



|                             |       |
|-----------------------------|-------|
| SERVICE INFORMATION         | 13-1  |
| TROUBLESHOOTING             | 13-2  |
| HEADLIGHT                   | 13-3  |
| INSTRUMENTS                 | 13-6  |
| HANDLEBAR SWITCH/HANDLEBARS | 13-8  |
| FRONT WHEEL                 | 13-14 |
| FRONT FORK                  | 13-19 |
| STEERING STEM               | 13-25 |

## SERVICE INFORMATION

### WORKING PRACTICE

The front wheel uses a tubeless tire. For tubeless tire repairs, refer to the TUBELESS TIRE MANUAL, code No. 6141550.

Do not remove rivets, nuts and pins from the rim, spoke plate and hub.

Never ride on the rim or try to bend the wheel.

Avoid damaging the aluminum alloy rim.

### SPECIAL TOOLS

#### Special Tools

|                           |               |
|---------------------------|---------------|
| Steering Stem Socket      | 07916-3710100 |
| Hollow Set Wrench (6mm)   | 07917-3230000 |
| Bearing Race Remover      | 07946-3710500 |
| Steering Stem Driver      | 07946-3710600 |
| Bearing Driver Attachment | 07946-3710700 |

#### Common Tools

|                                    |               |
|------------------------------------|---------------|
| Retainer Wrench C                  | 07710-0010300 |
| Retainer Wrench Body               | 07710-0010400 |
| Bearing Driver Outer (42x47mm)     | 07746-0010300 |
| Bearing Driver Pilot (15mm)        | 07746-0040300 |
| Front Fork Oil Seal Driver Body    | 07747-0010100 |
| Front Fork Oil Seal Attachment (E) | 07747-0010600 |
| Lock Nut Wrench Socket (26 x 30)   | 07716-0020202 |
| Bearing Driver Handle (A)          | 07749-0010000 |
| Extension Bar                      | 07716-0020500 |

### TORQUE VALUES

|                         |                              |
|-------------------------|------------------------------|
| Front brake disc        | 2.7-3.3 kg-m (20-24 ft-lb)   |
| Front axle nut          | 5.5-6.5 kg-m (40-47 ft-lb)   |
| Front caliper bracket   | 3.0-4.0 kg-m (22-29 ft-lb)   |
| Front caliper           | 1.5-2.0 kg-m (11-15 ft-lb)   |
| Front axle holder nut   | 1.8-2.5 kg-m (13-18 ft-lb)   |
| Front fork bolt         | 2.0-3.0 kg-m (15-22 ft-lb)   |
| Handlebar mounting bolt | 2.8-3.2 kg-m (20-23 ft-lb)   |
| Fork bottom bridge      | 1.8-2.5 kg-m (13-18 ft-lb)   |
| Fork top bridge         | 0.9-1.3 kg-m (7-9 ft-lb)     |
| Head top thread         | 0.8-1.2 kg-m (5.8-8.7 ft-lb) |
| Steering stem nut       | 8.0-12.0 kg-m (58-87 ft-lb)  |
| Fork top cap bolt       | 0.8-1.2 kg-m (5.8-8.7 ft-lb) |

### SPECIFICATIONS

|                         |                     | STANDARD                           | SERVICE LIMIT       |
|-------------------------|---------------------|------------------------------------|---------------------|
| Axle shaft runout       |                     | —                                  | 0.2 mm (0.008 in)   |
| Front wheel rim runout  | Radial              | —                                  | 2.0 mm (0.08 in)    |
|                         | Axial               | —                                  | 2.0 mm (0.08 in)    |
| Fork spring free length |                     | 562.0 mm (22.1 in)                 | 552.0 mm (21.7 in)  |
| Tube bend               |                     | —                                  | 0.2 mm (0.008 in)   |
| Front fork slider I.D.  |                     | 35.04 -35.10 mm (1.3796-1.3820 in) | 35.25 mm (1.388 in) |
|                         | New type-with guide | 35.03 -35.08 mm (1.3792-1.3812 in) | 35.15 mm (1.384 in) |
| Front fork tube O.D.    |                     | 34.96 -34.90 mm (1.3764-1.3740 in) | 34.90 mm (1.374 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

### **Hard Suspension**

1. Incorrect fluid weight in front forks

### **Front Suspension Noise**

1. Slider binding
2. Insufficient fluid in forks
3. Loose front fork fasteners

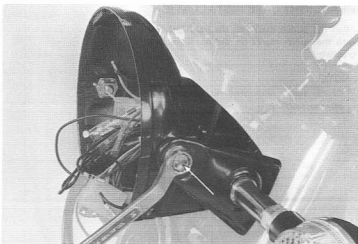


### HEADLIGHT

#### 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.

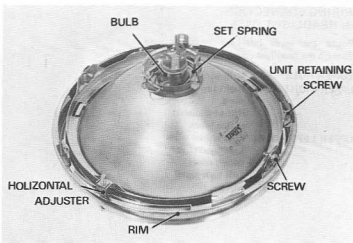


#### HEADLIGHT DISASSEMBLY/ ASSEMBLY

Remove the bulb cover, set ring and bulb. Remove the retaining lock pins, screws and horizontal adjusting screw from the rim.

Remove the two headlight unit retaining screws, and headlight unit.

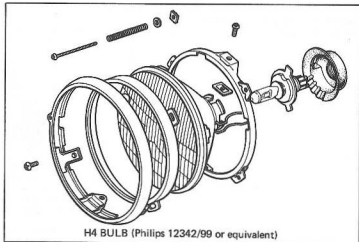
Assembly is essentially the reverse of disassembly.



After assembly, adjust headlight beam (Page 3-19).

#### NOTE

Do not touch the with your fingers.







## HEADLIGHT CASE INSTALLATION

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

## NOTE

Check each component for operation after assembling.

WIRING CONNECTION  
IN HEADLIGHT CASE

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

**LOWER HOLE:** Main wire harness

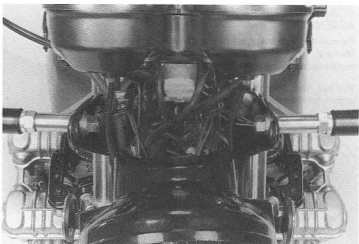
**UPPER RIGHT HOLE:** Right turn signal wires

Right handlebar switch wires

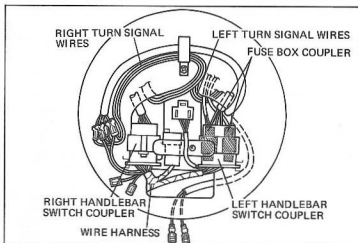
**UPPER LEFT HOLE:** Fuse holder wires

Left handlebar switch wires

Left turn signal wires

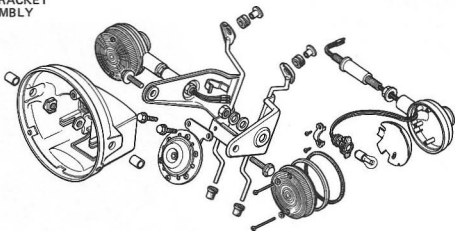


Connect the color-coded wires and couplers. Secure each coupler in its correct holder in the headlight case.





### HEADLIGHT CASE BRACKET DISASSEMBLY/ASSEMBLY



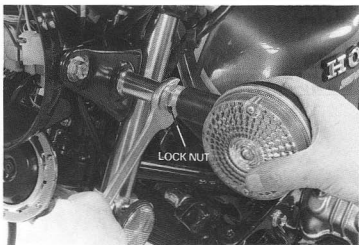
Remove the headlight and disconnect all wires and wire couplers inside the case. Disconnect the brake hose from the front brake master cylinder.

#### NOTE

Avoid spilling fluid on painted surfaces. Place a rag over the fuel tank whenever the brake hose is disconnected.



Install the turn signals parallel with the ground. Tighten the lock nuts securely.

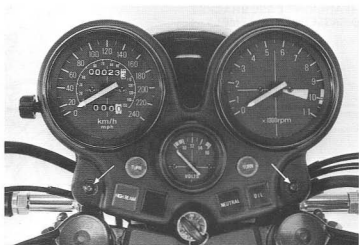




## INSTRUMENTS

## CLUSTER DISASSEMBLY

Remove the speedometer and tachometer cables from the instruments.



Remove the two instrument mounting bolts and separate the coupler from the instrument cluster.

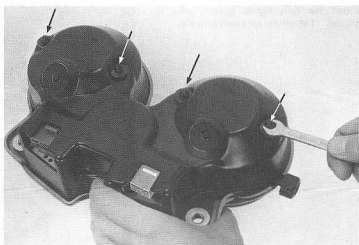
Remove the cluster.



Remove the lower instrument case by removing four bolts.

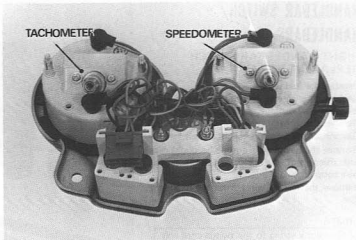
**WARNING**

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

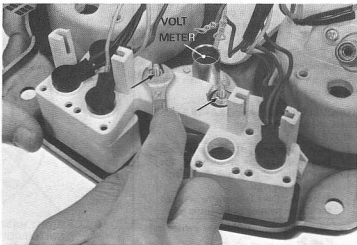




Remove the instrument lamps and speedometer and tachometer by pushing them out. Check the meter cable if the needle swings abnormally.



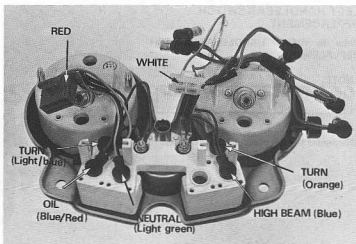
Remove the voltmeter.



### CLUSTER ASSEMBLY

Connect the lamp wires color-to-color.

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





## HANDLEBAR SWITCH/ HANDLEBARS

### RIGHT HANDLEBAR SWITCH REPLACEMENT

Remove the fuel tank.  
Remove the screws holding the upper and lower switch housings.  
Remove the throttle cables.  
Disconnect the front brakelight switch.  
Remove the headlight from the headlight case and disconnect the right handlebar switch wire coupler.  
Remove the switch wires from the headlight case.

#### NOTE

Connect a string to the switch cord and then remove the cord leaving the string. This string is used as a draw cord when routing the wiring of a new switch.

Install a new switch aligning its locating pin in the handlebar.

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

**TORQUE:** 0.10–0.15 kg-m (8.4–13.0 in-lb)  
Check the switch operation.

#### NOTE

- Before tightening the throttle cable lock nut, turn the handlebar all the way to the right and pull the throttle cables to the right.
- Make sure there is clearance between the switch housing and throttle grip.

After installing, adjust throttle cable free play. (Page 3-6)

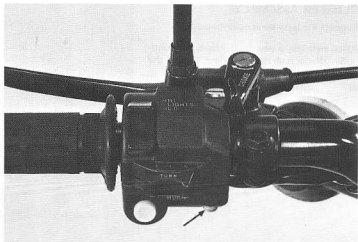
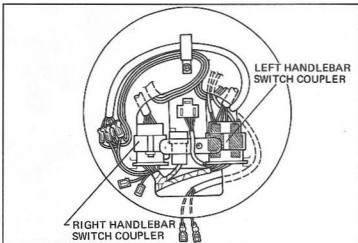
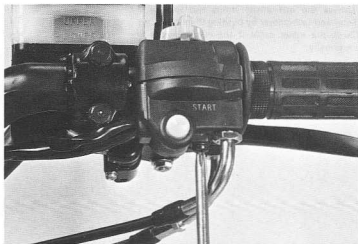
### LEFT HANDLEBAR SWITCH REPLACEMENT

Refer to RIGHT HANDLEBAR SWITCH REPLACEMENT.

#### NOTE

It is not necessary to remove the fuel tank.

Disconnect the left handlebar switch wires.





### RIGHT HANDLEBAR REMOVAL

Loosen the three screws attaching the throttle grip/switch housing.  
Remove the right handlebar switch wires from the handlebar.

Remove the brake master cylinder.

#### CAUTION

*Secure the brake cylinder in an upright position to prevent the fluid from leaking and damaging the paint and to prevent air from entering the brake system.*

#### NOTE

Do not loosen the brake hose unless necessary.

Remove the handlebar mounting bolts.  
Remove the handlebar.  
Remove the throttle grip and switch assembly.

### RIGHT HANDLEBAR INSTALLATION

Attach the handlebar to the front fork tube, inserting the locating lug into the cut-out of the fork top bridge.

#### NOTE

Before installing the handlebar mounting bolt, coat the bolt threads with oil.

Coat the throttle grip area of handlebar with grease.

Install the throttle grip switch housing and throttle cables.

#### TORQUE:

Switch housing: 0.10–0.15 kg-m  
(8.4–13.0 in-lb)

Throttle cable lock nut:  
0.2–0.3 kg-m  
(17.4–26.0 in-lb)

#### NOTE

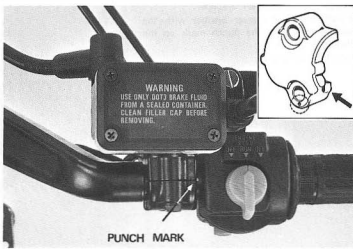
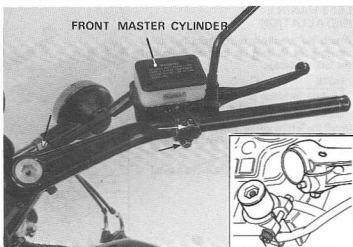
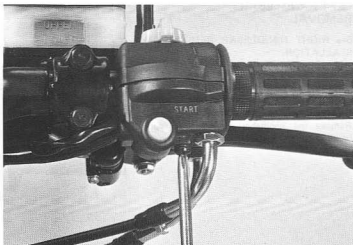
- Before tightening the throttle cable lock nut, turn the handlebar all the way to the right and pull the throttle cables to the right.
- Make sure there is clearance between the switch housing and throttle grip.

Check throttle operation in all steering position (Page 3-4).

Install the master cylinder on the handlebar with the end of the holder aligned with the punch mark and wire relief facing down.

Tighten the upper screw first, then tighten the lower screw.

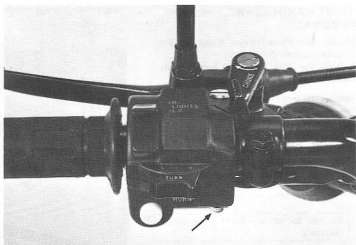
After assembly, check that the brake lever does not touch the switch housing when it is pulled in.



LEFT HANDLEBAR  
REMOVAL

See RIGHT HANDLEBAR REMOVAL/INSTALLATION.

Remove the left grip.  
Remove the left handlebar switch assembly.  
Loosen the clutch lever bracket bolt.  
Remove the clutch lever assembly.  
Remove the handlebar mounting bolt and handlebar.

LEFT HANDLEBAR  
INSTALLATION

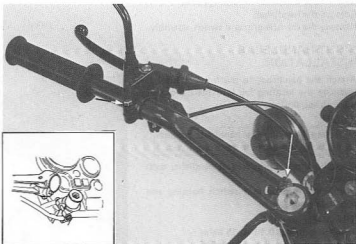
Attach the handlebar to the front fork tube, inserting the locating lug into the cut-out of the fork top bridge.

## NOTE

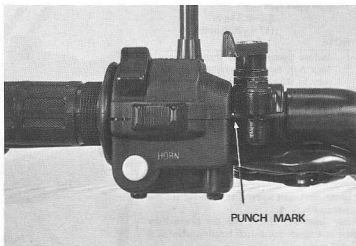
Before installing the handlebar mounting bolt, coat the bolt threads with oil.

Install the left handlebar switch assembly.  
Tighten the forward screw first, then tighten the rear screw.

**TORQUE: 0.10–0.15 kg-m (8.4–13.0 in-lb)**



Install the clutch lever assembly.  
Install the handle lever bracket with the split aligned with the punch mark on the handlebar.  
Install the left grip.

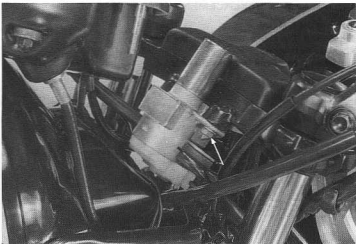




### IGNITION SWITCH REPLACEMENT

Remove the two bolts holding the instrument cluster.

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



### FUSE HOLDER REPLACEMENT

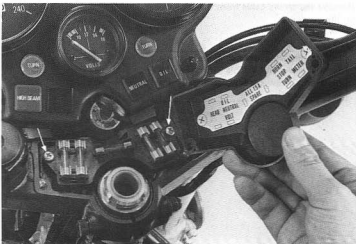
Remove the fuse cover.

Unscrew the screws holding the fuse holder.

Remove the headlight.

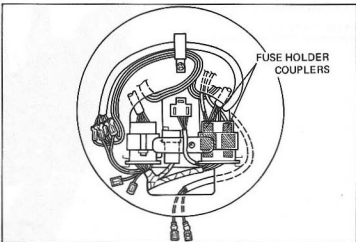
Disconnect the wire coupler.

Remove the fuse holder.



### NOTE

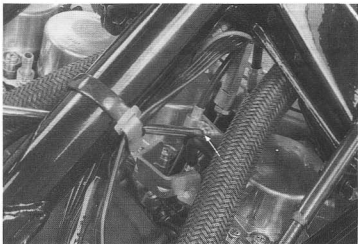
Before disconnecting the holder wires, tie a string to them. This string can be used as a draw cord when installing a new holder.





**CHOKE CABLE REPLACEMENT**

Remove the fuel tank.  
Disconnect the choke cable from the lower  
choke cable bracket.  
Remove the cable end from the choke lever.



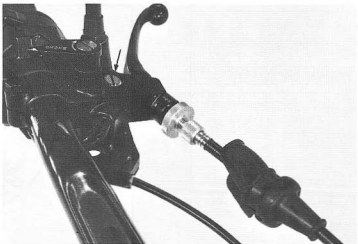
Remove the choke cable from the choke lever  
on the handlebar.

**NOTE**

Before removing the cable, tie a string  
to the cable end. This string can be  
used as a draw cord when installing a  
new choke cable.

**CLUTCH CABLE REPLACEMENT**

Remove the fuel tank.  
Remove the clutch cable from the lever.



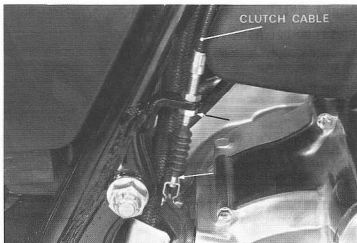


Loosen the lock nut on the engine and remove the clutch cable from the clutch lever.

### NOTE

Before removing the clutch cable, connect a string to the end of the cable so that a new cable can be installed easily by using this string as a draw cord.

Adjust the clutch cable after replacement (Page 3-19).

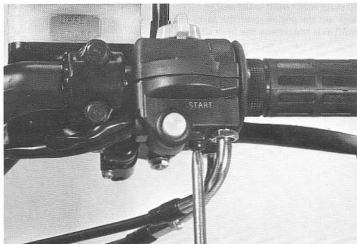


### THROTTLE CABLE REPLACEMENT

Remove the fuel tank.

Remove the right handlebar switch/throttle housing.

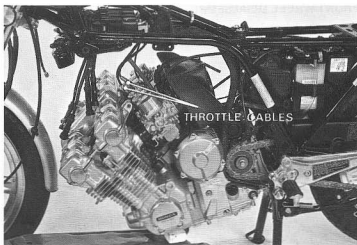
Remove the throttle cables from the throttle pipes.



Tilt the engine forward (Page 5-1).

Remove the throttle cables from the carburetors.

Adjust throttle cable free play (Page 3-6).





## FRONT WHEEL

### FRONT WHEEL REMOVAL

Remove the speedometer cable set screw and the speedometer cable.

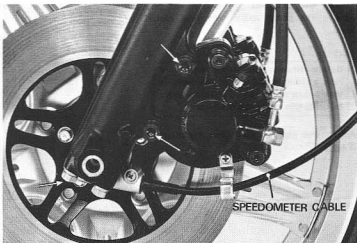
Remove the right and left side caliper assemblies by loosening the allen bolts.

#### 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.

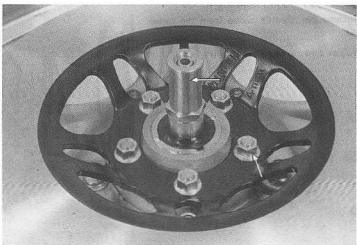
Remove either front brake caliper. Jack up the engine until the forks clear the front axle and remove the front wheel.



### FRONT WHEEL DISASSEMBLY

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

Remove five bolts and discs.

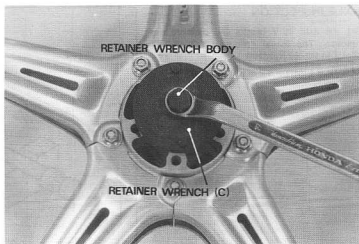




Remove the retainer.  
Remove the bearings and the distance collar from the hub.

### NOTE

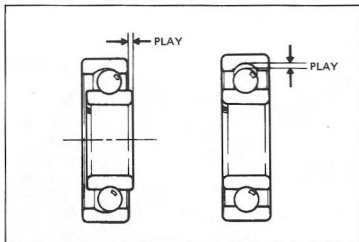
If the bearings are removed, they should be replaced with new ones.



## FRONT WHEEL INSPECTION

### WHEEL BEARING:

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.



### 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 gauge.

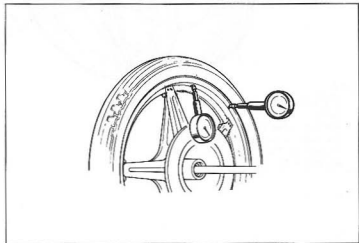
### SERVICE LIMITS:

RADIAL RUNOUT: 2.0 mm (0.08 in)

AXIAL RUNOUT: 2.0 mm (0.08 in)

### NOTE

The COMSTAT WHEEL cannot be repaired and must be replaced with a new one if the service limits are exceeded.

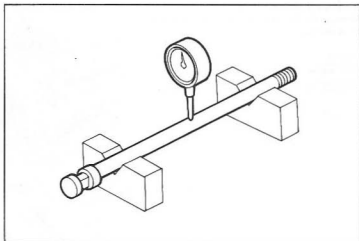




## AXLE INSPECTION

Set the axle in V blocks and measure the runout. The actual runout is 1/2 of TIR (Total Indicator Reading).

**SERVICE LIMIT: 0.2 mm (0.008 in)**



## FRONT WHEEL ASSEMBLY

5.5–6.5 kg-m  
(40–47 ft-lb)

GREASE

2.7–3.3 kg-m  
(20–24 ft-lb)

BEARING RETAINER

**WARNING**

Do not get grease on the brake disc.

GREASE

## NOTE

- The COMSTAR wheel has no rim band.
- The front wheel uses a tubeless tire. For tubeless tire repair, refer to the TUBELESS TIRE MANUAL (Code No. 6141550).



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.

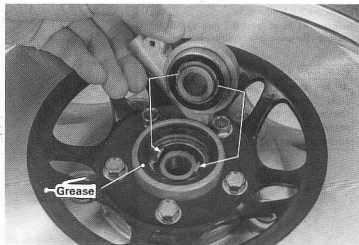
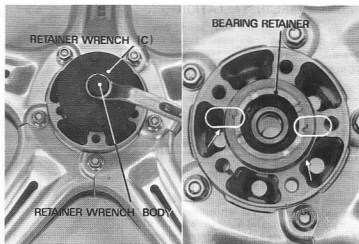
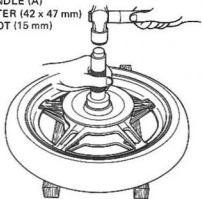
### NOTE

The spoke plate bolts and nuts require no retightening since they are secured with lock pins. Do not remove the pins.

Install the speedometer gear retainer.  
Lubricate the inside of the oil seal and install it.

Install the speedometer gear in the wheel hub, aligning the tangs with the slots.

BEARING DRIVER HANDLE (A)  
BEARING DRIVER OUTER (42 x 47 mm)  
BEARING DRIVER PILOT (15 mm)





Install the left and right discs.

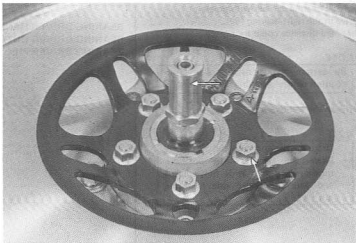
**TORQUE: 2.7–3.3 kg-m (20–24 ft-lb)**

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.



### FRONT WHEEL 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.

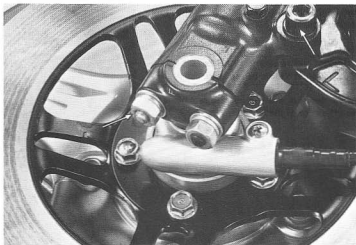
**TORQUE: 1.8–2.5 kg-m (13–18 ft-lb)**

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.

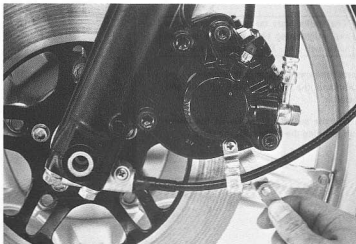
Tighten the left holder nuts.

There should be at least 0.7 mm (0.028 in) clearance between the caliper holder and disc.



#### 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

#### FRONT FORK OIL CHANGE

Remove the handlebar set bolt and filler plug. Place a pan below the fork, remove the drain plug and allow the fork oil to drain.

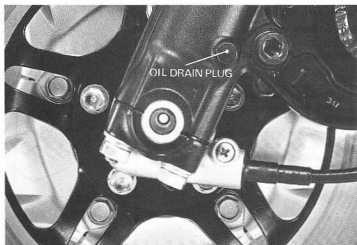
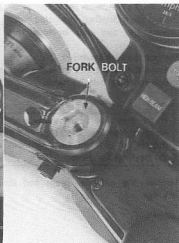
Compress the suspension a few times to completely drain the fork.

Refill the fork, page 13-23.

#### REFILL CAPACITY:

157-162 cc (5.3-5.5 ozs)

Repeat this operation for the remaining fork leg.



#### FORK REMOVAL

Remove the front wheel.  
Remove the brake calipers.

#### NOTE

Do not loosen the brake hose unless necessary.

Remove the front fender.







Remove the handlebar set bolt.  
Loosen the handlebar mounting bolt.  
Loosen the top and bottom fork pinch bolts.  
Remove the fork assembly.  
Remove the fork tubes from the bottom fork bridge, rotating them by hand.

**NOTE**

If the fork has been removed due to accident damage, the stem and crown should be checked for alignment and the bearings for damage.

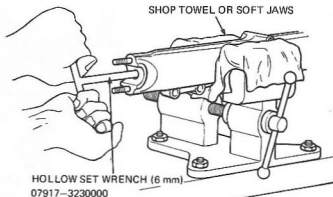
Remove the oil filler plugs and drain the fork legs.

**FORK DISASSEMBLY**

Remove the socket from the bottom of the fork leg.  
Remove the fork tubes and piston.

**NOTE**

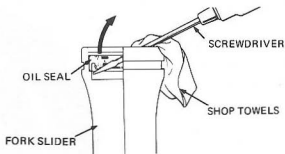
- Hold the fork slider in a vise with soft jaws, being careful not to over-tighten it.
- Temporarily install the spring and fork bolt should difficulty be encountered in removing the bolt.

**OIL SEAL REMOVAL**

Carefully remove the oil seal with a screwdriver.

**NOTE**

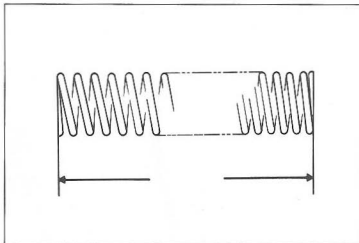
Avoid damaging the inner and outer surfaces of the slider when removing the seal.



**SPRING FREE LENGTH  
INSPECTION**

Check the free length of the fork spring.  
Replace it if it does not meet the specification.

**SERVICE LIMIT: 552.0 mm (21.7 in)**

**FORK TUBE/FORK SLIDER/  
PISTON INSPECTION**

Check the fork tubes, fork sliders and pistons for score marks, scratches, or excessive or abnormal wear, replacing those which cannot be reused.

Remove the fork seal. Measure the inside diameter of the guide bushing.

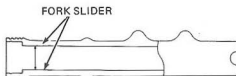
Measure the outside diameter of the fork tube and check the condition of the tube piston and rings.

**Front fork slider I.D.**

**SERVICE LIMIT: 35.25 mm (1.388 in)**

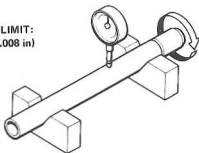
**Front fork tube O.D.**

**SERVICE LIMIT: 34.85 mm (1.372 in)**

**FORK TUBE INSPECTION**

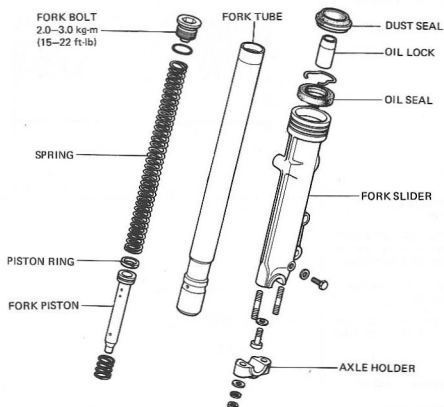
Set the fork tube in V blocks and read the runout. Take 1/2 TIR to determine the actual runout.

**RUNOUT  
SERVICE LIMIT:  
0.2 mm (0.008 in)**





## FORK ASSEMBLY

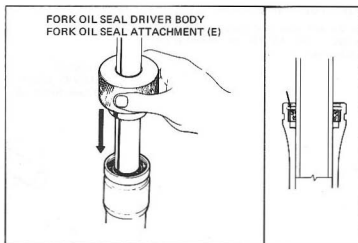


## OIL SEAL INSTALLATION

Dip the new fork seal in ATF and install it in the slider using the fork leg as a guide for the seal driver.

Drive the oil seal into position until the snap ring groove appears.

Install the snap ring and dust cover.



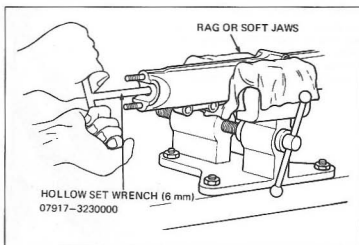


Install the piston and fork tube.  
Apply a locking agent to the bolt threads and underside of the bolt and torque to the specified tension.

**TORQUE:** 0.8–1.2 kg-m (6–9 ft-lb)

**NOTE**

Do not overtighten the fork slider in a vise.



### FILLING WITH OIL

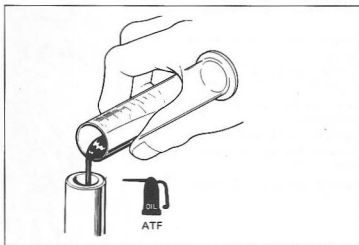
Use ATF (Automatic Transmission Fluid) to fill the front fork.

**OIL CAPACITY:**

177–182 cc (6.0–6.2 ozs) at assembly

**NOTE**

Pour the specified amount of ATF. Do not overfill.



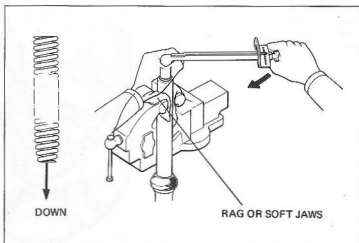
Slide the fork spring and spring seat into position.

Clean the fork bolt and tighten.

**TORQUE:** 2.0–3.0 kg-m (15–22 ft-lb)

**NOTE**

- Place the fork tube in a vise with soft jaws, avoiding the sliding surface.
- Note the spring direction.

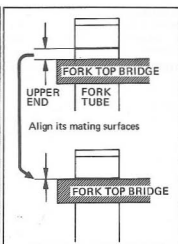




## FORK INSTALLATION

Install the fork tubes in the fork top bridge and steering stem, while rotating them by hand.

Position the fork tubes so that the aligning lines are even with the fork top bridge.



Tighten the right and left handlebar mounting bolts.

**TORQUE:** 2.8–3.2 kg-m (20–23 ft-lb)

**NOTE**

Before installing the handlebar mounting bolts, coat the bolts threads with oil.

Torque the fork tube pinch bolts at the steering stem.

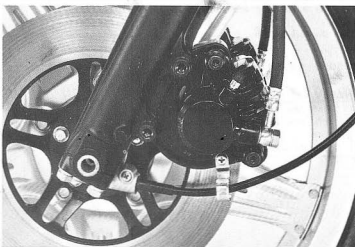
**TORQUE:** 1.8–2.5 kg-m (13–18 ft-lb)

Torque the fork tube pinch bolts at the top bridge.

**TORQUE:** 0.9–1.3 kg-m (7–9 ft-lb)



Install the fender.  
Install the brake caliper.  
Secure the brake hose.  
Install the front wheel.





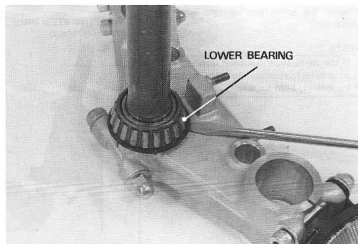
## STEERING STEM

### STEM REMOVAL

Remove the handlebars.  
Remove the instruments (Page 13-6).  
Remove the headlight assembly and disconnect the wiring (Page 13-5).  
Remove the 2-way joint assembly.  
Remove the wheel and forks.  
Remove the fuse cover.  
Remove the fork top bridge.

Remove the top thread nut.  
Remove the steering stem.

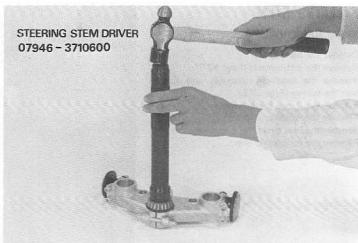
Remove the lower steering stem bearing.





Install a dust seal onto the steering stem and drive the lower bearing inner race over the stem with the special tool.

STEERING STEM DRIVER  
07946-3710600

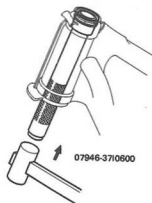


**NOTE**

Replace the bearing and bearing race as a set.

Remove the upper bearing race with the special tool.

STEERING STEM DRIVER  
07946-3710600

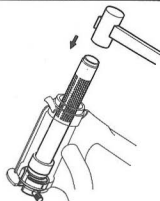


Remove the lower bearing race with the special tool.

**NOTE**

If the motorcycle has been involved in an accident, examine the area around the steering head for cracks.

STEERING STEM DRIVER  
07946-3710600

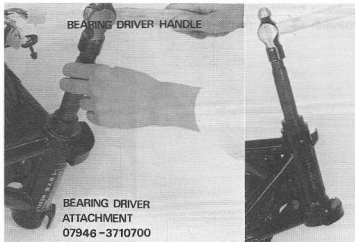


BEARING RACE REMOVER  
07946-3710500



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.

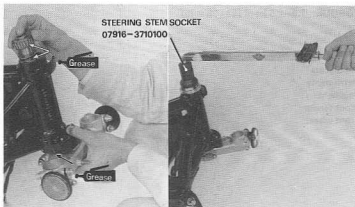


### STEERING STEM INSTALLATION

Pack the bearing cavities with bearing grease. Insert the steering stem into the steering head pipe and install the upper bearing inner race.

Install the steering head top nut and tighten to 3.0–4.0 kg-m (22–28 ft-lb).

Loosen the top nut and retighten to 0.8–1.2 kg-m (6–9 ft-lb).



### TOP BRIDGE INSTALLATION

Install the front fork legs.

Position the fork tubes so that the upper ends are even with the steering head adjuster.

Temporarily hold the front fork legs by tightening the steering stem fork pinch bolts.







Torque the steering stem nut.

**TORQUE:** 8.0–12.0 kg-m (58–87 ft-lb)

LOCK NUT WRENCH SOCKET (26×30)  
EXTENSION HANDLE



Torque the bottom bridge fork bolts.

**TORQUE:** 1.8–2.5 kg-m (13–18 ft-lb)

Install the following:

Handlebars  
Instruments  
Headlight  
Front fender  
Front wheel

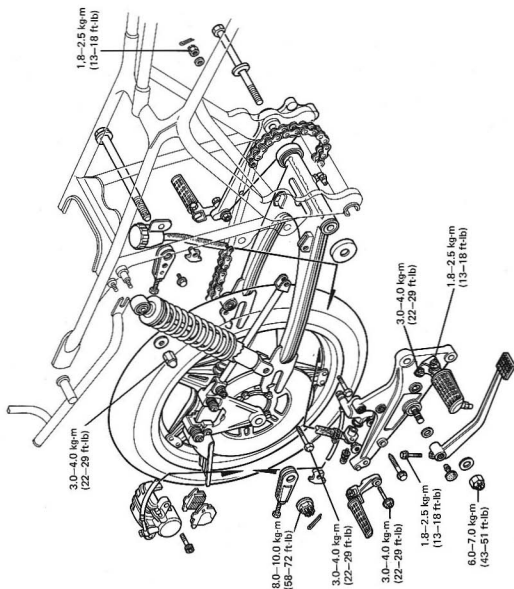




**HONDA**  
**CB X**

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MEMO





|                     |       |
|---------------------|-------|
| SERVICE INFORMATION | 14-1  |
| TROUBLESHOOTING     | 14-2  |
| REAR WHEEL          | 14-3  |
| SHOCK ABSORBER      | 14-8  |
| SWING ARM           | 14-11 |

## SERVICE INFORMATION

### WORKING PRACTICE

The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to the TUBELESS TIRE MANUAL, code No. 6141550.

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.

### SPECIAL TOOLS

#### Common Tools

|                                   |               |
|-----------------------------------|---------------|
| 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 Cushion Compressor           | 07959-3290001 |
| Retainer Wrench Body              | 07710-0010400 |
| Retainer Wrench A.                | 07710-0010100 |

### TORQUE VALES

|                      |                             |
|----------------------|-----------------------------|
| Rear brake disc      | 2.7-3.3 kg-m (20-24 ft-lb)  |
| Driven sprocket      | 8.0-10.0 kg-m (58-72 ft-lb) |
| Rear axle            | 8.0-10.0 kg-m (58-72 ft-lb) |
| Rear shock absorber  | 3.0-4.0 kg-m (22-29 ft-lb)  |
| Swing arm pivot bolt | 6.0-7.0 kg-m (43-51 ft-lb)  |
| Rear brake rod nut   | 1.8-2.5 kg-m (13-18 ft-lb)  |

### SPECIFICATIONS

|                                   |        | STANDARD                            | SERVICE LIMIT      |
|-----------------------------------|--------|-------------------------------------|--------------------|
| Axle runout                       |        | —                                   | 0.2 mm (0.008 in)  |
| Rear wheel rim runout             | Radial | —                                   | 2.0 mm (0.08 in)   |
|                                   | Axial  | —                                   | 2.0 mm (0.08 in)   |
| Shock absorber spring free length |        | 254.2 mm (10.0 in)                  | 249.5 mm (9.82 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

### Wobble or Vibration in Motorcycle

1. Distorted rim
2. Loose wheel bearing
3. Loose or distorted spokes
4. Faulty tire
5. Loose axle
6. Tire pressure incorrect
7. Swing arm bushing worn

### Soft Suspension

1. Weak spring
2. Shock absorber improperly adjusted

### Hard Suspension

1. Shock absorbers improperly adjusted
2. Bent shock absorber

### Suspension Noise

1. Shock case binding
2. Loose fasteners



### REAR WHEEL

#### REAR WHEEL REMOVAL

Place the motorcycle on its center stand. Loosen the drive chain adjuster lock nuts and bolts.

Remove the cotter pin from the rear axle and loosen the nut.

Pull the adjusters down, push the wheel forward and remove the drive chain from the drive sprocket.

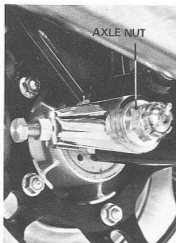
Remove the rear wheel.

Remove the rear axle.

#### NOTE

Do not operate the rear brake pedal after removing the rear wheel.

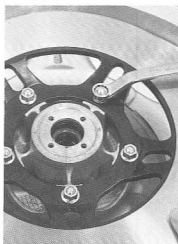
To do so will cause difficulty in refitting the brake disc between the brake pads.



#### REAR WHEEL DISASSEMBLY

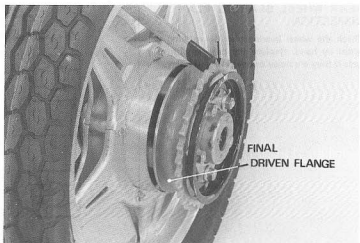
Remove the rear disc.

Loosen the driven sprocket nuts.



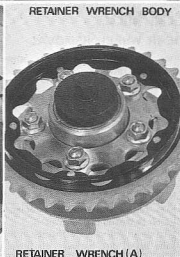
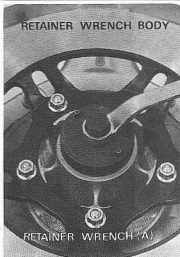
Remove the driven flange from the wheel hub.

Remove the driven sprocket.





Remove the bearing retainer.

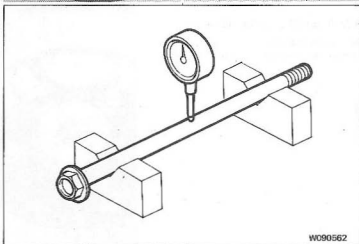


### AXLE INSPECTION

Set the axle in V blocks and read the axle runout.

The actual axle runout is 1/2 of TIR (Total Indicator Reading).

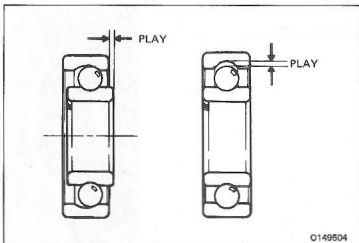
**SERVICE LIMIT: 0.2 mm (0.008 in)**



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### 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.



Q149504



### 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.

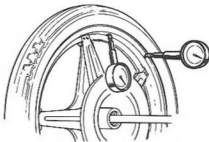
#### SERVICE LIMITS:

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.



### FINAL DRIVEN SPROCKET INSPECTION

Check the condition of the final driven sprocket teeth.

Replace the sprocket if worn or distorted.

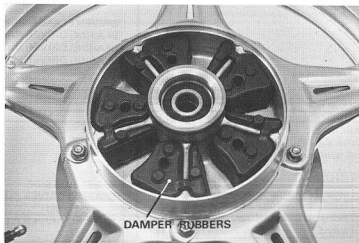
#### NOTE

If the final driven sprocket requires replacement, inspect the drive chain and drive sprocket. (See 3-16)



### DAMPER RUBBER INSPECTION

Replace the damper rubbers if they are damaged or deteriorated.



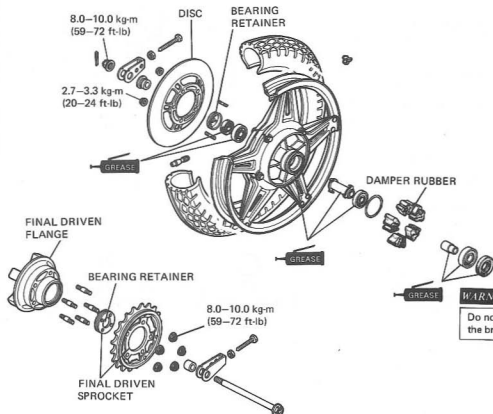




# REAR WHEEL ASSEMBLY

## NOTE

The rear wheel uses a tubeless tire. For tubeless tire repairs, refer to **TUBELESS TIRE MANUAL**.



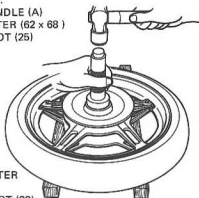
Pack all bearing cavities with grease.  
Press the distance collar into place from the left side.  
Drive the right ball bearing first, then the left ball bearing.

## CAUTION

Drive the bearings squarely.  
Install the bearings with the sealed end facing out, making sure they are fully seated.

**DRIVEN FLANGE SIDE:**  
BEARING DRIVER HANDLE (A)  
BEARING DRIVER OUTER (62 x 68 )  
BEARING DRIVER PILOT (25)

**WHEEL HUB SIDE:**  
BEARING DRIVER OUTER  
(52 x 55)  
BEARING DRIVER PILOT (20)

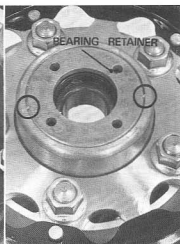
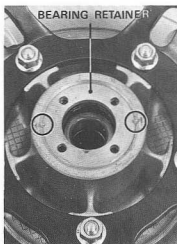




Install the bearing retainer with the same tool that was used to remove it. Peen it to the hub.

### NOTE

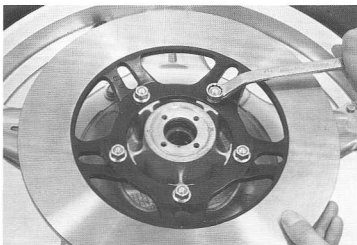
Check the condition of the bearing retainer.  
If the threads are damaged, the retainer should be replaced.



Install the rear brake disc and nut.

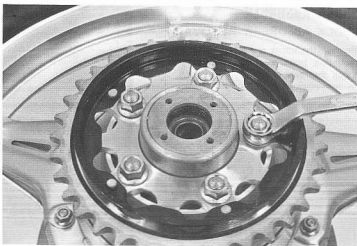
**TORQUE: 2.7–3.3 kg-m (20–24 ft-lb)**

Clean the brake disc with a high quality degreasing agent.



Install the final driven sprocket.

**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**





## REAR WHEEL INSTALLATION

Install the rear wheel in the reverse order of removal.

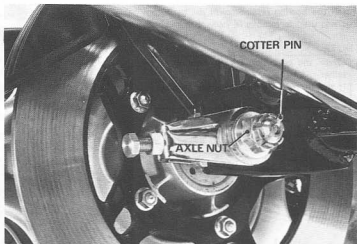
### NOTE

- When installing the wheel, fit the brake disc between the brake pads carefully.
- After installing the wheel, apply the brakes several times and then check if the wheel rotates freely. Recheck the wheel if the brake drags or if the wheel does not rotate freely.

Use a new cotter pin for securing the axle nut.

**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**

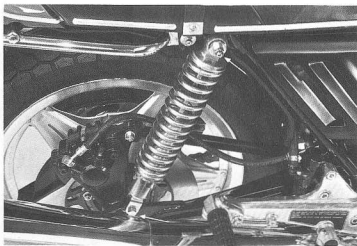
Adjust the drive chain free play. (See 3-16)



## SHOCK ABSORBER

### SHOCK ABSORBER REMOVAL

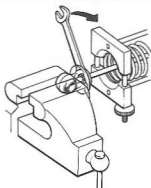
Remove the upper and lower shock absorber mounting bolts and nuts and remove the shock absorbers.





### SHOCK ABSORBER DISASSEMBLY

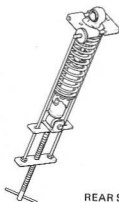
Compress the spring just enough to remove the lock nut.  
Loosen the lock nut and remove the top eye.



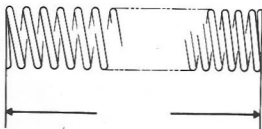
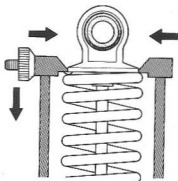
### SHOCK ABSORBER SPRING FREE LENGTH

Disassemble the unit.  
Measure the free length of the spring. Inspect the shock body for oil leaks.

**SERVICE LIMIT: 249.5 mm (9.82 in)**



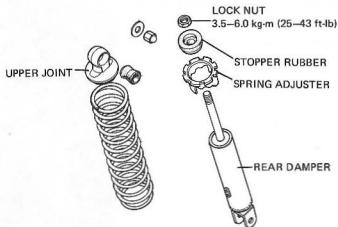
REAR SHOCK ABSORBER COMPRESSOR



### SHOCK ABSORBER ASSEMBLY

#### NOTE

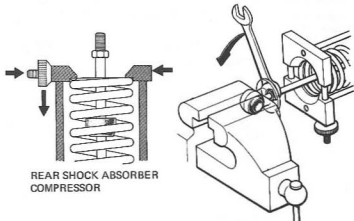
Install the spring with the small coil at the bottom.





**NOTE**

Apply locking agent to the lock nut at time of assembly.

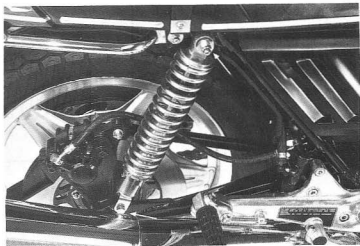


REAR SHOCK ABSORBER  
COMPRESSOR

**SHOCK ABSORBER INSTALLATION**

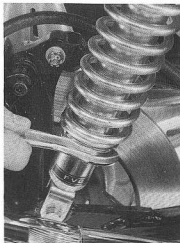
Torque the shock absorber bolts and nuts.

**TORQUE: 3.0–4.0 kg-m (22–29 ft-lb)**



Adjust the right and left absorbers equally with the spring adjuster.

Check shock absorber operation after installation.



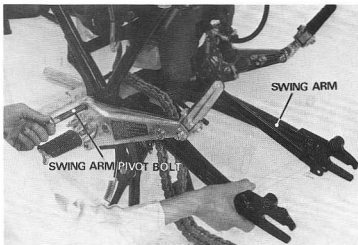
STANDARD: I



### SWING ARM

#### SWING ARM REMOVAL

Remove the rear wheel. (Page 14-3)  
Disconnect the rear brake torque rod from the brake caliper.  
Remove the drive chain guard.  
Remove the right and left shock absorbers.  
Remove the swing arm.

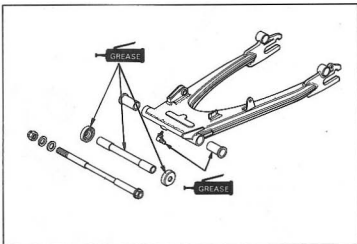


#### SWING ARM DISASSEMBLY/ ASSEMBLY

##### NOTE

Drive the bushings into place, with a soft hammer, making sure that they are not damaged.  
Lubricate with grease after installation.

**SWING ARM BUSHING I.D. SERVICE LIMIT:**  
21.7 mm (0.854 in)  
**SWING ARM COLLAR O.D. SERVICE LIMIT:**  
21.4 mm (0.843 in)



#### SWING ARM INSTALLATION

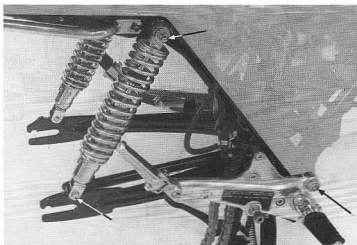
Place the drive chain over the swing arm.  
Tighten the swing arm pivot bolt.

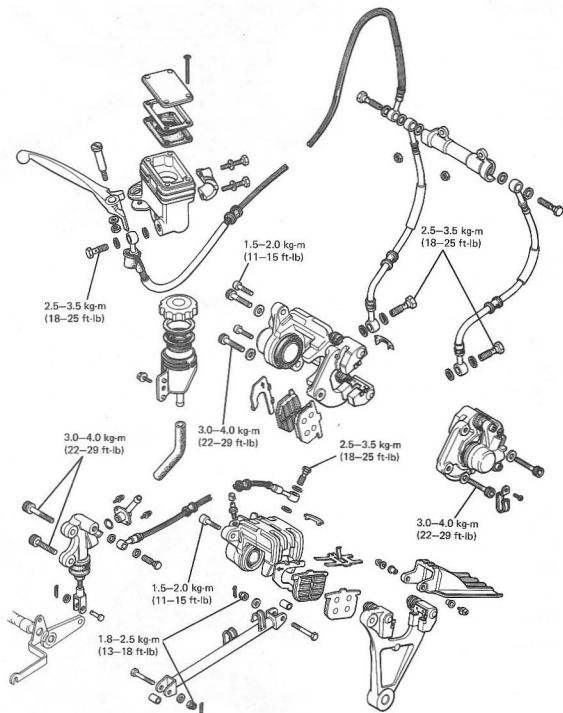
**TORQUE: 6.0–7.0 kg-m (43–51 ft-lb)**

Install the shock absorbers.

**TORQUE: 3.0–4.0 kg-m (22–29 ft-lb)**

Install the rear wheel.







|                                      |       |
|--------------------------------------|-------|
| SERVICE INFORMATION                  | 15-1  |
| TROUBLESHOOTING                      | 15-2  |
| BRAKE FLUID REPLACEMENT/AIR BLEEDING | 15-3  |
| BRAKE PAD/DISC                       | 15-5  |
| FRONT BRAKE MASTER CYLINDER          | 15-8  |
| FRONT BRAKE CALIPER                  | 15-11 |
| REAR BRAKE MASTER CYLINDER           | 15-14 |
| REAR BRAKE CALIPER                   | 15-17 |
| BRAKE PEDAL SHAFT                    | 15-20 |

## SERVICE INFORMATION

### WORKING PRACTICE

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.

### SPECIAL TOOL

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         | 1.5-2.0 kg-m (11-15 ft-lb)  |
| Rear brake caliper          | 1.5-2.0 kg-m (11-15 ft-lb)  |
| Rear master cylinder        | 3.0-4.0 kg-m (22-29 ft-lb)  |
| Rear brake 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         |
|-----------------------------|-------------------------------------|-----------------------|
| Disc thickness              | 4.9-5.1 mm (0.19-0.20 in)           | 4.0 mm (0.16 in)      |
| Disc runout                 | —                                   | 0.3 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.   | 42.772-42.822 mm (1.6839-1.6859 in) | 42.765 mm (1.6837 in) |
| Front caliper cylinder I.D. | 42.85-42.90 mm (1.6870-1.6890 in)   | 42.915 mm (1.6896 in) |
| Rear master cylinder I.D.   | 14.000-14.043 mm (0.5512-0.5529 in) | 14.06 mm (0.554 in)   |
| Rear master piston O.D.     | 13.957-13.984 mm (0.5496-0.5506 in) | 13.945 mm (0.549 in)  |
| Rear caliper cylinder I.D.  | 38.180-38.230 mm (1.5031-1.5051 in) | 38.24 mm (1.506 in)   |
| Rear caliper piston O.D.    | 38.098-38.148 mm (1.4999-1.5019 in) | 38.09 mm (1.500 in)   |
| Rear disc thickness         | 6.9-7.1 mm (0.27-0.28 in)           | 6.0 mm (0.24 in)      |
| Rear disc runout            | —                                   | 0.3 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. Fault in one side of front brake
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.*

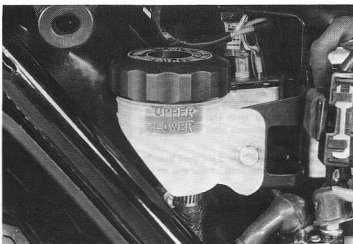


## BRAKE FLUID DRAINING

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 brands 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.

**NOTE**

Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.

**NOTE**

- Use only **DOT 3 brake fluid** from a sealed container.
- Do not mix brake fluid brands 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.

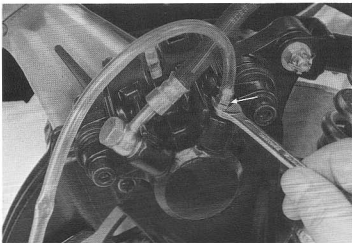
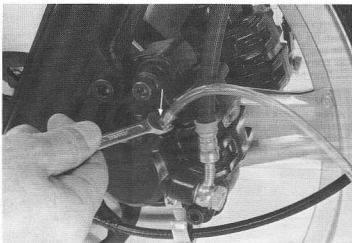
**NOTE**

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 BRAKE PAD WEAR CHECK

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.


### FRONT BRAKE PAD REPLACEMENT

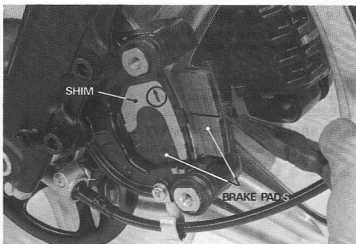
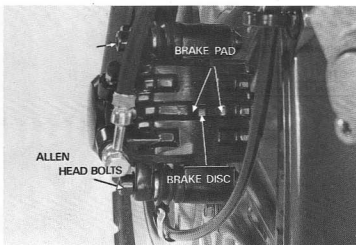
Remove the two caliper allen head bolts.

Lift off the caliper and remove both brake pads and the shim.

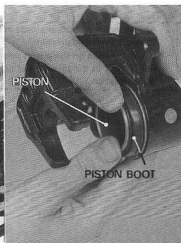
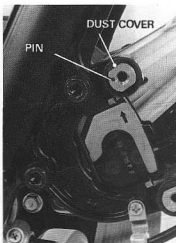
Install the new brake pads and the shim.

#### NOTE

- Install the shims with the  facing up.
- Push the piston all the way in.
- Check the brake fluid level in the brake master cylinder reservoir as this causes the level to rise.
- Always replace the brake pads in pairs to assure even disc pressure.



Inspect the piston boot for damage or deterioration.



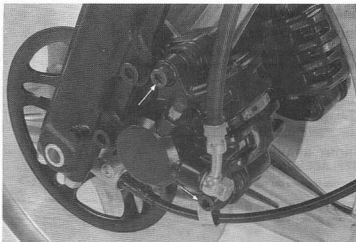


Install the brake caliper with the two allen head bolts.

**TORQUE: 1.5–2.0 kg-m (11–15 ft-lb)**

**NOTE**

Torque the bolts evenly in 2-3 steps.



**REAR BRAKE PAD WEAR CHECK**

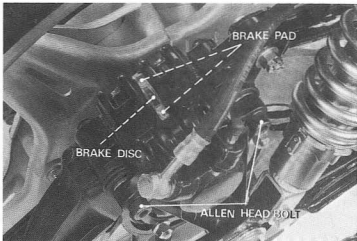
Replace the rear brake pads if the red line on the top of the pads reaches the edge of the brake disc.

**NOTE**

Always replace both pads to assure even disc pressure.

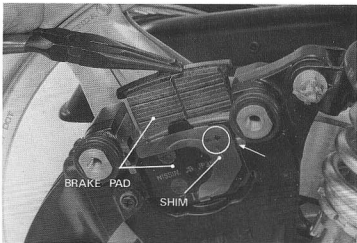
**REAR BRAKE PAD REPLACEMENT**

Remove the two caliper allen head bolts. Lift the caliper off and remove both brake pads and shim.



**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.



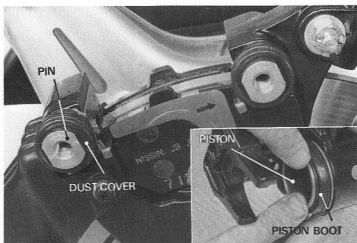


Press the piston back into the caliper. Check the brake fluid level in the brake master cylinder reservoir as this causes the level to rise.

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.

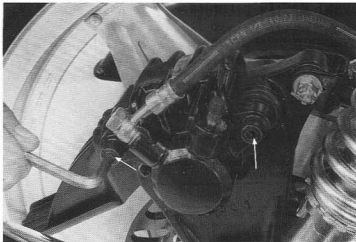


Install the brake caliper with the two allen bolts.

### NOTE

Torque the bolts evenly in 2-3 steps.

**TORQUE: 1.5–2.0 kg-m (11–15 ft-lb)**



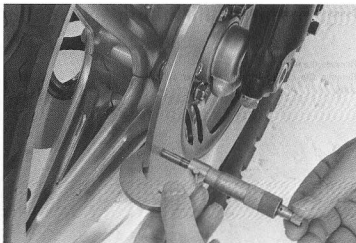
### DISC THICKNESS

Measure the disc thickness.

### SERVICE LIMIT:

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

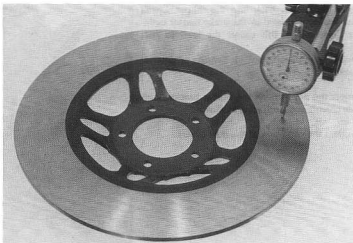
**REAR: 6.0 mm (0.24 in)**



**BRAKE DISC WARPAGE**

Measure brake disc warpage.

**SERVICE LIMIT: 0.3 mm (0.012 in)**

**FRONT MASTER CYLINDER****FRONT BRAKE 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 boot.



**SNAP RING PLIERS**  
07914-3230001

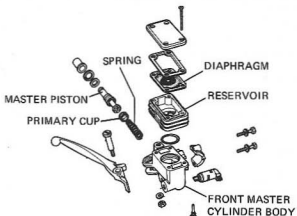




Remove the stop plate, secondary cup and master piston.  
Then remove the primary cup and spring.

Remove the brake fluid reservoir from the master cylinder body.

Clean the inside of the master cylinder and reservoir with brake fluid.

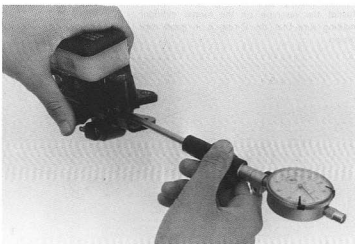


### FRONT MASTER CYLINDER I.D. INSPECTION

Measure the master cylinder I.D.

Check the master cylinder for scores, scratches or nicks.

**SERVICE LIMIT: 15.925 mm (0.6270 in)**

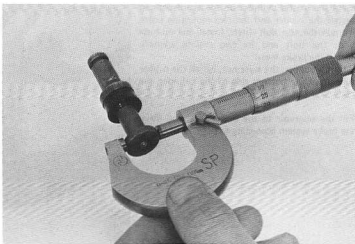


### FRONT MASTER PISTON O.D. INSPECTION

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.





FRONT 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 before assembly. Place the spring on the check valve. Install the spring and valve together.

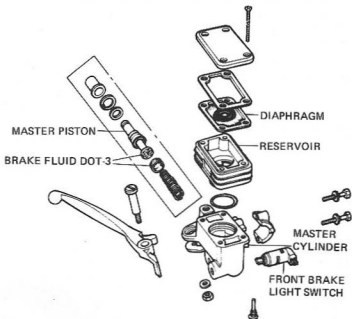
Dip the piston cup in brake fluid before assembly.

**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. Torque 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 15-3.





## FRONT BRAKE CALIPER

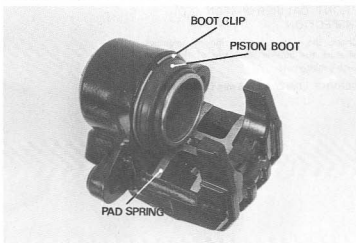
### FRONT BRAKE CALIPER DISASSEMBLY

Place a clean container under the caliper and disconnect the brake hose bolt. Loosen the two inside allen bolts. Remove the two outside allen bolts and the caliper.

#### NOTE

Avoid spilling brake fluid on painted surfaces.

Remove the inside allen bolts and separate the two caliper halves. Observe the position of the pad spring. Remove the piston boot and boot clip.

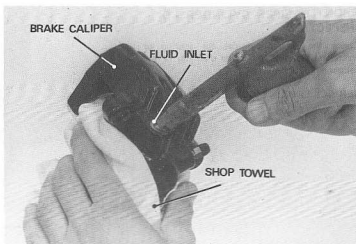


Place a shop towel over the piston to prevent the piston from coming out, and position the caliper with the piston down. Apply a small amount of air pressure to the fluid inlet.

#### 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.

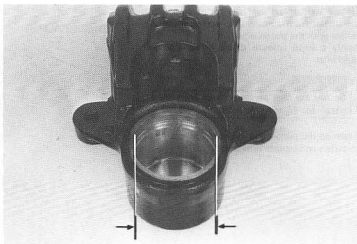
**SERVICE LIMIT: 42.765 mm (1.6837 in)**



#### FRONT CALIPER CYLINDER I.D. INSPECTION

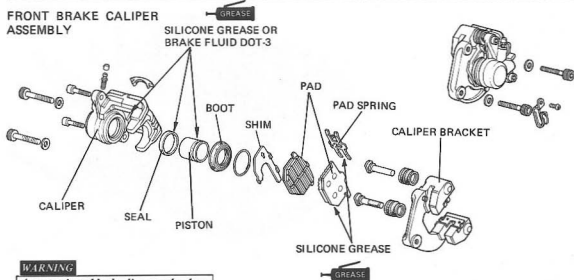
Check the caliper cylinder for scoring or scratches. Measure the inside diameter of the caliper cylinder bore.

**SERVICE LIMIT: 42.915 mm (1.690 in)**





### FRONT BRAKE CALIPER 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.

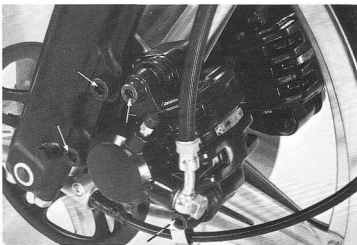
Be certain the piston seal is seated in the caliper groove.

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 outside allen bolts. Install the oil bolt and the two sealing washers.

Fill the brake fluid reservoir and bleed the front brake system (page 15-4).

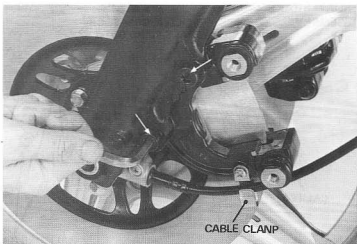


**FRONT CALIPER BRACKET  
DISASSEMBLY**

Remove the speedometer cable clamp.

Remove the two caliper bracket attaching bolts and remove the brake caliper.

Remove the pins and dust covers from the caliper bracket, making sure that they are in good condition.

**FRONT CALIPER BRACKET  
ASSEMBLY**

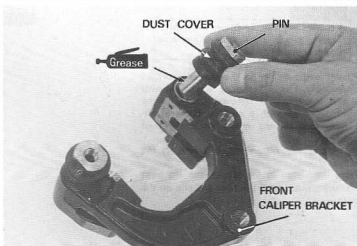
Wash all removed parts with brake fluid. Make sure that both pins move freely in and out of the caliper pin holes.

Lubricate both pins with a medium grade Hi-Temperature silicone grease before assembly.

Install the caliper bracket on the front fork.

**TORQUE: 3.0–4.0 kg-m (22–29 ft-lb)**

Install the front caliper (page 15-5).

**REAR BRAKE MASTER CYLINDER****REAR MASTER CYLINDER  
DISASSEMBLY**

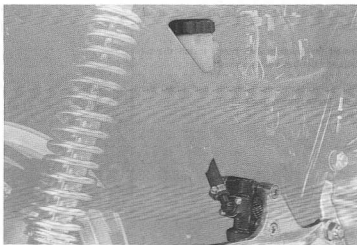
Remove the right side cover.

Place a clean drip pan under the brake line.

Disconnect the brake line on the back of the master cylinder.

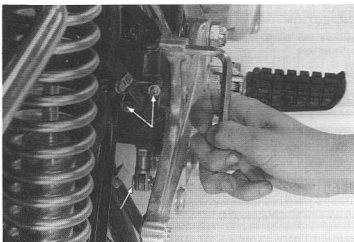
**CAUTION**

*Avoid spilling brake fluid on painted surfaces.*





Remove the pin from the rod eye and remove the two allen head bolts.



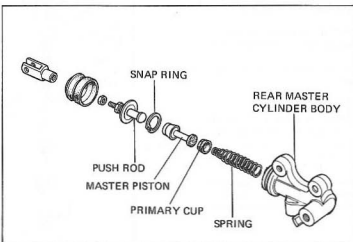
Remove the rubber cover.  
Remove the circlip and push rod from the master cylinder body.



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.

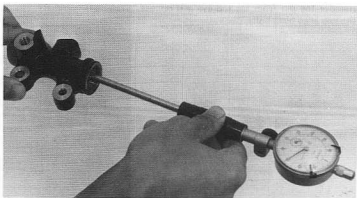


**REAR MASTER CYLINDER I.D. INSPECTION**

Measure the inside diameter of the master cylinder bore.

**SERVICE LIMIT: 14.06 mm (0.554 in)**

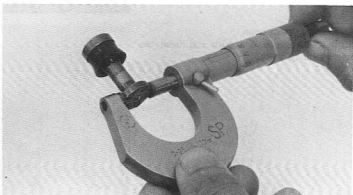
Check for scores, scratches or nicks.

**REAR MASTER PISTON O.D. INSPECTION**

Measure the master piston O.D.

**SERVICE LIMIT: 13.945 mm (0.549 in)**

Check the primary cup and secondary cup for damages before assembly.

**REAR MASTER CYLINDER ASSEMBLY****CAUTION**

*Handle the master cylinder piston, cylinder and spring as a set.*

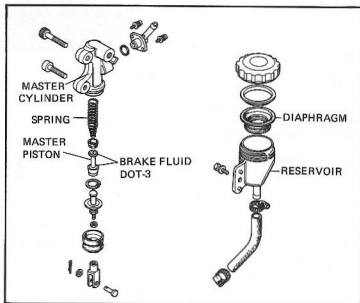
Assemble the master cylinder.  
Coat all parts with clean brake fluid.

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.



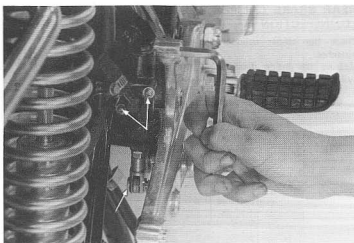


Install the master cylinder on the master cylinder bracket.

**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 15-14)



## REAR BRAKE CALIPER

### REAR BRAKE CALIPER REMOVAL

Drain the brake hydraulic system.  
Disconnect the brake hose.

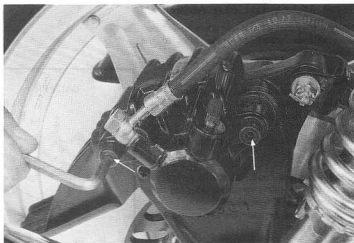
#### NOTE

Avoid spilling brake fluid on painted surfaces and the brake.

Remove the two brake caliper bolt and caliper.

### REAR BRAKE CALIPER DISASSEMBLY

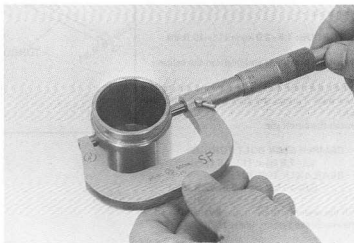
Refer to Front Brake Caliper. (Page 15-10)



### REAR BRAKE CALIPER PISTON O.D. INSPECTION

Check the piston for scoring or scratches.  
Measure the piston diameter.

**SERVICE LIMIT: 38.09 mm (1.50 in)**





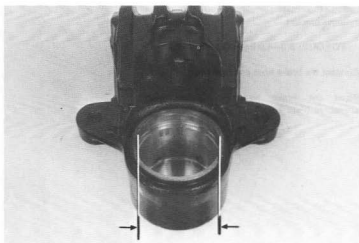


### REAR BRAKE CALIPER CYLINDER I.D. INSPECTION

Check the caliper cylinder for scoring or scratches.

Measure the inside diameter of the caliper cylinder bore.

**SERVICE LIMIT: 38.240 mm (1.506 in)**



### REAR BRAKE CALIPER ASSEMBLY

Apply a thin coat of medium grade Hi-Temperature silicone grease or brake fluid to the piston and seal.

#### WARNING

*A contaminated brake disc or pad reduces stopping power. Do not allow grease to contact pad faces.*

Install the piston seats, pistons, boots and clips.

Install the shims, pads, pins and spring. The arrows on the shims must be pointing down when the caliper is positioned.

Replace the seal between the two caliper halves with a new one.

Align both caliper halves and torque the two allen bolts.

**TORQUE: 1.5–2.0 kg-m (11–15 ft-lb)**

Install the brake line and position the caliper.

Install the rear axle, axle nut and the caliper stay bolt. Torque the stay bolt, then the axle nut.

Install the cotter pin.

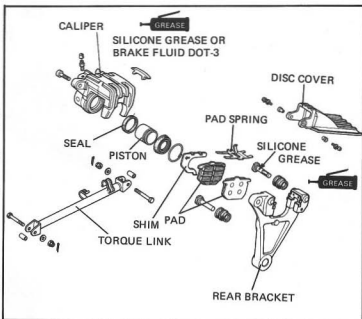
#### CALIPER STAY BOLT TORQUE:

1.8–2.5 kg-m (13–18 ft-lb)

#### REAR AXLE TORQUE:

8.0–10.0 kg-m (57.9–72.3 ft-lb)

Fill the reservoir to the upper level and bleed the rear brake system. (Page 15-3)



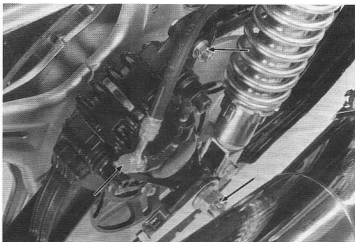


### REAR CALIPER BRACKET DISASSEMBLY

Remove the two bolts holding the caliper bracket.

Remove the axle nut and remove the caliper bracket from the rear swing arm.

Remove the pins and dust cover and check for damage.



### REAR CALIPER BRACKET ASSEMBLY

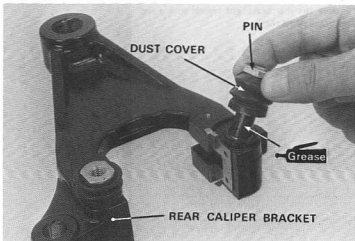
Make sure that both pins move freely in and out of the caliper pin holes.

Lubricate both pins with a medium grade Hi-Temperature Silicone grease before assembly.

Install the caliper brake on the swing arm.

**TORQUE: 8.0–10.0 kg-m (58–72 ft-lb)**

Install the rear caliper according to page 15–18.





## **BRAKE PEDAL SHAFT**

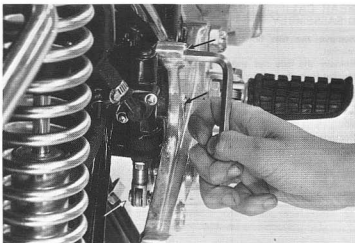
### **BRAKE PEDAL SHAFT REMOVAL/ INSTALLATION**

#### **NOTE**

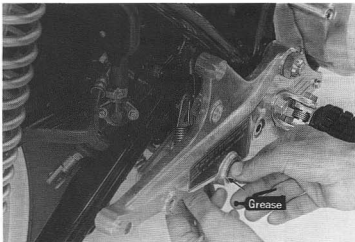
The brake pedal shaft can be removed and installed without removing the muffler.

Remove the brake pedal.

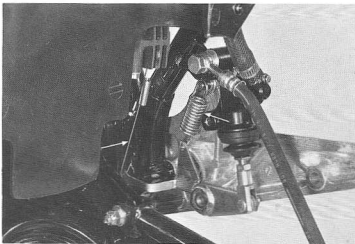
Remove the allen head bolt and rod pin.  
Remove the rear master cylinder.



Remove the rear brakelight switch spring and rear brake pedal shaft.



Install the brake return spring as shown.





**HONDA**  
**CB X**

HYDRAULIC BRAKE

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