

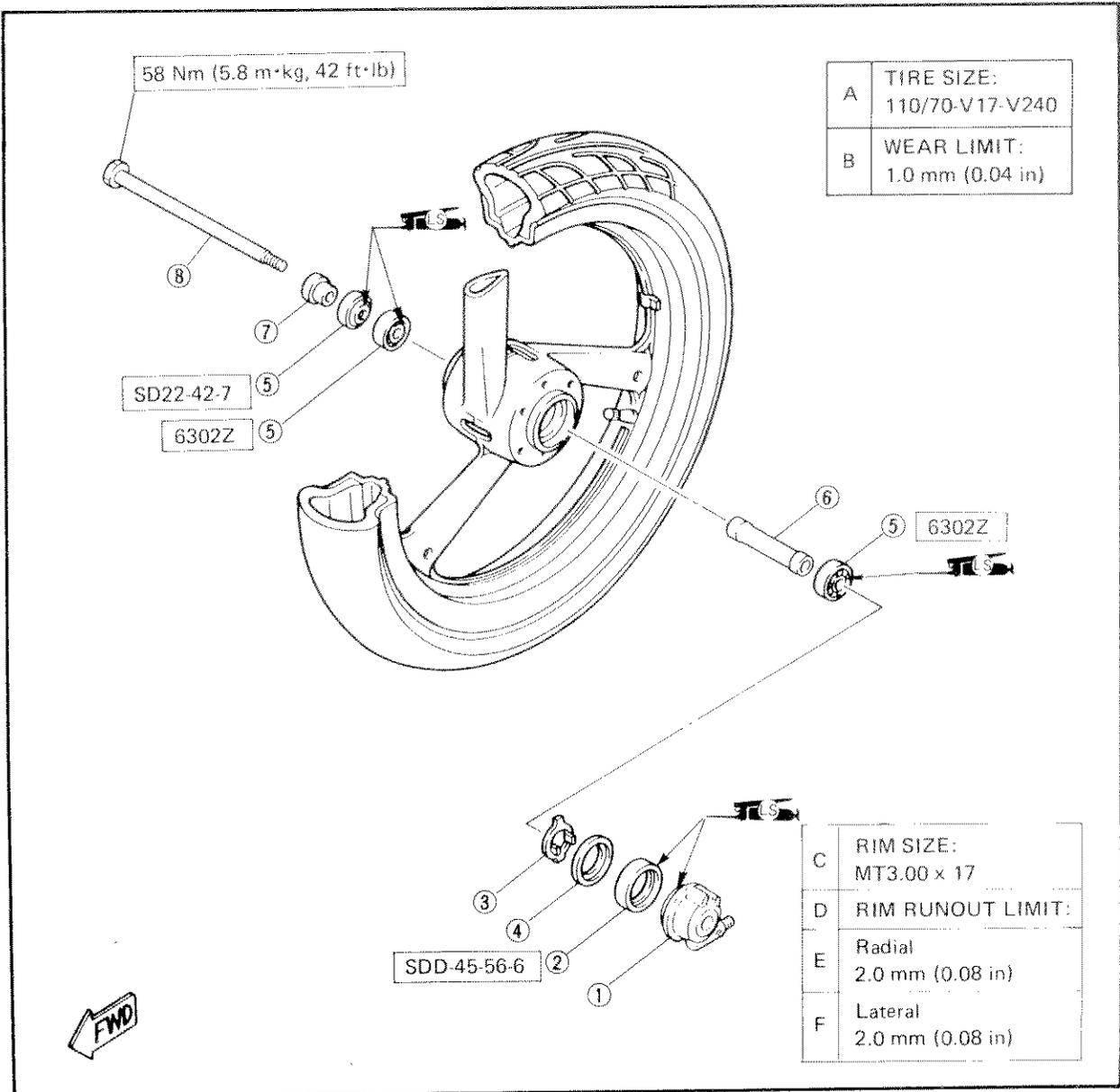
# CHASSIS

## FRONT WHEEL

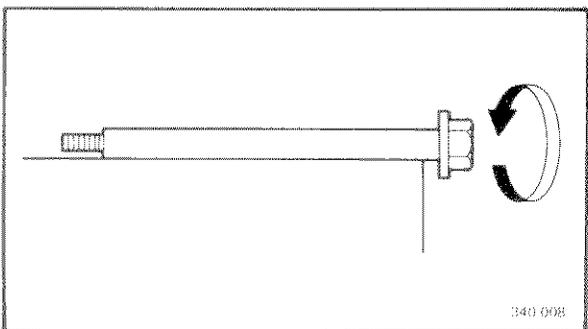
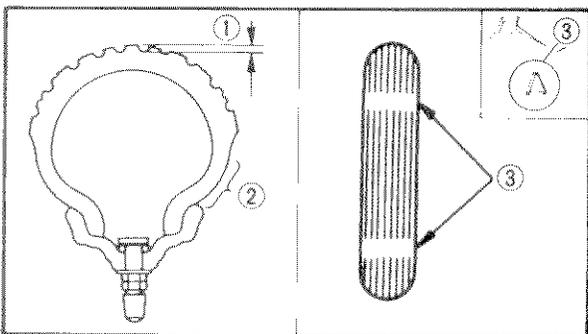
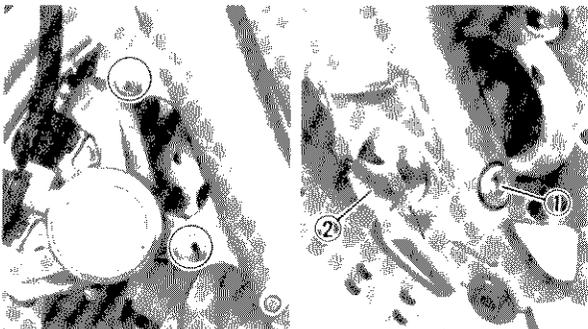
- ① Gear unit assembly      ⑤ Bearing
- ② Oil seal                    ⑥ Spacer
- ③ Meter clutch              ⑦ Collar
- ④ Clutch retainer          ⑧ Wheel axle

TIRE AIR PRESSURE (COLD):		
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load*	200 kPa (2.0 kg/cm <sup>2</sup> , 28 psi)	230 kPa (2.3 kg/cm <sup>2</sup> , 32 psi)
90 kg (198 lb) ~ Maximum load*	200 kPa (2.0 kg/cm <sup>2</sup> , 28 psi)	250 kPa (2.5 kg/cm <sup>2</sup> , 36 psi)
High speed riding	200 kPa (2.0 kg/cm <sup>2</sup> , 28 psi)	250 kPa (2.5 kg/cm <sup>2</sup> , 36 psi)
Maximum load*	159 kg (351 lb) 154 kg (340 lb) (FZR600WC)	

\* Load is the total weight of cargo, rider, passenger, and accessories.



7



## REMOVAL

## 1. Remove:

- Side cowlings (left and right)  
Refer to "COWLINGS/COVERS REMOVAL AND INSTALLATION" section in the CHAPTER 3.

## 2. Place the motorcycle on a level place.

**⚠ WARNING:**

Securely support the motorcycle so there is no danger of it falling over.

## 3. Remove:

- Speedometer cable ①

## 4. Remove:

- Bolts (caliper – left)

## 5. Loosen:

- Pinch bolt (front axle) ①
- Axle (front) ②

## 6. Elevate the front wheel by placing a suitable stand under the engine.

## 7. Remove:

- Axle ①
- Wheel (front)
- Speedometer gear unit
- Collar

## NOTE:

Do not squeeze the brake lever while the wheel is off the motorcycle.

## INSPECTION

## 1. Inspect:

- Tire  
Tire tread shows crosswise lines (minimum tread depth)/Cracks → Replace.



Minimum tire tread depth:  
1.0 mm (0.04 in)

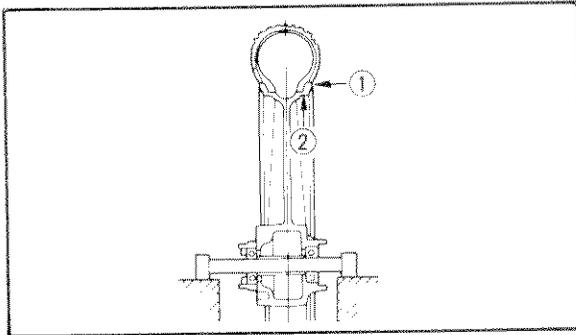
① Tread depth ② Side wall ③ Wear indicator

## 2. Inspect:

- Front axle  
Bends → Replace.  
Roll the axle on a flat surface.

**⚠ WARNING:**

Do not attempt to straighten a dent axle.



## 3. Inspect:

- Wheel  
Cracks/Bends/Warpage → Replace.

## 4. Measure:

- Wheel runout  
Over specified limit → Replace.



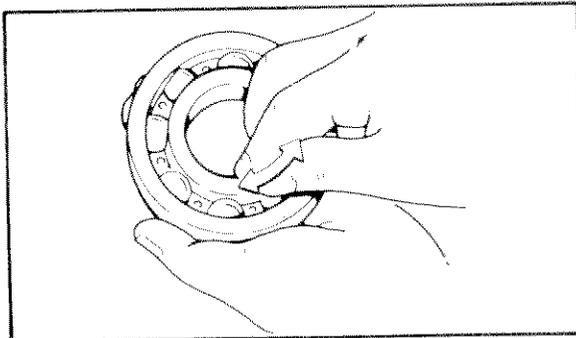
## Rim runout limit:

Radial ① : 2.0 mm (0.08 in)

Lateral ② : 2.0 mm (0.08 in)

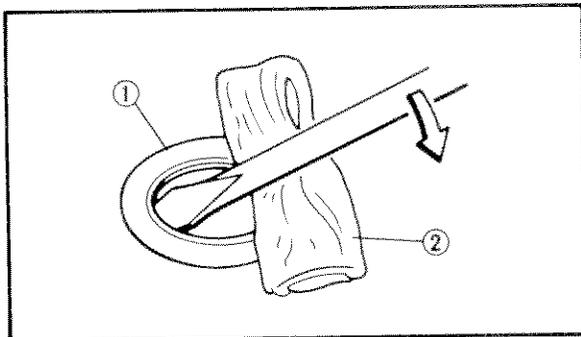
**⚠ WARNING:**

- After mounting a tire, ride conservatively to allow proper tire to rim seating. Failure to do so may cause an accident resulting in motorcycle damage and possible operator injury.
- After a tire repair or replacement, be sure to torque/tighten the valve stem locknut ① to specification.



## Valve-stem locknut:

1.5 Nm (0.15 m·kg, 1.1 ft·lb)

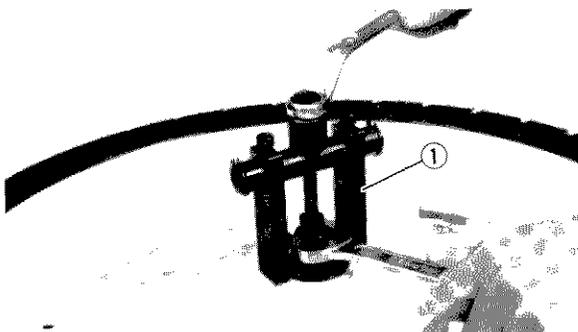

**Wheel bearing and oil seal replacement steps:**

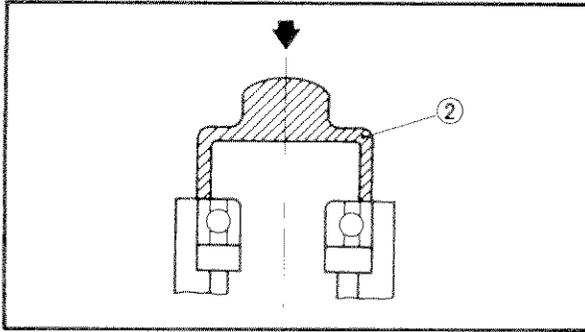
- Clean the outside of the wheel hub.
- Remove the oil seals ① use a flat-head screw driver.

**NOTE:**

Place a rag ② on the outer edge to protect this edge.

- Clean the outside of the wheel hub.
- Remove the bearing using a general bearing puller ①.
- Install the new bearing by reversing the previous steps.





**NOTE:** \_\_\_\_\_  
Use a socket ② that matches the outside diameter of the race of the bearing.

**⚠ CAUTION:** \_\_\_\_\_

Do not strike the center race or balls of the bearing. Contact should be made only with the outer race.

- Install the oil seal (new).

### INSTALLATION

When installing the front wheel, reverse the removal procedure. Note the following points.

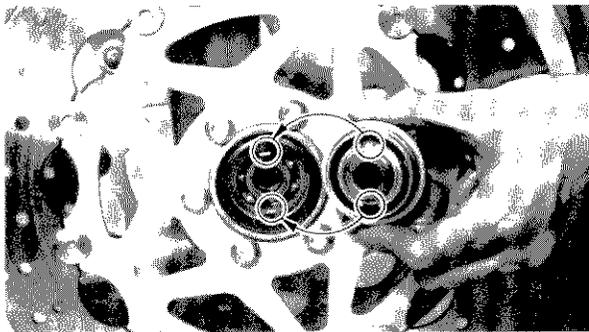
1. Lubricate:
  - Bearings
  - Oil seals



Lithium soap base grease

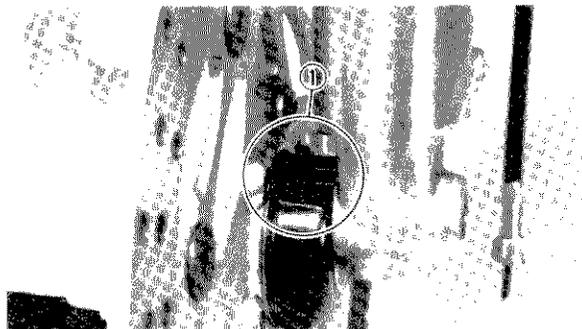
2. Install:
  - Speedometer gear unit

**NOTE:** \_\_\_\_\_  
Be sure that the two projections inside the wheel hub mesh with the two slots in the gear unit assembly.



3. Install:
  - Front wheel

**NOTE:** \_\_\_\_\_  
Be sure that the projecting portion (torque stopper) ① of the gear unit housing is positioned correctly.





## 4. Tighten:

- Front axle
- Pinch bolt (front axle)
- Brake calipers (right/left)
- Speedometer cable



## Front axle:

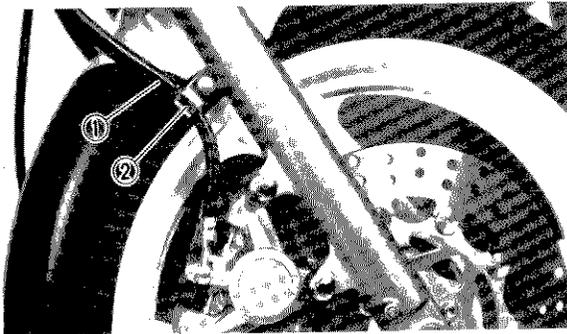
58 Nm (5.8 m · kg, 42 ft · lb)

## Pinch bolt (front axle):

20 Nm (2.0 m · kg, 14 ft · lb)

## Bolts (brake caliper):

35 Nm (3.5 m · kg, 25 ft · lb)

**⚠ WARNING:**

Make sure that the brake hoses are routed properly.

- ① Brake hose
- ② Brake hose holder

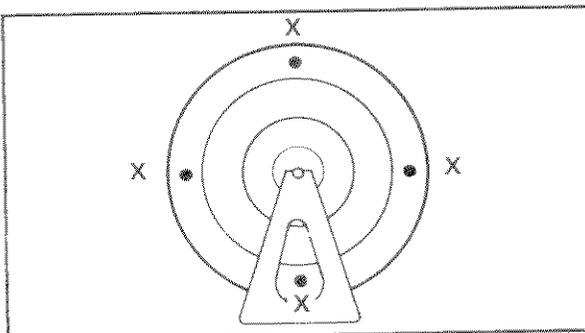
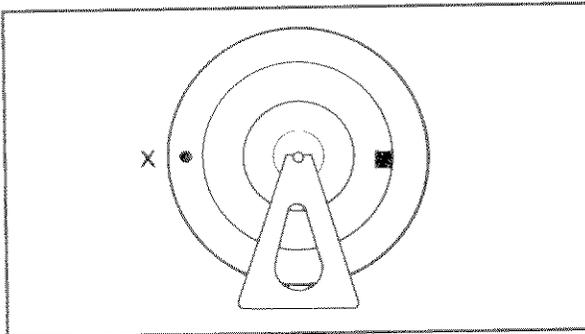
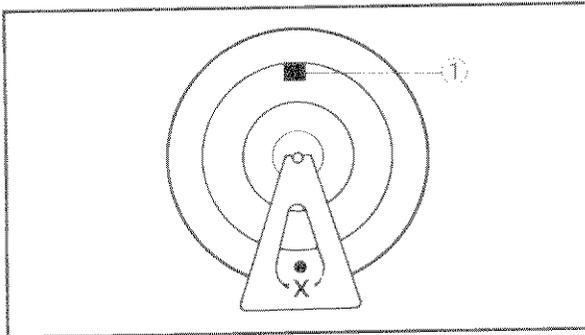
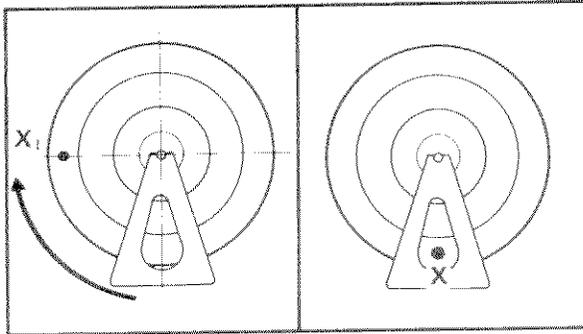
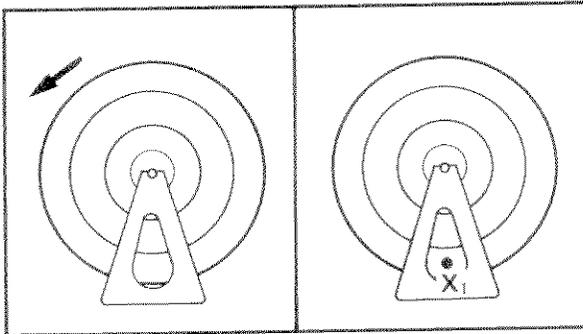
## STATIC WHEEL BALANCE ADJUSTMENT

## NOTE:

- After replacing the tire and/or rim, wheel balancer should be adjusted.
- Adjust the wheel balance with brake disk installed.

## 1. Remove:

- Balancing weight



2. Set the wheel on a suitable stand.

3. Find:  
• Heavy spot

**Procedure:**

- Spin the wheel and wait for it to rest.
- Put an "X<sub>1</sub>" mark on the wheel bottom spot.
- Turn the wheel so that the "X<sub>1</sub>" mark is 90° up.
- Let the wheel fall and wait for it to rest. Put an "X<sub>2</sub>" mark on the wheel bottom spot.
- Repeat the above b., c., and d. several times until these marks come to the same spot.
- This spot is the heavy spot "X".

4. Adjust:  
• Wheel balance

**Adjusting steps:**

- Install a balancing weight ① on the spoke exactly opposite to the heavy spot "X".

**NOTE:** \_\_\_\_\_

Start with the smallest weight.

- Turn the wheel so that the heavy spot is 90° up.
- Check that the heavy spot is at rest there. If not, try another weight until the wheel is balanced.

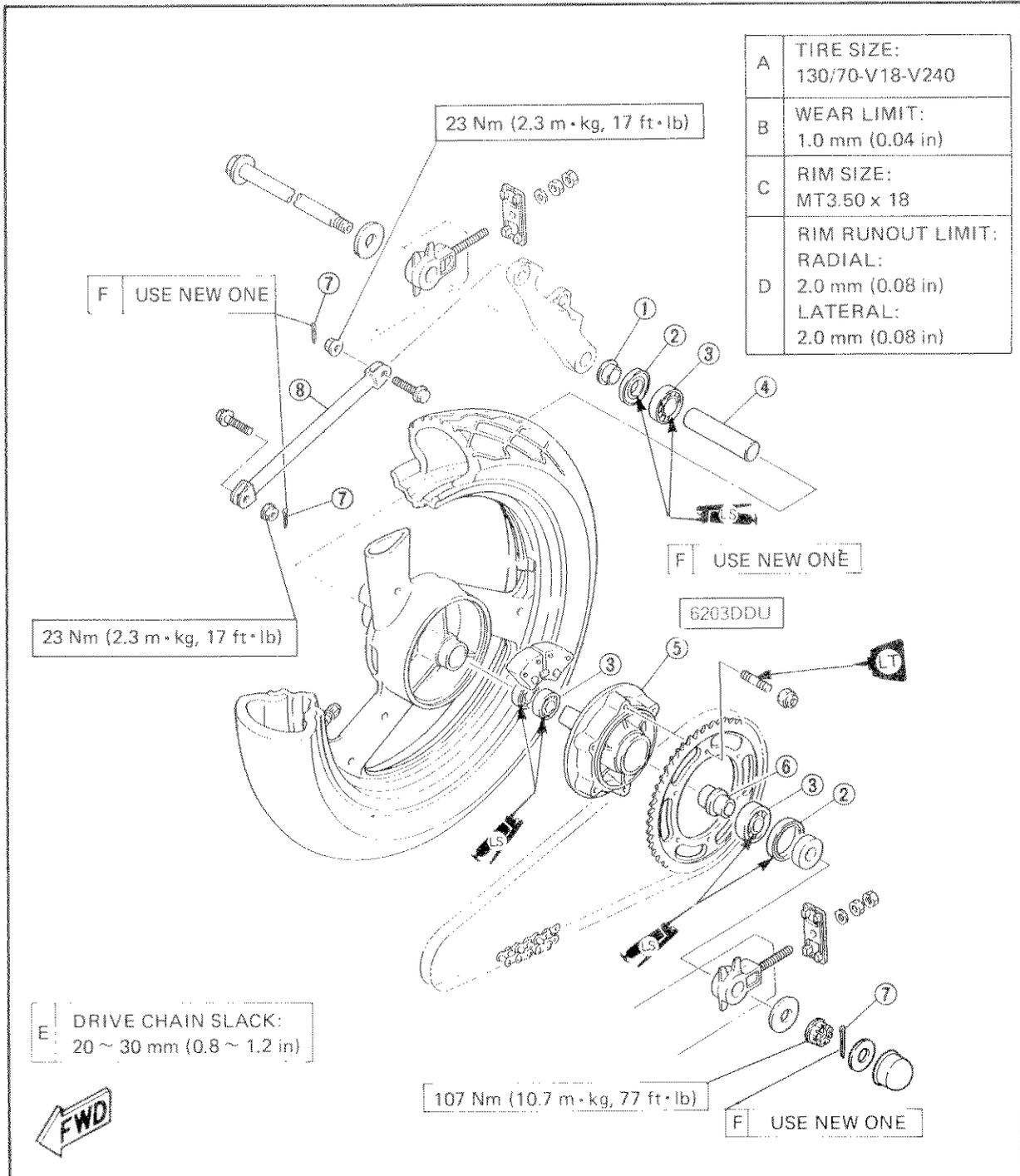
5. Check:  
• Wheel balance

**Checking steps:**

- Turn the wheel so that it comes to each point as shown.
- Check that the wheel is at rest at each point. If not, readjust the wheel balance.

REAR WHEEL

- ① Collar
- ② Oil seal
- ③ Bearing
- ④ Spacer
- ⑤ Clutch hub
- ⑥ Collar
- ⑦ Cotter pin
- ⑧ Tension bar





## REMOVAL

1. Place the motorcycle on a level place.

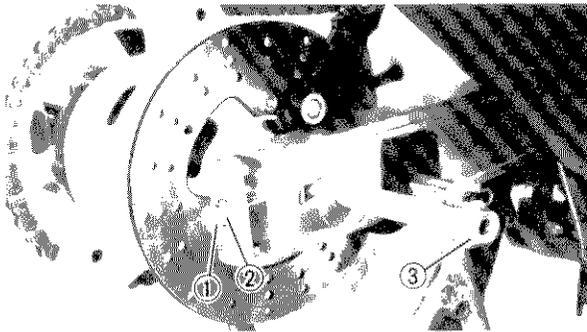
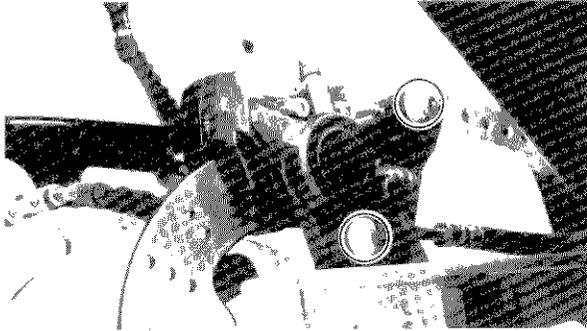
### ⚠ WARNING:

Securely support the motorcycle so there is no danger of it falling over.

2. Elevate the rear wheel by placing a suitable stand under the swingarm.
3. Remove:
  - Brake caliper

### NOTE:

Do not depress the brake pedal while the caliper is off the disc.



4. Loosen:
  - Locknut ①
  - Adjuster ②
5. Remove:
  - Cotter pin
  - Axle nut
  - Axle ③
  - Rear wheel
  - Collars

## INSPECTION

1. Inspect:
  - Tire
  - Rear wheel axle
  - Wheel
  - Wheel bearings
  - Oil seals
  - Brake disc

Refer to the "FRONT WHEEL – INSPECTION".
2. Measure:
  - Wheel runout

Refer to the "FRONT WHEEL – INSPECTION".



### INSTALLATION

When installing the rear wheel, reverse the removal procedure. Note the following points.

#### 1. Lubricate:

- Bearings
- Oil seals
- Spacer
- Collar



Lithium – soap base grease

#### 2. Adjust:

- Drive chain slack



Drive chain slack:  
20 ~ 30 mm (0.8 ~ 1.2 in)

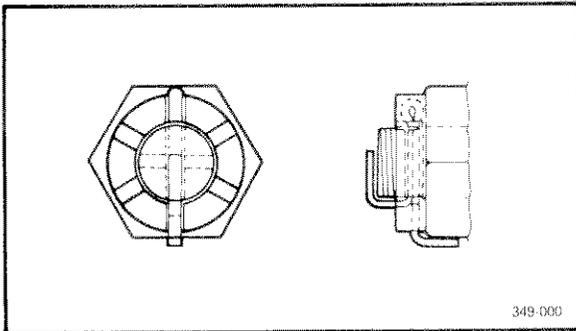
Refer to the "DRIVE CHAIN ADJUSTMENT" section in the CHAPTER 3.

#### 3. Tighten:

- Nut (rear axle)
- Brake caliper



Nut (rear axle):  
107 Nm (10.7 m·kg, 77 ft·lb)  
Bolts (brake caliper):  
35 Nm (3.5 m·kg, 25 ft·lb)



#### NOTE:

Do not loosen the axle nut after torque tightening.

If the axle nut groove is not aligned with the wheel shaft cotter pin hole, align groove to hole by tightening up on the axle nut.

### STATIC WHEEL BALANCE ADJUSTMENT

#### NOTE:

- After replacing the tire and/or rim, wheel balance should be adjusted.
- Adjust the wheel balance with brake disc and wheel hub installed.

#### 1. Adjust:

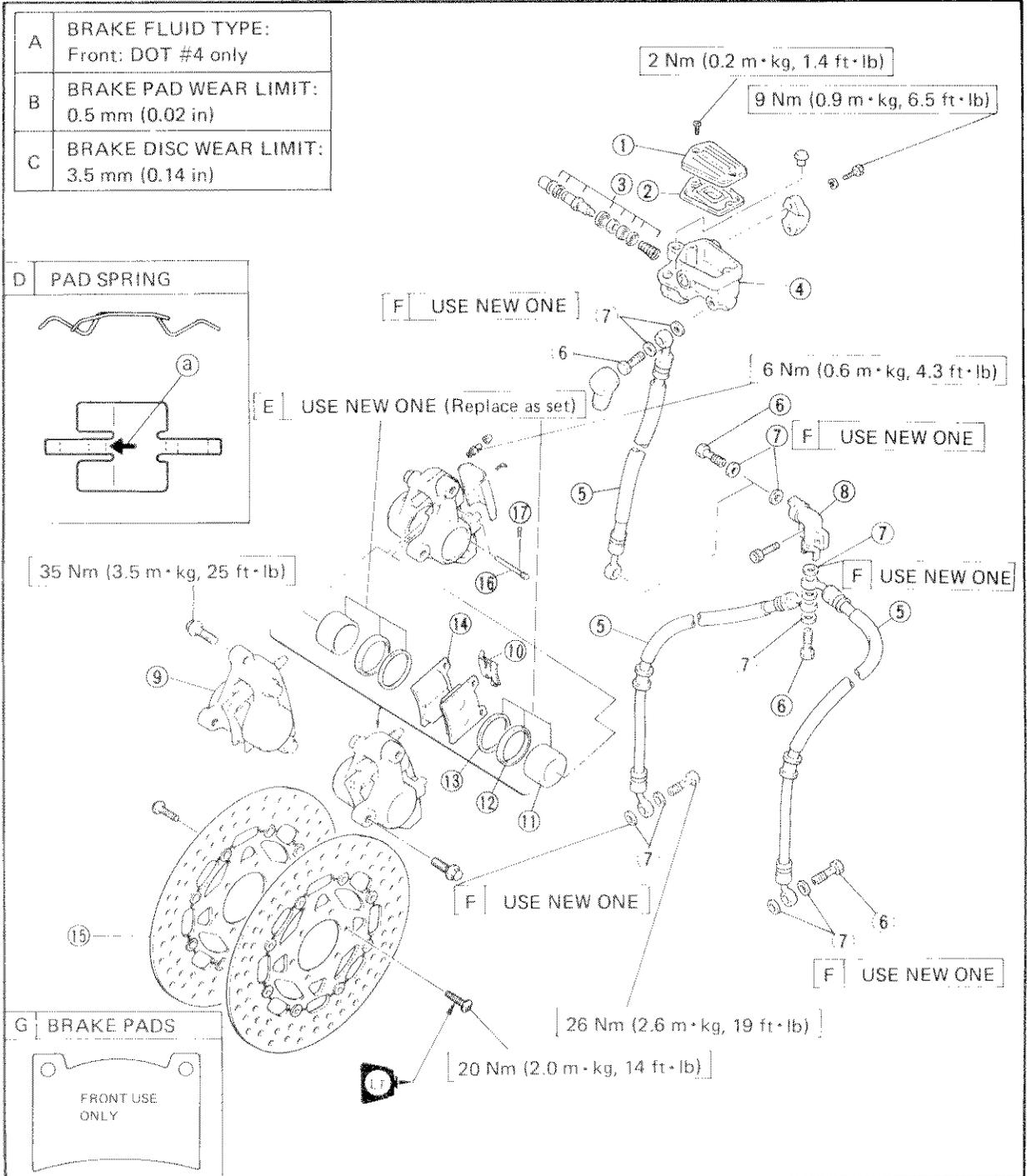
- Wheel balance

Refer to the "FRONT WHEEL – STATIC WHEEL BALANCE ADJUSTMENT" section.

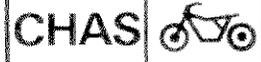
FRONT AND REAR BRAKE

- ① Master cylinder cap
- ② Rubber seal
- ③ Master cylinder kit
- ④ Master cylinder
- ⑤ Brake hose
- ⑥ Union bolt
- ⑦ Copper washer
- ⑧ Joint
- ⑨ Brake caliper
- ⑩ Pad spring
- ⑪ Piston
- ⑫ Piston seal
- ⑬ Dust seal
- ⑭ Brake pad
- ⑮ Brake disc
- ⑯ Retaining pins
- ⑰ Retaining clips

- Ⓓ The arrow mark **a** on the pad spring must pointing the disc rotating direction.
- Ⓔ The brake pads with "FRONT USE ONLY" mark should be used for front brake only.

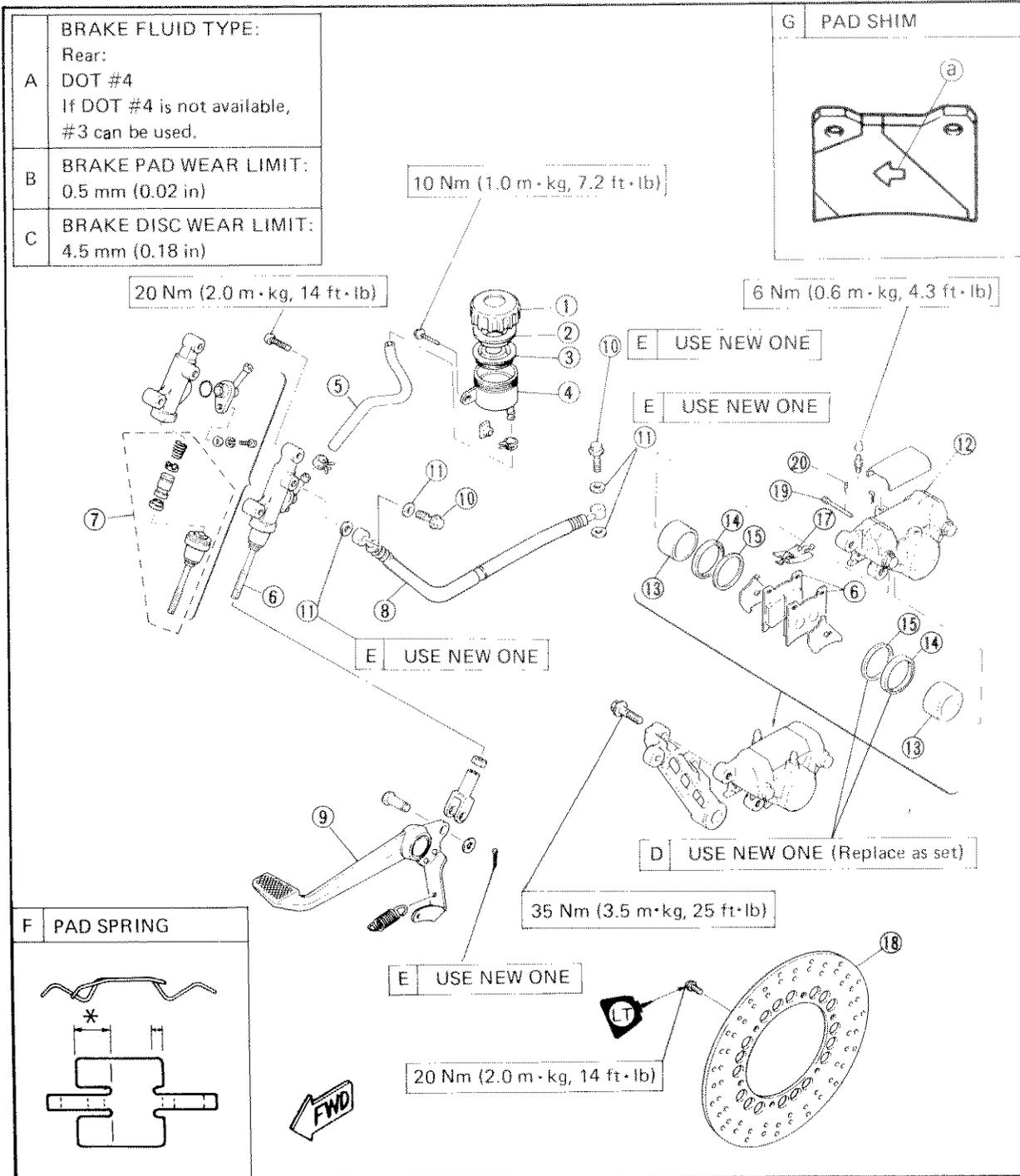


# FRONT AND REAR BRAKE



- ① Reservoir tank cap
- ② Bush
- ③ Diaphragm
- ④ Reservoir tank
- ⑤ Reservoir hose
- ⑥ Master cylinder
- ⑦ Master cylinder kit
- ⑧ Brake hose
- ⑨ Brake pedal
- ⑩ Union bolt
- ⑪ Copper washer
- ⑫ Brake caliper
- ⑬ Piston
- ⑭ Piston seal
- ⑮ Dust seal
- ⑯ Brake pad
- ⑰ Pad spring
- ⑱ Brake disc
- ⑲ Retaining pins
- ⑳ Retaining clips

[F] The longer tangs (✱) of the pad spring must point in the disc rotating direction.  
 [G] The allow mark (a) on the pad shim must point in the disc rotating direction.



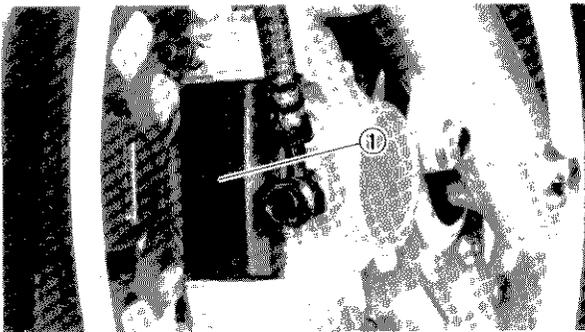

**⚠ CAUTION:**

Disc brake components rarely require disassembly. DO NOT:

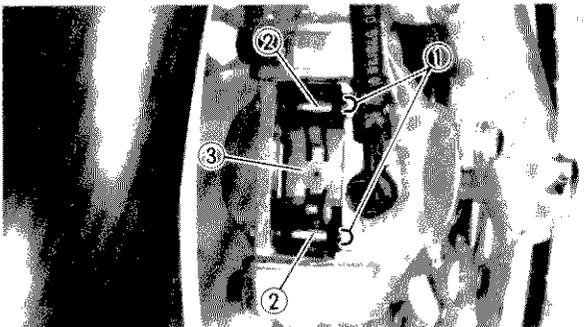
- Disassemble components unless absolutely necessary.
- Use solvents on internal brake component.
- Use contaminated brake fluid for cleaning.
- Use only clean brake fluid.
- Allow brake fluid to come in contact with the eyes otherwise eye injury may occur.
- Allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.
- Disconnect any hydraulic connection otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.

**BRAKE PAD REPLACEMENT**
**NOTE:**

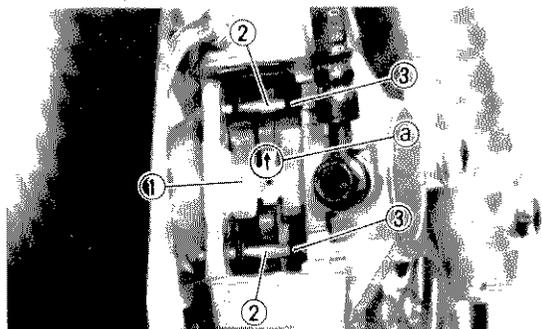
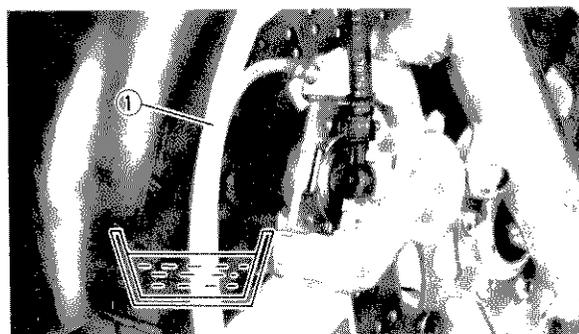
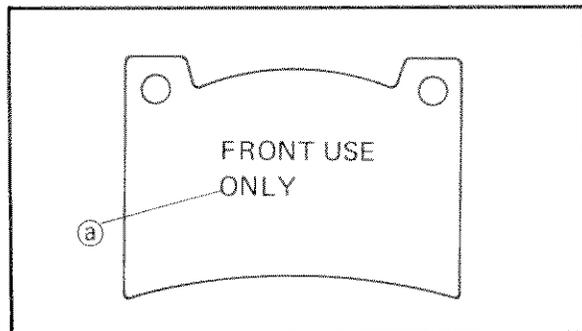
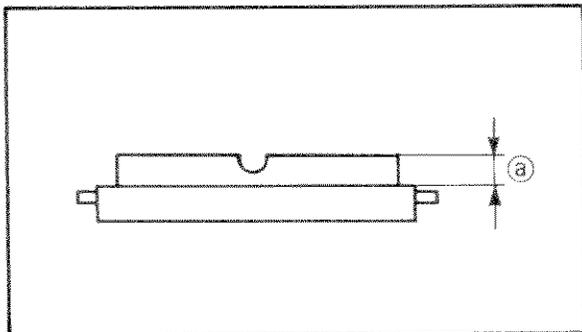
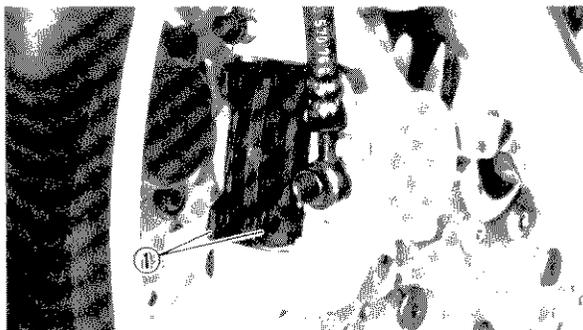
It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.


**Front Brake**

1. Remove:
  - Cover ①



2. Remove:
  - Retaining clips ①
  - Retaining pins ②
  - Pad spring ③



3. Remove:
- Brake pads ①

**NOTE:**

- Replace the pad spring if the pad replacement is required.
- Replace the pads as a set if either is found to be worn to the wear limit.

	<p><b>Wear limit ② :</b> 0.5 mm (0.02 in)</p>
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- Replace the pad shim if the pad replacement is required for the rear brake.

4. Install:
- Brake pads (new)
  - Pad springs

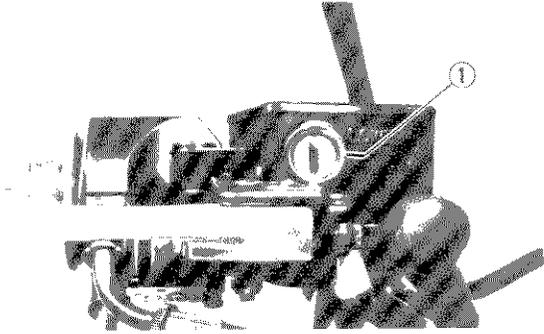
**NOTE:**  
The brake pads with "FRONT USE ONLY" mark ② should be used for front brake only.

<b>Installation steps:</b>	
<ul style="list-style-type: none"> <li>• Connect a suitable hose ① tightly to the caliper bleed screw. Then, place the other end of this hose into an open container.</li> <li>• Loosen the caliper bleed screw and push the piston into the caliper by your finger.</li> <li>• Tighten the caliper bleed screw.</li> </ul>	

	<p><b>Caliper bleed screw:</b> 6 Nm (0.6 m·kg, 4.3 ft·lb)</p>
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- Install the brake pad (new), pad spring (new) ①, retaining pins ②, retaining clip ③ and cover.

**NOTE:**  
The arrow mark ② on the pad spring must point in the disc rotating direction.



5. Inspect:

- Brake fluid level  
Refer to the "BRAKE AND CLUTCH FLUID INSPECTION" section in the CHAPTER 3.

① "LOWER" level line

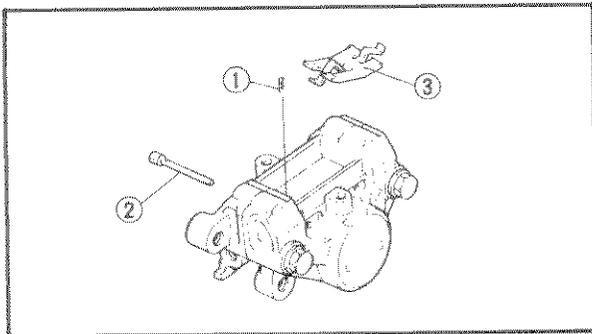
6. Check:

- Brake lever operation  
A softy or spongy filling → Bleed brake system.  
Refer to the "AIR BLEEDING" section.

Rear Brake

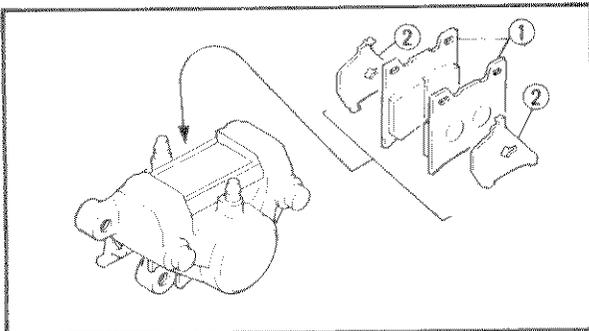
1. Remove:

- Cover



2. Remove:

- Retaining clips ①
- Retaining clips ②
- Pad spring ③

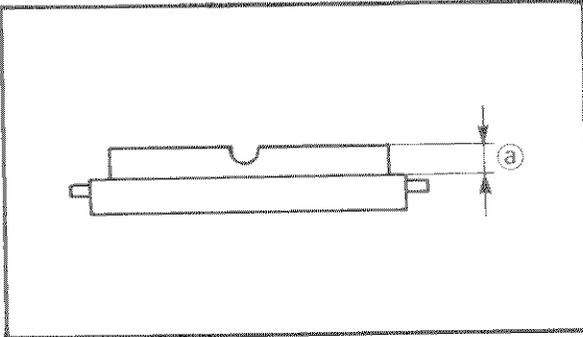


3. Remove:

- Brake pads ①
- Pad shim ②

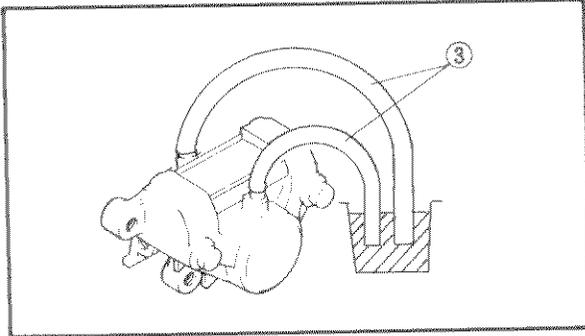
NOTE:

- Replace the pad spring if the pad replacement is required.
- Replace the pads as a set if either is found to be worn to the wear limit.



Wear limit (a) :  
0.5 mm (0.02 in)

- Replace the pad shim if the pad replacement is required for the rear brake.

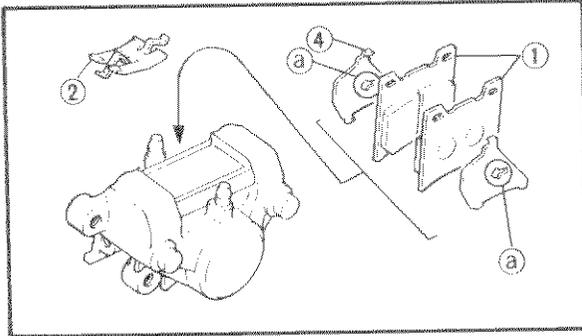


4. Install:

- Brake pads (1)
- Pad springs (2)

**Installation steps:**

- Connect a suitable hose (3) tightly to the caliper bleed screw. Then, place the other end of this hose into an open container.
- Loosen the caliper bleed screw and push the piston into the caliper by your finger.
- Tighten the caliper bleed screw.



Caliper bleed screw:  
6 Nm (0.6 m·kg, 4.3 ft·lb)

- Install the pad shim (new) (4) to the brake pad (new).

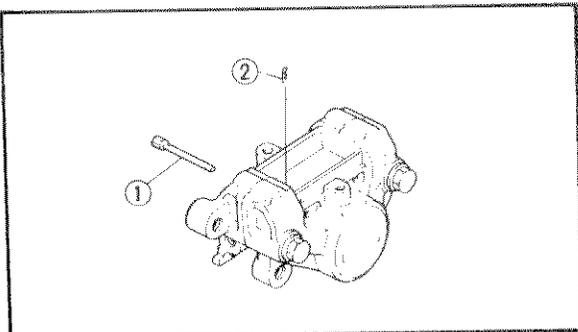
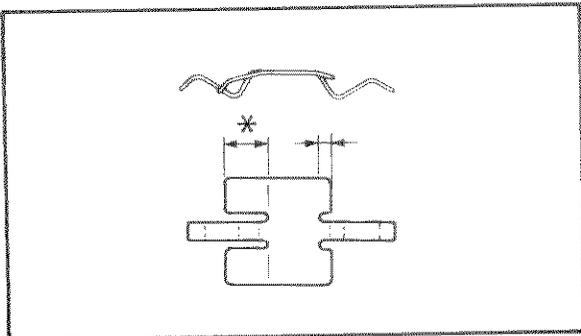
**NOTE:**

The arrow mark (a) on the pad shim must point in the disc rotating direction.

- Install the brake pad (new) and pad spring (new) (2).

**NOTE:**

The longer tangs (\*) of the pad spring must point in the disc rotating direction.

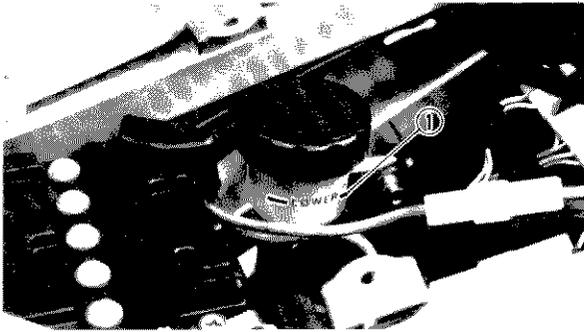


5. Install:

- Retaining pins (1)
- Retaining clips (2)
- Cover

6. Remove:

- Seat (front)



## 7. Inspect:

- Brake fluid level

Refer to the "BRAKE AND CLUTCH FLUID INSPECTION" section in the CHAPTER 3.

① "LOWER" level line

## 8. Check:

- Brake pedal operation

A softy or spongy filling → Bleed brake system.

Refer to the "AIR BLEEDING" section.

## 9. Install:

- Seat (front)

Refer to the "COWLINGS" section in the CHAPTER 3.

## CALIPER DISASSEMBLY

## NOTE:

Before disassembling the front brake caliper or rear brake caliper, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.

## Front Brake

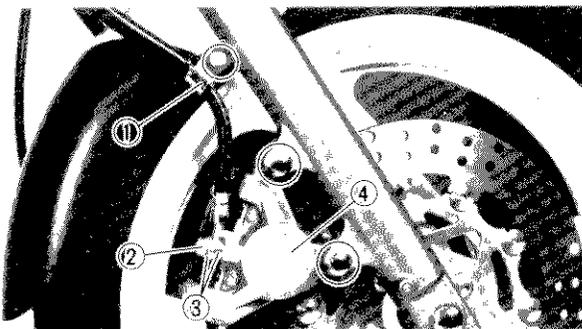
## 1. Remove:

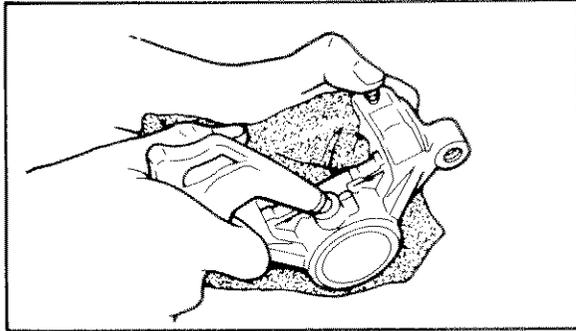
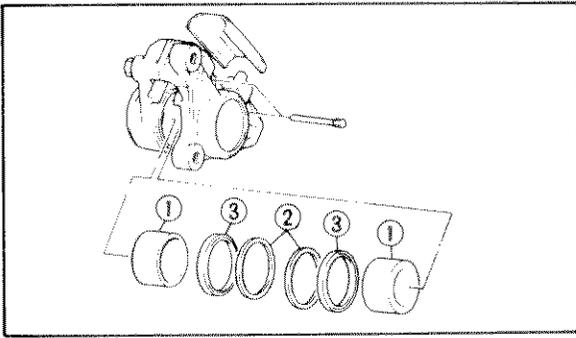
- Cover
- Retaining clips
- Retaining pins
- Pad spring
- Brake pads

Refer to the "BRAKE PAD REPLACEMENT" section.

## 2. Remove:

- Clamp ①
- Union bolt ②
- Copper washers ③
- Caliper ④





## 3. Remove:

- Pistons ①
- Dust seals ②
- Piston seals ③

## Remove steps:

- Blow compressed air into the tube joint opening to force out the piston from the caliper body.

**⚠ WARNING:**

- Never try to pry out the piston.
- Cover the piston with a rag. Use care so that piston does not cause injury as it is expelled from the cylinder.

## Rear Brake

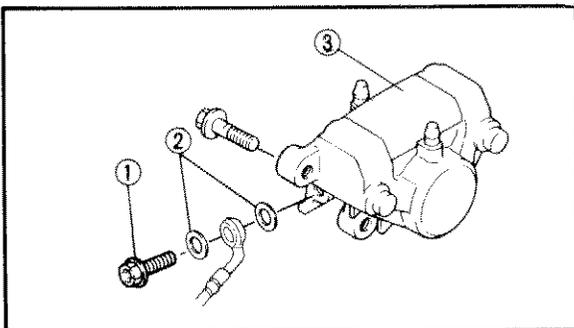
## 1. Remove:

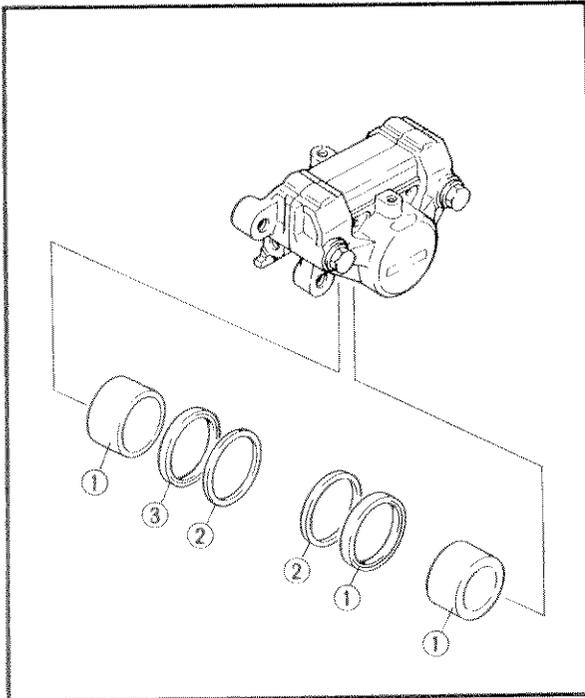
- Cover
- Retaining clips
- Retaining pins
- Pad spring
- Brake pads (with shims)

Refer to the "BRAKE PAD REPLACEMENT" section.

## 2. Remove:

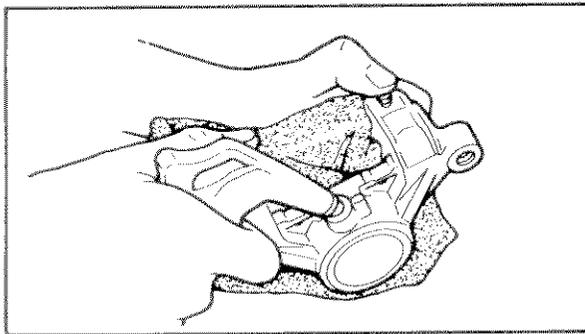
- Union bolt ①
- Copper washers ②
- Caliper ③





## 3. Remove:

- Pistons ①
- Dust seals ②
- Piston seals ③

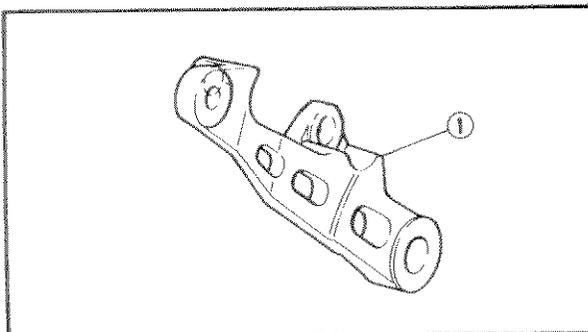


## Removal steps:

- Blow compressed air into the tube joint opening to force out the piston from the caliper body.

**⚠ WARNING:**

- Never try to pry out the piston.
- Cover the piston with a rag. Use care so that piston does not cause injury as it is expelled from the cylinder.



## 4. Remove:

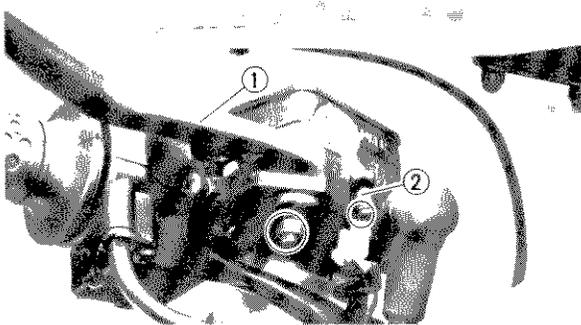
- Rear wheel  
Refer to "REAR WHEEL" section.
- Cotter pin
- Caliper bracket ①



## MASTER CYLINDER DISASSEMBLY

### NOTE:

Before disassembling the front or rear brake master cylinders, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.



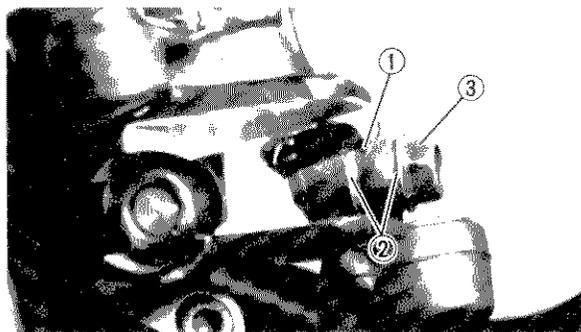
### Front Brake

#### 1. Remove:

- Brake switch ①
- Brake lever ②
- Return spring (brake lever)

### NOTE:

Disconnect the brake switch from the brake lever while pushing the hook of brake switch by a suitable rod.

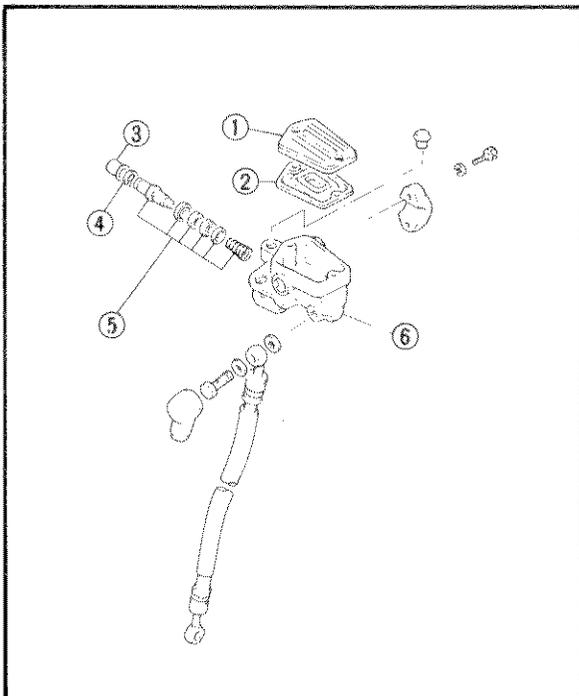


#### 2. Remove:

- Brake hose ①
- Copper washers ②
- Union bolt ③

### NOTE:

Place the open hose end into a container.

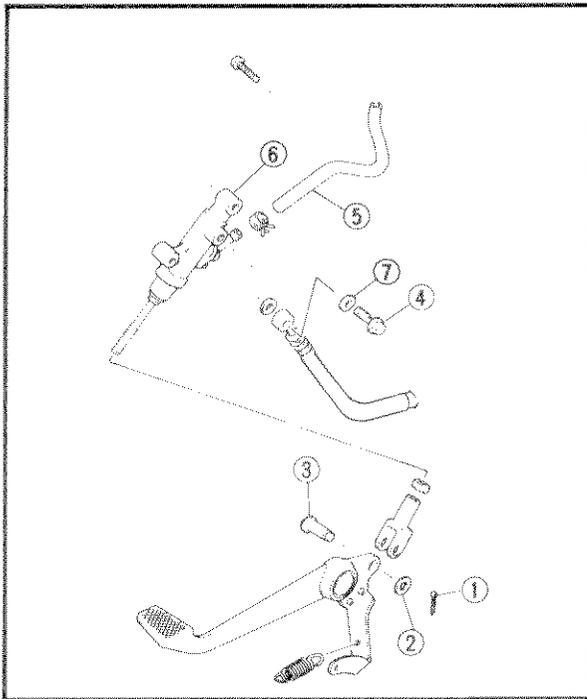


#### 3. Remove:

- Cap (master cylinder)
- Diaphragm ③
- Dust boot ④
- Circlip ⑤
- Master cylinder kit ⑥

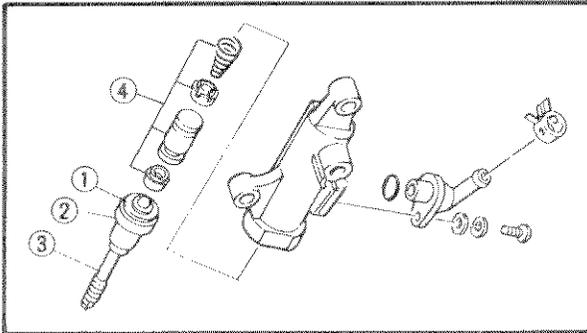
#### 4. Remove:

- Master cylinder ⑥

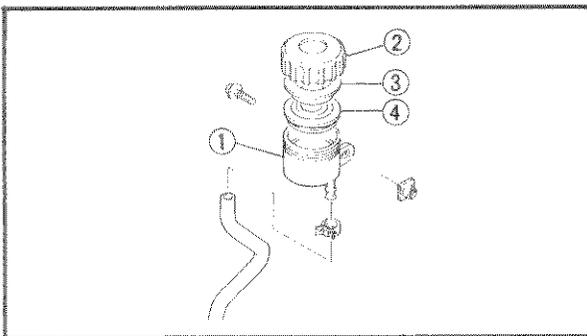


**Rear Brake**

1. Remove:
  - Seat
  - Side cover (right)  
Refer to the "COWLINGS REMOVAL AND INSTALLATION" section in the CHAPTER 3.
2. Remove:
  - Cotter pin ①
  - Washer ②
  - Clevis pin ③
3. Loosen:
  - Union bolt ④
4. Disconnect:
  - Brake hose (reservoir tank – master cylinder) ⑤
5. Remove:
  - Master cylinder ⑥
  - Union bolt ④
  - Copper washers ⑦
6. Remove:
  - Dust boot ①
  - Circlip ②
  - Push rod ③
  - Master cylinder kit ④



7. Remove:
  - Reservoir tank ①  
(from frame)
  - Cap (reservoir tank) ②
  - Holder (diaphragm) ③
  - Diaphragm ④

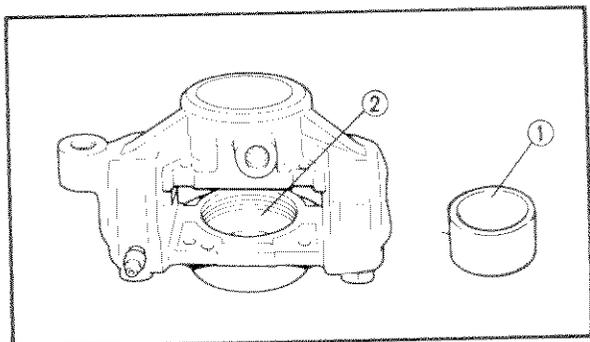


**INSPECTION AND REPAIR**

Recommended brake component replacement schedule:	
Brake pads	As required
Piston seal, dust seal	Every two years
Brake hoses	Every four years
Brake fluid	Replace only when brakes are disassembled


**⚠ WARNING:**

All internal parts should be cleaned in new brake fluid only. Do not use solvents will cause seals to swell and distort.

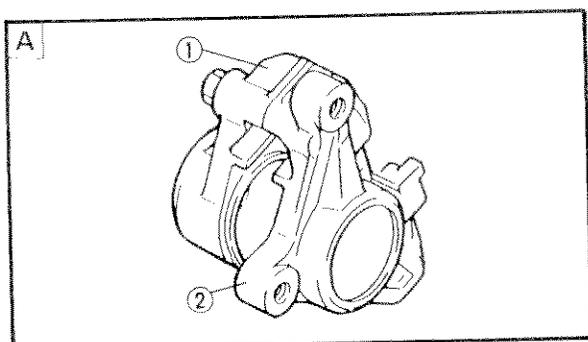


## 1. Inspect:

- Caliper piston ①  
Scratches/Rust/Wear → Replace caliper assembly.
- Caliper cylinder ②  
Wear/Scratches → Replace caliper assembly.

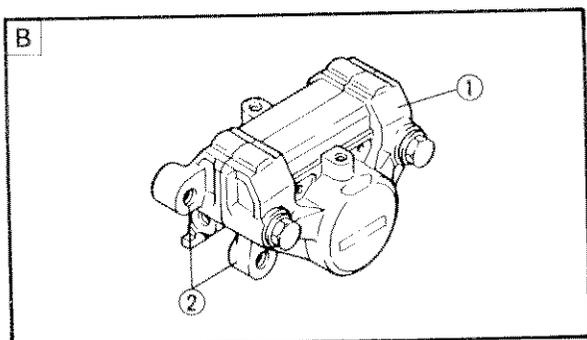
**⚠ WARNING:**

Replace the piston seal and dust seal whenever a caliper is disassembled.



## 2. Inspect:

- Caliper body ①  
Cracks/Damage → Replace.
- Caliper bracket ②  
Cracks/Damage → Replace.
- Oil delivery passage (caliper body)  
Blow out with compressed air.



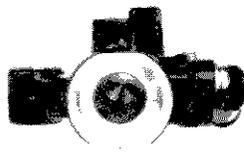
[A] Front

[B] Rear

A



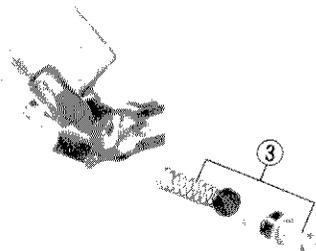
B



3. Inspect:

- Master cylinder ①  
Wear/Scratches → Replace the caliper assembly.
- Master cylinder body ②  
Cracks/Damage → Replace.
- Oil delivery passage (master cylinder body)  
Blow out with compressed air.

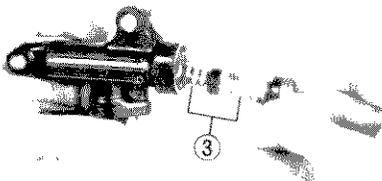
A



4. Inspect:

- Master cylinder kit ③  
Scratches/Wear/Damage → Replace, as a set.

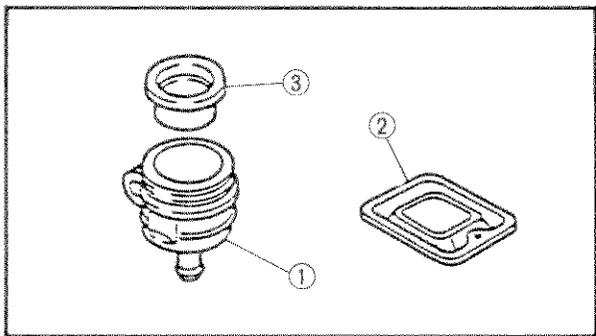
B



A Front  
B Rear

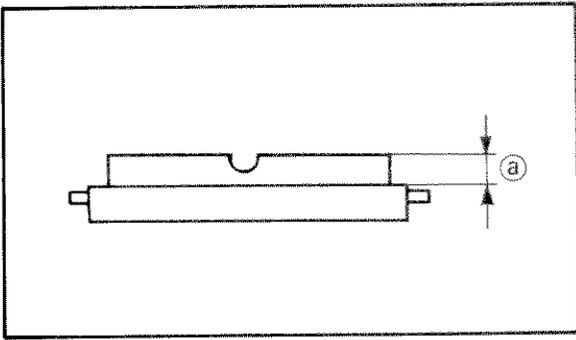
5. Inspect:

- Reservoir tank ①  
Cracks/Damage → Replace.
- Diaphragm (front) ②
- Diaphragm (rear) ③  
Wear/Damage → Replace.



6. Inspect:

- Brake hoses  
Cracks/Wear/Damage → Replace.



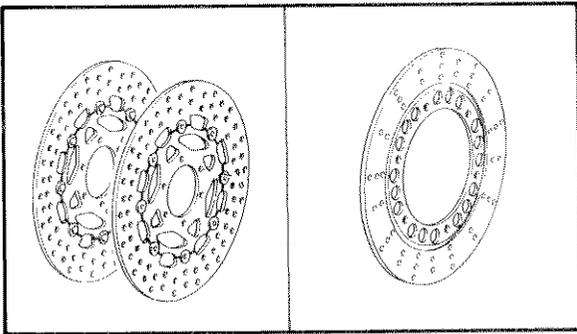
7. Measure:

- Brake pads (thickness) **a**  
Out of specification → Replace.

 **Wear limit:**  
0.5 mm (0.02 in)

NOTE:

- Replace the pad spring as a set if pad replacement is required.
- Replace the pads as a set if either if found to be worn to the wear limit.



8. Inspect:

- Brake discs (front and rear)  
Galling/Damage → Replace.

9. Measure:

- Brake disc deflection  
Out of specification → Inspect wheel runout.  
If wheel runout is in good condition, replace the brake disc(s).

 **Maximum deflection:**  
0.5 mm (0.02 in)

- Brake disc thickness **a**  
Out of specification → Replace.

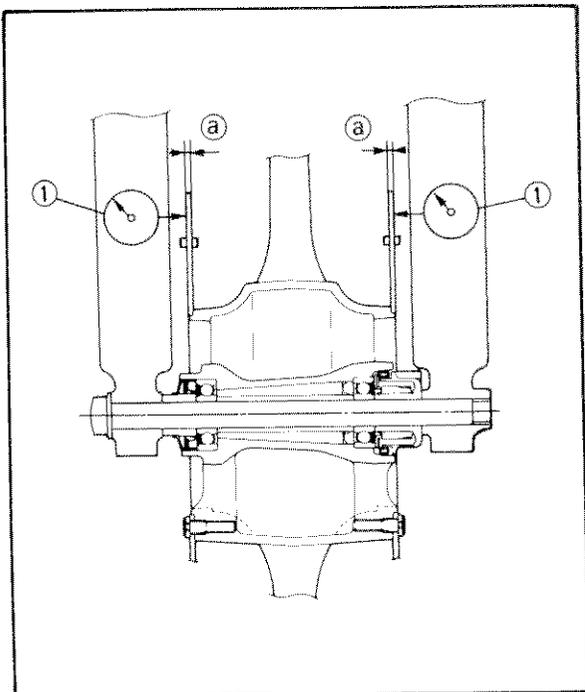
 **Minimum thickness:**  
front: 3.5 mm (0.14 in)  
rear: 4.5 mm (0.18 in)

① Dial gauge

NOTE:

Tighten the bolts (brake disc) in stage using a crisscross pattern.

 **Bolt (brake disc):**  
20 Nm (2.0 m<sup>3</sup> kg, 14 ft·lb)  
Use LOCTITE<sup>®</sup>

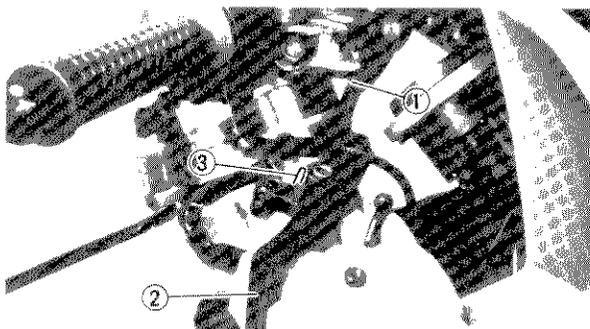
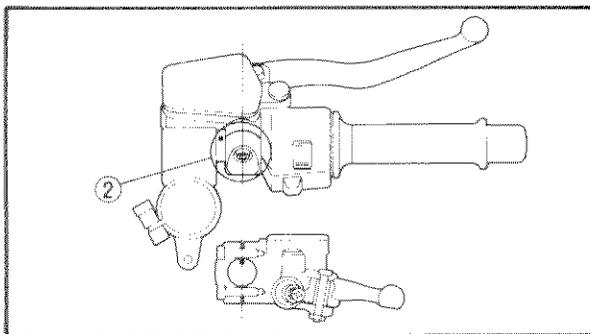
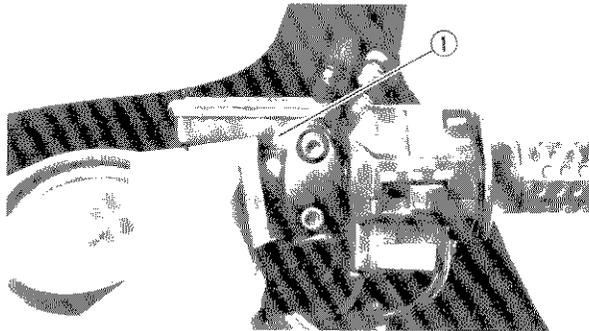
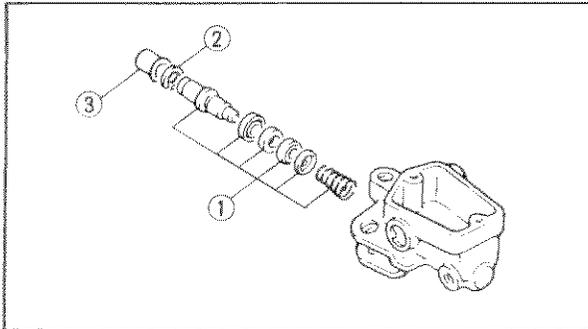




## ASSEMBLY

**⚠ WARNING:**

- All internal parts should be cleaned in new brake fluid only.
- Internal parts should be lubricated with brake fluid when installed.
- Replace the piston seal and dust seal whenever a caliper is disassembled.



## Front Brake

## 1. Install:

- Master cylinder kit ①
- Circlip ②
- Dust boot ③

## 2. Install:

- Master cylinder ①

**⚠ CAUTION:**

- Install the master cylinder holder with the "UP" mark facing upward.
- Align the end of the holder with the punch mark ② on the handlebar.
- Tighten first the upper bolt, then the lower bolt.



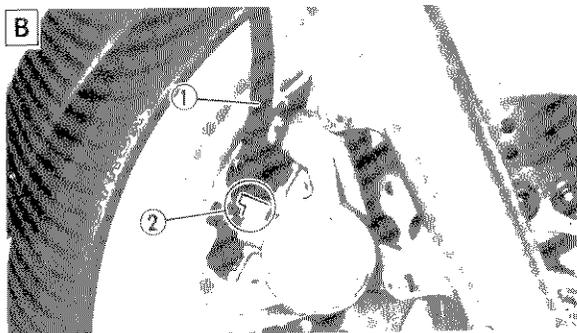
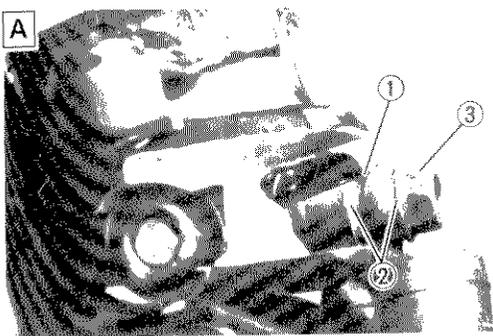
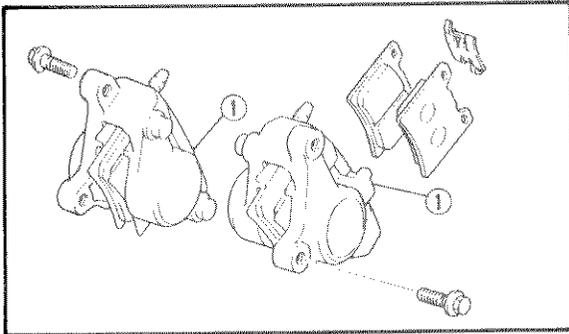
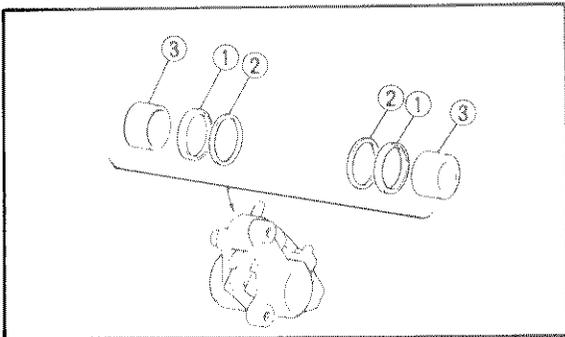
Bolts (master cylinder holder):  
9 Nm (0.9 m·kg, 8.5 ft·lb)

## 3. Install:

- Brake switch ①
- Brake lever ②
- Return spring (brake lever) ③

**NOTE:**

Apply the lithium soap base grease to the brake lever pivot.



4. Install:
- Piston seal ①
  - Dust seal ②
  - Caliper piston ③

**⚠ WARNING:**

Always use new piston seal and dust seal.

5. Install:
- Brake calipers ①



**Bolt (brake caliper):**  
35 Nm (3.5 m · kg, 25 ft · lb)

- Brake pads
- Pad spring
- Retaining pins
- Retaining clips
- Cover

Refer to "BRAKE PAD REPLACEMENT" section.

6. Install:
- Brake hose ①
  - Copper washers ②
  - Union bolt ③



**Union bolt:**  
26 Nm (2.6 m · kg, 19 ft · lb)

- A Front
- B Rear

**⚠ CAUTION:**

When installing the brake hose to the caliper ①, lightly touch the brake pipe with the projections ② on them.

**⚠ WARNING:**

- Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".
- Always use new copper washers.



## 7. Fill:

- Master cylinder tank



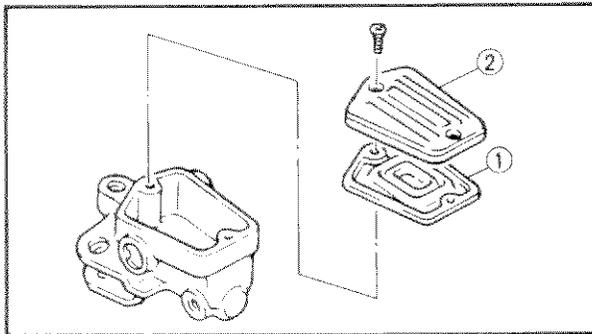
Recommended brake fluid:  
DOT #4 only

**⚠ CAUTION:** \_\_\_\_\_

Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

**⚠ WARNING:** \_\_\_\_\_

- Use only the designated quality brake fluid. otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid; mixing fluids may result in a harmful chemical reaction and lead to poor performance.
- Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.



## 8. Install:

- Diaphragm ①
- Cap (master cylinder) ②

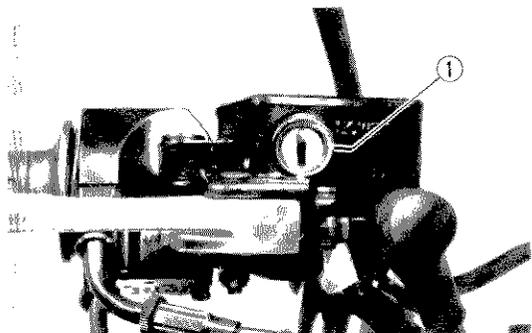


Screw (master cylinder):  
2 Nm (0.2 m · kg, 1.4 ft · lb)

## 9. Air bleed:

- Brake system

Refer to "AIR BLEEDING" section in the CHAPTER 3.

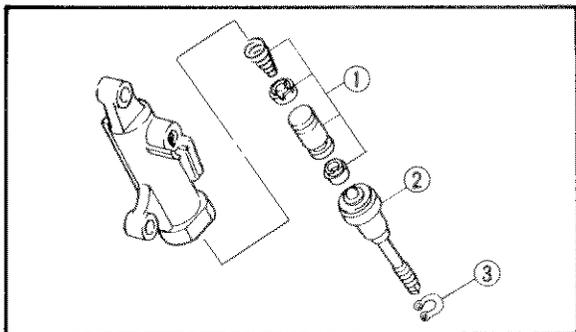


## 10. Inspect:

- Brake fluid level

Refer to "BRAKE FLUID INSPECTION" section in the CHAPTER 3.

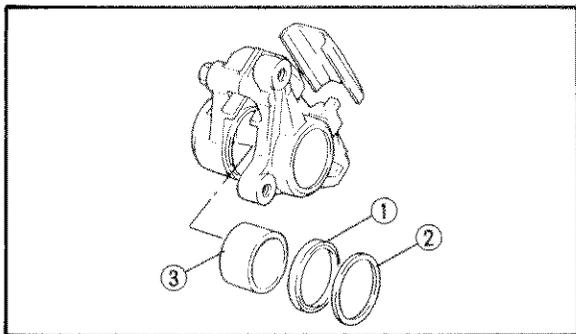
① "LOWER" level line



## Rear Brake

## 1. Install:

- Master cylinder kit ①
- Push rod ②
- Circlip ③

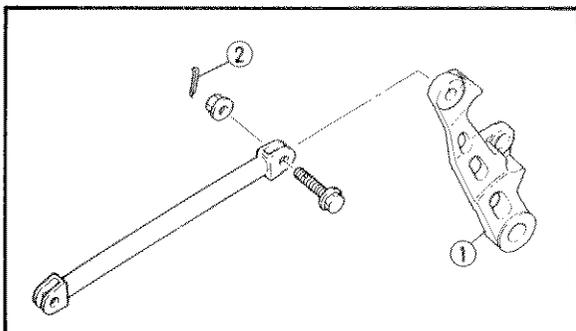


## 2. Install:

- Piston seal ①
- Dust seal ②
- Pistons ③

**⚠ WARNING:**

Always use new piston seal and dust seal.



## 3. Install:

- Caliper bracket ①
- Cotter pin ②

**⚠ WARNING:**

Always use a new cotter pin.

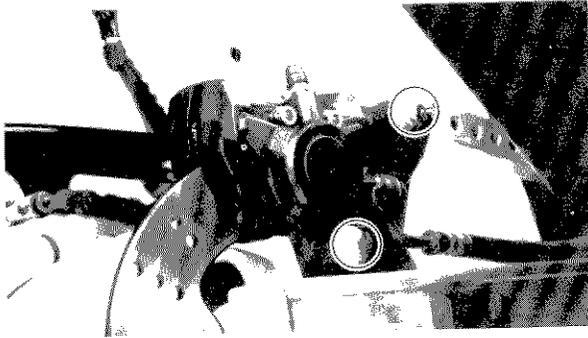


**Nut (tensionbar – caliper bracket):**  
28 Nm (2.8 m·kg, 20 ft·lb)

## 4. Install:

- Rear wheel

Refer to the "REAR WHEEL" section.

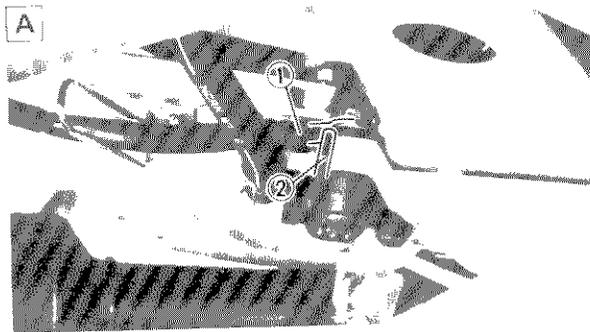


5. Install:
- Brake caliper (rear)

	<b>Brake caliper (rear):</b> 35 Nm (3.5 m · kg, 25 ft · lb)
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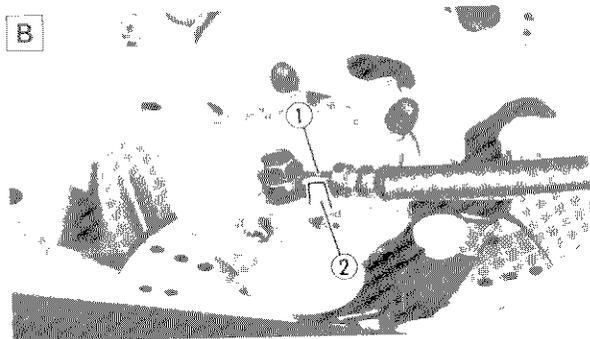
- Brake pads (with shims)
- Pad spring
- Retaining bins
- Retaining clips
- Cover

Refer to "BRAKE PAD REPLACEMENT" section.



6. Install:
- Copper washers
  - Brake hose
  - Union bolts
  - Master cylinder

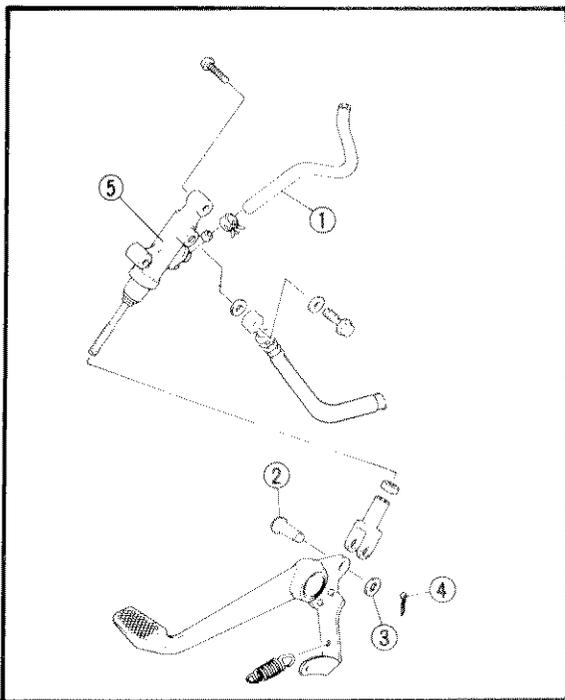
	<b>Bolt (master cylinder):</b> 20 Nm (2.0 m · kg, 14 ft · lb)
	<b>Union bolts:</b> 26 Nm (2.6 m · kg, 19 ft · lb)



- A** Front  
**B** Rear

**CAUTION:** \_\_\_\_\_  
 When installing the brake hose, lightly touch the brake pipe ① with the projections ② on the caliper and master cylinder.

**WARNING:** \_\_\_\_\_  
 • Proper hose routing is essential to insure safe machine operation. Refer to "CABLE ROUTING".  
 • Always use new copper washers.



## 7. Connect:

- Brake hose (reservoir tank — master cylinder) ①

## 8. Install:

- Clevis pin ②
- Washer ③
- Cotter pin ④
- Master cylinder assembly ⑤

**⚠ WARNING:**

Always use a new cotter pin.



Bolt (master cylinder):  
20 Nm (2.0 m·kg, 14 ft·lb)

## 9. Fill:

- Reservoir tank



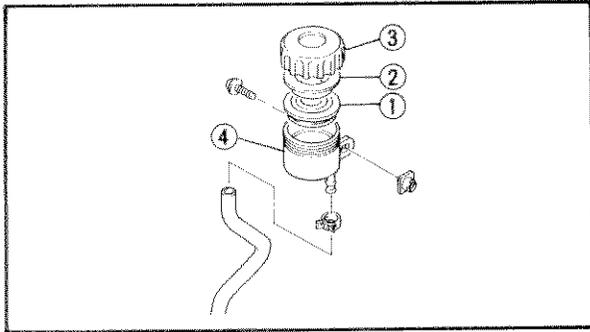
Recommended brake fluid:  
DOT #4  
If DOT #4 is not available,  
#3 can be used.

**⚠ CAUTION:**

Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

**⚠ WARNING:**

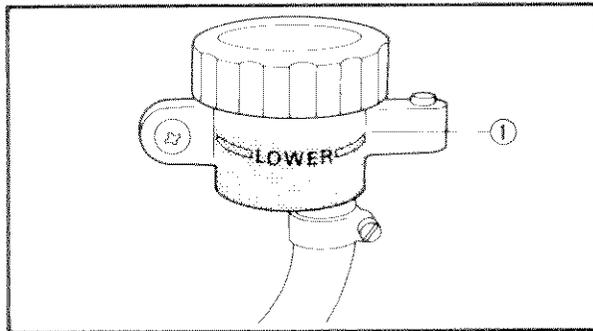
- Use only the designated quality brake fluid; otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid; mixing fluids may result in a harmful chemical reaction and lead to poor performance.
- Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.



10. Install:
- Diaphragm ①
  - Holder (diaphragm) ②
  - Cap (reservoir tank) ③
  - Reservoir tank ④

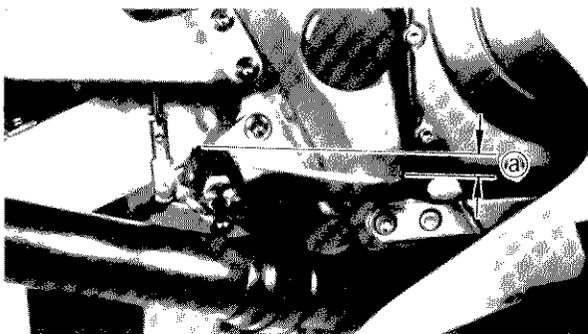
11. Air bleed
- Brake system  
Refer to "AIR BLEEDING" section in the CHAPTER 3.

12. Install:
- Side cover (right)
  - Seat  
Refer to "COVERS" section in the CHAPTER 3.



13. Inspect:
- Brake fluid level  
Refer to the "BRAKE FLUID INSPECTION" section in the CHAPTER 3.

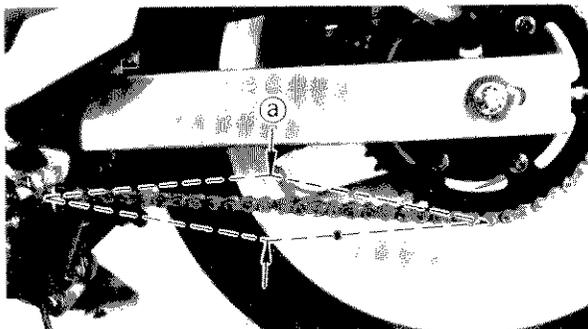
① "LOWER" level line



14. Adjust:
- Rear brake pedal height ①

	<b>Pedal height:</b>
	44 mm (1.73 in)
	Below top of footrest

Refer to the "REAR BRAKE ADJUSTMENT" section in the CHAPTER 3.



15. Adjust:
- Drive chain slack ①

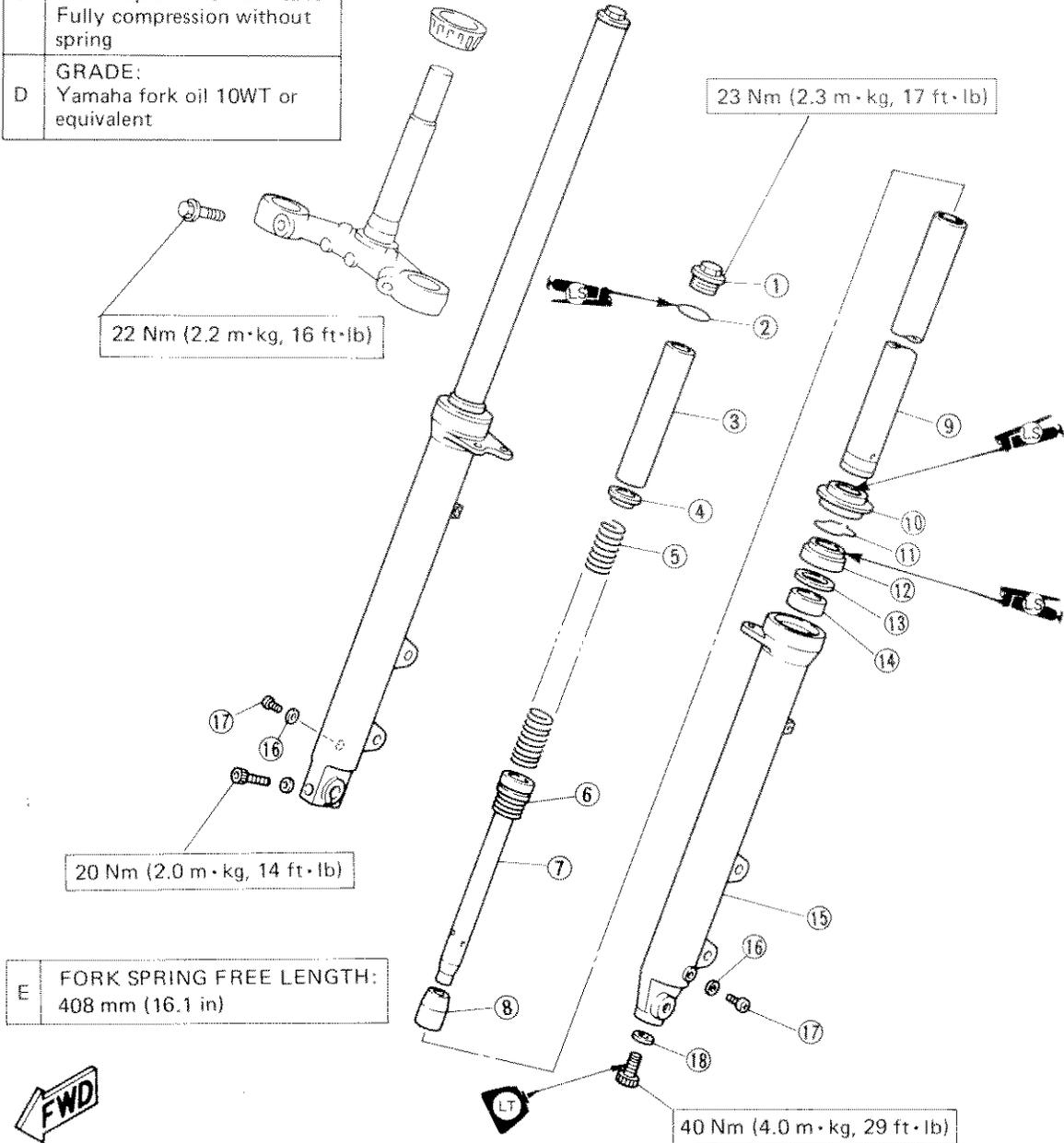
	<b>Drive chain slack:</b>
	20 ~ 30 mm (0.8 ~ 1.2 in)

Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.

**FRONT FORK**

- ① Cap bolt
- ② O-ring
- ③ Collar
- ④ Spring seat
- ⑤ Fork spring
- ⑥ Rebound spring
- ⑦ Damper rod
- ⑧ Oil lock piece
- ⑨ Inner tube
- ⑩ Dust seal
- ⑪ Retaining clip
- ⑫ Oil seal
- ⑬ Seal spacer
- ⑭ Guide bushing
- ⑮ Outer tube
- ⑯ Gasket
- ⑰ Drain screw
- ⑱ Gasket

A	FORK OIL (EACH):
B	CAPACITY: 435 cm <sup>3</sup> (15.3 Imp oz, 14.9 US oz)
C	OIL LEVEL: 101 mm (3.98 in) From top of inner fork tube Fully compression without spring
D	GRADE: Yamaha fork oil 10WT or equivalent



E FORK SPRING FREE LENGTH:  
408 mm (16.1 in)

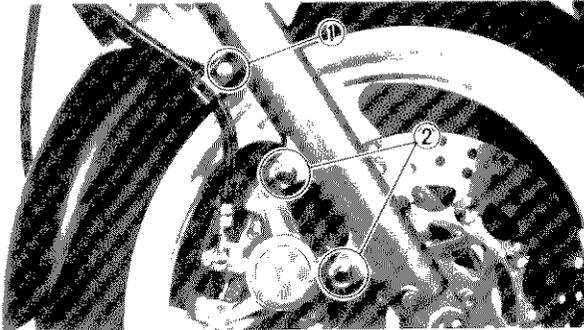


## REMOVAL

**⚠ WARNING:**

Securely support the motorcycle so there is no danger of it falling over.

1. Elevate the front wheel by placing a suitable stand under the engine.



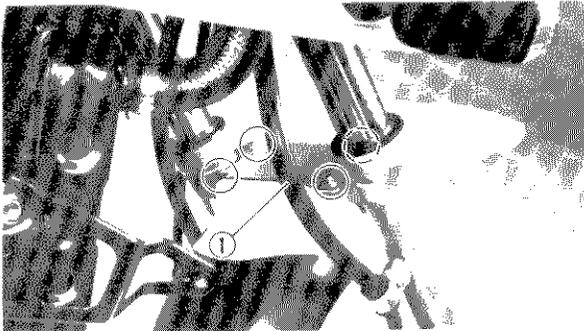
2. Remove:

- Bolts (brake hose clamp) ①
- Bolts (caliper) ②

3. Remove:

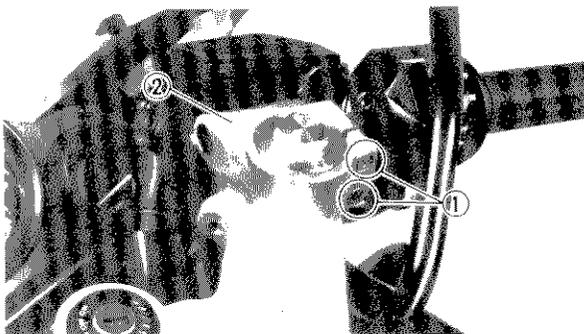
- Front wheel

Refer to the "FRONT WHEEL – REMOVAL" section.



4. Remove:

- Front fender ①

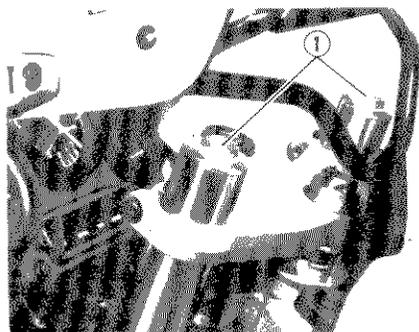


5. Loosen:

- Bolts (handlebar bosses) ①

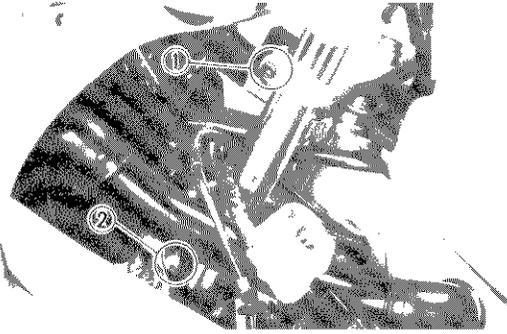
6. Remove:

- Handlebar (left and right) ②



7. Loosen:

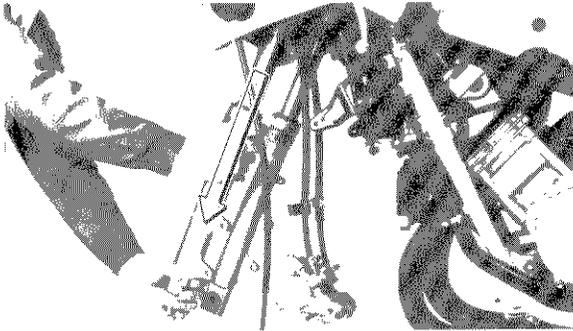
- Cap bolts ①



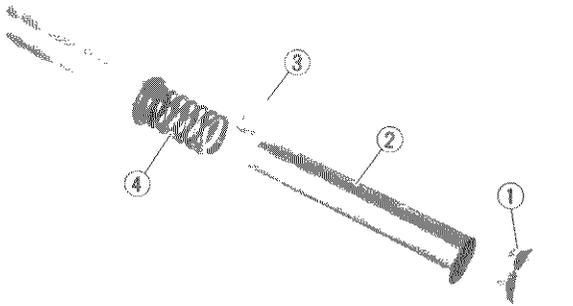
8. Loosen:
- Pinch bolt (handlebar crown) ①
  - Pinch bolt (steering stem) ②

**⚠ WARNING:**

Support the fork before loosening the pinch bolts.

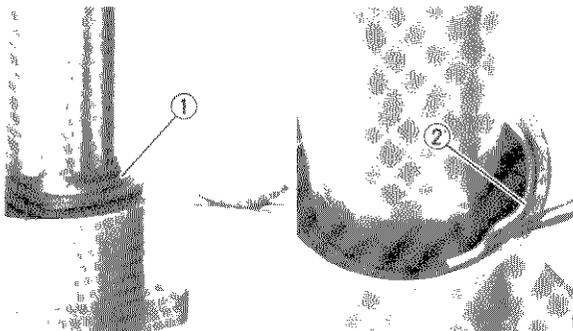


9. Remove:
- Front fork

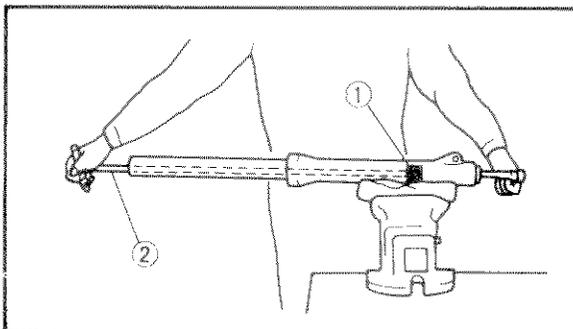


**DISASSEMBLY**

1. Remove:
- Cap bolt ①
  - Collar ②
  - Spring seat ③
  - Fork spring ④
- Drain the fork oil



2. Remove:
- Dust seal ①
  - Retaining clip ②
- Use a thin flat screwdriver, and be careful not to scratch the inner fork tube.



3. Remove:
- Bolt (damper rod)

**NOTE:**

Loosen the bolt (damper rod) while holding the damper rod with the T-handle ② and holder ①.



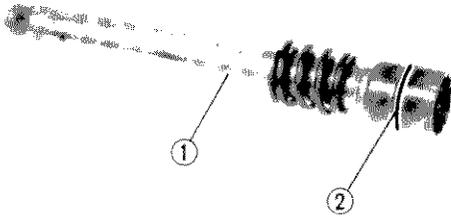
Damper rod holder:  
P/N YM-01300-1  
90890-01294

T-Handle:  
P/N YM-01326  
90890-01326



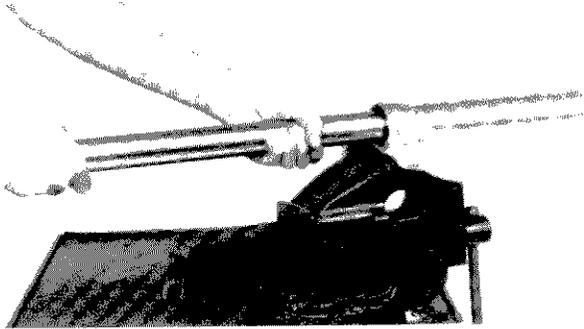
## 4. Remove:

- Damper rod ①
- Rebound spring ②



## 5. Remove:

- Inner tube

**Inner tube removal steps:**

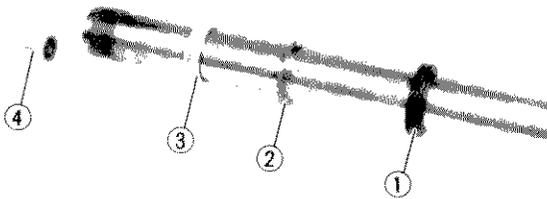
- Hold fork leg horizontally.
- Clamp the caliper mounting boss of the outer tube securely in a vise with soft jaws.
- Pull out the inner tube from the outer tube by forcefully, but carefully, with drawing the inner tube.

**NOTE:**

- Excessive force will damage the oil seal and/or the bushes. Damaged oil seal and bushing must be replaced.
- Avoid bottoming the inner tube in the outer tube during the above procedure, as the oil lock piece will be damaged.

## 6. Remove:

- Oil seal ①
- Seal spacer ②
- Guide bushing ③
- Oil lock piece ④

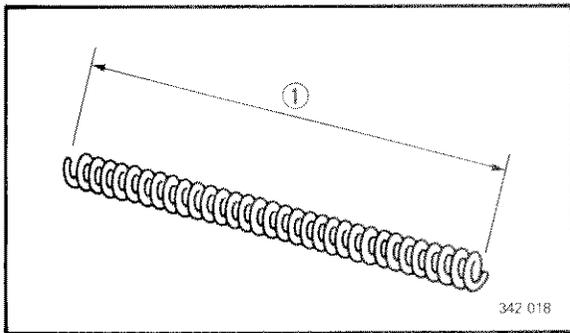
**INSPECTION**

## 1. Inspect:

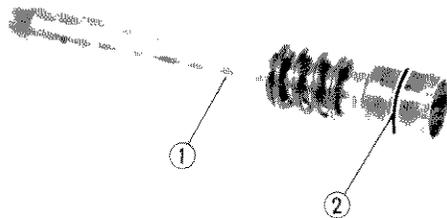
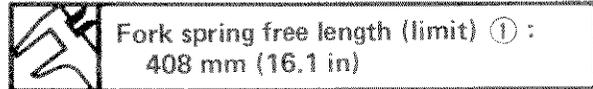
- Inner tube  
Scratches/Bends → Replace.

**⚠ WARNING:**

Do not attempt to straighten a bent inner fork tube as this may dangerously weaken the tube.



2. Inspect:
  - Outer tube  
Scratches/Bends/Damage → Replace.
3. Measure:
  - Fork spring  
Over specified limit → Replace.



4. Inspect:
  - Damper rod ①
  - Ring ②  
Wear/Damage → Replace.  
Contamination → Blow out all oil passages with compressed air.
  - Oil lock piece
  - O-ring (cap bolt)
  - Damage → Replace.

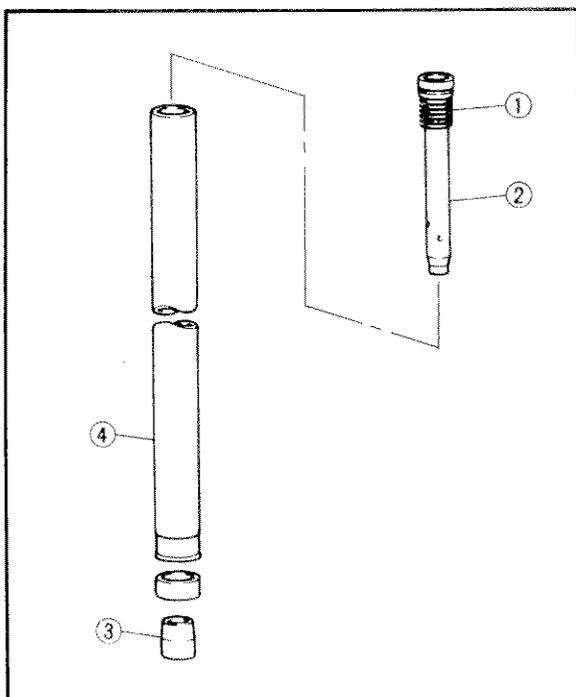
#### ASSEMBLY

Before assembling, clean and inspect all parts and replace when necessary.

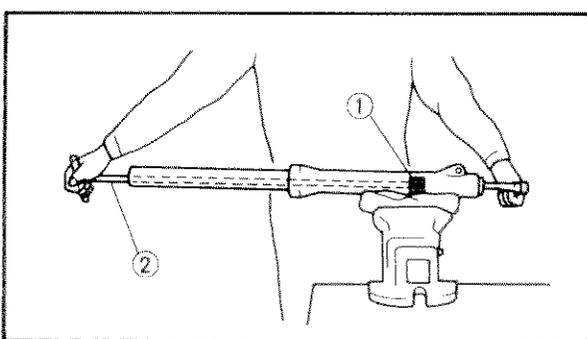
#### NOTE:

In front fork assembly, be sure to use following new parts. Do not reuse them.

- Slide bushing
- Guide bushing
- Oil seal
- Dust seal



1. Install:
  - Rebound spring ①
  - Damper rod ②  
Allow the rod to slide slowly down the tube until it protrudes from the bottom.
  - Oil lock piece ③  
Fit oil lock piece over damper rod sticking out of the inner tube.
  - Inner tube ④  
Into the outer tube.



## 2. Tighten:

- Bolt (damper rod)

Use the damper rod holder ① and T-handle ② to lock the damper rod.



**Bolt (damper rod):**

40 Nm (4.0 m·kg, 29 ft·lb)

LOCTITE®

## NOTE:

Tighten the bolt (damper rod) while holding the damper rod with the T-handle ② and holder ①.



**Damper rod holder:**

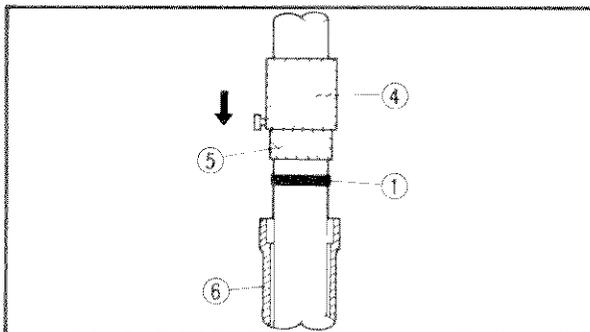
P/N YM-01300-1

90890-01294

**T-handle:**

P/N YM-01326

90890-01326



## 3. Install:

- Guide bush ① (new)

Into the outer tube ⑥.

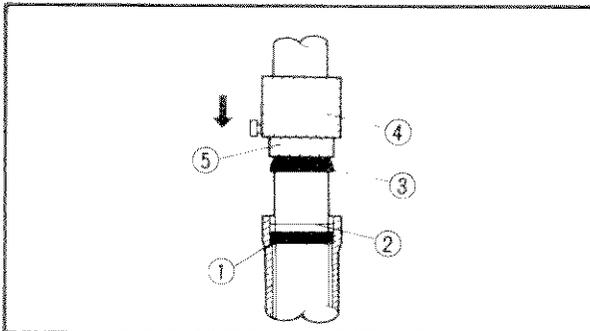
Use the fork seal driver weight ④ and adapter ⑤.

- Seal spacer ②

On the top of guide bushing ①.

- Oil seal ③

Use the fork seal driver weight ④ and adapter ⑤.



**Fork seal driver weight:**

P/N YM-33963

90890-01367

**Fork seal driver adapter:**

P/N YM-01372

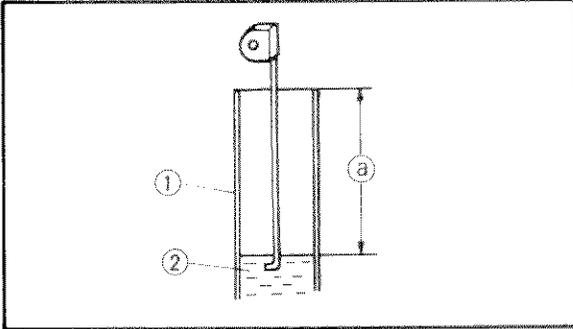
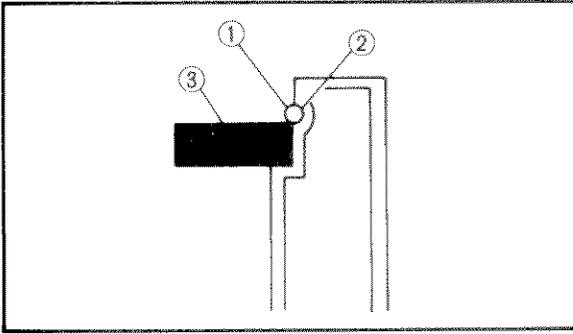
90890-01372

## NOTE:

Before installing the oil seal, apply the lithium soap base grease onto the oil seal lips.

## ⚠ CAUTION:

Be sure that the oil seal numbered side face upward.



4. Install:
- Retaining clip ①
  - Dust seal

**NOTE:** \_\_\_\_\_  
Fit the retaining clip ① correctly in the groove ② in the outer tube.

- ③ Oil seal

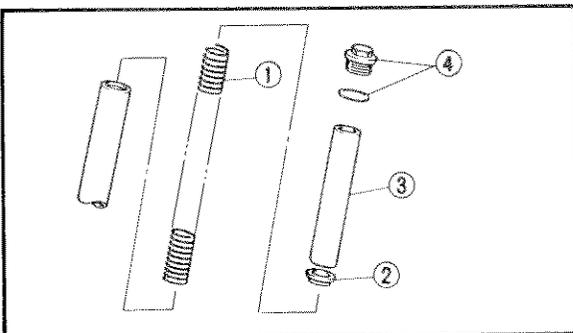
5. Fill:
- Front fork



Each fork:  
435 cm<sup>3</sup>  
(15.3 Imp oz, 14.9 US oz)  
Yamaha fork oil 10WT or equivalent  
After filling, slowly pump the fork  
up and down to distribute oil.

Oil level ① :  
101 mm (3.98 in)  
From the top of inner fork tube  
fully compressed without spring.

- ① Inner tube  
② Fork oil

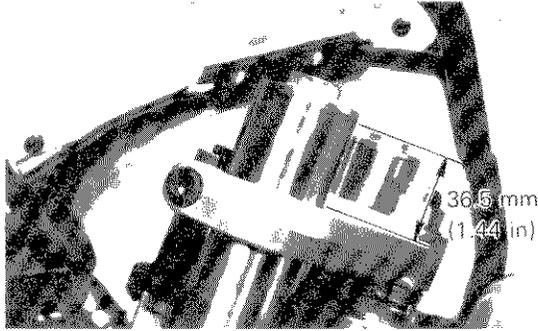


6. Install:
- Fork spring ①
  - Spring seat ②
  - Collar ③
  - Cap bolt ④

**NOTE:** \_\_\_\_\_  
• Fork spring must be installed with the larger pitch upward.  
• Before installing the cap bolt, apply the lithium soap base grease to the O-ring.  
• Temporarily tighten the cap bolt ④ yet.

### INSTALLATION

Reverse the removal procedure.  
Note the following points.



## 1. Install:

- Front fork
- Temporary tighten the pinch bolts.

**NOTE:**

Hold the inner tube with its top 36.5 mm (1.44 in) above the top of the handlebar crown.

## 2. Tighten:

- Cap bolt
- Pinch bolt (handle crown)
- Pinch bolt (steering stem)

**Cap bolt:**

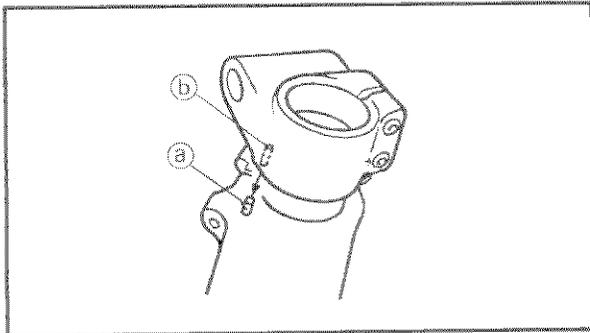
23 Nm (2.3 m · kg, 17 ft · lb)

**Pinch bolt (handlebar crown):**

26 Nm (2.6 m · kg, 19 ft · lb)

**Pinch bolt (steering stem):**

22 Nm (2.2 m · kg, 16 ft · lb)



## 3. Install:

- Handlebars (left and right)

**NOTE:**

Align the projection (a) with the hole (b).

**Bolts (handlebar)**

23 Nm (2.3 m · kg, 17 ft · lb)

## 4. Install:

- Front fender
- Brake hose clamp

**Bolt (front fender):**

7 Nm (0.7 m · kg, 5.1 ft · lb)

## 5. Install:

- Front wheel
- Brake caliper (left and right)
- Speedometer calbe

Refer to the "FRONT WHEEL" section.

**Front wheel axle.**

58 Nm (5.8 m · kg, 42 ft · lb)

**Bolts (brake caliper):**

35 Nm (3.5 m · kg, 25 ft · lb)

**Pinch bolt (front fork):**

20 Nm (2.0 m · kg, 14 ft · lb)

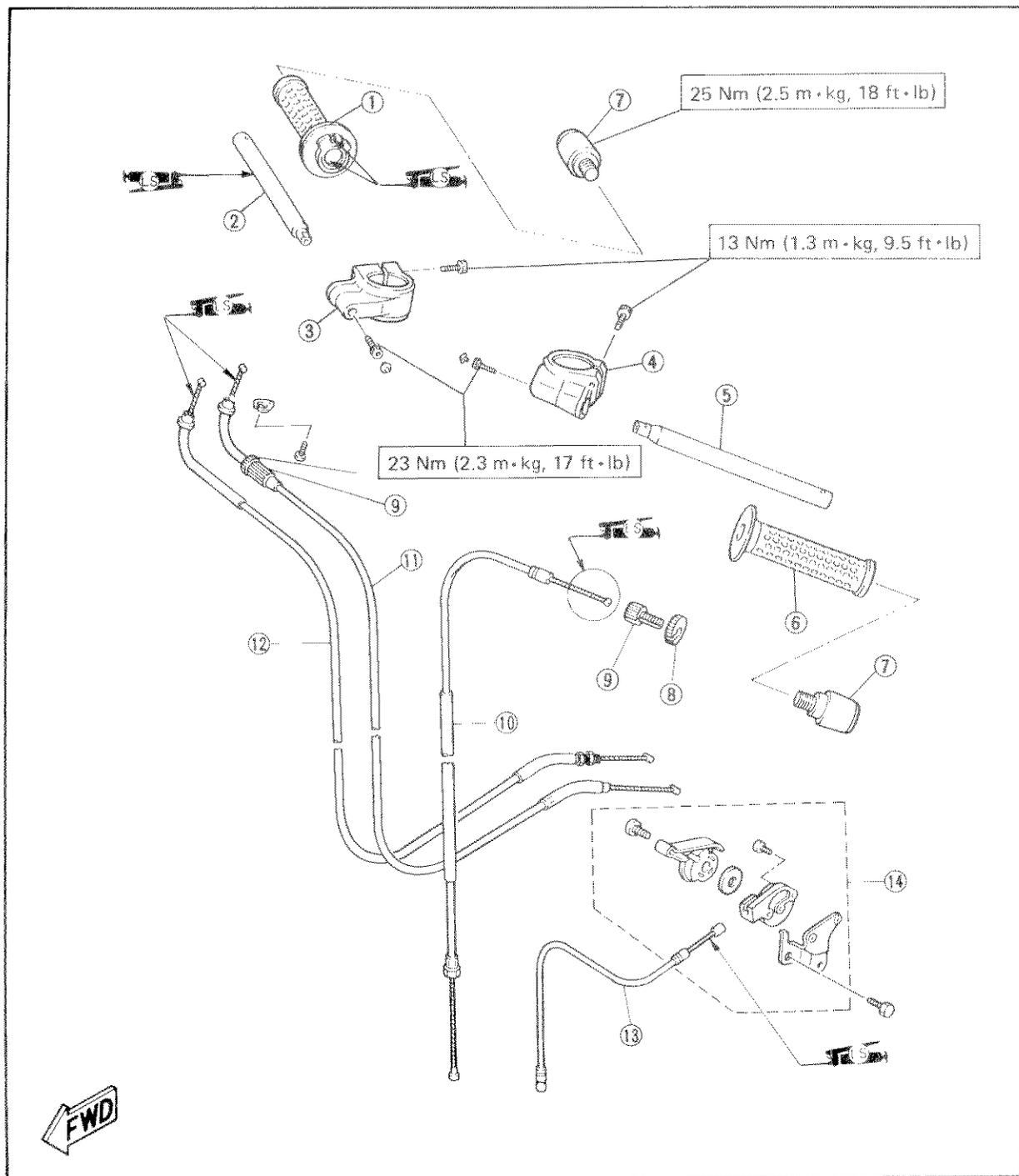
**⚠ WARNING:**

Make sure that the brake hoses are routed properly.

STEERING HEAD AND HANDLEBAR

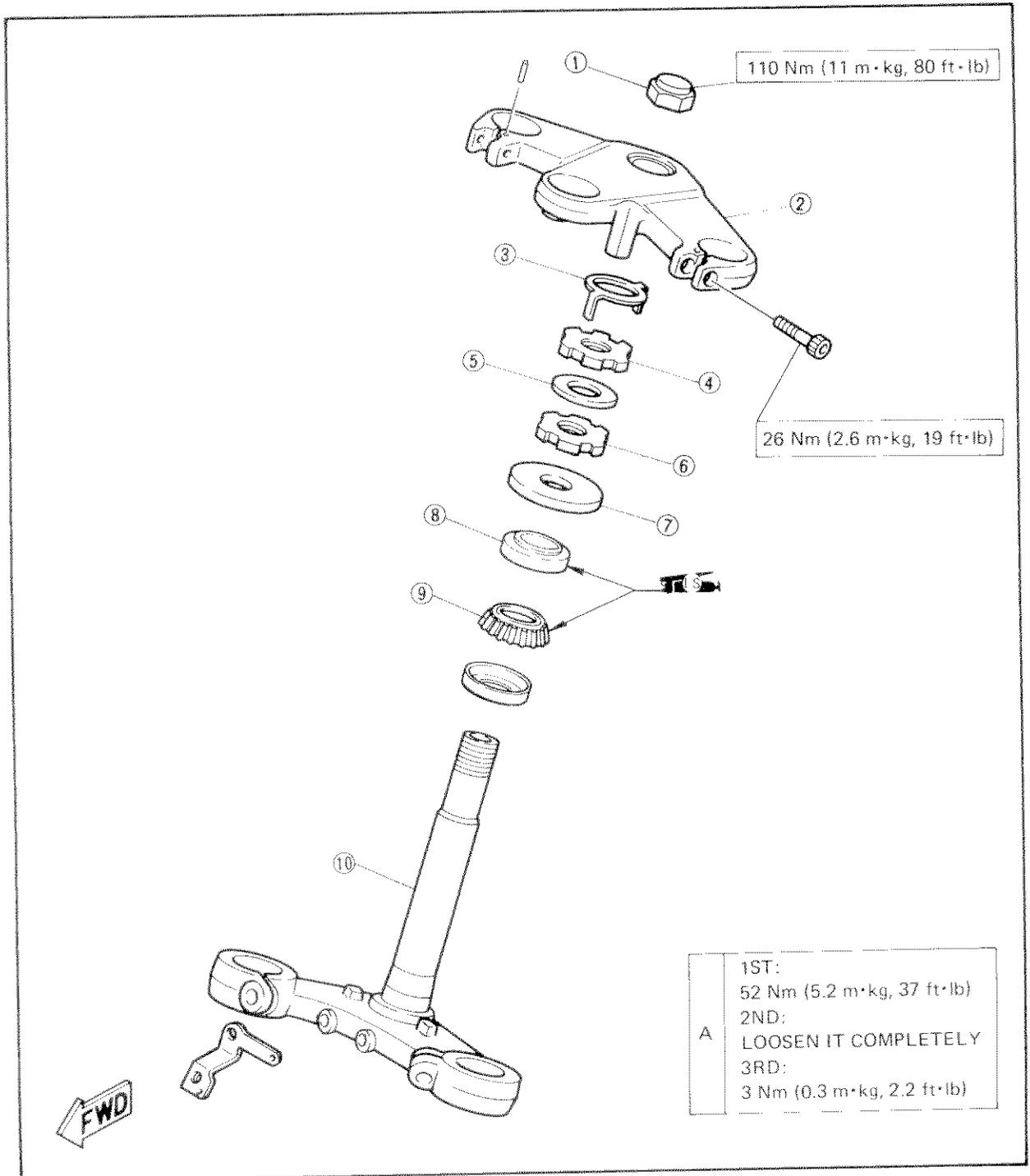
Handlebar

- ① Throttle guide tube
- ② Handlebar (Right)
- ③ Handlebar boss (Right)
- ④ Handlebar boss (Left)
- ⑤ Handlebar (Left)
- ⑥ Grip rubber
- ⑦ Handlebar grip end
- ⑧ Locknut
- ⑨ Adjuster
- ⑩ Clutch cable
- ⑪ Throttle cable 1
- ⑫ Throttle cable 2
- ⑬ Starter cable
- ⑭ Starter lever assembly



**Steering Head**

- ① Steering stem nut
- ② Handle crown
- ③ Lock washer
- ④ Ring nut (Upper)
- ⑤ Washer
- ⑥ Ring nut (Lower)
- ⑦ Bearing cover
- ⑧ Bearing (Upper)
- ⑨ Bearing (Lower)
- ⑩ Steering stem



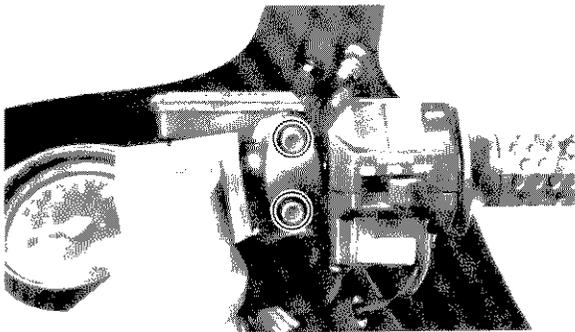


## REMOVAL

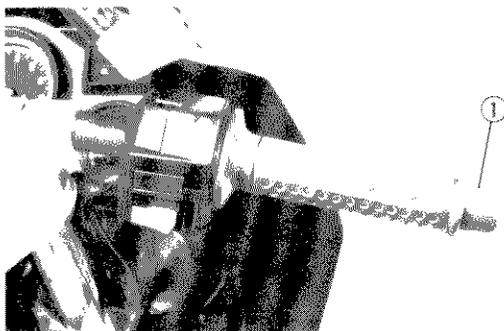
**⚠ WARNING:**

Securely support the motorcycle so there is no danger of it falling over.

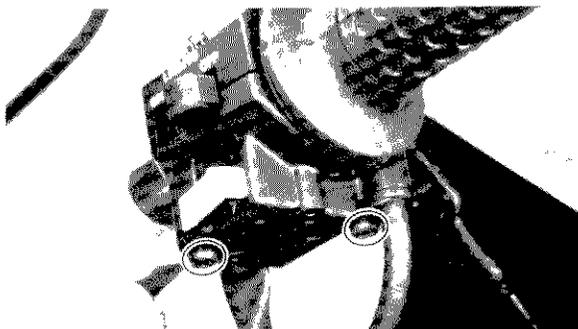
1. Remove:
  - Side cowlings  
Refer to "COWLINGS/COVERS REMOVAL AND INSTALLATION".
  - Front wheel  
Refer to the "FRONT WHEEL" section.



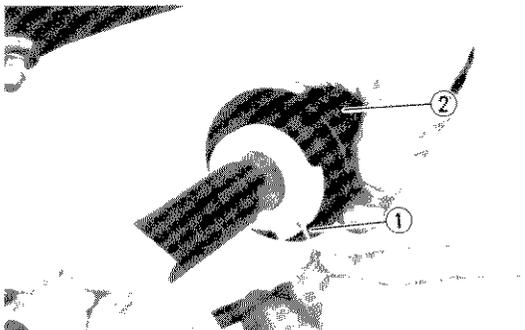
2. Remove:
  - Bracket (master cylinder)



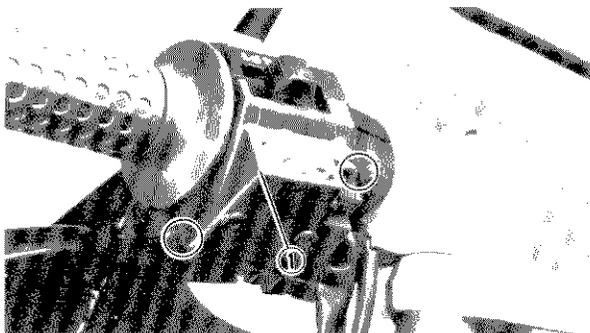
3. Remove:
  - Handlebar grip end (right) ①



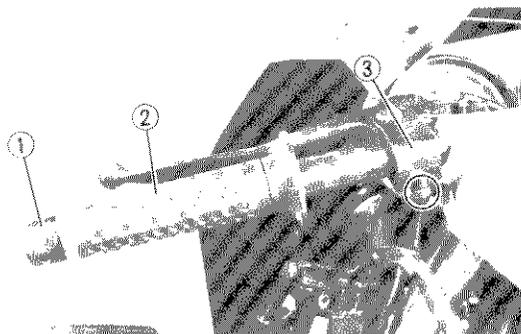
4. Remove:
  - Handlebar switch (right)



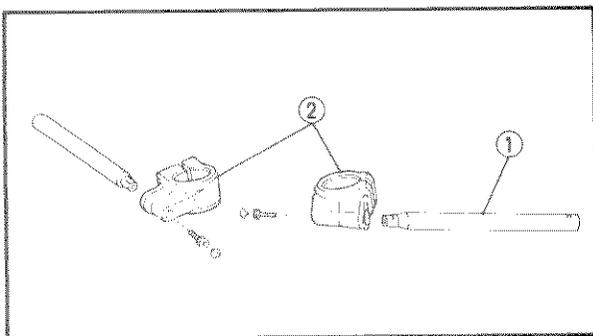
5. Remove:
- Throttle cable ①
  - Handlebar grip (right) ②



6. Remove:
- Handlebar switch (left) ①

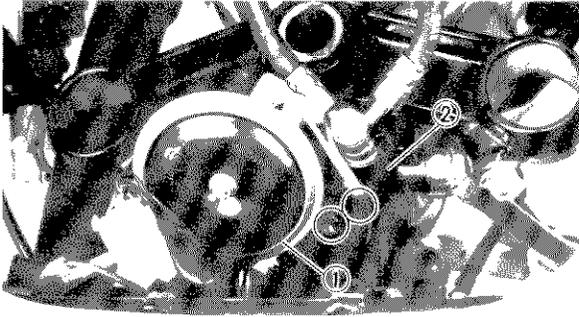


7. Remove:
- Handlebar grip end (left) ①
  - Handlebar grip (left) ②
  - Clutch lever holder ③

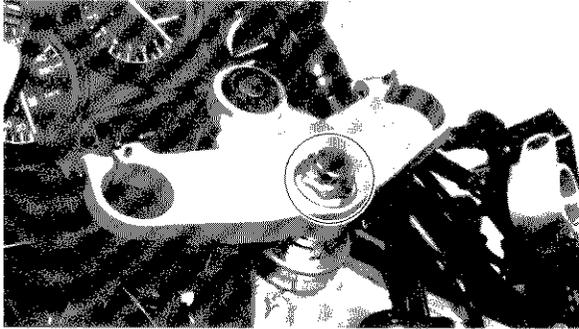


8. Remove:
- Handlebar (right) ①
  - Handlebar bosses (left and right) ② with handlebar (left).

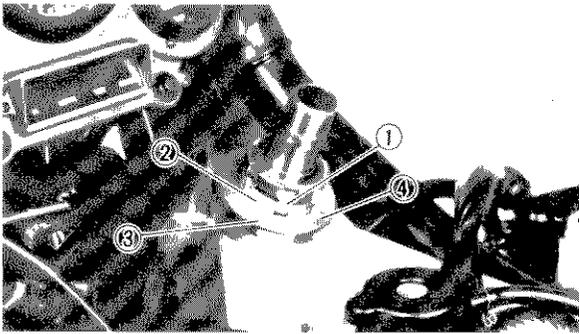
9. Remove:
- Front forks (left and right)  
Refer to the "FRONT FORK – REMOVAL" section.
  - Top cover
  - Rear view mirrors
  - Cowling stay
  - Air filter case



10. Remove:
- Horn ①
  - Joint (brake hose) ②



11. Remove:
- Handlebar crown



12. Remove:
- Lock washer ①
  - Ring nut (upper) ②
- Use ring nut wrench

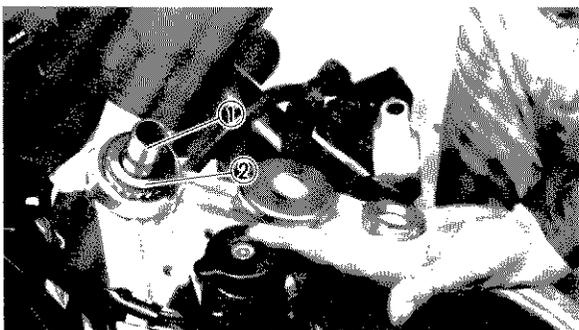


Ring nut wrench:  
P/N YU-33975  
90890-01403

13. Remove:
- Washer ⑤
  - Ring nut (lower) ③
  - Bearing cover ④

**⚠ WARNING:**

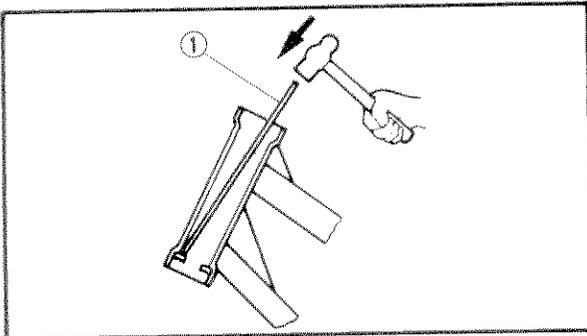
Support the steering shaft so that it may not fall down.



14. Remove:
- Steering stem ①
  - Bearing (upper) ②
  - Bearing (lower)

**INSPECTION**

1. Wash the bearing in a solvent.
2. Inspect:
  - Bearings
  - Bearing race
 Pitting/Damage → Replace.

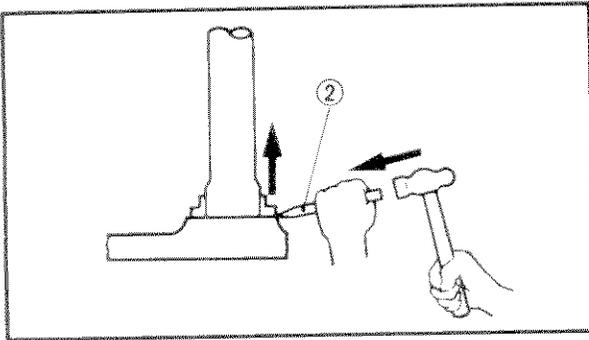


**Bearing race replacement steps:**

- Remove the bearing races using long rod ① and the hammer as shown.
- Remove the bearing race on the steering stem using the floor chisel ② and the hammer as shown.
- Install the new dust seal and races.

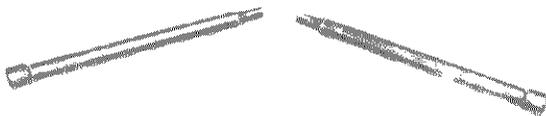
**NOTE:**

Always replace bearings and races as a set.



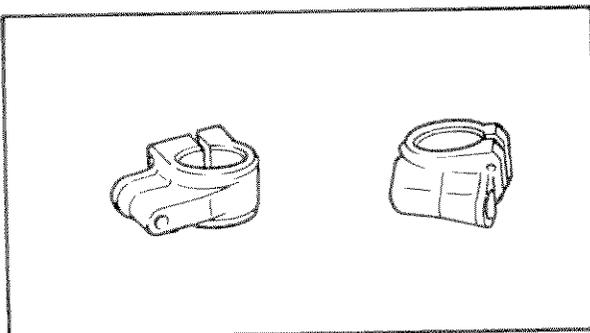
3. Inspect:

- Handlebars
- Bents/Damage → Replace.



4. Inspect:

- Handlebar bosses
- Cracks/Damage → Replace.

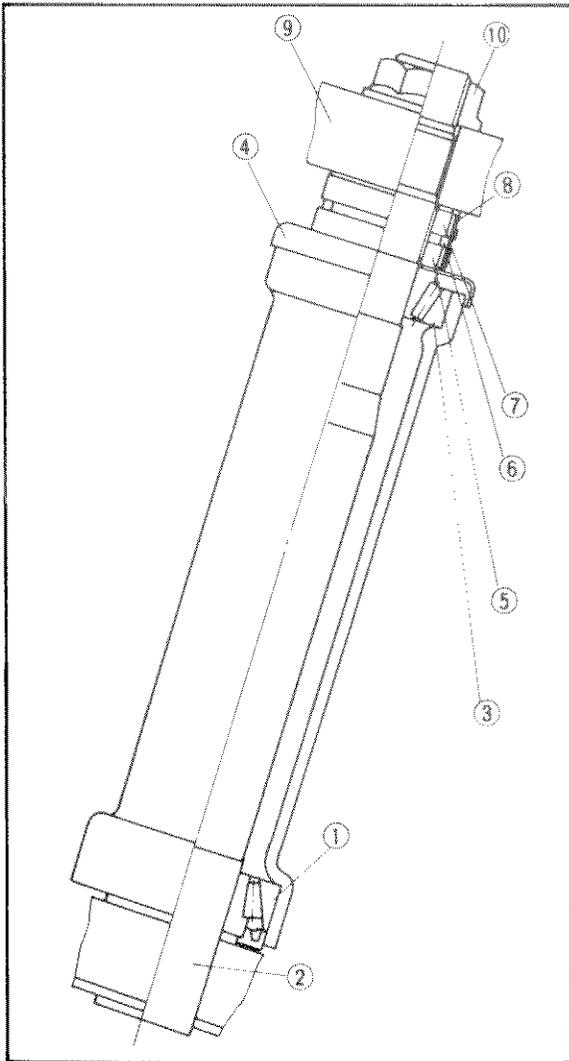


**INSTALLATION**

Reverse the removal procedure.  
Note the following points.

1. Lubricate:
  - Bearings (upper/lower)
  - Bearing races

	<b>Wheel bearing grease</b>
---	-----------------------------



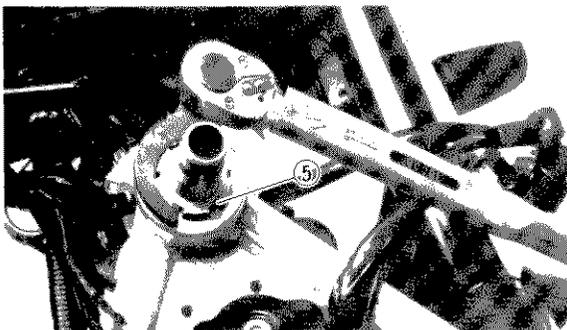
2. Install:
  - Bearing (lower) ①
  - Onto the steering stem.
  - Steering stem ②

**⚠ CAUTION:** \_\_\_\_\_

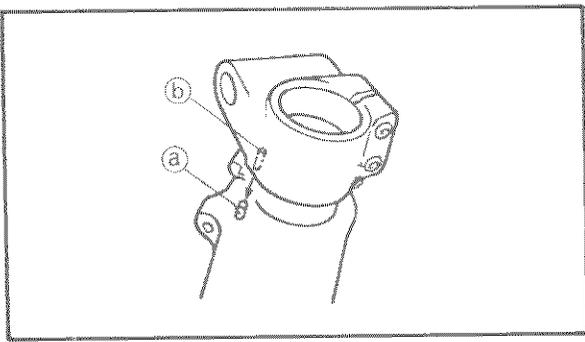
Hold the steering stem until it is secured.

- Bearing (uppers) ③
  - Bearing cover ④
  - Ring nut (lower) ⑤
3. Tighten:
    - Ring nuts (lower/upper)

<b>Ring nuts tightening steps:</b>	
<b>NOTE:</b> _____	
Set the torque wrench to the ring nut wrench so that they form a right angle.	
_____	
• Install the ring nut (lower) ⑤ .	
<b>NOTE:</b> _____	
The tapered side of ring nut must face downward.	
_____	
• Tighten the ring nut ⑤ using the ring nut wrench.	
	<b>Ring nut wrench:</b> P/N YU-33975 90890-01403
	<b>Ring nut ⑤ (initial tightening):</b> 52 Nm (5.2 m·kg, 37 ft·lb)
• <b>LOOSEN THE RING NUT ⑤ COMPLETELY</b> and retighten it to specification.	
<b>⚠ WARNING:</b> _____	
Do not over-tightening.	

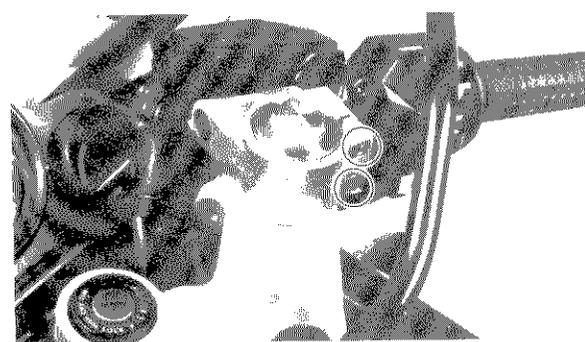






6. Install:
- Handlebar bosses

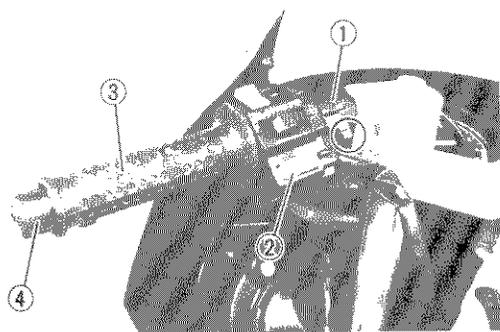
**NOTE:** \_\_\_\_\_  
Align the projection (a) with the hole (b) .  
\_\_\_\_\_



7. Install:
- Handlebars

	<b>Pinch bolts (handlebar):</b> 23 Nm (2.3 m·kg, 17 ft·lb)
---	---

8. Install:
- Clutch lever holder (1)
  - Handlebar switch (left) (2)
  - Handlebar grip (left) (3)
  - Handlebar grip end (left) (4)

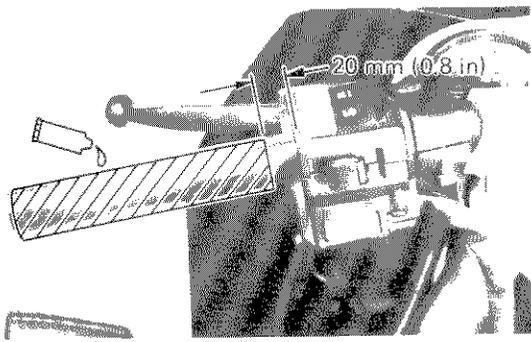
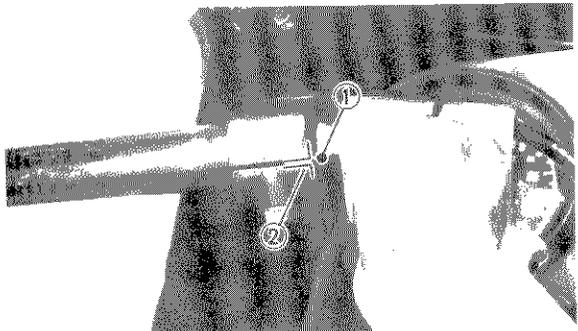


<b>Handlebar (left) installation steps:</b>	
• Install the lever holder with the punched mark (1) on the handlebar aligning with the slit in the lever holder (2) .	

	<b>Bolt (lever holder):</b> 10 Nm (1.0 m·kg, 7.2 ft·lb)
---	--

- Install the handlebar switch (left)
  - Apply align coat of an adhesive for rubber to the handlebar end, as shown.
- (a) 20 mm (0.8 in)
- Fit the handlebar grip fully over the handlebar end.

**⚠ WARNING:** \_\_\_\_\_  
Leave the handlebar intact with the adhesive becomes dry enough to make the grip and handlebar stuck securely.  
\_\_\_\_\_

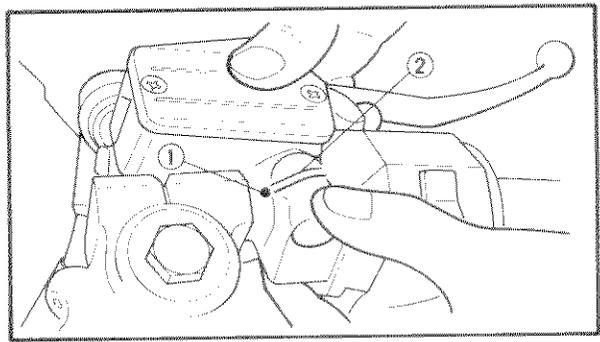


• Install the handlebar grip end (left).

 Handlebar grip end:  
25 Nm (2.5 m · kg, 18 ft · lb)

9. Install:
- Handlebar grip (right)
  - Throttle cable
  - Handlebar switch (right)

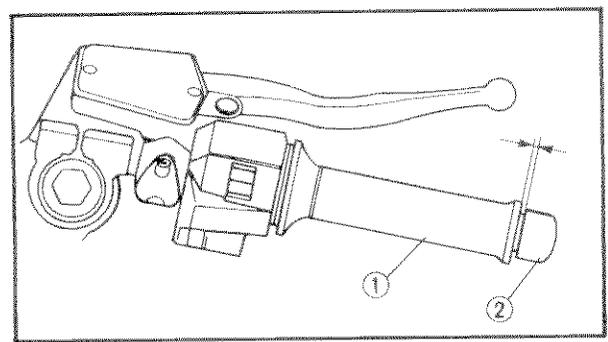
**NOTE:** \_\_\_\_\_  
Before installing the handlebar grip (Right), apply a light coat of lithium soap base grease onto the surfaces where the handlebar and throttle grip make contact.



10. Install:
- Front brake master cylinder

**NOTE:** \_\_\_\_\_  
Install the master cylinder with the punched mark ① on the handlebar aligning with the master cylinder end ②.

 Bolts (master cylinder bracket):  
9 Nm (0.9 m · kg, 6.5 ft · lb)



11. Install:
- Handlebar grip end (right) ①

**⚠ WARNING:** \_\_\_\_\_  
• Provide a clearance of 1 mm (0.04 in) between the handlebar grip ② and the handlebar grip end ①. Otherwise, the grip may not move.  
• Check the throttle grip for smooth action.

 Handlebar grip end:  
25 Nm (2.5 m · kg, 18 ft · lb)



12. Install:

- Front fender



Bolt (front fender):  
7 Nm (0.7 m · kg, 5.1 ft · lb)

13. Install:

- Front wheel

Refer to the "FRONT WHEEL" section.



Wheel axle:  
58 Nm (5.8 m · kg, 42 ft · lb)

Bolt (brake caliper):  
35 Nm (3.5 m · kg, 25 ft · lb)

Pinch bolt (front fork):  
20 Nm (2.0 m · kg, 14 ft · lb)

14. Install:

- Clutch cable

**NOTE:**

Apply a light coat of lithium soap base grease onto the clutch cable end.

15. Adjust:

- Clutch cable free play

Refer to the "CLUTCH ADJUSTMENT" section in the CHAPTER 3.



Free play:  
2 ~ 3 mm (0.08 ~ 0.12 in)  
At the lever pivot.