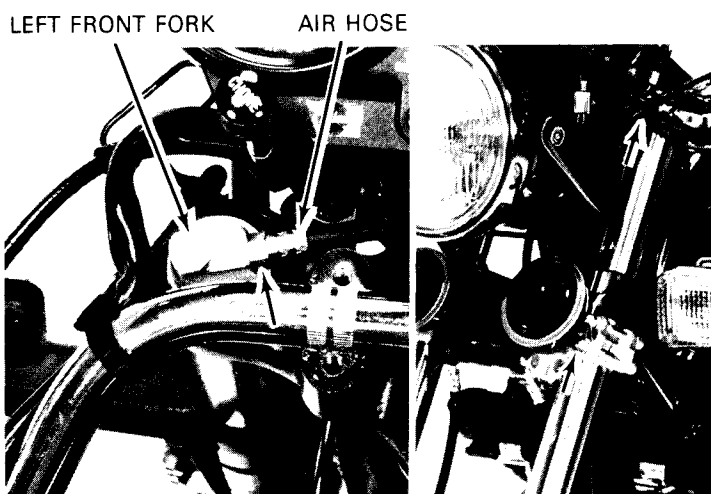
UPPER HOLDER



Disconnect the air hose and remove the connector from the right front fork.

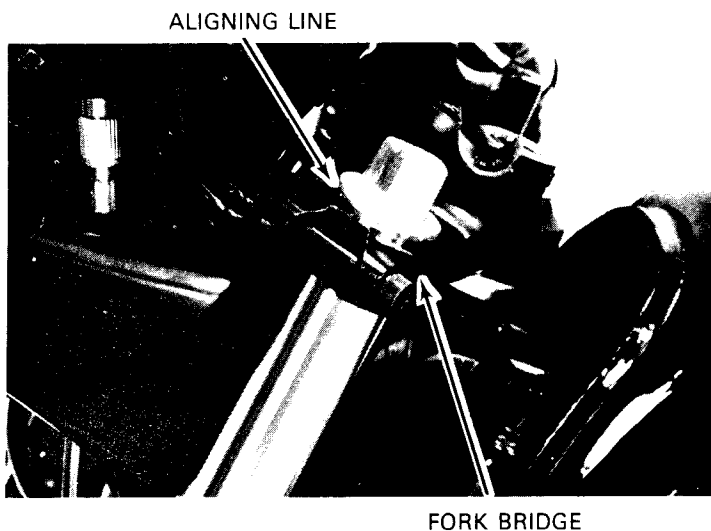


Disconnect the air hose from the left front fork. Remove the front wheel (page 25-30). Remove the right brake caliper. Remove the front fender. Loosen the fork upper and lower pinch bolts and remove the front fork tubes.



## INSTALLATION

Install the front fork so the aligning line on the top of the fork tube is even with the fork bridge.

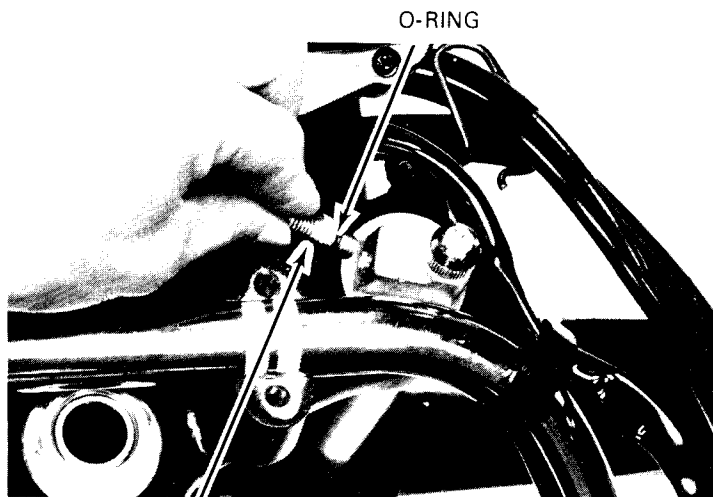




Apply grease to a new O-ring and place it on the air hose connector.

Install the connector into the right front fork cap and tighten it.

**TORQUE:** 4–7 N·m  
(0.4–0.7 kg-m, 2.9–5.1 ft-lb)

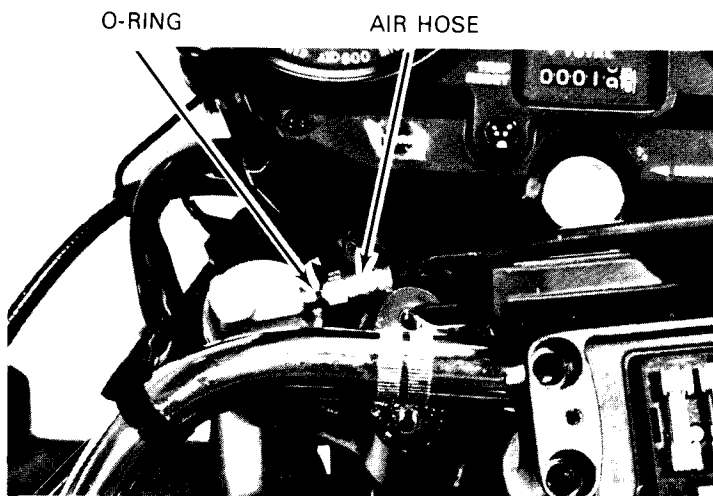


AIR HOSE CONNECTOR

Apply grease to a new O-ring and place it on the end of the air hose.

Connect the air hose to the left front fork cap.

**TORQUE:** 4–7 N·m  
(0.4–0.7 kg-m, 2.9–5.1 ft-lb)



Connect the air hose to the connector in the right fork cap and tighten it.

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

Install the removed parts in the reverse order of removal.

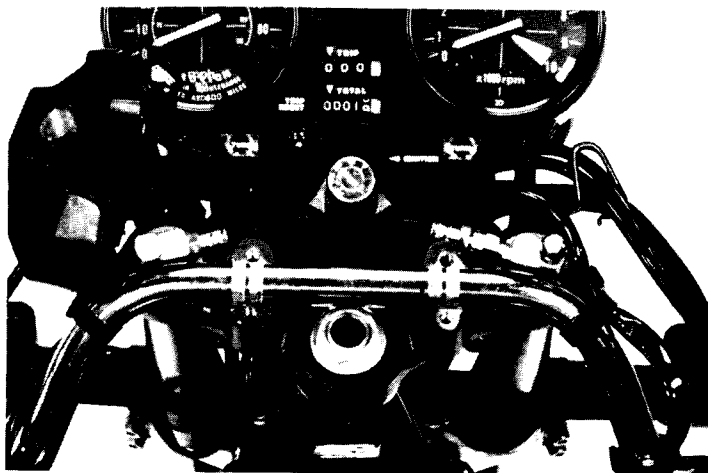
Fill the fork tubes with air to 0.8 - 1.1 kg/cm<sup>2</sup> (11 - 16 psi).

**CAUTION:**

- Use only a hand operated air pump to fill the fork tubes. Do not use compressed air.
- Maximum pressure is 3 kg/cm<sup>2</sup> (43 psi). Do not exceed this or fork tube component damage may occur.

With the front brake applied, pump the front forks up and down several times.

Place the motorcycle on its center stand. Check the air pressure and adjust if necessary.





## SEPARATION

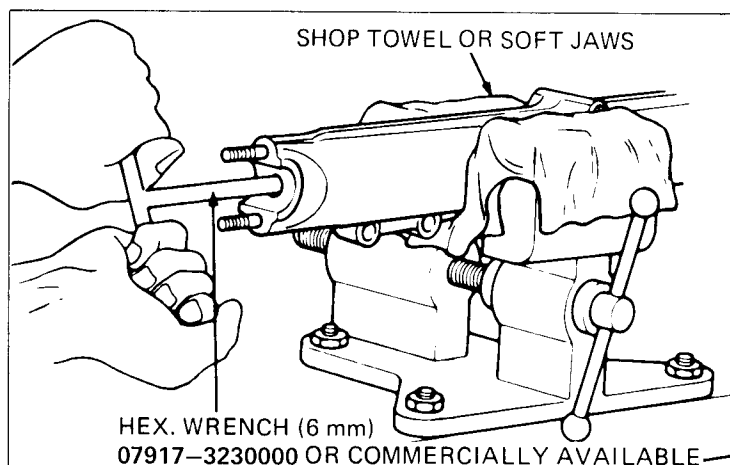
Remove the front fork (see page 25-31).

Hold the fork slider in a vise with soft jaws or a shop towel.

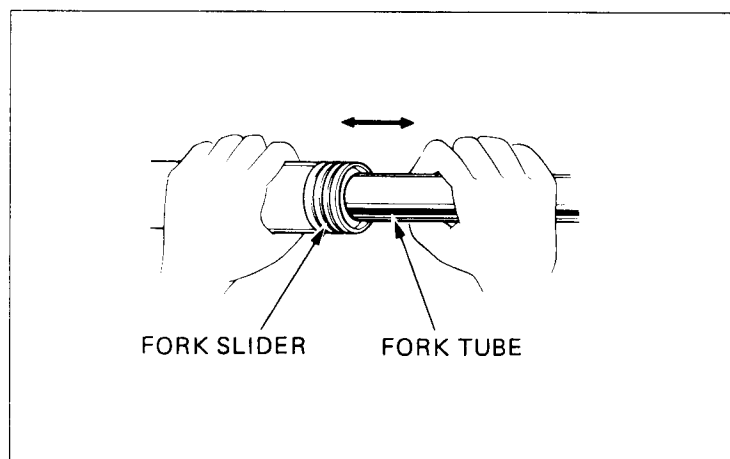
Remove the socket bolt with a hex wrench and pump the remaining ATF out through the socket bolt hole.

### CAUTION:

*Do not distort the slider in the vise.*

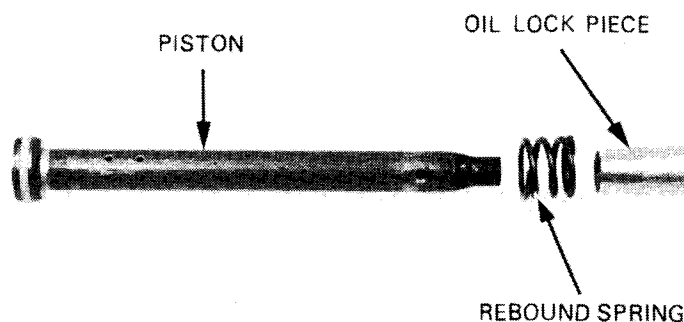


Pull the fork tube out until resistance from the slider bushing is felt. Then move it in and out, tapping the bushing lightly until the fork tube separates from the slider. The slider bushing will be forced out by the fork tube bushing. Remove the slider bushing from the fork tube.



Remove the piston and rebound spring from the fork tube.

Remove the oil lock piece from inside the slider.







## INSPECTION

Check the fork spring free lengths and replace the springs if shorter than the service limit.

|               | Spring                 |
|---------------|------------------------|
| Standard      | 532.2 mm<br>(20.95 in) |
| Service limit | 521 mm<br>(20.51 in)   |

SPRING



Check the fork tubes, fork sliders, bushings and pistons for score marks, scratches, excessive or abnormal wear, replacing those which can not be reused.

Measure the outside diameter of the fork tube.

### FORK TUBE O. D. SERVICE LIMIT:

**38.9 mm (1.531 in)**

Visually inspect the slider and fork tube bushings.

Replace if there are excessive scores or scratches, or if the teflon coating is worn so that copper appears over more than 3/4 of the total surface.

Check the back-up ring at the points shown.

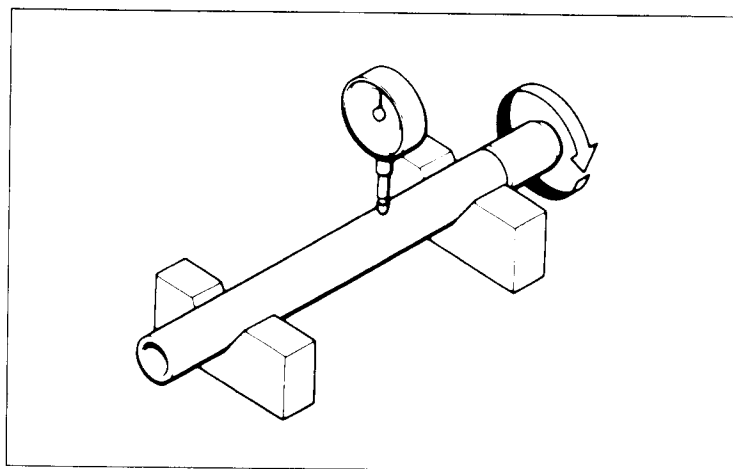
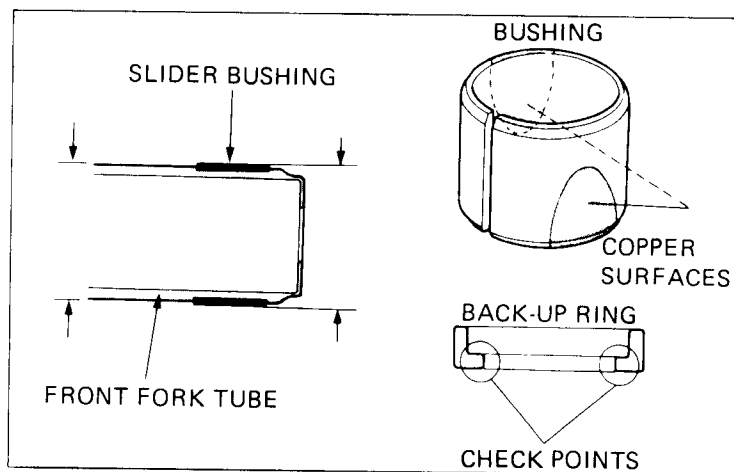
Replace if there is any distortion at the points.

Set the fork tube in V blocks and read the runout. Take 1/2 TIR to determine the actual runout.

### RUN OUT SERVICE LIMIT:

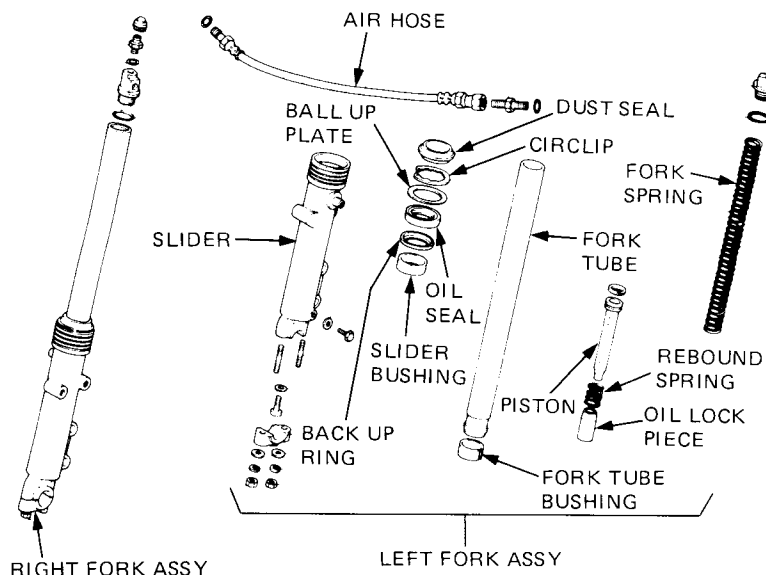
**0.2 mm (0.008 in)**

Inspect the fork tube, slider and piston ring for excessive wear and replace if necessary.





# FRONT FORK ASSEMBLY/ INSTALLATION ASSEMBLY



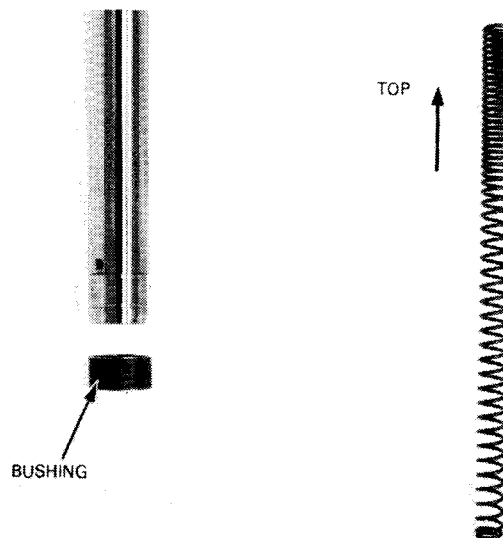
Clean all disassembled parts.

Install the bushing onto the inner tube.

Install the rebound spring and piston into the fork tube.

Place the oil lock piece into the slider and insert the fork tube.

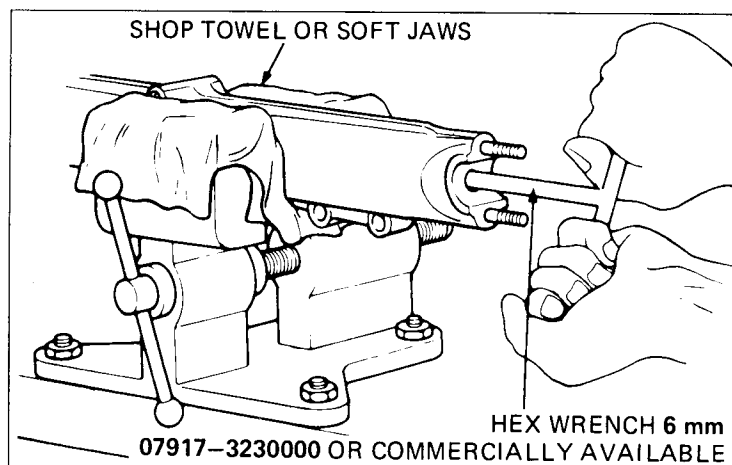
Install the fork spring with the narrow coil toward the top. Install the fork tube cap loosely.



Apply a locking agent to the socket bolt and thread it into the piston. Tighten with a Hex Wrench.

## CAUTION:

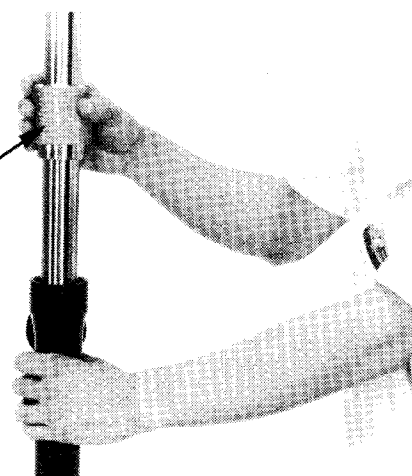
*Do not distort the slider in the vise.*





Place the slider bushing over the fork tube and rest it on the slider. Put the back-up ring and an old bushing or equivalent tool on top. Drive the bushing into place with the seal driver. Remove the old bushing.

FORK SEAL DRIVER  
07947-4630100



Coat a new oil seal with ATF and install it with the seal markings facing up. Drive the seal in with the seal driver.

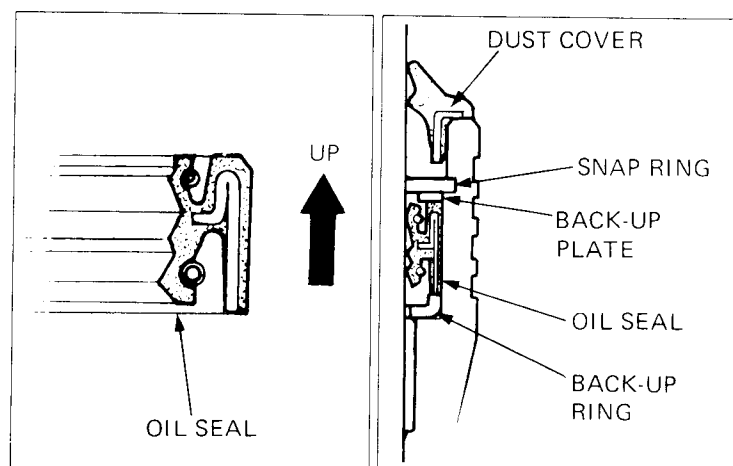
**NOTE**

If additional seal depth is needed, install the back-up plate and repeat driving the seal in.

Install the back-up plate, snap ring and dust cover.

**NOTE**

Install the snap ring with its radiused edge facing down.



Remove the fork tube cap and pour the specified amount of ATF into the fork tube.

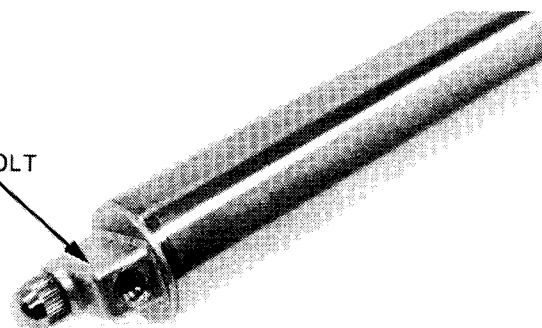
**OIL CAPACITY:** 345 cc (11.66 oz)

Install and torque the fork tube cap bolt.

**TORQUE:** 15–30 N·m  
(1.5–3.0 kg-cm, 11–22 ft-lb)

Install the front fork (see page 25-32).

CAP BOLT





## 7. REAR WHEEL/SUSPENSION

### SERVICE INFORMATION

#### GENERAL INSTRUCTIONS

- The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to the TUBELESS TIRE MANUAL.
- Do not remove rivets, nuts and pins from the rim, spoke plate and hub.
- Never ride on the rim or try to bend the rim.
- Avoid damaging the aluminum alloy rim.

#### TOOLS

Common

|                                 |               |
|---------------------------------|---------------|
| Bearing driver handle A         | 07749-0010000 |
| Bearing driver outer 62 x 68 mm | 07746-0010500 |
| Bearing driver outer 52 x 55 mm | 07746-0010400 |
| Bearing driver pilot 20 mm      | 07746-0040500 |
| Bearing driver pilot 25 mm      | 07746-0040600 |
| Rear shock absorber compressor  | 07959-3290001 |
| Retainer wrench body            | 07710-0010400 |
| Retainer wrench A               | 07710-0010100 |

#### TORQUE VALUES

|                     |   |
|---------------------|---|
| Rear brake disc     | 27–33 N·m (2.7–3.3 kg-m, 20–24 ft-lb)   |
| Driven sprocket     | 80–100 N·m (8.0–10.0 kg-m, 58–72 ft-lb) |
| Rear axle nut       | 80–100 N·m (8.0–10.0 kg-m, 58–72 ft-lb) |
| Rear shock absorber | 30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb)   |
| Swing arm pivot nut | 60–70 N·m (6.0–7.0 kg-m, 43–51 ft-lb)   |
| Brake torque link   | 18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)   |

#### SPECIFICATIONS

|                                   | Standard                                | Service Limit      |
|-----------------------------------|---|--------------------|
| Axle runout                       | —                                       | 0.2 mm (0.008 in)  |
| Rear wheel runout Radial          | —                                       | 2.0 mm (0.08 in)   |
| Axial                             | —                                       | 2.0 mm (0.08 in)   |
| Shock absorber spring free length | 238.0 mm (9.37 in)                      | 233.0 mm (9.17 in) |
| Swing arm bushing I.D.            | 21.500 - 21.552 mm (0.8465 - 0.8485 in) | 21.7 mm (0.854 in) |
| Swing arm collar O.D.             | 21.427 - 21.460 mm (0.8436 - 0.8449 in) | 21.4 mm (0.843 in) |

## TROUBLESHOOTING

#### Oscillation

1. Bent rim
2. Loose wheel bearings
3. Loose or bent spokes
4. Faulty tire
5. Loose axle
6. Tire pressure incorrect
7. Swingarm bearing worn

#### Soft suspension

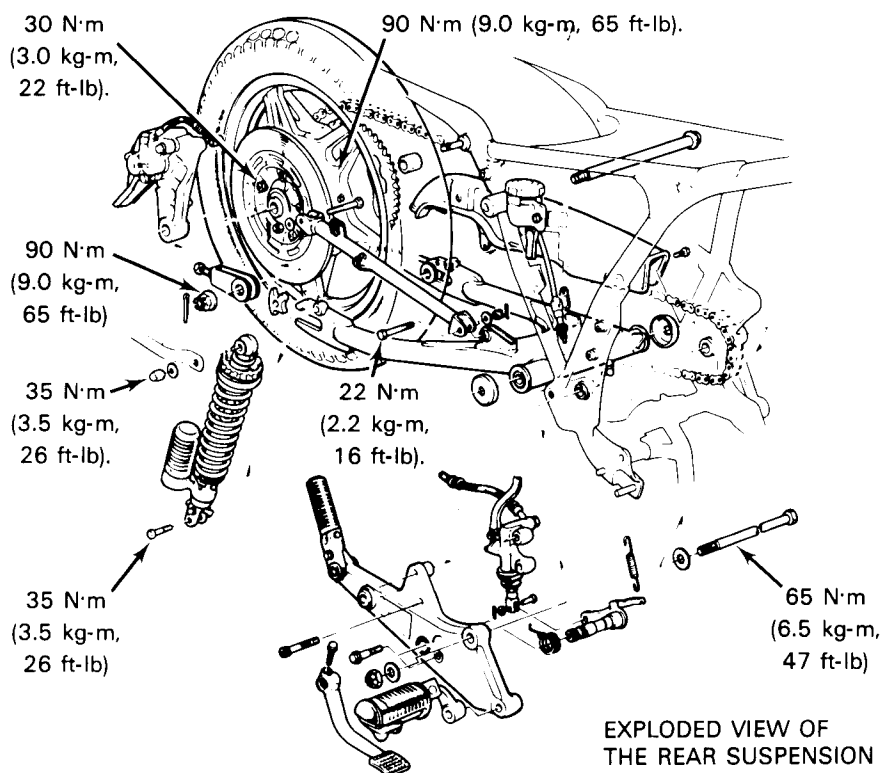
1. Weak springs
2. Shock absorber improperly adjusted

#### Hard suspension

1. Shock absorber improperly adjusted
2. Bent shock absorber

#### Suspension noise

1. Shock case binding
2. Loose fasteners





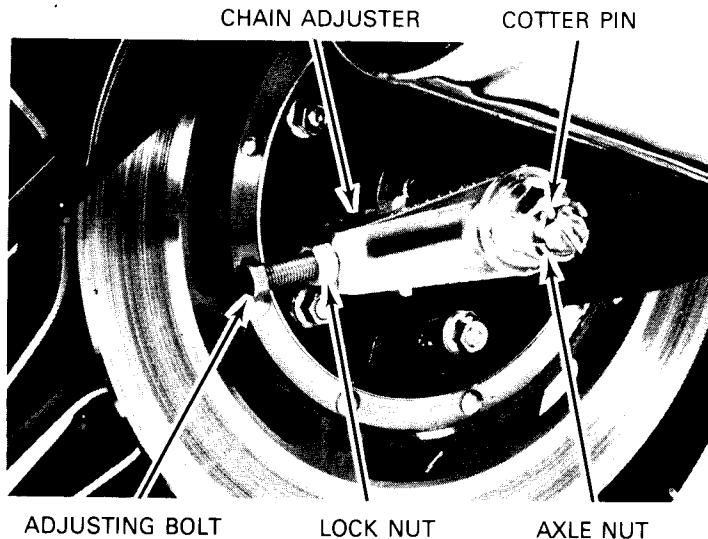
## REAR WHEEL

### REMOVAL

Place the motorcycle on its center stand.

Loosen the drive chain adjusting bolt lock nuts and adjusting bolts.

Remove the cotter pin from the end of the rear axle and loosen the rear axle nut.



Pull the adjusters down and remove the adjuster stops.

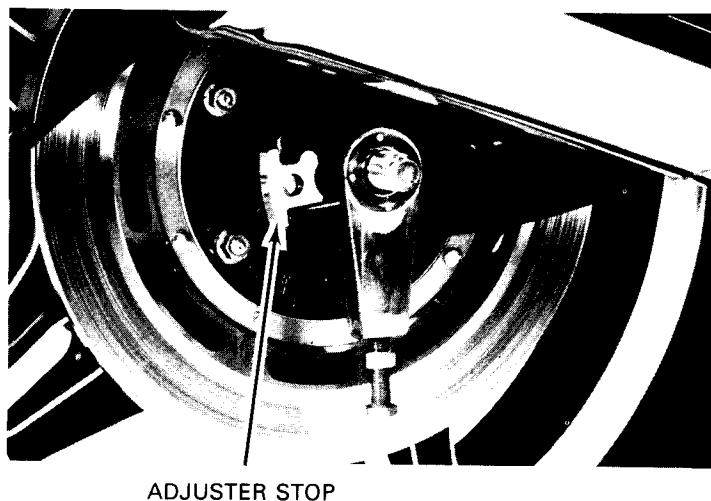
Push the wheel forward and remove the drive chain from the sprocket.

Pull the wheel out of the swingarm.

#### NOTE

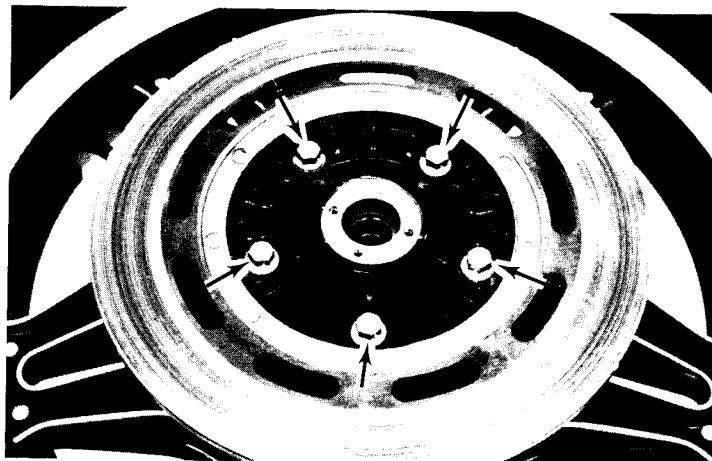
Do not operate the rear brake pedal after removing the rear wheel. To do so will cause difficulty in refitting the brake disc between the brake pads.

Remove the rear axle.



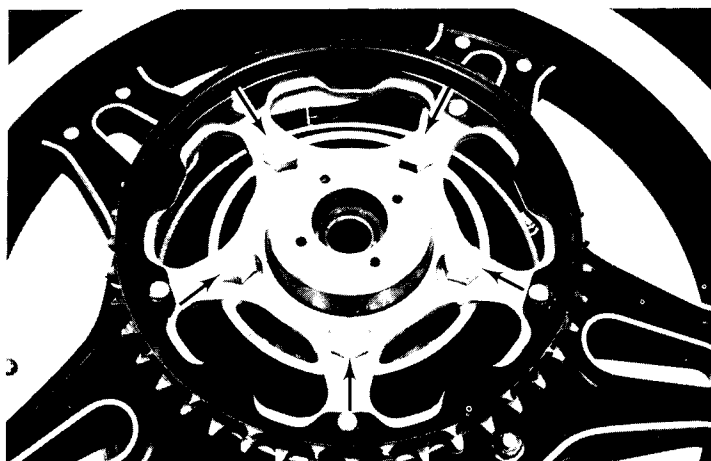
### DISASSEMBLY

Remove the rear disc nuts and the disc.



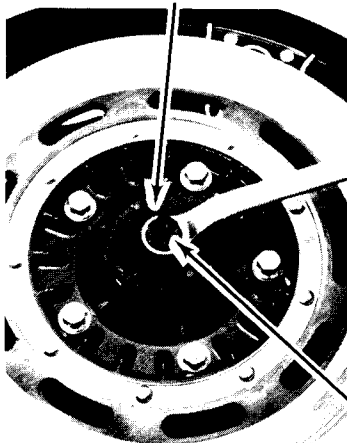


Loosen the driven sprocket nuts.  
Remove the driven flange from the wheel hub.  
Remove the driven sprocket.



Remove the bearing retainers.

RETAINER WRENCH A  
07710-0010100



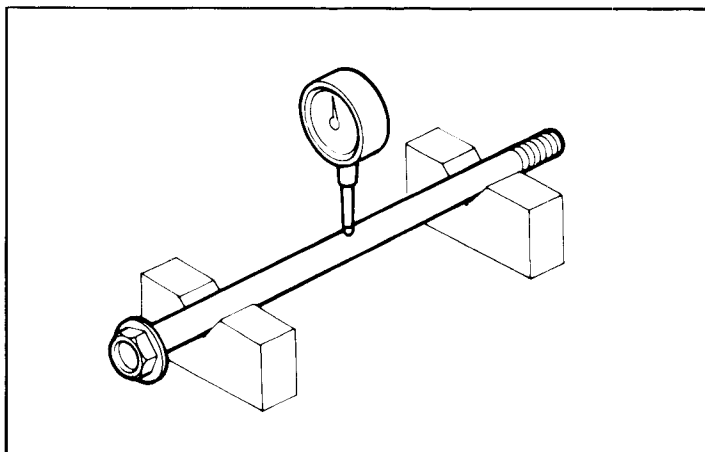
RETAINER WRENCH BODY  
07710-0010401

## INSPECTION

### AXLE

Set the axle in V blocks and read the axle runout.  
The actual axle runout is 1/2 of the total indicator reading.

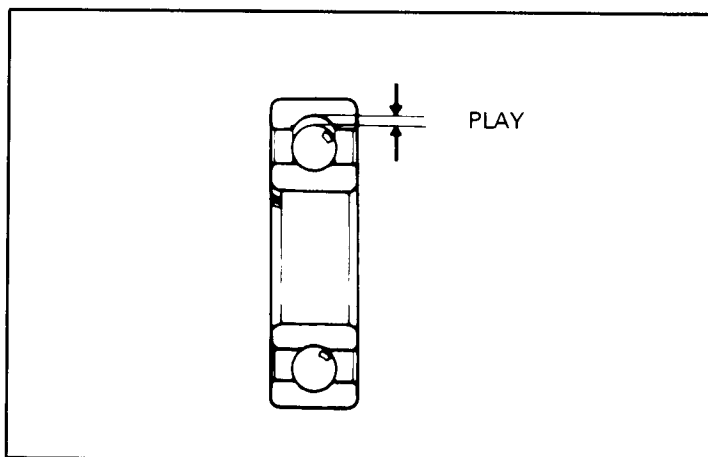
**SERVICE LIMIT: 0.2 mm (0.008 in)**





### REAR WHEEL BEARING

Check the wheel bearing play by rotating the wheel by hand. Replace the bearings with new ones if they are noisy or have excessive play.



### REAR WHEEL RIM RUNOUT

Check the rim for runout by placing the wheel in a truing stand. Spin the wheel slowly, and read the runout using a dial indicator.

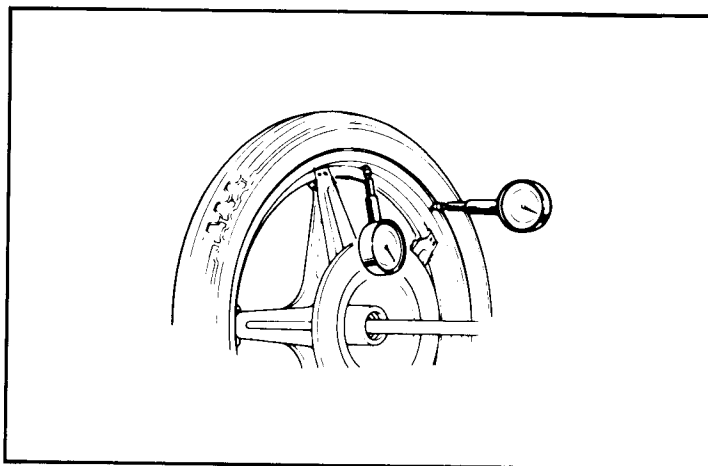
#### SERVICE LIMITS:

**RADIAL RUNOUT:** 2.0 mm (0.08 in)

**AXIAL RUNOUT:** 2.0 mm (0.08 in)

#### NOTE

The COMSTAR WHEEL cannot be serviced and must be replaced if the above limits are exceeded.

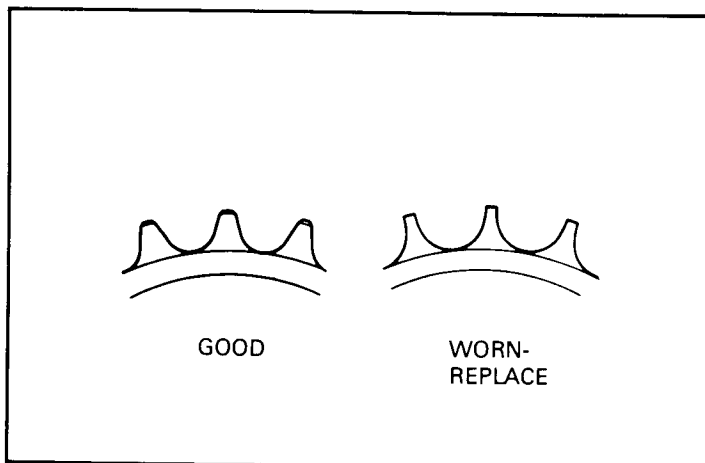


### FINAL DRIVEN SPROCKET

Check the condition of the final driven sprocket teeth. Replace the sprocket if worn or distorted.

#### NOTE

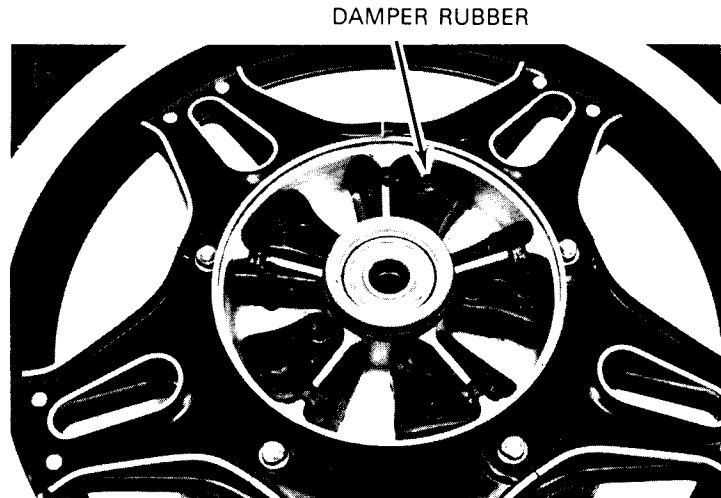
If the final driven sprocket requires replacement, inspect the drive chain and drive sprocket.





## DAMPER RUBBERS

Replace the damper rubbers if they are damaged or deteriorated.



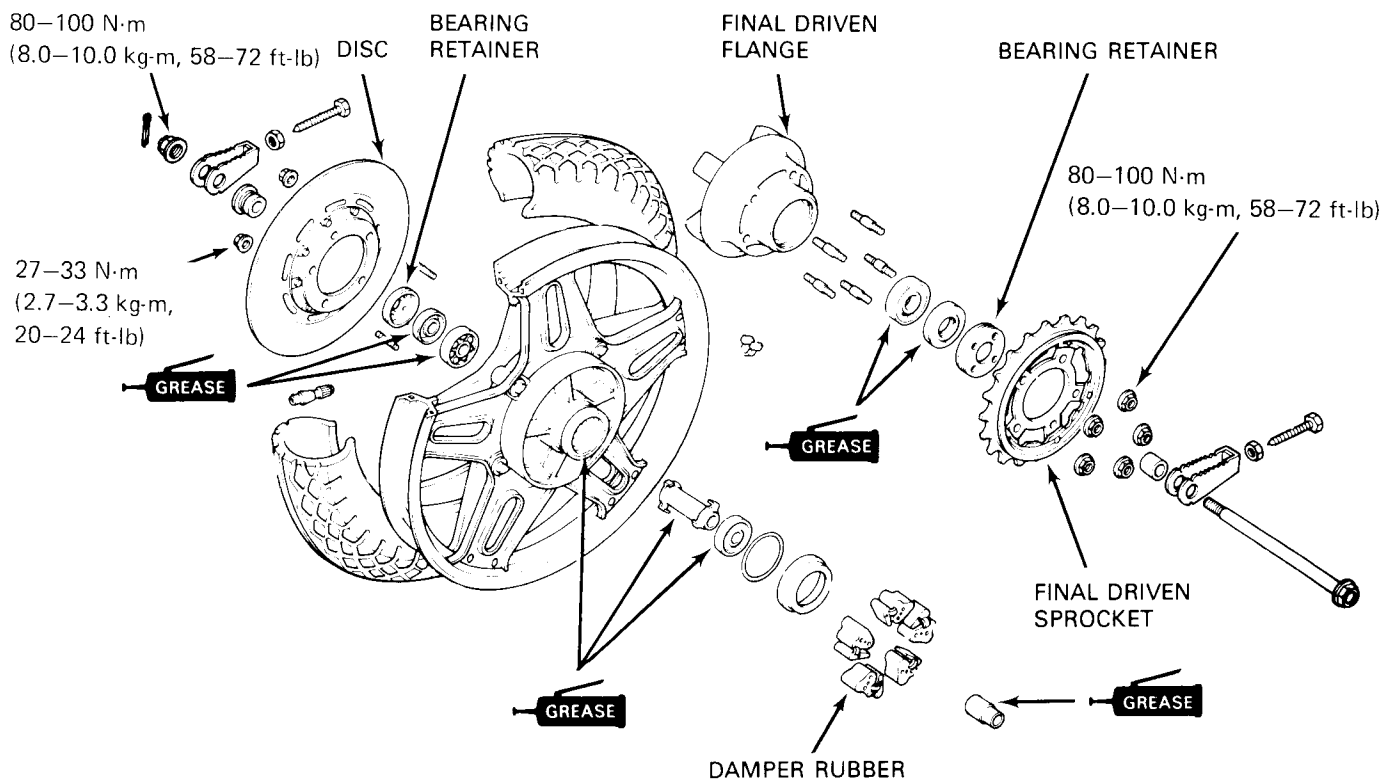
## ASSEMBLY

### NOTE

The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to TUBELESS TIRE MANUAL.

### WARNING

*Do not get grease on the brake disc or stopping power will be reduced.*







Pack all bearing cavities with grease.  
Press the distance collar into place from the left side.

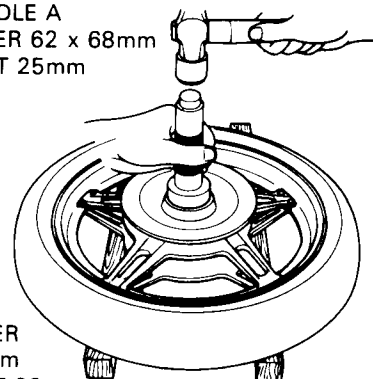
Drive the right ball bearing in first, then the left ball bearing.

**CAUTION:**

*Drive the bearings in squarely with the sealed end facing out, making sure they are fully seated.*

**DRIVEN FLANGE SIDE:**

BEARING DRIVER HANDLE A  
BEARING DRIVER OUTER 62 x 68mm  
BEARING DRIVER PILOT 25mm



**WHEEL HUB SIDE:**

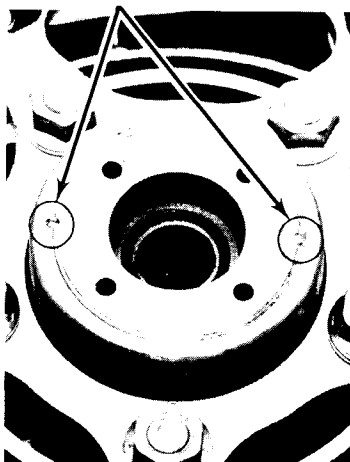
BEARING DRIVER OUTER  
52 x 55mm  
BEARING DRIVER PILOT 20mm

Install the bearing retainers with the same tools used to remove them. Then stake the retainers to the hub.

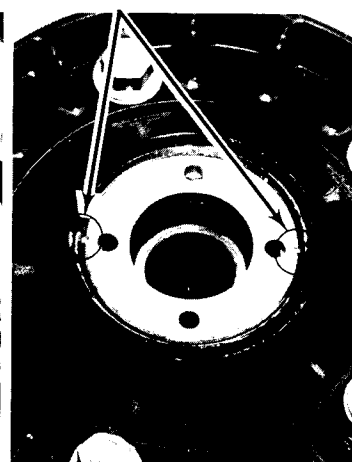
**NOTE**

Check the condition of the bearing retainer. If the threads are damaged, the retainer should be replaced.

STAKE IN 2 PLACES



STAKE IN 2 PLACES



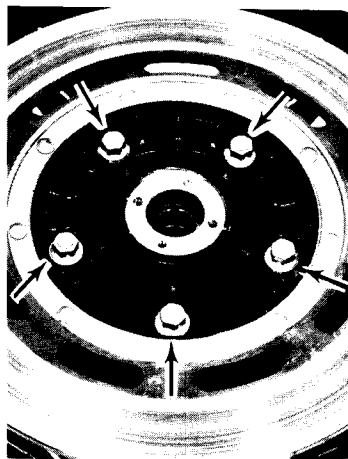
Install the rear brake disc.

**TORQUE:** 27–33 N·m  
(2.7–3.3 kg·m, 20–24 ft·lb)

Clean the brake disc with a high quality degreasing agent.

Install the final driven sprocket.

**TORQUE:** 80–100 N·m  
(8.0–10.0 kg·m, 58–72 ft·lb)





## INSTALLATION

Install the rear wheel in the reverse order of removal.

### NOTE

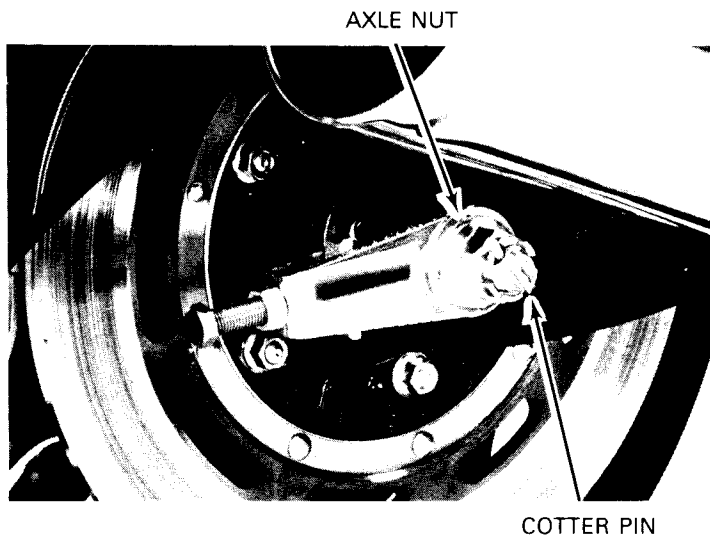
- When installing the wheel, carefully fit the brake disc between the brake pads.
- After installing the wheel, apply the brake several times. Then check that the wheel rotates freely. Recheck wheel installation if the brake drags or if the wheel does not rotate freely.

Use a new cotter pin for securing the axle nut.

**TORQUE:** 80–100 N·m

(8.0–10.0 kg·m, 58–72 ft·lb)

Adjust the drive chain slack (page 25-20).



## SHOCK ABSORBER

### REMOVAL

Remove the side grip and shock absorber lower mounting bolt.

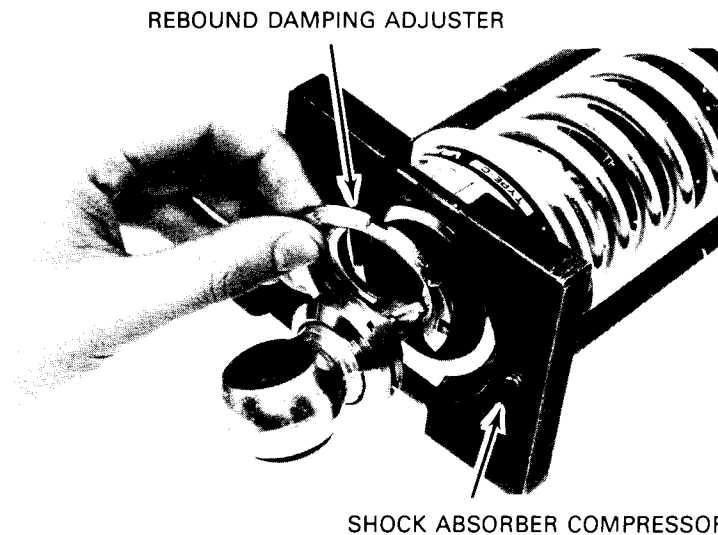
Remove the shock absorber.



### DISASSEMBLY

Compress the spring with the shock absorber compressor just enough to remove the rebound damping adjuster.

Remove the compressor, spring seat, case, spring and adjuster.



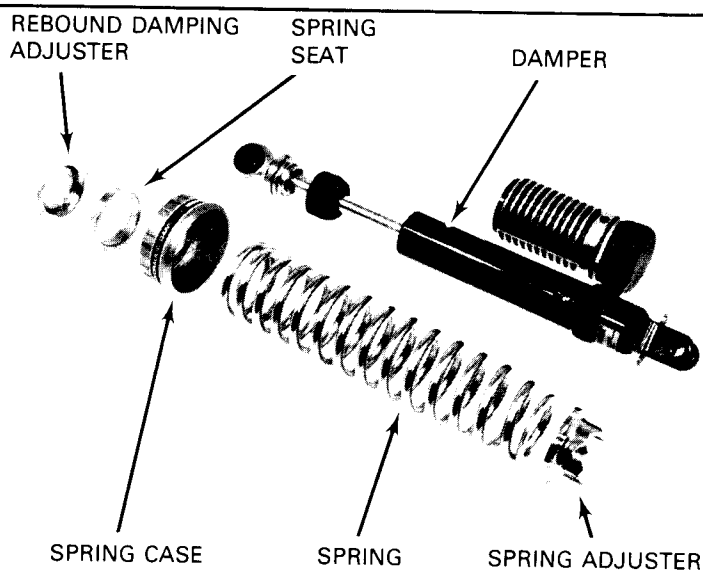


**NOTE**

Do not try to disassemble the shock absorber further.

**WARNING**

- Before discarding the shock absorber release the air pressure by removing the reservoir cap and depressing the valve core.
- Do not place the shock absorber near extreme heat or it will explode.

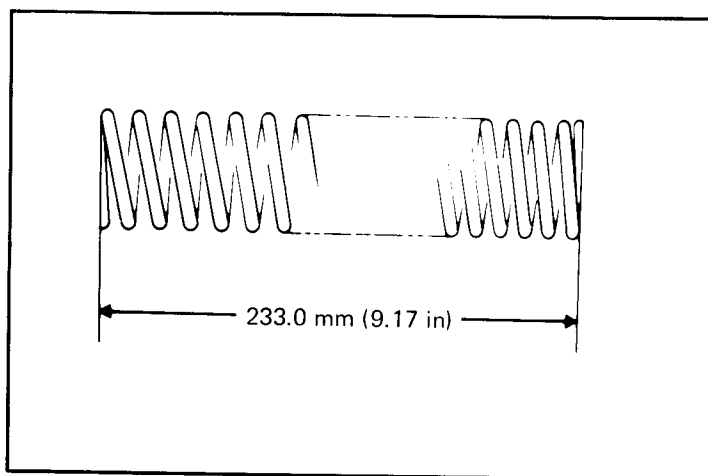


**INSPECTION**

Check the shock absorber spring free length and replace the spring if shorter than the service limit.

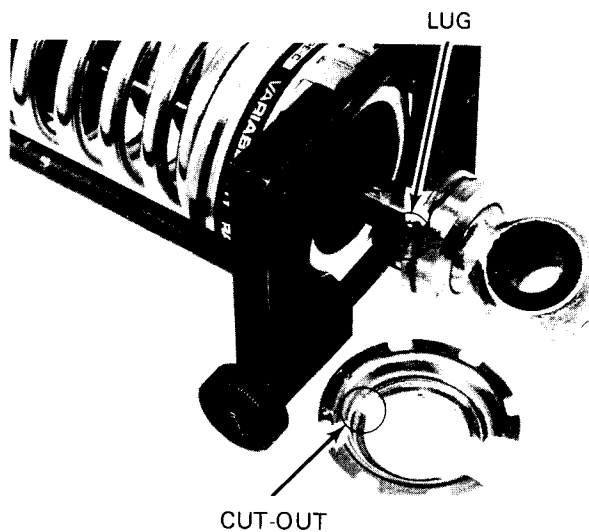
**SERVICE LIMIT: 233.0 mm (9.17 in)**

Inspect the shock absorber damper for damage or oil leaks. Replace the damper if it is damaged or leaking.



**ASSEMBLY**

- Install the spring adjuster over the damper.
- Install the shock absorber spring over the spring adjuster and damper with the narrow coils toward the top.
- Install the spring case and seat.
- Install the rebound damping adjuster with the spring compressor, aligning the lug on the upper eye with the cutout in the adjuster.





## INSTALLATION

Install the shock absorber and lower mounting bolt.

Install the side grip and upper mounting nut.  
Tighten the mounting bolt and nut.

**TORQUE:** 30–40 N·m  
(3.0–4.0 kg·m, 22–29 ft·lb)



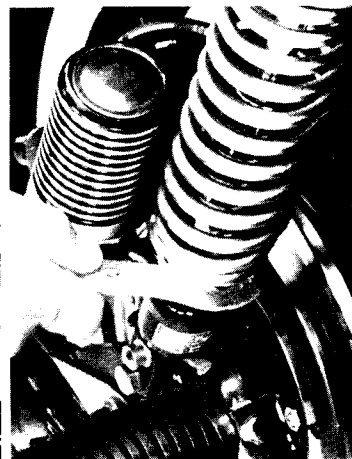
The adjustable VHD shock absorber has three adjustments to provide the desired ride with various rider/cargo weights.

The spring adjuster adjusts spring preload. The rebound damping adjuster and compression damping adjuster adjust damping.

Adjust spring preload first, using the hook spanner to rotate the spring adjuster. Position I is for light loads and position II to V progressively increase preload for heavier loads.



I II III IV V



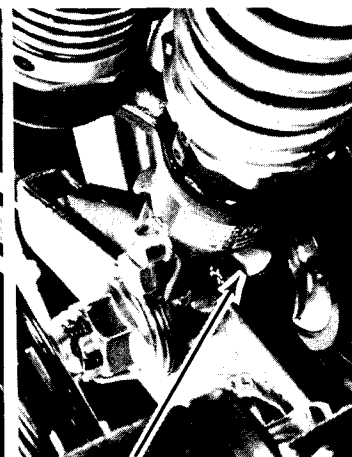
ADJUSTING SPRING PRELOAD

## ADJUSTER (TENSION)

Rotate the rebound damping adjuster with the hook spanner to select one of the three positions. Move the compression damping adjuster lever to position "1" or "2".

For both adjusters, damping force increases as you select a higher number.

Be sure to adjust both shock absorbers equally.



ADJUSTER LEVEL  
(COMPRESSION)



## RECOMMENDED DAMPING ADJUSTER POSITIONS:

| Rebound<br>Damping<br>Adjuster (2) | Compression<br>Damping<br>Adjuster (3) | Conditions                  |                           |
|------------------------------------|--|-----------------------------|---------------------------|
|                                    |  | Riders/Load                 | Riding Conditions         |
| 1                                  | 1                                      | One                         | Around town               |
| 2                                  | 1                                      | One                         | Highways or winding roads |
| 3                                  | 1                                      | One                         | Rough or uneven roads     |
| 1                                  | 2                                      | One/Two                     | Around town               |
| 2                                  | 2                                      | One/Two<br>or carrying load | Highways or winding roads |
| 3                                  | 2                                      | One/Two<br>or carrying load | Rough or uneven roads     |

**SWINGARM****REMOVAL**

Remove the rear wheel (page 25-39).  
Disconnect the rear brake torque rod from the swingarm.

**NOTE**

To prevent damage to the caliper or brake hose, support caliper with a piece of wire to the frame. Do not allow the caliper to hang by the brake hose.

REAR BRAKE TORQUE ROD



Remove the rear shock absorber lower mounting bolts.

Remove the swingarm pivot bolt and remove the swingarm.

**DISASSEMBLY**

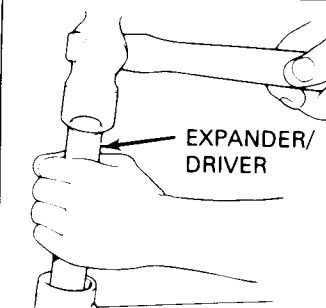
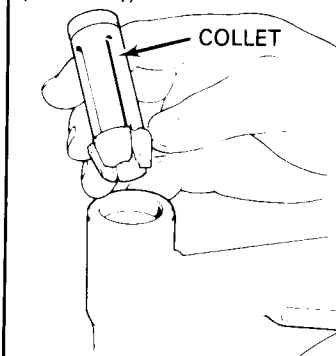
Remove the dust covers.

Remove the collar.

Remove the bearings and thrust bushings with the two piece bearing remover.

Insert the collet into the bearing. Then insert the expander/driver into the collet from the other end of the swingarm and drive out the bearing.

NEEDLE BEARING REMOVER  
M9310-277-91774  
H/C 91774  
(USA only)

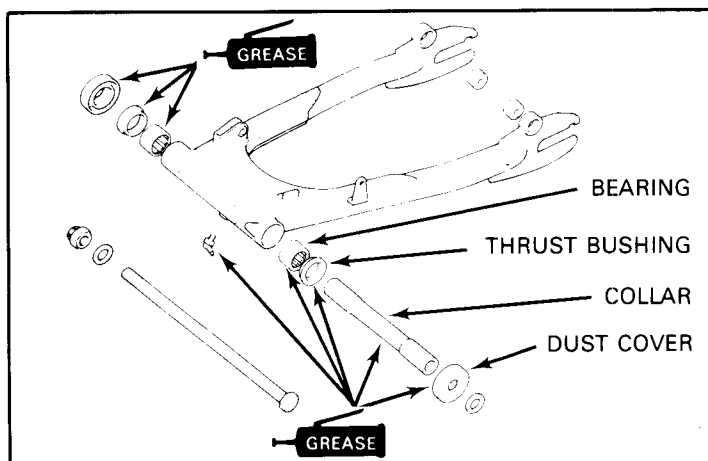




## INSPECTION

Inspect the collar and bearings.

Replace them if they have score marks, scratches, excessive or abnormal wear.



## ASSEMBLY

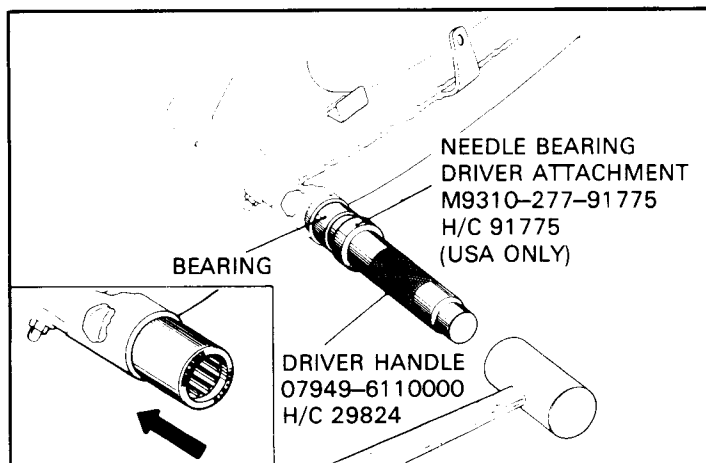
Clean the bearings thoroughly, then lubricate them with grease.

Carefully drive the bearings into the swingarm with the special tool. Drive the thrust bushings into the swingarm with the same special tool.

### NOTE

Install the bearings with the markings facing out.

Lubricate with grease after installation.  
Install the collar.



## INSTALLATION

Place the drive chain over the swingarm.

Tighten the swingarm pivot bolt.

**TORQUE: 60–70 N·m**  
(6.0–7.0 kg-m, 43–51 ft-lb)

Install and tighten the rear shock absorber lower mounting bolts.

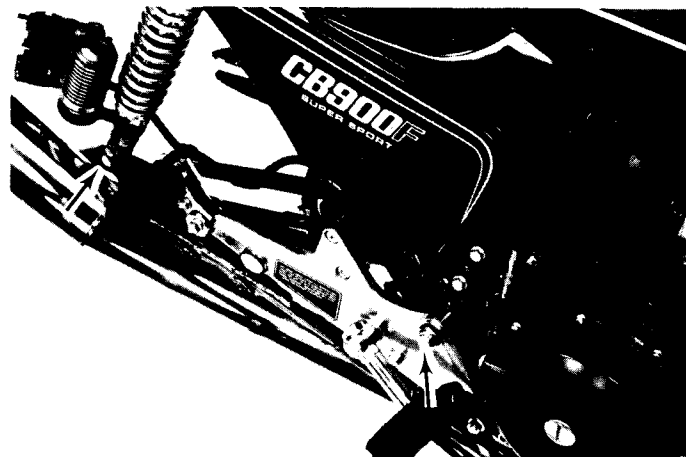
**TORQUE: 30–40 N·m**  
(3.0–4.0 kg-m, 22–29 ft-lb)

Connect the rear brake torque rod to the swingarm and tighten the nut.

**TORQUE: 18–25 N·m**  
(1.8–2.5 kg-m, 13–18 ft-lb)

Secure the torque rod nut with a new cotter pin.

Install the rear wheel (page 25-46).





## 8. HYDRAULIC BRAKE BRAKE PAD

### FRONT PAD REPLACEMENT

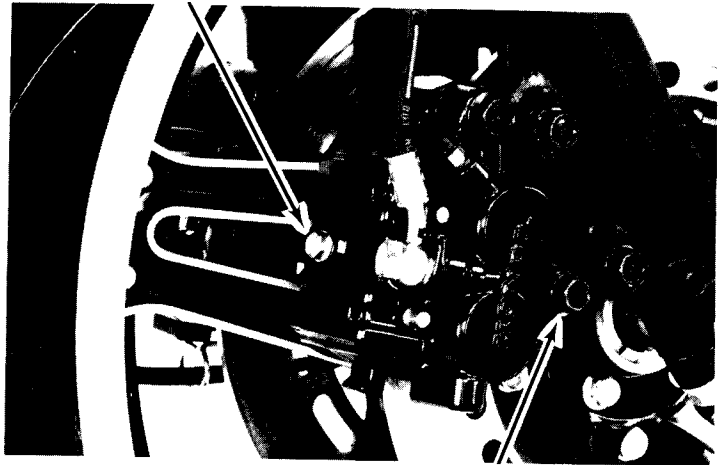
#### NOTE

Always replace the brake pads in pairs to assure even disc pressure.

Remove the pad pin retainer bolt and the caliper bolt.

Pivot the caliper up out of the way.

PAD PIN RETAINER BOLT

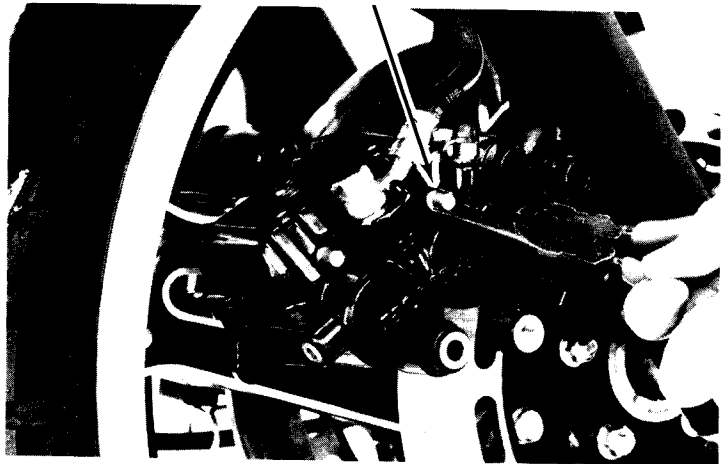


CALIPER BOLT

Remove the pad pin retainer and pull the pad pins out of the caliper.

Remove the brake pads.

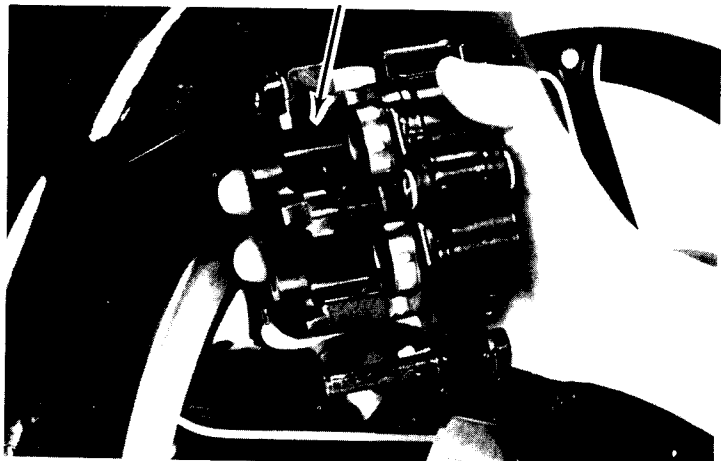
PAD PIN



Position the anti-rattle spring in the caliper as shown.

Push the caliper pistons in all the way.

ANTI-RATTLE SPRING

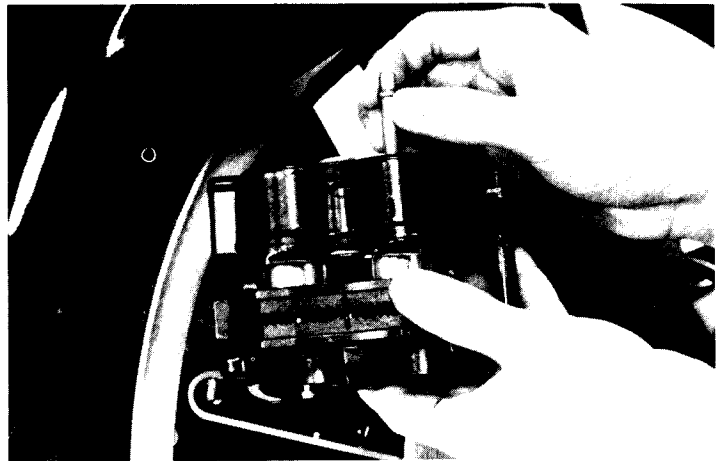




Install the new pads in the caliper.  
Install the pad pins.

**NOTE**

Install one pad pin first then install the other pin by pushing the pads against the caliper to depress the anti-rattle spring.

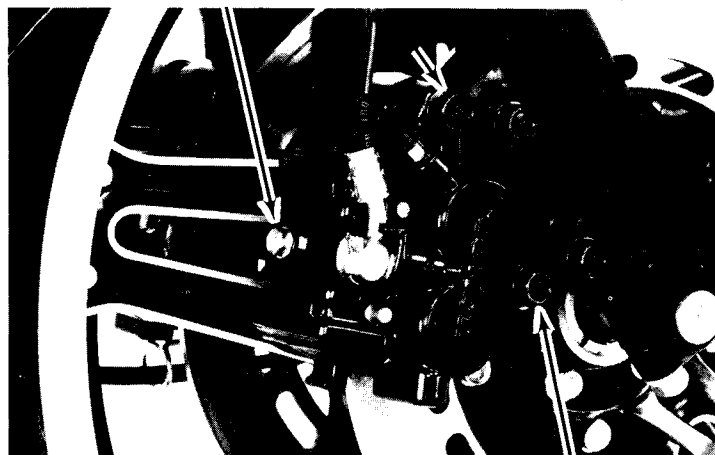
**PAD PIN RETAINER**

Place the pad pin retainer over the pad pins. Push the retainer down to secure the pins.

**RETAINER BOLT**

Install the pad pin retainer bolt.  
Pivot the caliper down so the brake disc is positioned between the pads, making sure not to damage the pads.  
Install the caliper bolt and tighten it.

**TORQUE:** 22–25 N·m  
(2.2–2.5 kg-m, 16–18 ft-lb)

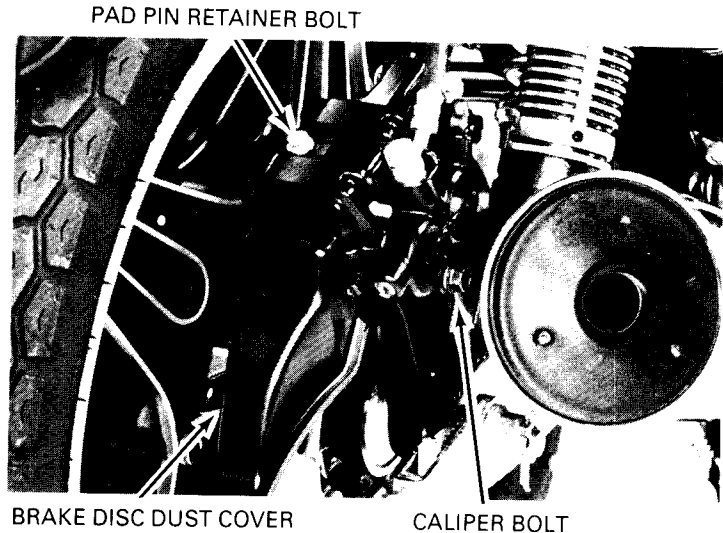
**CALIPER BOLT**





## REAR PAD REPLACEMENT

Remove the brake disc dust cover.  
Replace the rear brake pads using the same method as for the front brake pad replacement (page 25-49).



## BRAKE CALIPER

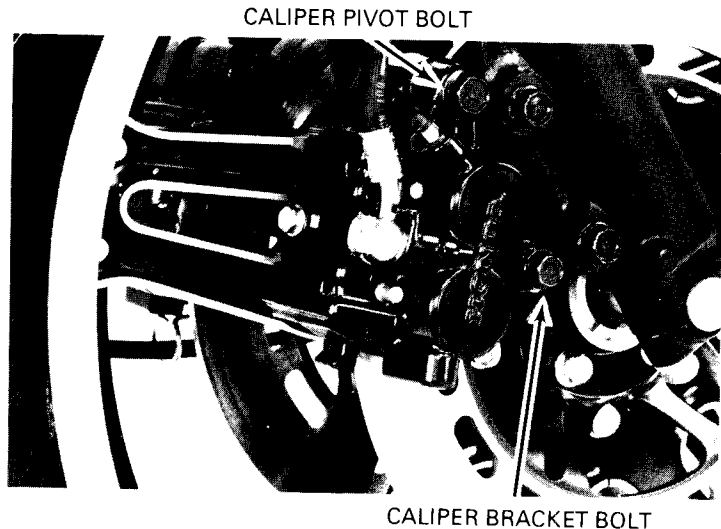
### FRONT BRAKE CALIPER REMOVAL

Place a clean container under the caliper and disconnect the brake hose from the caliper.

#### CAUTION:

*Avoid spilling brake fluid on painted surfaces.*

Remove the caliper bracket bolt and caliper pivot bolt.  
Remove the caliper.



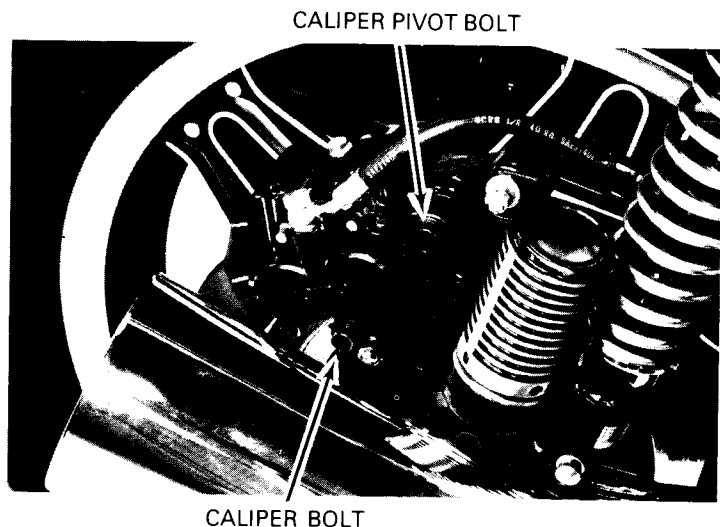
### REAR BRAKE CALIPER REMOVAL

Remove the right rear shock absorber lower mounting bolt and move the shock absorber forward enough to remove the caliper pivot bolt. Place a clean container under the caliper and disconnect the brake hose from the caliper.

#### CAUTION:

*Avoid spilling brake fluid on painted surfaces to prevent paint damage.*

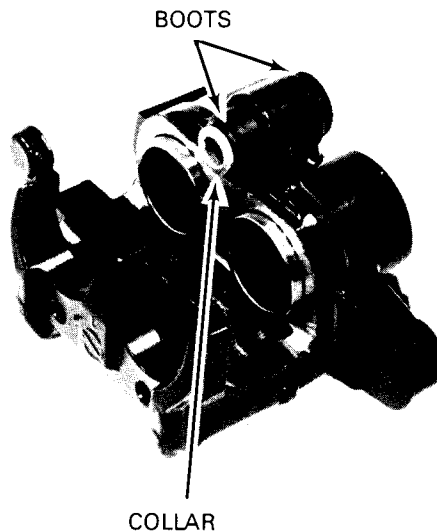
Remove the caliper and pivot bolts, and remove the caliper.





## CALIPER DISASSEMBLY

Remove the pads and anti-rattle spring.  
 Remove the caliper pivot collar and boots.



Position the caliper with the piston down and apply small squirts of air pressure to the fluid inlet.

### **WARNING**

*Do not use high pressure air or bring the nozzle too close to the inlet.*

### NOTE

Place a shop towel over the pistons to prevent the pistons from becoming projectiles.

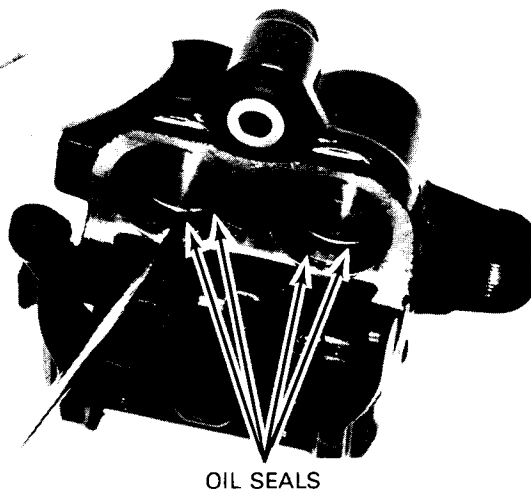
Examine the pistons and cylinders for scoring, scratches or other damage and replace if necessary.



Push the oil seals in and then lift them out.  
 Clean the oil seal grooves with brake fluid.

### CAUTION:

*Do not damage the piston sliding surfaces.*





#### CALIPER PISTON O.D. INSPECTION

Check the piston for scoring, scratches or other faults. Measure the piston diameter with a micrometer.

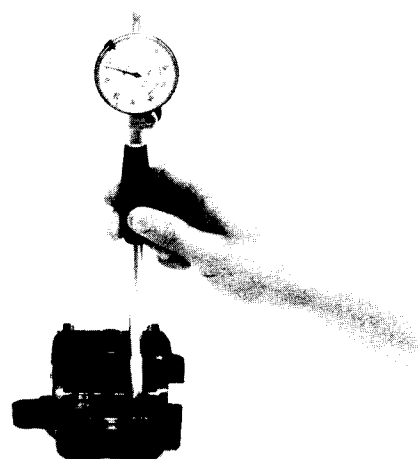
**SERVICE LIMIT: FRONT: 30.14 mm (1.187 in)**  
**REAR: 26.91 mm (1.059 in)**



#### CALIPER CYLINDER I.D. INSPECTION

Check the caliper cylinder for scoring, scratches or other faults. Measure the caliper cylinder bore.

**SERVICE LIMIT: FRONT: 30.29 mm (1.193 in)**  
**REAR: 27.06 mm (1.065 in)**



#### CALIPER ASSEMBLY

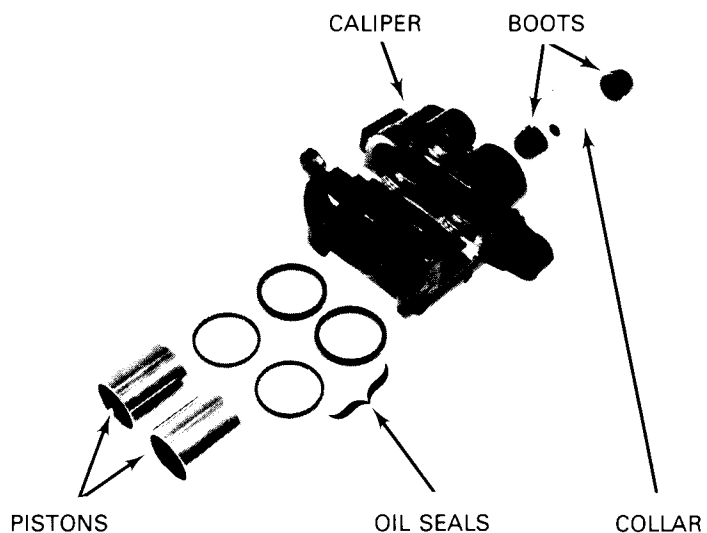
The oil seals must be replaced with new ones whenever they are removed.

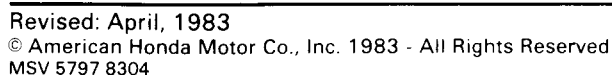
Coat the oil seals with silicon grease or brake fluid before assembly.

Install the pistons with the dished ends toward the pads.

Install the boots and collar making sure that the boots are seated in the collar and caliper grooves properly.

Install the anti-rattle spring and pads.









Install the caliper pivot bolt.

**TORQUE:** 25–30 N·m

(2.5–3.0 kg·m, 18–22 ft·lb)

Install the caliper bolt.

**TORQUE:** 22–25 N·m

(2.2–2.5 kg·m, 16–18 ft·lb)

Connect the brake hose.

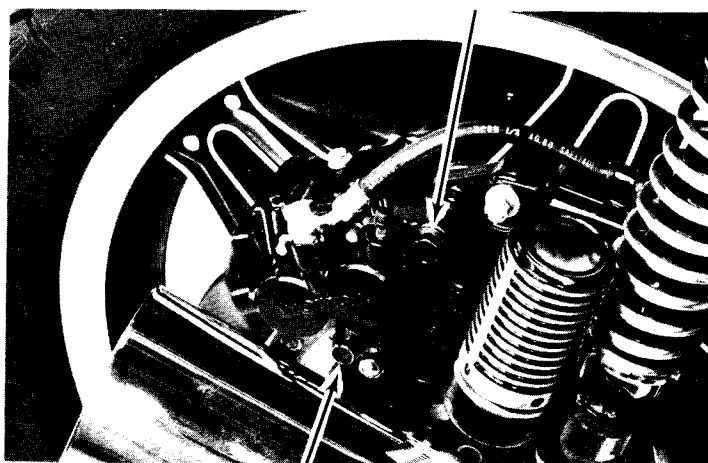
Fill the brake fluid reservoir and bleed the rear brake system (page 17-4).

Install the right rear shock absorber lower mounting bolt.

**TORQUE:** 30–40 N·m

(3.0–4.0 kg·m, 22–29 ft·lb)

CALIPER PIVOT BOLT



CALIPER BOLT

## REAR MASTER CYLINDER

### REMOVAL

Remove the right side cover.

Place a clean drain pan under the master cylinder and disconnect the brake hoses from the master cylinder.

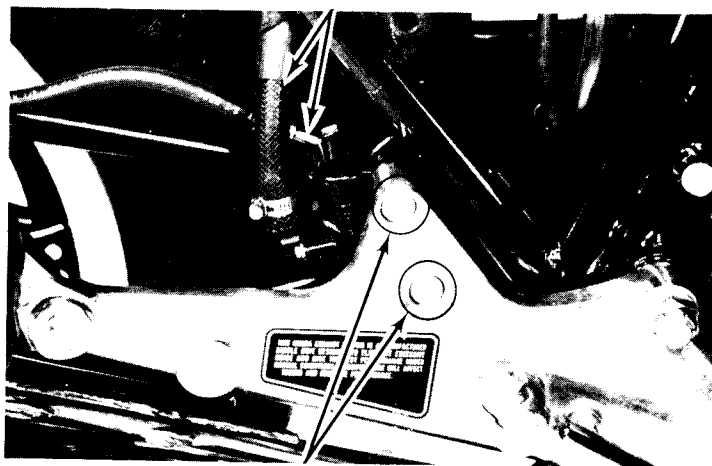
### CAUTION:

*Avoid spilling brake fluid on painted surfaces to prevent paint damage.*

Remove the cotter pin and pull out the joint pin connecting the master cylinder push rod end and rear brake pedal shaft.

Remove the socket screws and the master cylinder.

BRAKE HOSES



SOCKET SCREWS

### INSTALLATION

Install the master cylinder and tighten the socket screws.

**TORQUE:** 30–40 N·m

(3.0–4.0 kg·m, 22–29 ft·lb)

Connect the push rod end and brake pedal shaft with the joint pin. Secure the joint pin with a new cotter pin.

Connect the brake hoses to the master cylinder. Fill the brake fluid reservoir and bleed the rear brake system (page 17-4).

Install the right side cover.



COTTER PIN AND JOINT PIN



## BRAKE PEDAL SHAFT

### REMOVAL

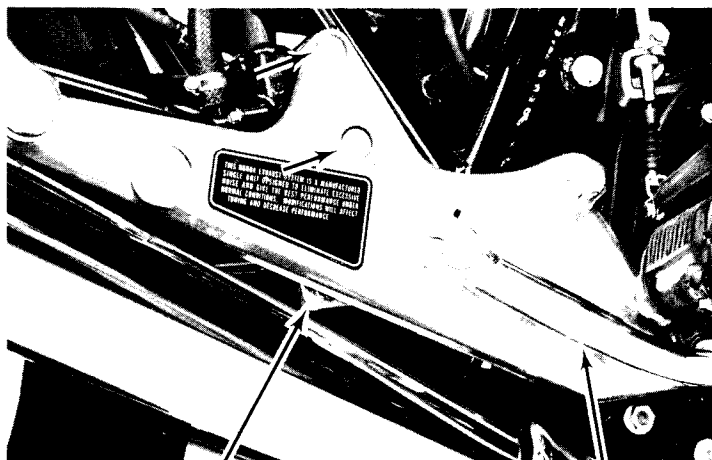
Remove the brake pedal.

Remove the cotter pin and joint pin, and then disconnect the pedal shaft from the master cylinder push rod end.

Unhook the brake light switch spring and brake return spring.

Remove the right foot peg holder.

Remove the brake pedal shaft from the foot peg holder.



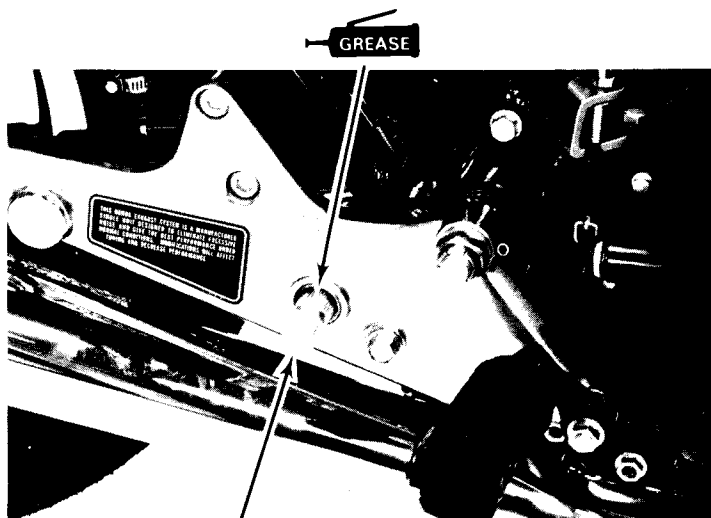
COTTER PIN AND JOINT PIN

BRAKE PEDAL

### INSTALLATION

Apply grease to the brake pedal shaft and install it in the foot peg holder.

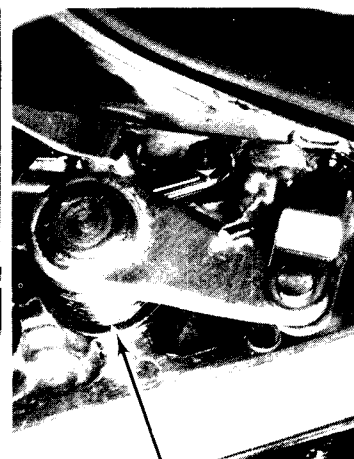
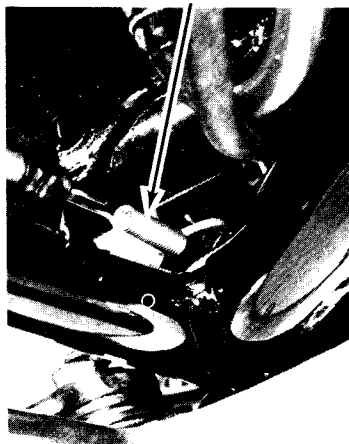
Install the foot peg holder.



BRAKE PEDAL SHAFT

Hook the brakelight switch spring and return spring as shown.

### BRAKELIGHT SWITCH SPRING



RETURN SPRING



Connect the pedal shaft to the master cylinder push rod end and install the joint pin.  
Secure the joint pin with a new cotter pin.  
Install the brake pedal aligning the punch marks of the pedal and shaft.

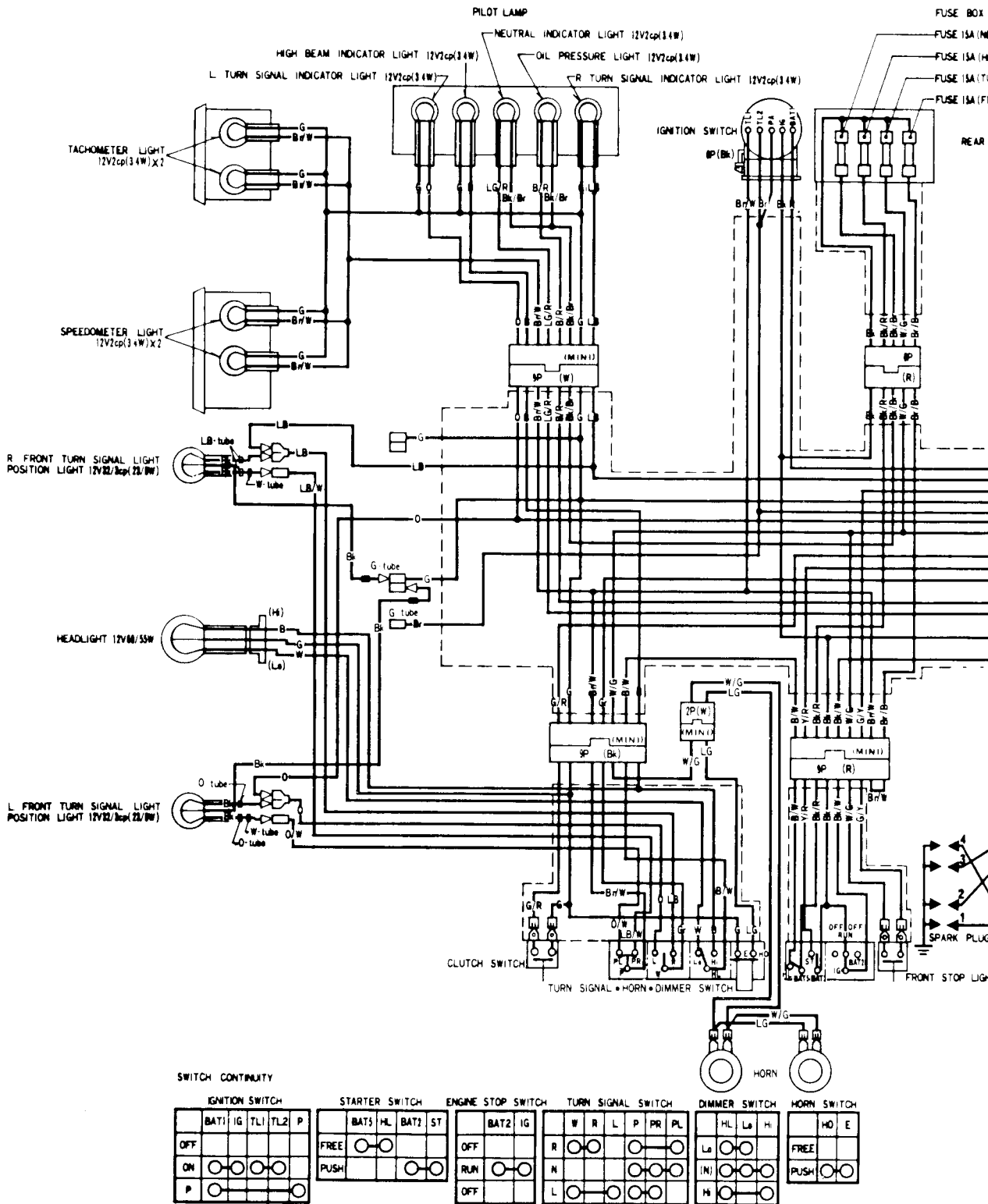
PUNCH MARKS





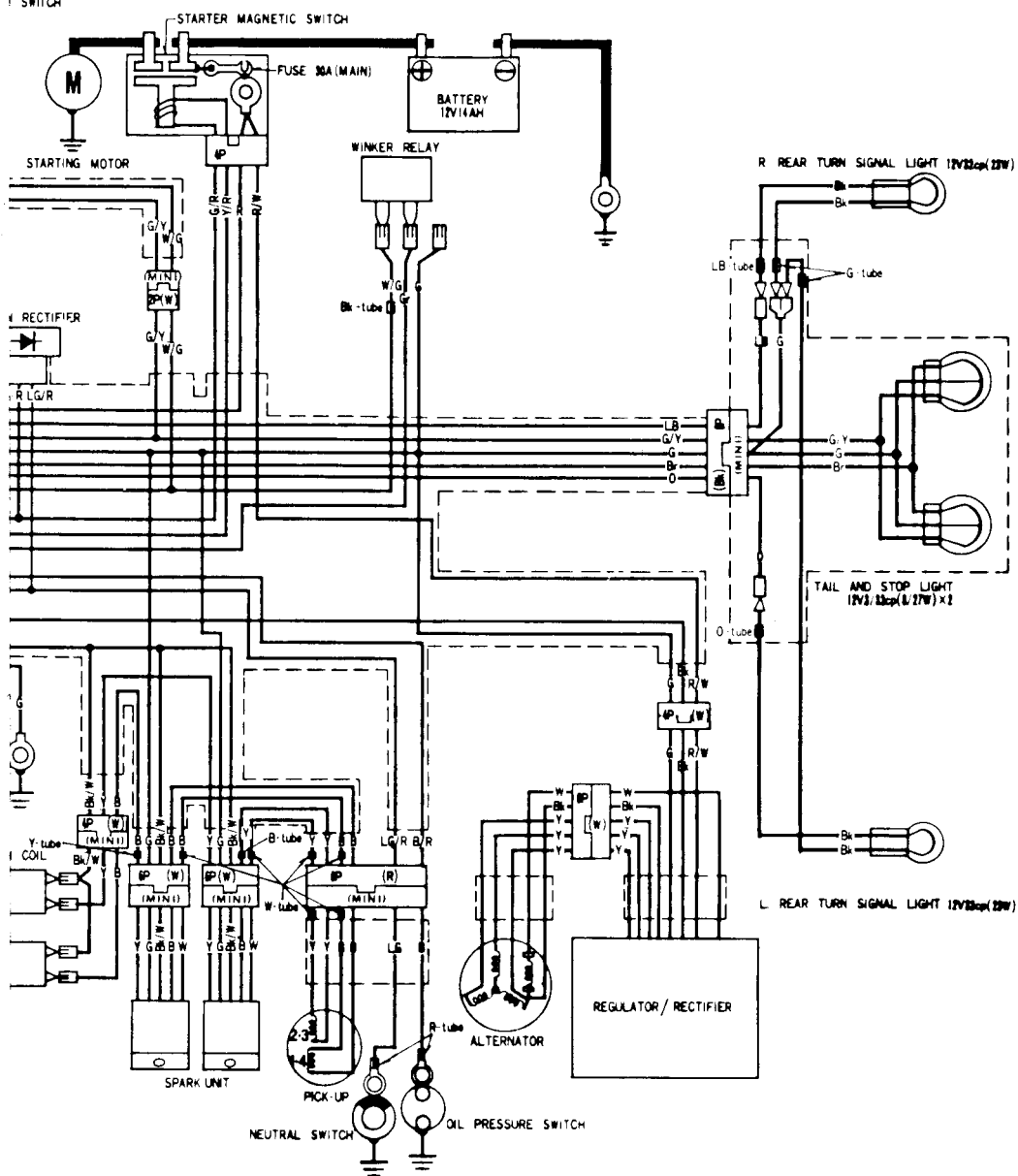


### 9. WIRING DIAGRAM



• FRONT REAR BRAKE • HORN  
 ON • METER LIGHT • TAIL

F SWITCH



|    |             |    |            |
|----|-------------|----|------------|
| Bk | Brown       | Y  | Yellow     |
| Bk | Black       | B  | Blue       |
| W  | White       | Gr | Gray       |
| LG | Light Green | LB | Light Blue |
| R  | Red         | O  | Orange     |
| G  | Green       | P  | Pink       |

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**HONDA****CB900C•CB900F**

# 26. '82 CB900C/F ADDENDUM

387

## INTRODUCTION

This addendum contains information for the 1982 CB900C and CB900F. Refer to the base shop manual for service procedures and data not included in this manual.

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## 1. SPECIFICATIONS

Specifications that are new for the 1982 CB900C/F are listed below. See the base shop manual and the 1981 CB900C/F Addendums for complete specifications.

### CB900C

|             | ITEM  |  |
|-------------|---|--|
| FRAME       | Front brake, lining swept area                              | Double disc 942 cm <sup>2</sup> (147.6 sq. in)             |
|             | Rear brake, lining swept area                               | Single disc 516 cm <sup>2</sup> ( 80.0 sq. in)             |
| DRIVE TRAIN | Secondary reduction (subtransmission)<br>I (High range)     | 0.595 (28/47)  |
| ELECTRICAL  | Spark plug<br>Standard<br>For cold climate below 5°C (41°F) | DR8ES (NGK), X27ESR-U (ND)<br>DR8ES-L (NGK), X24ESR-U (ND) |

### CB900F

|             | ITEM  |                             |       |  |
|-------------|---|-----------------------------|-------|--|
| FRAME       | Gross vehicle weight rating                                 |                             |       | 452 kg (995 lb)  |
|             | Cold tire pressure  | Up to 90 kg (200 lbs) load  | Front | 32 psi (225 kPa, 2.25 kg/cm <sup>2</sup> )                 |
|             |   |                             | Rear  | 32 psi (225 kPa, 2.25 kg/cm <sup>2</sup> )                 |
|             |   | Up to vehicle capacity load | Front | 32 psi (225 kPa, 2.25 kg/cm <sup>2</sup> )                 |
|             |   |                             | Rear  | 41 psi (285 kPa, 2.85 kg/cm <sup>2</sup> )                 |
| DRIVE TRAIN | Primary reduction   |                             |       | 1.000/2.042  |
| ELECTRICAL  | Spark plug<br>Standard<br>For cold climate below 5°C (41°F) |                             |       | DR8ES (NGK), X27ESR-U (ND)<br>DR8ES-L (NGK), X24ESR-U (ND) |



## 2. MAINTENANCE SCHEDULES

### CB900C

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

| ITEM                       |                       | FREQUENCY                   | WHICHEVER<br>COMES<br>FIRST | ODOMETER READING (NOTE 3) |                        |                         |                          |                          |                          |                          |                  |
|----------------------------|-----------------------|-----------------------------|-----------------------------|---------------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
|                            |                       |                             |                             | 600 mi<br>(1,000 km)      | 4,000 mi<br>(6,400 km) | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) | 24,000 mi<br>(38,400 km) | Refer to<br>page |
|                            |                       |                             | EVERY                       |                           |                        |                         |                          |                          |                          |                          |                  |
| EMISSION RELATED ITEMS     | *                     | FUEL LINES                  |                             |                           | I                      | I                       | I                        | I                        | I                        | I                        | 3-3              |
|                            | *                     | FUEL STRAINER               |                             | C                         | C                      | C                       | C                        | C                        | C                        | C                        | 26-5             |
|                            | *                     | THROTTLE OPERATION          |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-3              |
|                            | *                     | CARBURETOR-CHOKE            |                             |                           | I                      | I                       | I                        | I                        | I                        | I                        | 3-4              |
|                            |                       | AIR CLEANER                 | NOTE 1                      |                           | C                      | R                       | C                        | R                        | C                        | R                        | 3-4              |
|                            |                       | CRANKCASE BREATHER          | NOTE 2                      |                           | C                      | C                       | C                        | C                        | C                        | C                        | 3-5              |
|                            |                       | SPARK PLUGS                 |                             |                           | R                      | R                       | R                        | R                        | R                        | R                        | 26-6             |
|                            | *                     | VALVE CLEARANCE             |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 26-10            |
|                            |                       | ENGINE OIL                  | YEAR                        | R                         | R                      | R                       | R                        | R                        | R                        | R                        | 2-3              |
|                            |                       | ENGINE OIL FILTER           | YEAR                        | R                         | R                      | R                       | R                        | R                        | R                        | R                        | 2-3              |
|                            | *                     | CAM CHAIN TENSION           |                             | A                         | A                      | A                       | A                        | A                        | A                        | A                        | 25-18            |
|                            | *                     | CARBURETOR-SYNCHRONIZE      |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-10             |
| NON-EMISSION RELATED ITEMS | *                     | CARBURETOR-IDLE SPEED       |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-11             |
|                            | *                     | DRIVE SHAFT JOINT           |                             |                           |                        | L                       |                          | L                        |                          | L                        | 2-12             |
|                            |                       | DUAL RANGE TRANSMISSION OIL |                             |                           |                        | I                       |                          | I                        |                          | R                        | 2-9              |
|                            |                       | FINAL DRIVE OIL             |                             |                           |                        | I                       |                          | I                        |                          | R                        | 2-12             |
|                            |                       | BATTERY                     | MONTH                       | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-14             |
|                            |                       | BRAKE FLUID                 | MONTH I<br>2 YEARS* R       | I                         | I                      | I                       | *R                       | I                        | I                        | *R                       | 3-14             |
|                            |                       | BRAKE PAD WEAR              |                             |                           | I                      | I                       | I                        | I                        | I                        | I                        | 26-6             |
|                            |                       | BRAKE SYSTEM                |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 24-7             |
|                            | *                     | BRAKE LIGHT SWITCH          |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-16             |
|                            | *                     | HEADLIGHT AIM               |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-16             |
|                            |                       | CLUTCH                      |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-17             |
|                            |                       | SIDE STAND                  |                             |                           | I                      | I                       | I                        | I                        | I                        | I                        | 3-18             |
|                            | *                     | SUSPENSION                  |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-19             |
|                            | *                     | NUTS, BOLTS, FASTENERS      |                             |                           | I                      | I                       | I                        | I                        | I                        | I                        | 3-20             |
|                            | **                    | WHEELS                      |                             | I                         | I                      | I                       | I                        | I                        | I                        | I                        | 3-20             |
| **                         | STEERING HEAD BEARING |                             | I                           |                           | I                      |                         | I                        |                          | I                        | 3-21                     |                  |

\* Should be serviced by an authorized 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 an authorized Honda dealer.

NOTES: 1. Service more frequently when riding in dusty areas.  
2. Service more frequently when riding in rain or at full throttle.  
3. For higher odometer readings, repeat at the frequency interval established here.


**CB900F**

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

| ITEM                       |    | FREQUENCY              | WHICHEVER COMES FIRST | ODOMETER READING (NOTE 3)  |                        |                         |                          |                          |                          | Refer to page |
|----------------------------|----|------------------------|-----------------------|----------------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------|
|                            |    |                        |                       | 600 mi<br>(1,000 km)       | 4,000 mi<br>(6,400 km) | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) |               |
| EMISSION RELATED ITEMS     | *  | FUEL LINES             |                       |                            | I                      | I                       | I                        | I                        | I                        | 3-3           |
|                            | *  | FUEL STRAINER          |                       | C                          | C                      | C                       | C                        | C                        | C                        | 26-5          |
|                            | *  | THROTTLE OPERATION     |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-3           |
|                            | *  | CARBURETOR-CHOKE       |                       |                            | I                      | I                       | I                        | I                        | I                        | 3-4           |
|                            |    | AIR CLEANER            | NOTE 1                |                            | C                      | R                       | C                        | R                        | C                        | 3-4           |
|                            |    | CRANKCASE BREATHER     | NOTE 2                |                            | C                      | C                       | C                        | C                        | C                        | 3-5           |
|                            |    | SPARK PLUGS            |                       |                            | R                      | R                       | R                        | R                        | R                        | 26-6          |
|                            | *  | VALVE CLEARANCE        |                       | I                          | I                      | I                       | I                        | I                        | I                        | 26-10         |
|                            |    | ENGINE OIL             | YEAR                  | R                          | R                      | R                       | R                        | R                        | R                        | 2-3           |
|                            |    | ENGINE OIL FILTER      | YEAR                  | R                          | R                      | R                       | R                        | R                        | R                        | 2-3           |
|                            | *  | CAM CHAIN TENSION      |                       | A                          | A                      | A                       | A                        | A                        | A                        | 25-18         |
|                            | *  | CARBURETOR-SYNCHRONIZE |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-10          |
|                            | *  | CARBURETOR-IDLE SPEED  |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-11          |
| NON-EMISSION RELATED ITEMS |    | DRIVE CHAIN            |                       | I, L Every 300 mi (500 km) |                        |                         |                          |                          |                          | 25-20         |
|                            |    | BATTERY                | MONTH                 | I                          | I                      | I                       | I                        | I                        | I                        | 3-14          |
|                            |    | BRAKE FLUID            | MONTH I<br>2 YEARS*R  | I                          | I                      | I                       | R                        | I                        | I                        | 3-14          |
|                            |    | BRAKE PAD WEAR         |                       |                            | I                      | I                       | I                        | I                        | I                        | 25-21         |
|                            |    | BRAKE SYSTEM           |                       | I                          | I                      | I                       | I                        | I                        | I                        | 24-7          |
|                            | *  | BRAKE LIGHT SWITCH     |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-16          |
|                            | *  | HEADLIGHT AIM          |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-16          |
|                            |    | CLUTCH                 |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-17          |
|                            |    | SIDE STAND             |                       |                            | I                      | I                       | I                        | I                        | I                        | 3-18          |
|                            | *  | SUSPENSION             |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-19          |
|                            | *  | NUTS, BOLTS, FASTENERS |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-20          |
|                            | ** | WHEELS                 |                       | I                          | I                      | I                       | I                        | I                        | I                        | 3-20          |
|                            | ** | STEERING HEAD BEARING  |                       | I                          |                        | I                       |                          | I                        |                          | 3-21          |

\* Should be serviced by an authorized 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 an authorized Honda dealer.

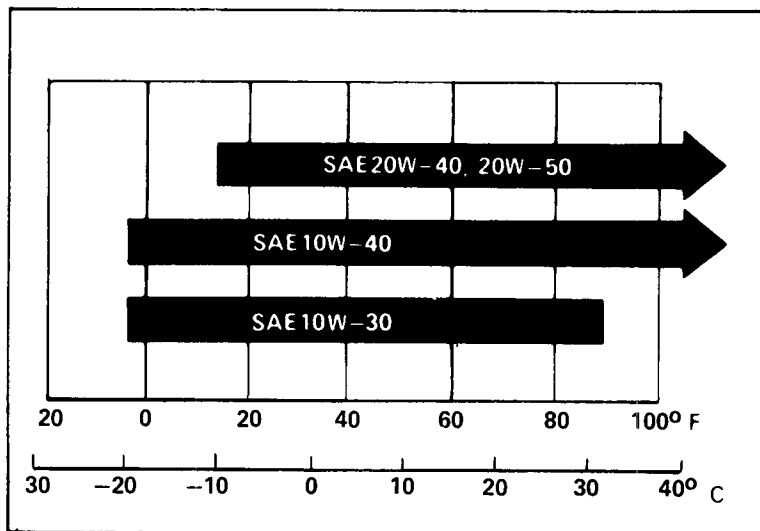
NOTES: 1. Service more frequently when riding in dusty areas.  
 2. Service more frequently when riding in rain or at full throttle.  
 3. For higher odometer readings, repeat at the frequency interval established here.



### 3. OIL RECOMMENDATION

Use HONDA 4-STROKE OIL or equivalent.  
API SERVICE CLASSIFICATION: SE or SF  
VISCOSITY:  
SAE 20W-40

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



### 4. FUEL STRAINER

Turn the fuel valve OFF.

Remove the fuel cup, O-ring and filter screen, draining the gasoline into a suitable container.

#### **WARNING**

*Gasoline is flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks near the equipment while draining fuel.*

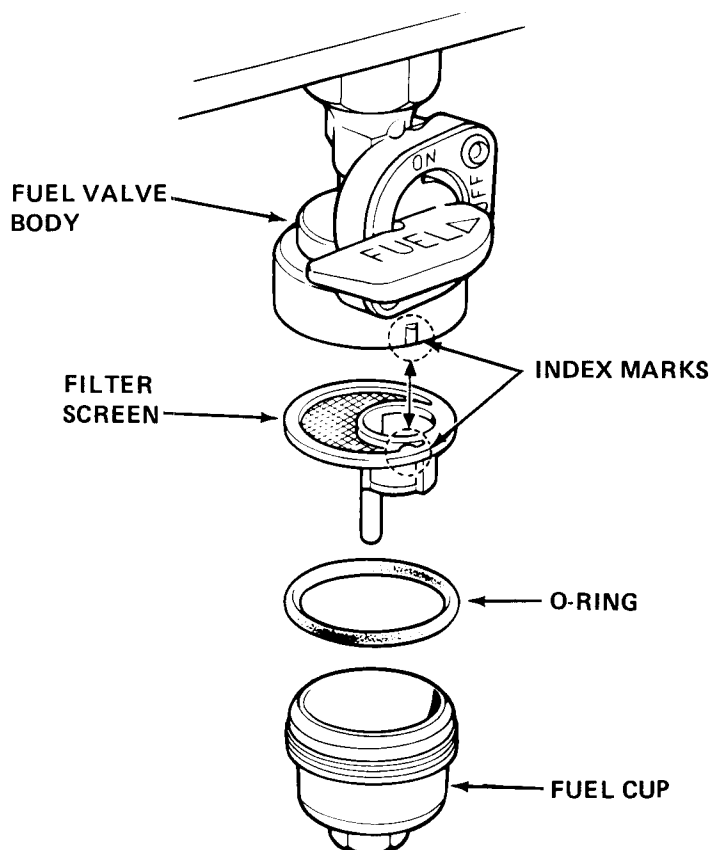
Wash the cup and filter screen in clean non-flammable or high flash point solvent.

Reinstall the screen, aligning the index marks on the fuel valve body and filter screen. Install a new O-ring into the fuel valve body. Reinstall the fuel cup, making sure the new O-ring is in place.

Hand tighten the fuel cup. Torque to specification.

**TORQUE:** 0.3–0.5 kg-m (2–4 ft-lb)

After installing, turn the fuel valve ON and check that there are no leaks.







## 5. SPARK PLUGS

### RECOMMENDED SPARK PLUGS

|                                      |           |                     |
|--------------------------------------|-----------|---------------------|
| Standard                             | ND<br>NGK | X27ESR-U<br>DR8ES   |
| For cold climate<br>Below 5°C (41°F) | ND<br>NGK | X24ESR-U<br>DR8ES-L |

Disconnect the spark plug caps.

Clean any dirt from around the spark plug bases.

Remove and discard the spark plugs.

Measure the spark plug gaps using a wire-type feeler gauge.

### SPARK PLUG GAP:

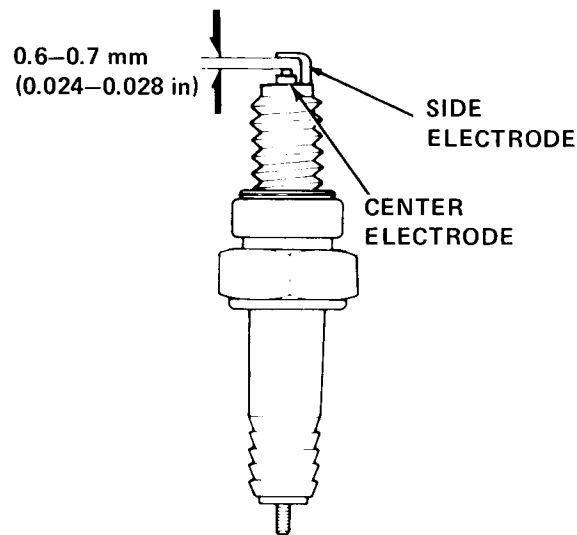
0.6–0.7 mm (0.024–0.028 in)

Adjust by bending the side electrode carefully.

With the plug washer attached, thread the spark plugs in by hand to prevent cross-threading.

Tighten the spark plugs another 1/2 turn with a spark plug wrench to compress the plug washer.

Connect the spark plug caps.



## 6. FUEL SYSTEM

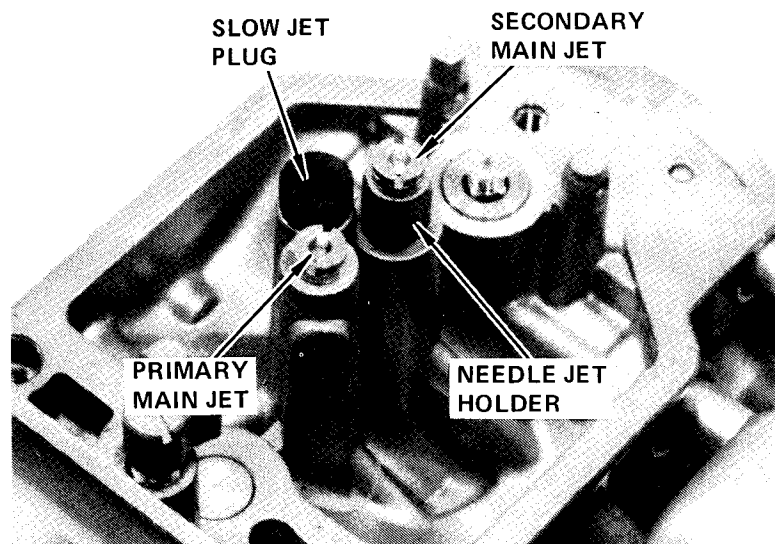
### FLOAT AND JETS

Remove the secondary main jet.

Remove the primary main jet.

Remove the slow jet plug.

Remove the slow jet.





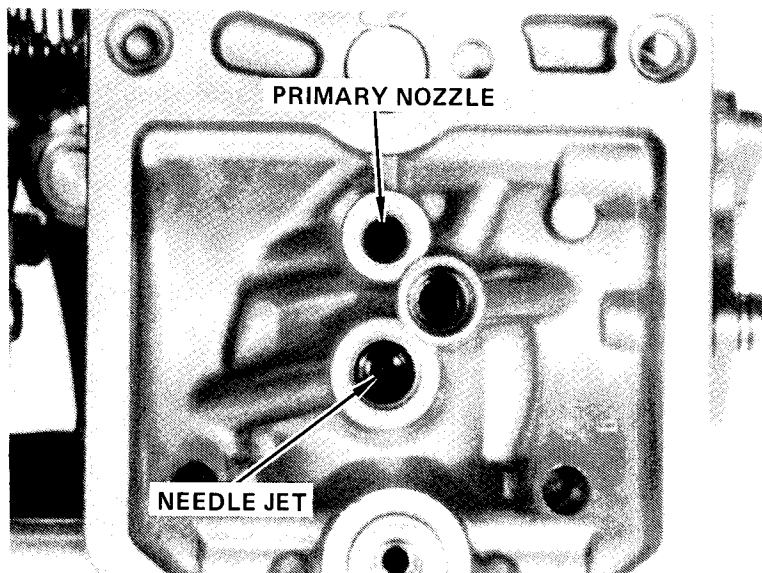
Remove the primary nozzle.

Remove the needle jet holder.

Tilt the carburetor to remove the needle jet. Blow all jets and body passages with compressed air.

**NOTE**

If the needle jet is difficult to remove, carefully press the needle jet from the cylinder side with a non-metallic object to prevent damage to the needle jet.

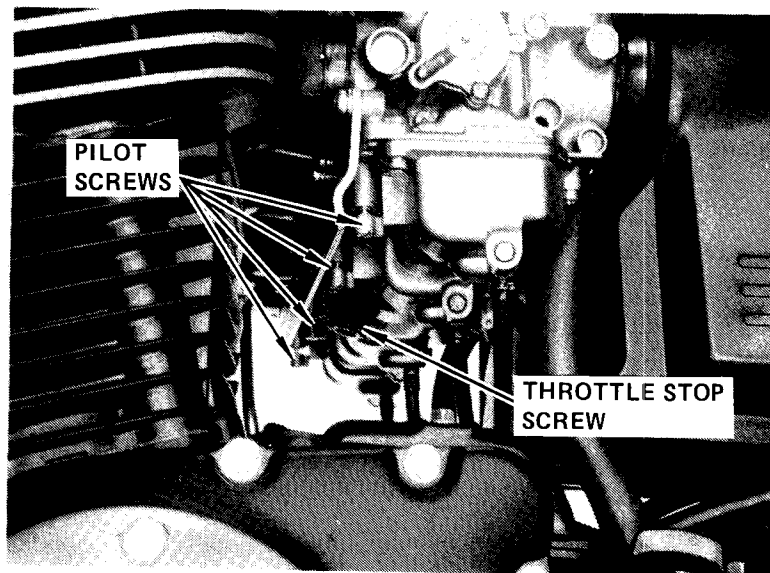


## HIGH ALTITUDE ADJUSTMENT (USA only)

When the vehicle is to be operated continuously above 6,500 feet (2,000 m), the carburetors must be readjusted as described below to improve driveability and decrease exhaust emissions.

Warm up the engine to operating temperature.

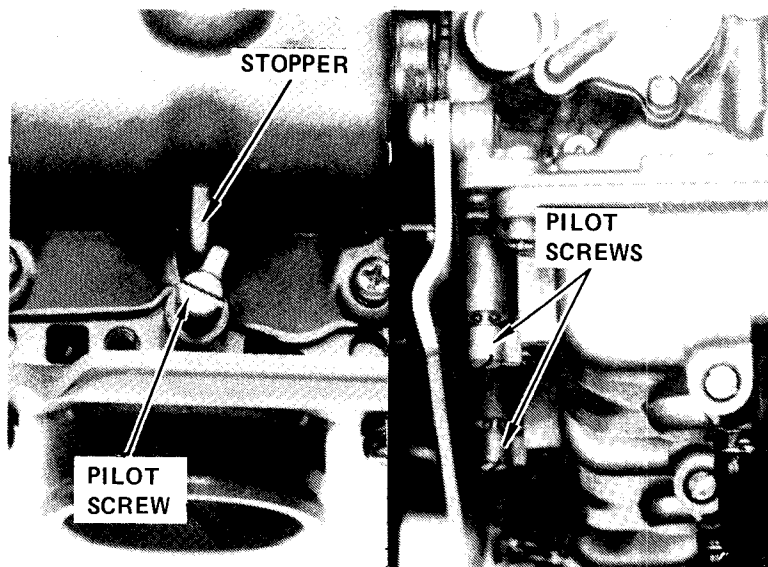
Stop-and-go driving for 10 minutes is sufficient to warm the engine.



Turn each pilot screw clockwise 1/2 turn. Adjust the idle speed to  $1,000 \pm 100$  rpm with the throttle stop screw.

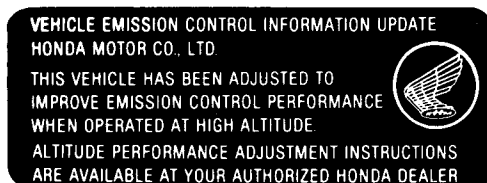
**NOTE**

These adjustments must be made at high altitude to ensure proper high altitude operation.





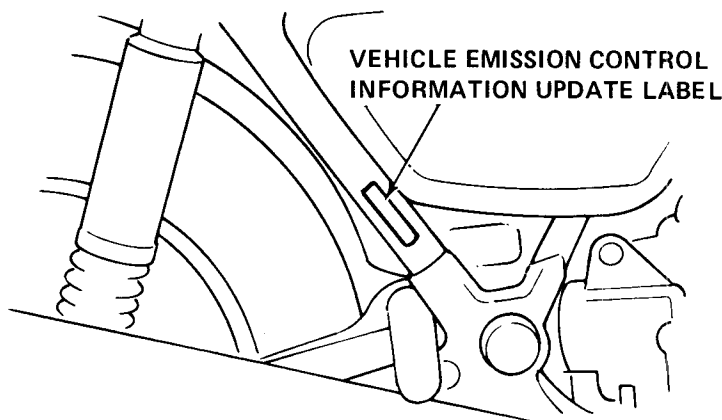
Attach the Vehicle Emission Control Information Update label as shown. Refer to Service Letter # 132.



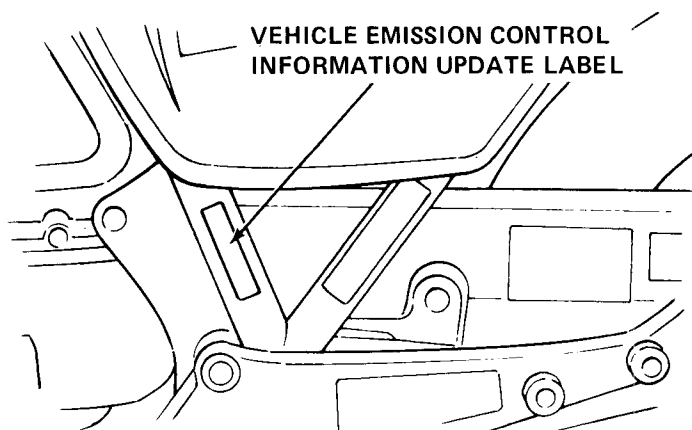
#### NOTE

Do not attach the label to any part that can be easily removed from the vehicle.

#### CB900C



#### CB900F



#### WARNING

*Operation at any altitude lower than 5,000 feet (1,500 m) with the carburetors adjusted for high altitudes may cause the engine to idle roughly and stall.*

When the vehicle is to be operated continuously below 5,000 feet (1,500 m), turn each pilot screw counterclockwise to its original position against its stop. Adjust the idle speed to  $1,000 \pm 100$  rpm. Be sure to do these adjustments at low altitude.

## 7. HYDRAULIC BRAKES

### SERVICE INFORMATION

The front and rear CB900C disc brakes have dual piston calipers.

#### SPECIFICATIONS

##### CB900C

| ITEM \ DATA                 | STANDARD                            | SERVICE LIMIT        |
|-----------------------------|-------------------------------------|----------------------|
| Front caliper piston O.D.   | 30.148–30.198 mm (1.1869–1.889 in)  | 30.14 mm (1.866 in)  |
| Front caliper cylinder I.D. | 30.230–30.280 mm (1.1901–1.1921 in) | 30.29 mm (1.1925 in) |
| Rear caliper piston O.D.    | 26.918–26.968 mm (1.0597–1.0617 in) | 26.91 mm (1.0594 in) |
| Rear caliper cylinder I.D.  | 27.000–27.05 mm (1.0629–1.0649 in)  | 27.06 mm (1.0653 in) |

**HONDA****CB900C•CB900F**

'82 CB900C/F ADDENDUM

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## BRAKE PAD WEAR

### CB900C

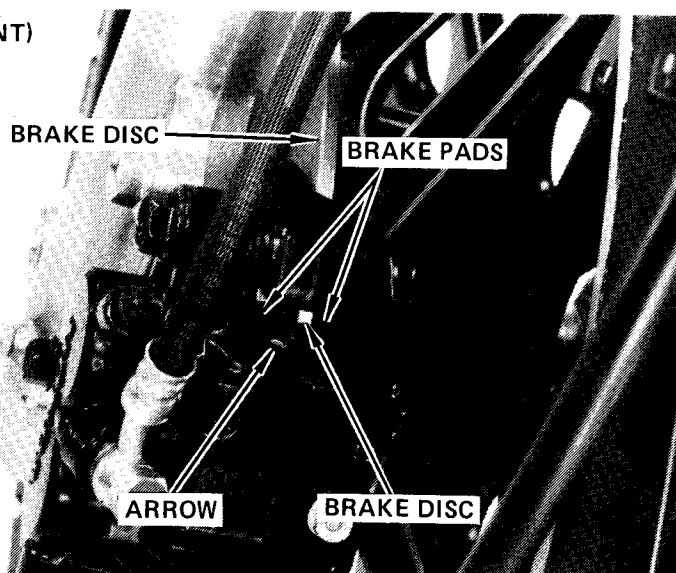
Check the brake pads for wear by looking through the slot pointed to by the arrow cast on the caliper assembly.

Replace the brake pads if the pads are worn to the wear line.

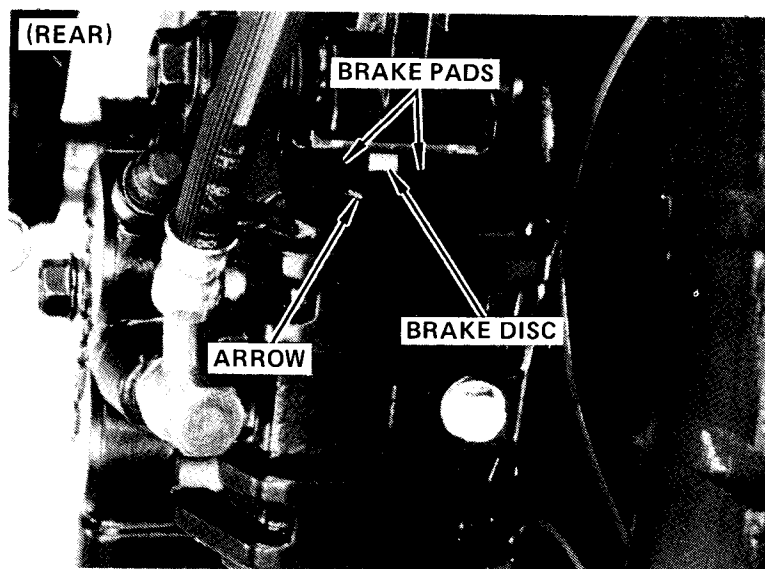
### CAUTION

*Always replace the brake pads in pairs to assure even disc pressure.*

(FRONT)



(REAR)





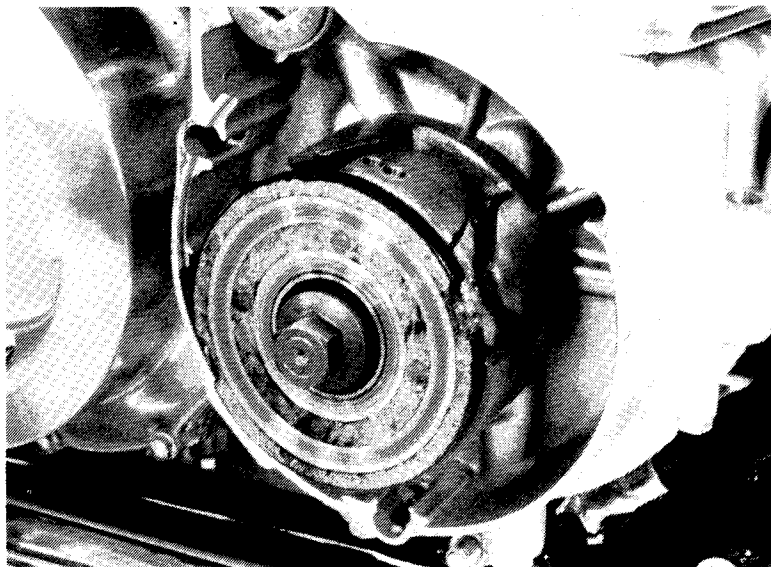
## 8. VALVE CLEARANCE

**NOTE:** Inspect valve clearance while the engine is cold (below 35°C; 95°F).

Remove the fuel tank, side covers, tachometer cable and spark plug caps. Drain the engine oil.

Lean the motorcycle to the right and left to drain residual oil from the cylinder head, then remove the cylinder head cover.

Remove the AC generator cover.

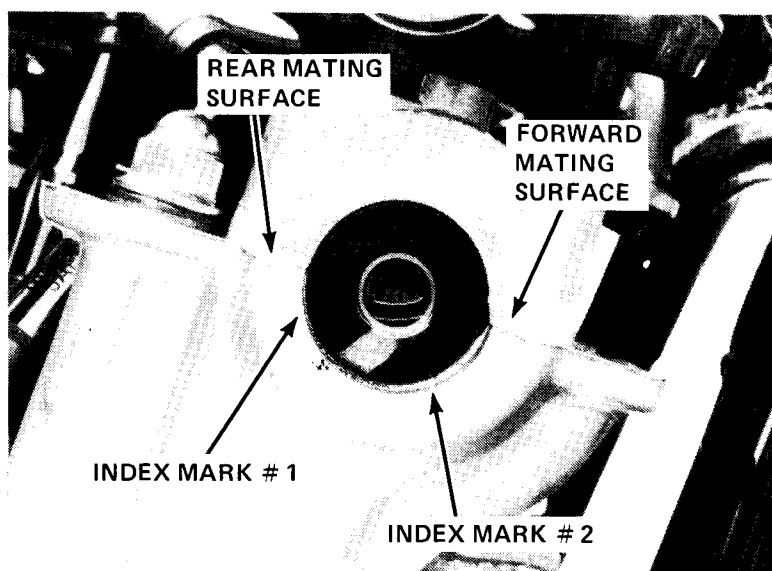


Rotate the crankshaft clockwise to align index mark # 1 on the exhaust camshaft right end with the forward cylinder head mating surface. Measure the clearance of the No. 1 and No. 3 exhaust valves by inserting a feeler gauge between the camshaft and the valve lifter shim.

Rotate the crankshaft clockwise and align index mark # 2 with the forward mating surface. Check the clearance of the No. 1 and No. 3 intake valves.

Rotate the crankshaft clockwise and align index mark # 1 with the rear cylinder head mating surface. Measure the clearance of the No. 2 and No. 4 exhaust valves.

Rotate the crankshaft once more and align index mark # 2 with the rear mating surface. Measure the No. 2 and No. 4 intake valve clearances.



### VALVE CLEARANCE (cold):

0.06–0.13 mm (0.002–0.005 in)

If clearances are not within the specified range, see "Adjustment", page 25-16.

