

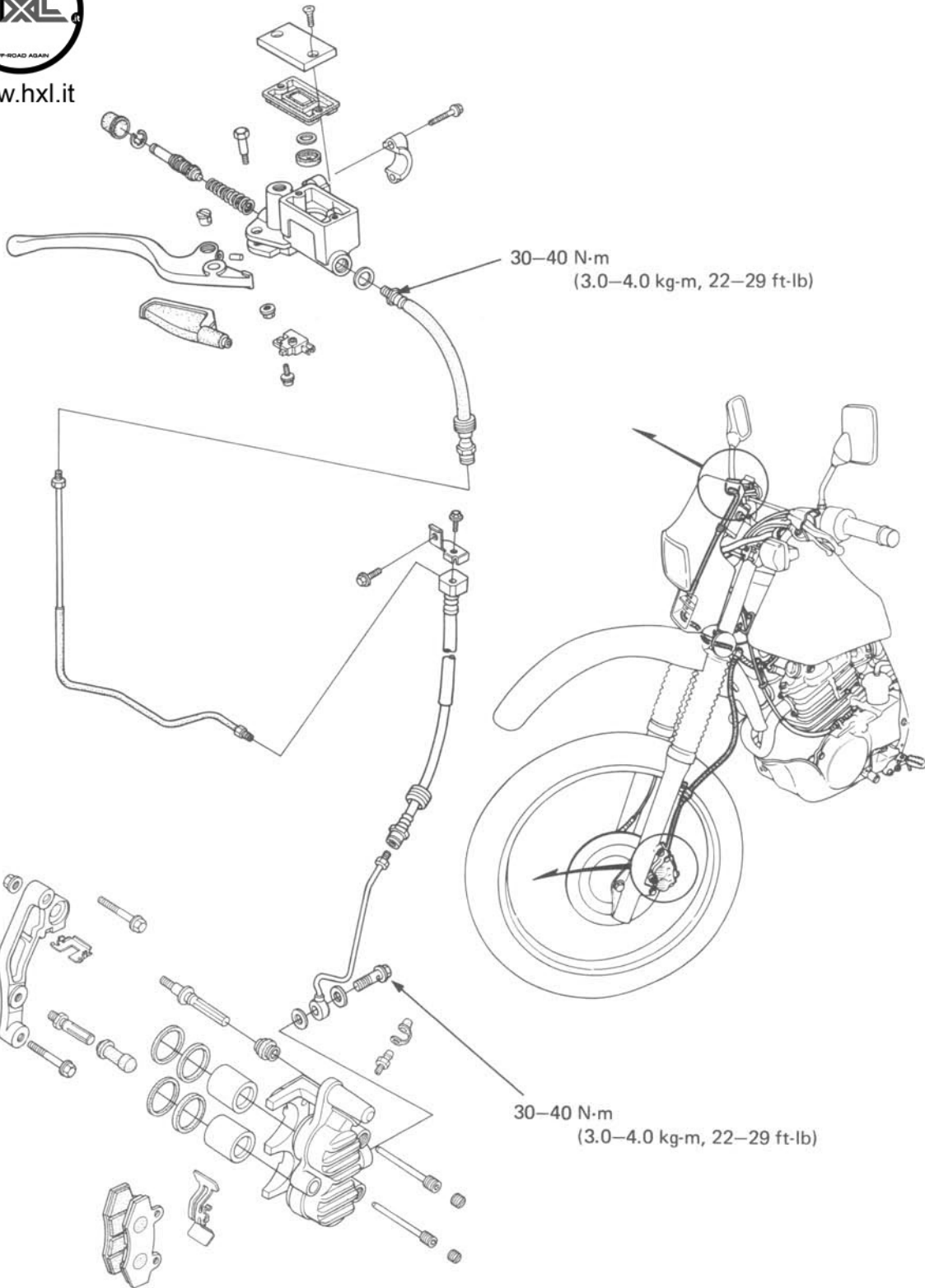
HYDRAULIC BRAKE



**HONDA**  
**XL600R**



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## SERVICE INFORMATION

### GENERAL

- The front brake can be removed without disconnecting the hydraulic system.
- Once the hydraulic systems has 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 reservoir.
- Avoid spilling brake fluid on painted surfaces or instrument lenses, as severe damage will result.
- Always check brake operation before riding the motorcycle.
- Use only DOT 4 Brake fluid.

### SPECIFICATIONS

	STANDARD	SERVICE LIMIT
Front disc thickness	3.5 mm (0.14 in)	3.0 mm (0.12 in)
Front disc runout	—	0.30 mm (0.012 in)
Front master cylinder I.D.	12.7–12.743 mm (0.5000–0.5017 in)	12.755 mm (0.5022 in)
Front master piston O.D.	12.716–12.743 mm (0.5006–0.5017 in)	12.640 mm (0.4976 in)
Front caliper piston O.D.	25.3–25.40 (0.999 in–1.000 in)	25.45 (1.002 in)
Front caliper cylinder I.D.	25.40–25.45 (1.000–1.002 in)	25.30 (0.9961 in)

### TORQUE VALUES

Brake hose bolt	25–35 N·m (2.5–3.5 kg-m, 18–25 ft-lb)
Front brake caliper bracket	20–30 N·m (2.0–3.0 kg-m, 14–22 ft-lb)
Brake caliper bolt (Upper)	20–25 N·m (2.0–2.5 kg-m, 14–18 ft-lb)
(Lower)	15–20 N·m (1.5–2.0 kg-m, 11–14 ft-lb)

### TOOL

Special Snap ring pliers	07914–3230001
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## HYDRAULIC BRAKE

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### 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
3. Sticking piston(s)

#### Brakes Grab or Pull to One Side

1. Disc or wheel misaligned

#### Brakes Chatter or Squeal

1. Pads contaminated
2. Excessive disc runout
3. Caliper installed incorrectly
4. Disc or wheel misaligned



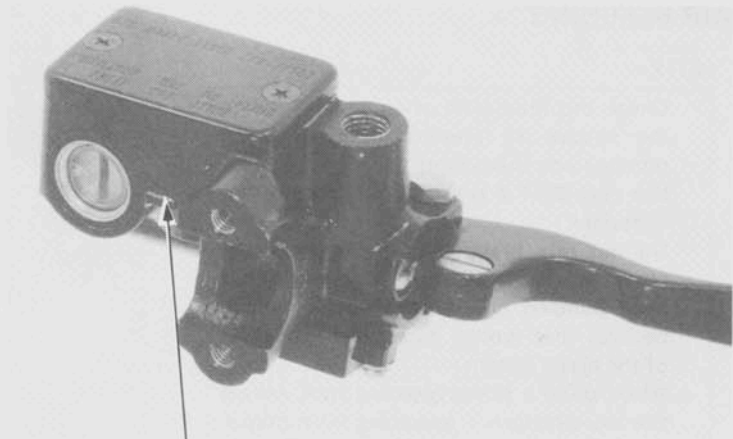
## BRAKE FLUID REPLACEMENT

### AIR BLEEDING

Check the fluid level with the fluid reservoir parallel to the ground.

#### CAUTION

- *Install the cover on the reservoir when operating the brake lever. 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.*



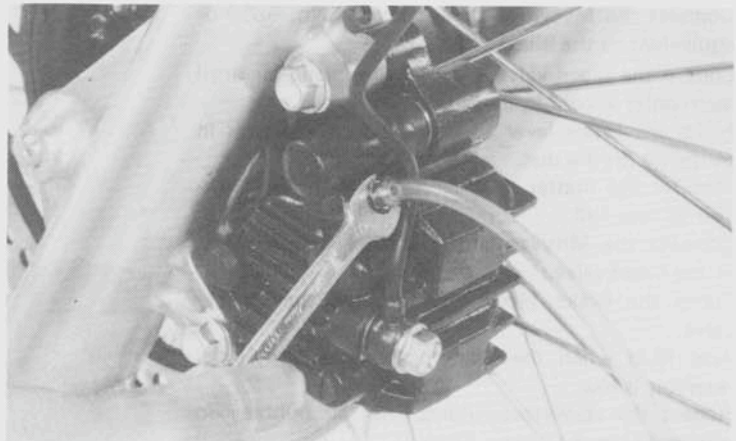
LOWER LEVEL

### BRAKE FLUID DRAINING

Connect a bleed hose to the bleeder valve. Loosen the caliper bleeder valve and pump the brake lever. Stop operating the lever 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 cleaning agent.*



### BRAKE FLUID FILLING

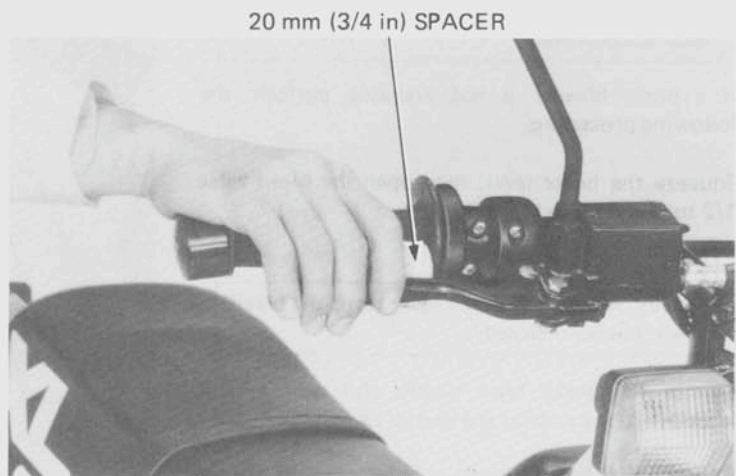
#### NOTE

Do not mix different types of fluid. They are not 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 between the lever and the handlebar grip when filling and 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 resistance is felt.

Bleed the system as described on the next page.





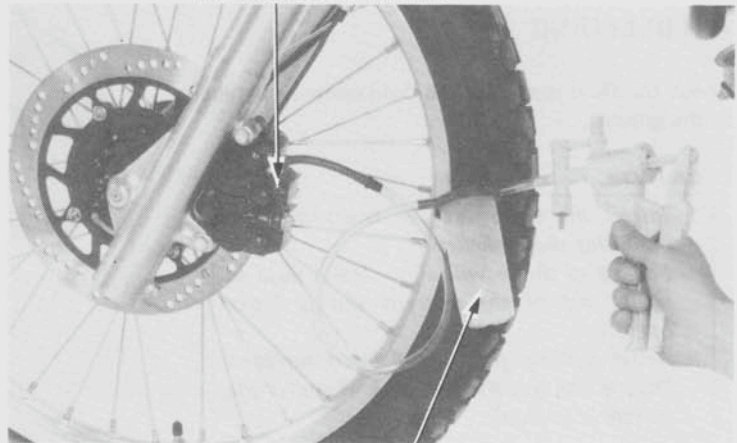


**AIR BLEEDING**

**NOTE**

- Check the fluid level often while bleeding the system to prevent air from being pumped into the system.
- Use only DOT 4 brake fluid from a sealed container.
- Do not mix brake fluid types and never reuse the contaminated fluid which has been pumped out during brake bleeding, because that would impair the efficiency of the brake system.
- When using a brake bleeding tool, follow the manufacturer's operating instructions.

AIR BLEEDER VALVE



MITYVAC BRAKE BLEEDER or EQUIVALENT

Connect the Mytymac Brake Bleeder No. 6860 or equivalent to the bleed valve.

Loosen the bleed valve 1/2 turn and bleed air until no bubbles appear in the fluid.

Pump the brake lever to bring the caliper pads in contact with the disc.

Remove the master cylinder cap and fill the reservoir to near full.

Connect the Mityvac Brake Bleeder or equivalent to the bleed valve.

Pump the brake bleeder and loosen the bleeder valve.

Add fluid when the level in the master cylinder reservoir is low.

Repeat the above procedures until air bubbles do not appear in the plastic window.



**NOTE**

If air is entering the bleeder hose from around the bleeder valve the threads. Seal the threads with teflon tape.

If a brake bleeder is not available, perform the following procedure.

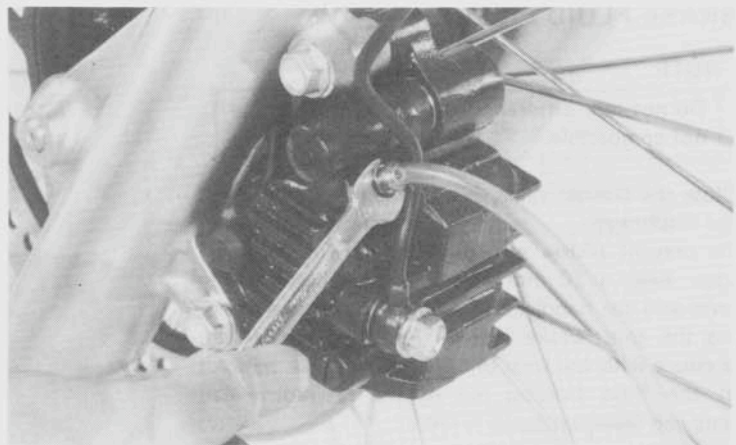
Squeeze the brake lever, then open the bleed valve 1/2 turn and close the valve.

**NOTE**

Do not release the brake lever until the bleed valve has been closed.

Release the brake lever slowly and wait several seconds after it reaches the end of its travel.

Repeat steps 1 and 2 until bubbles cease to appear in the fluid at the end of the hose.





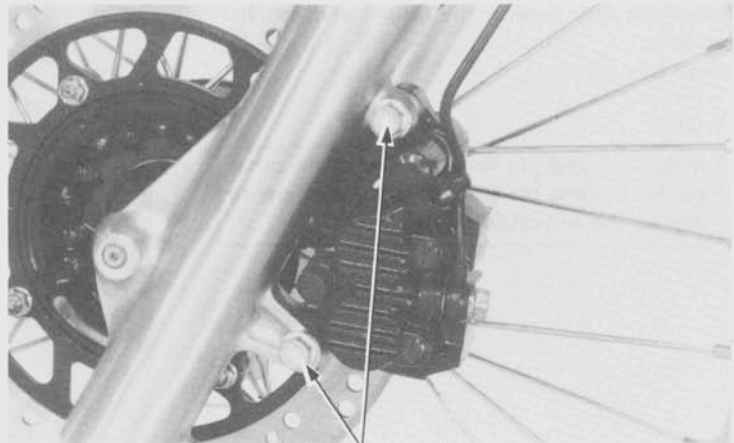
## BRAKE PAD/DISC

### FRONT PAD REPLACEMENT

#### NOTE

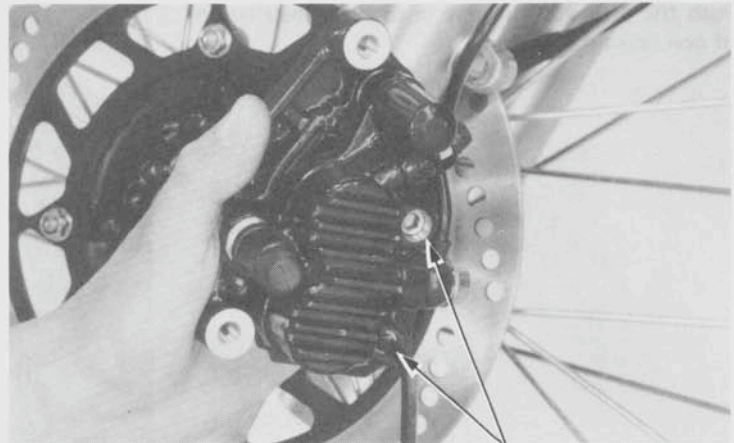
Always replace the brake pads in pairs to assure even disc pressure.

Remove the caliper mounting bolts.  
Remove the caliper from the fork slider.



MOUNTING BOLTS

Remove two slot-head screws, then remove the two hex head bolts beneath them.  
Remove the brake pads.



HEX HEAD BOLTS

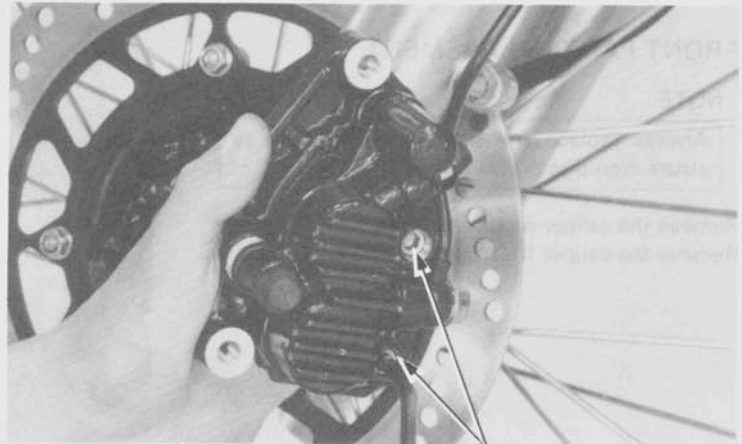
Position the anti-rattle spring in the caliper.  
Push the caliper pistons in all the way.



Install the new pads in the caliper and install the pad pins.  
Install two cap bolts.

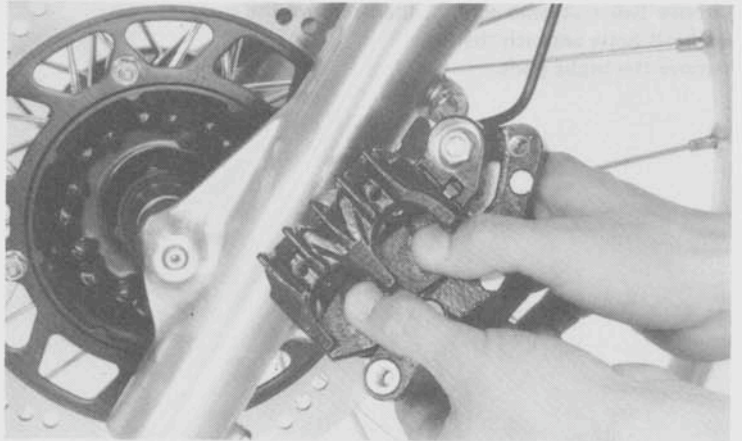
**NOTE**

Install one pad pin first then install the other pin by pushing the pads against the caliper to depress the anti-rattle spring.



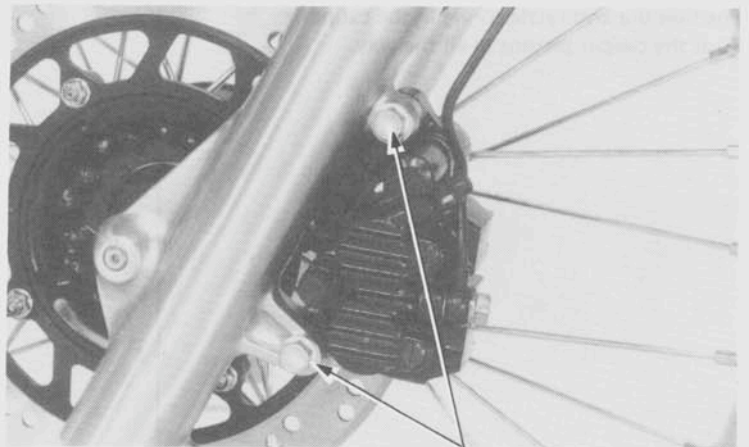
PAD PINS

Push the piston all the way in to allow installation of new brake pads.



Install the caliper on the fork slider and tighten its bolts.

**Torque:** 20–30 N·m (2.0–3.0 kg·m, 14–22 ft·lb)



MOUNTING BOLTS





### DISK THICKNESS

Measure the disc thickness with a micrometer.

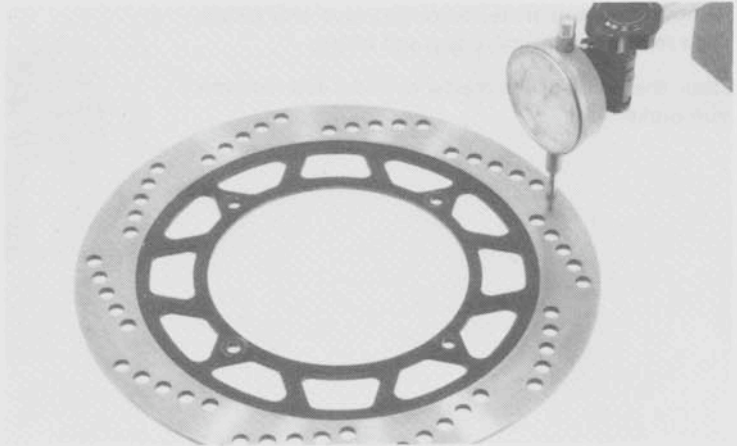
**SERVICE LIMIT:**

Front: 3.0 mm (0.12 in)

### BRAKE DISC WARPAGE

Measure brake disc warpage on a surface plate with a feeler gauge.

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



## MASTER CYLINDER

### DISASSEMBLY

Drain brake fluid from the hydraulic system.  
Disconnect the brake light switch wires.  
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.*

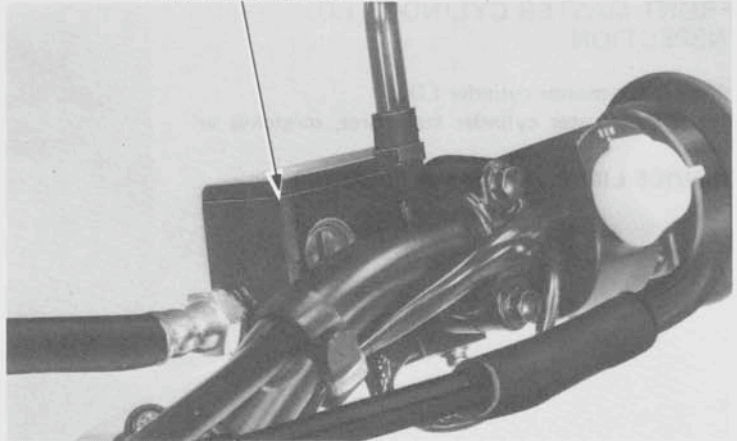
**NOTE**

- When removing the fluid bolt, cover the end of the hose to prevent contamination and secure the hose.
- When removing the brake lever, do not loose the push rod.

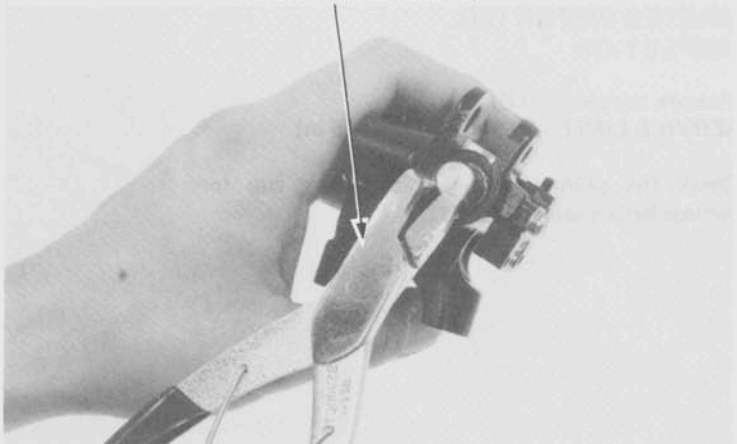
Remove the master cylinder.

Remove the boot and circlip from the master cylinder body.

MASTER CYLINDER



SNAP RING PLIERS

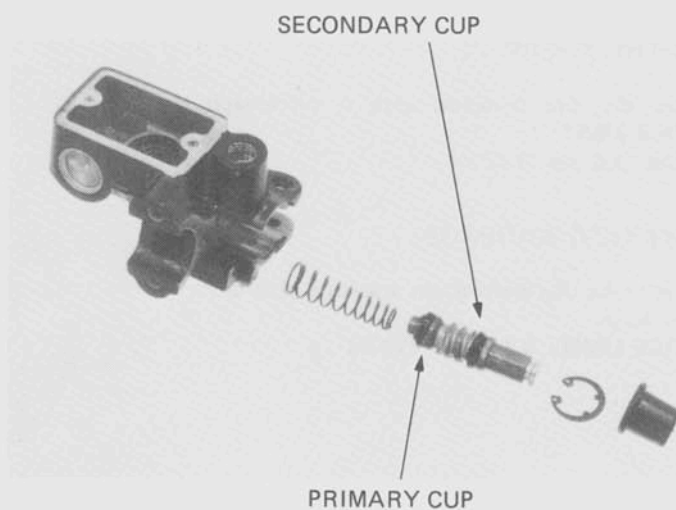






Remove the stop plate, secondary cup and piston. Then remove the primary cup and spring.

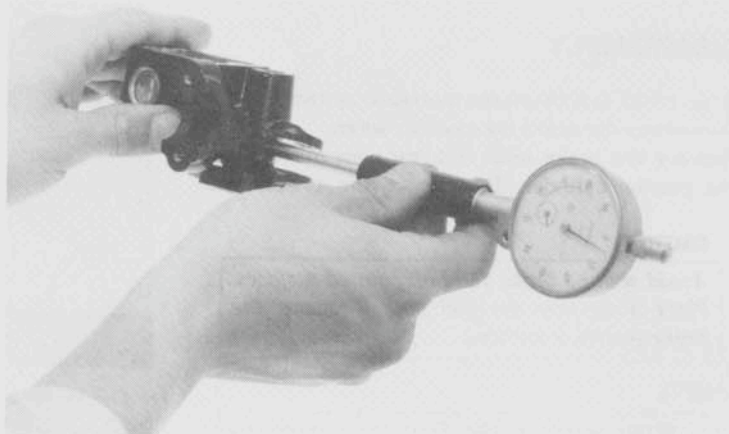
Clean the inside of the master cylinder and reservoir with brake fluid.



### FRONT MASTER CYLINDER I.D. INSPECTION

Measure the master cylinder I.D. Check the master cylinder for scores, scratches or nicks.

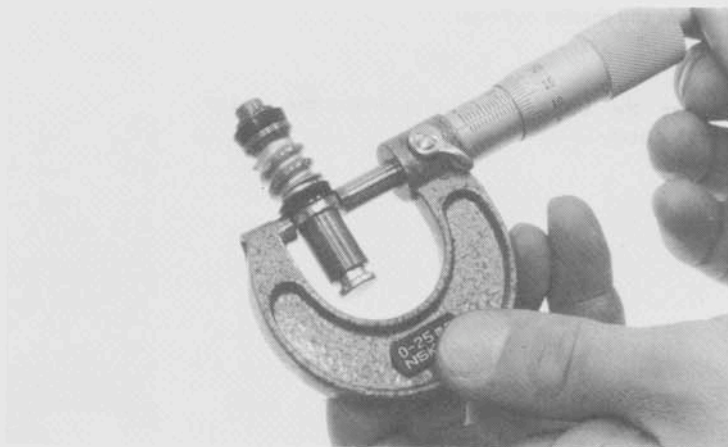
**SERVICE LIMIT: 12.755 mm (0.5022 in)**



### MASTER PISTON O.D. INSPECTION

Measure the piston O.D. **SERVICE LIMIT: 12.640 mm (0.4976 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.

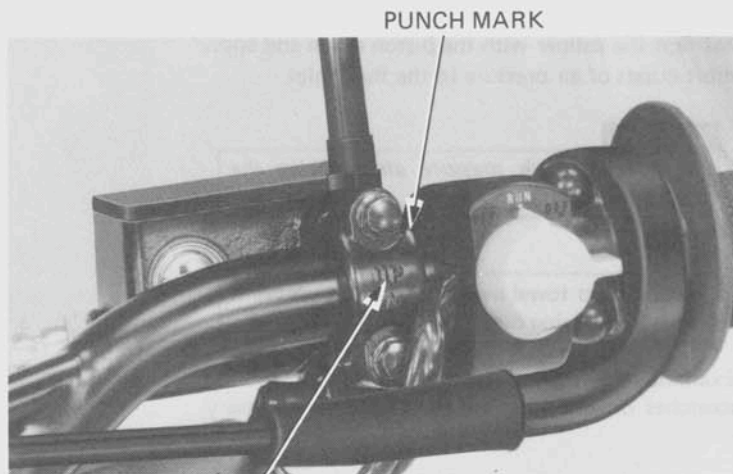
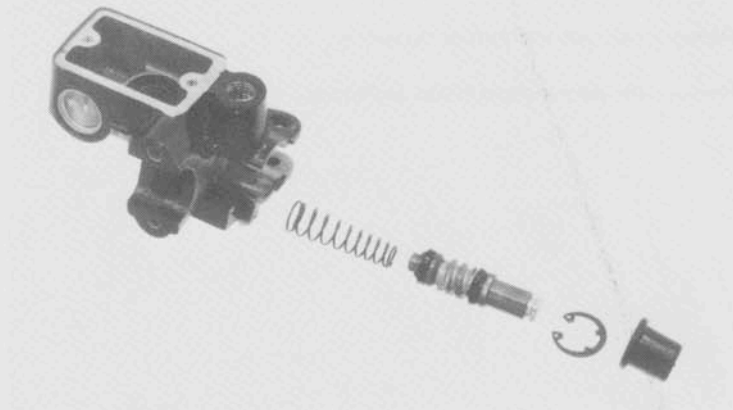
Install the reservoir on the master cylinder making sure that the O-ring is in good condition.

Place the master cylinder on the handlebar and install the holder and the two mounting bolts. Align the end of the holder with the punch mark on the handlebar.

Tighten the top bolt first. Install the fluid hose with the bolt and its two sealing washers.

Install the brake lever, but 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 14-4.



"UP" MARK

### BRAKE CALIPER

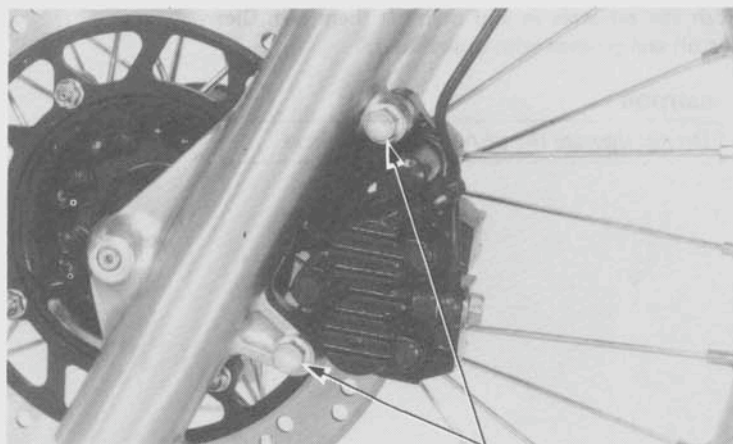
#### FRONT BRAKE CALIPER REMOVAL

Place a clean container under the caliper and disconnect the brake hose from the caliper.

**CAUTION**

*Avoid spilling brake fluid on painted surfaces to prevent paint damage.*

Remove the caliper bolts and caliper.

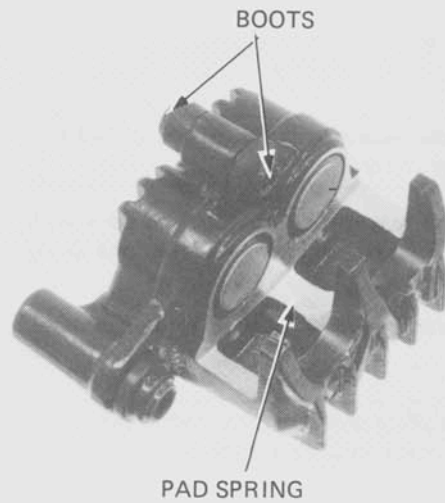


MOUNTING BOLTS

**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 short bursts 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 them from flying out.

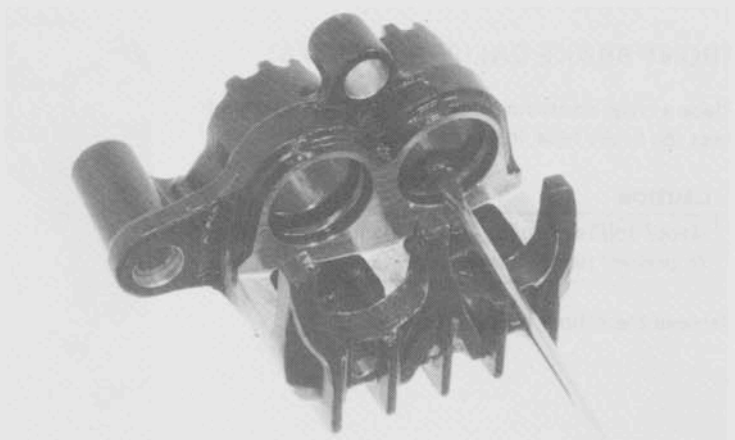
Examine the pistons and cylinders for scoring, scratches or other damage and replace if necessary.



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.*



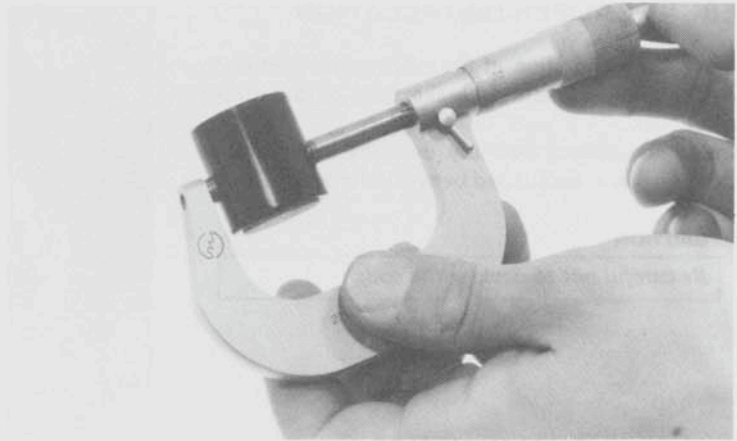




**CALIPER PISTON O.D. INSPECTION**

Check the piston for scoring, scratches or other faults. Measure the piston diameter with a micrometer.

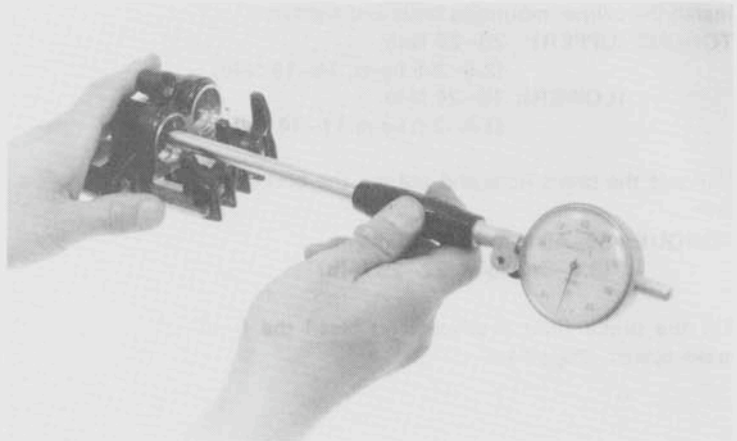
**SERVICE LIMIT: 25.45 mm (1.002 in)**



**CALIPER CYLINDER I.D. INSPECTION**

Check the caliper cylinder for scoring, scratches or other faults. Measure the caliper cylinder bore.

**SERVICE LIMIT: 25.30 mm (0.9961 in)**



**CALIPER ASSEMBLY**

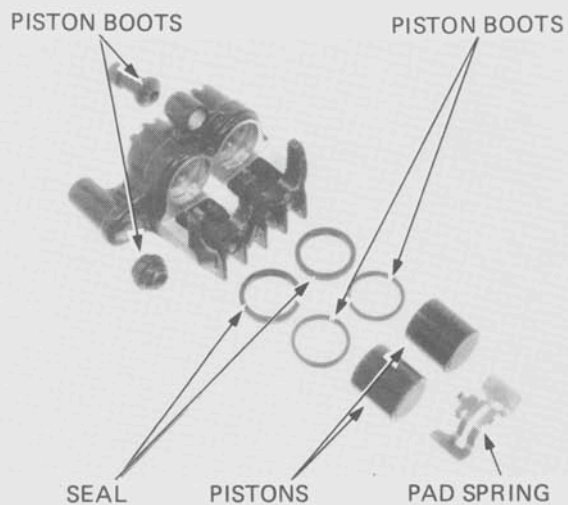
The seals must be replaced with new ones whenever they are removed.

Coat the seals with silicone 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.





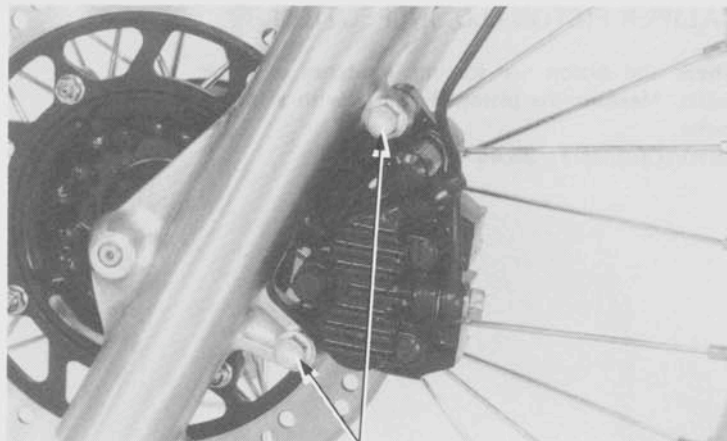
**FRONT CALIPER INSTALLATION**

Inspect the condition of the caliper pivot bolt boot. Apply silicone grease or brake fluid to the caliper pivot bolt.

Install the caliper assembly over the brake disc so that the disc is positioned between the pads.

**CAUTION**

*Be careful not to damage the pads.*



CALIPER MOUNTING BOLTS

Install the caliper mounting bolts and tighten.

**TORQUE (UPPER):** 20–25 N·m  
(2.0–2.5 kg·m, 14–18 ft·lb)

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

Connect the brake hose and tighten the brake hose bolt.

**TORQUE:** 30–40 N·m (3.0–4.0 kg·m,  
(3.0–4.0 kg·m, 22–29 ft·lb)

Fill the brake fluid reservoir and bleed the front brake system (Page 14-4).