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**STEERING HANDLEBAR/FRONT WHEEL/  
FRONT SHOCK ABSORBER**

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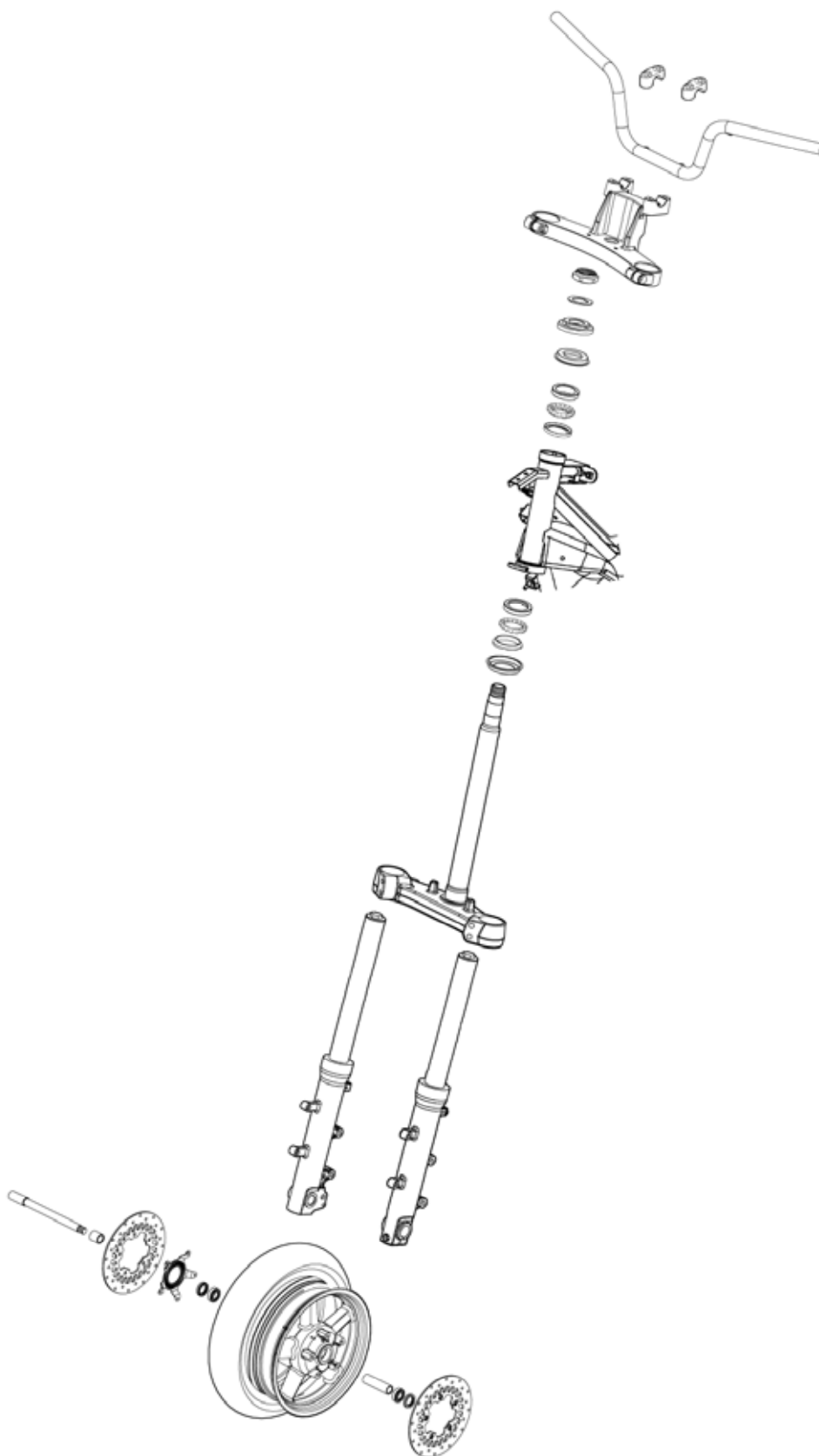
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## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

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### SCHEMATIC DRAWING



## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- A contaminated brake disc or pad reduces stopping power. Discard contaminated parts and clean a contaminated disc with a high quality brake degreasing agent.
- This section covers of the front wheel , fork, handlebar, and steering.
- A jack or other support is required to support the vehicle.
- Do not twist or bend the brake hose and pipe when servicing.
- Use genuine KYMCO replacement bolts and nuts for all suspension pivots and mounting points
- Refer to section 16 for brake system information.

### SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		—	1.6 (0.06)
Cold tire pressure	Driver only	200 kPa (2.00 kgf/cm <sup>2</sup> , 29 psi)	—
	Driver and passenger	225 kPa (2.25kgf/cm <sup>2</sup> , 32 psi)	—
Axle runout		—	0.2 (0.008)
Wheel rim runout	Radial	—	2.0 (0.08)
	Axial	—	2.0 (0.08)

### TORQUE VALUES

Handlebar bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)
Steering stem nut	62 N•m (6.2 kgf•m, 45 lbf•ft)
Steering stem lock nut	45 N•m (4.5 kgf•m, 32 lbf•ft)
Steering top thread	17 N•m (1.7 kgf•m, 12 lbf•ft)
Steering stem pinch bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)
Front axle bolt	55 N•m (5.5 kgf•m, 40 lbf•ft)
Front brake disc bolt	42 N•m (4.3 kgf•m, 31 lbf•ft)
	Lock bolt: replace with a new one.
Front fork bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)

### SPECIAL TOOLS

Long socket wrench	E015
Bearing remover	E037
Oil seal & bearing install driver	E014

### **TROUBLESHOOTING**

#### **Hard steering**

- Steering stem top thread too tight
- Worn or damaged steering bearings
- Worn or damaged steering bearing races
- Bent steering stem
- Insufficient tire pressure
- Faulty front tire

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

- Damaged or loose steering bearings
- Bent fork
- Bent front axle: wheel installed incorrectly
- Bent frame
- Faulty front tire
- Worn or damaged front wheel bearings
- Worn or damaged engine mounting bushings

#### **Front wheel wobbling**

- Bent rim
- Worn or damaged front wheel bearings
- Faulty front tire
- Loose front axle fasteners

#### **Wheel turns hard**

- Faulty front wheel bearings
- Bent front axle
- Brake drag

#### **Soft suspension**

- Weak fork spring
- Insufficient fluid in fork
- Deteriorated fork fluid
- Incorrect fork fluid weight
- Low tire pressure

#### **Hard suspension**

- Bent fork tube
- Too much fluid in fork
- Incorrect fork fluid weight
- Clogged fork fluid passage
- High tire pressure

#### **Front suspension noise**

- Worn slider or fork tube bushing
- Insufficient fluid in fork
- Loose fork fastener

## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

### FRONT WHEEL

#### REMOVAL

Loosen the front axle holder bolt.

Holder bolt



Loosen the front axle bolt.

Support the scooter securely using a hoist or equivalent and raise the front wheel off the ground.

Front Axle



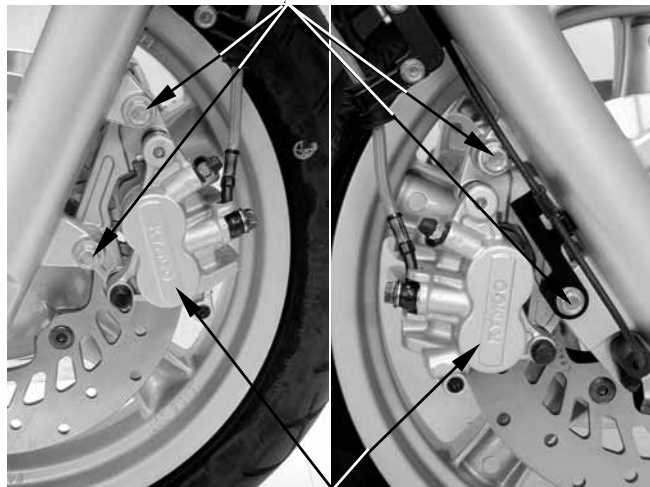
Remove the right and left mount bolts and front brake calipers.

Pull off the front axle out and remove the front wheel.

#### NOTE:

**Do not operate the front and rear brake lever after removing the front wheel.**

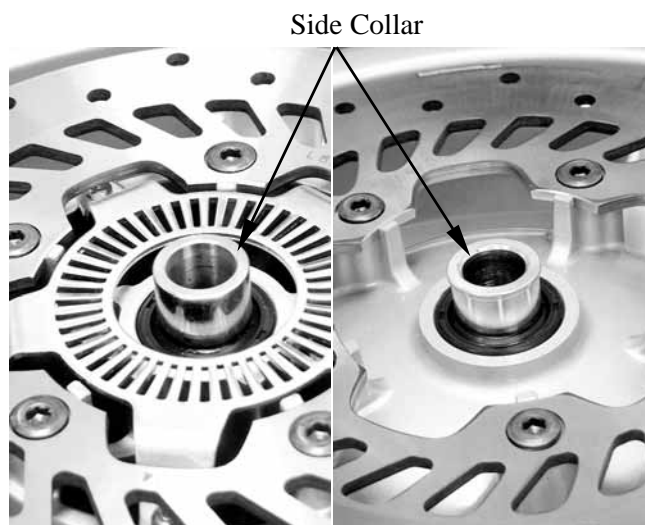
Bolts



Calipers

## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Remove the right and left side collar from the wheel hub.



### INSTECTION

#### Axle

Place the axle in V-blocks and measure the runout.

Actual runout is 1/2 the total indicator reading.

**Service limit: 0.20 mm (0.008 in)**



#### Wheel

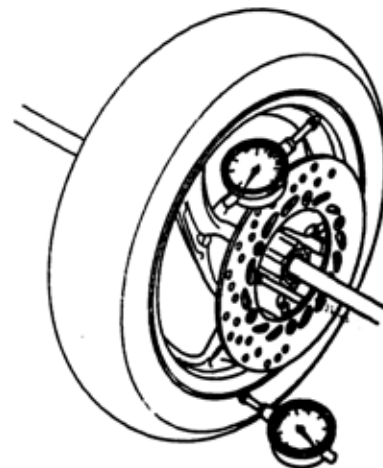
Check the rim runout by placing the wheel in a truing stand.

Spin the wheel slowly and read the runout using a dial indicator.

Actual runout is 1/2 the total indicator reading.

**Service limit: Radial: 0.20 mm (0.008 in)**

**Axial: 0.20 mm (0.008 in)**

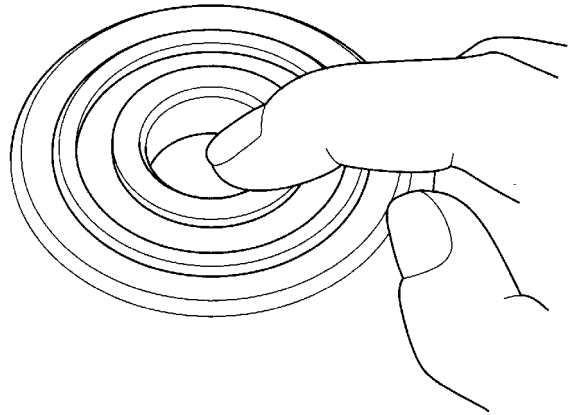


## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

### Wheel Bearing

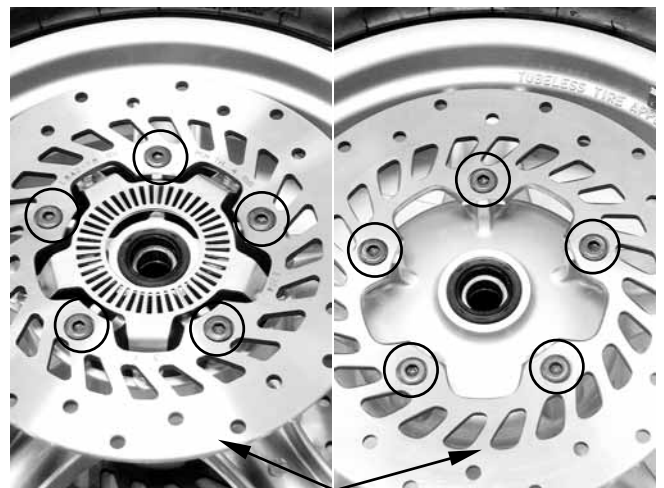
Turn the inner race of each bearing with your finger.

The bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the hub.



### DIASSEMBLY

Remove the right and left disc bolts and brake discs.



Discs

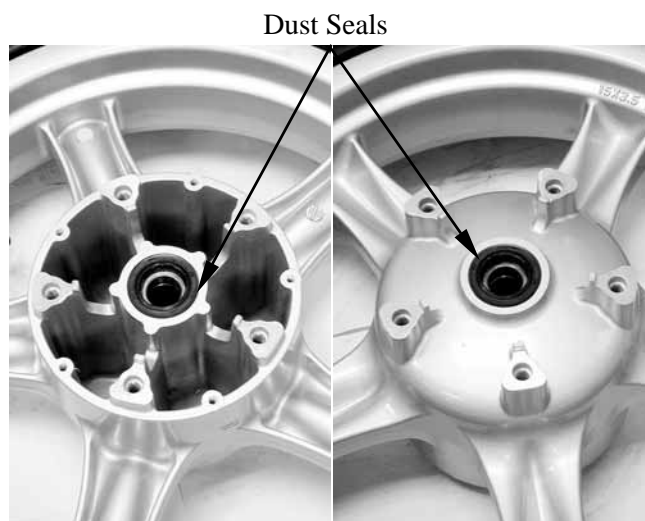
Remove the bolts and speed sensor guide.

Speed Sensor Guide



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Remove the dust seals



Install the bearing remover into the bearing.  
Drive the bearing out of the wheel hub.  
Remove the distance collar and drive out the other bearing.

**Special tool: Bearing remover E037**

### NOTE:

**Replace the wheel bearings in pairs.  
Do not reuse old bearings.**



### ASSEMBLY

Pack a new bearing cavities with grease.  
Drive the new left bearing squarely with the  
sealed side facing up until it is fully seated.

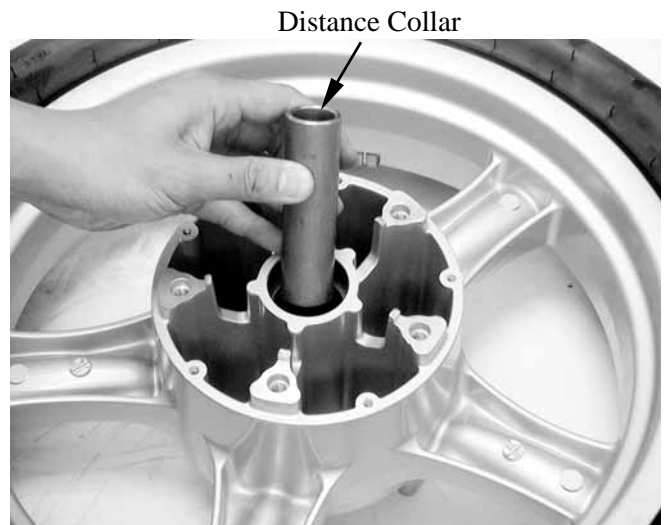
### Special tool:

**Oil seal & bearing install driver E014**



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Install the distance collar.



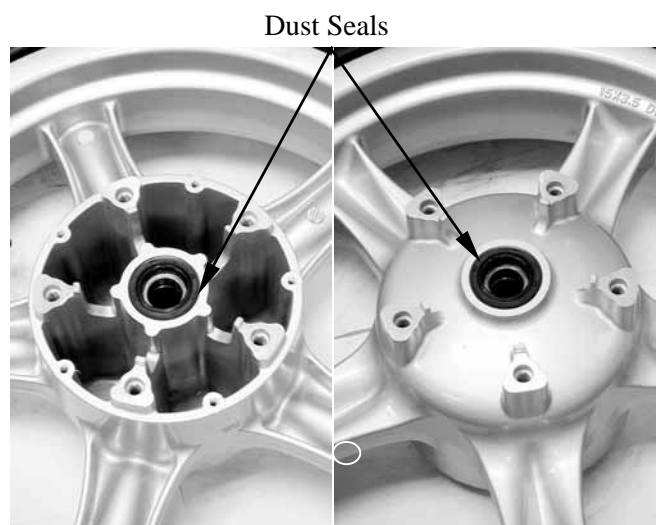
Pack a new bearing cavities with grease.  
Drive the new right bearing squarely with the  
sealed side facing up until it is fully seated.

**Special tool:**

**Oil seal & bearing install driver E014**



Apply grease to the new dust seal lips.  
Install the dust seals into the wheel hub until  
they are flush with the wheel hubs.



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Install the speed sensor guide.  
Install the plate bolts and tighten them to the specified torque.

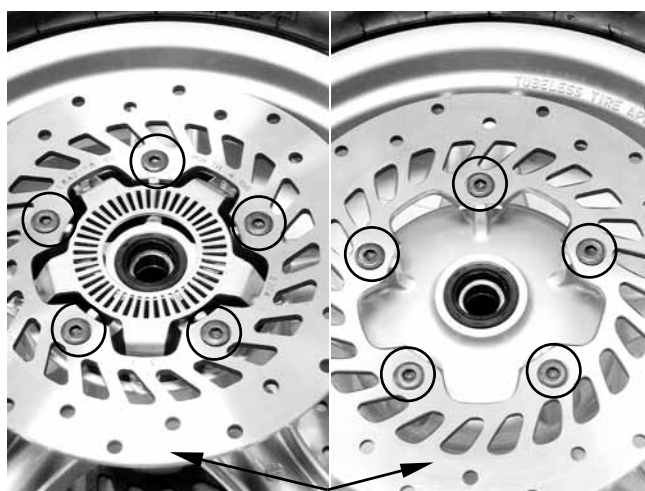
**Torque: 10 N•m (1.0 kgf•m, 7 lbf•ft)**

Speed sensor guide



Install the brake discs into wheel hub.  
Install new disc bolts and tighten them to the specified torque.

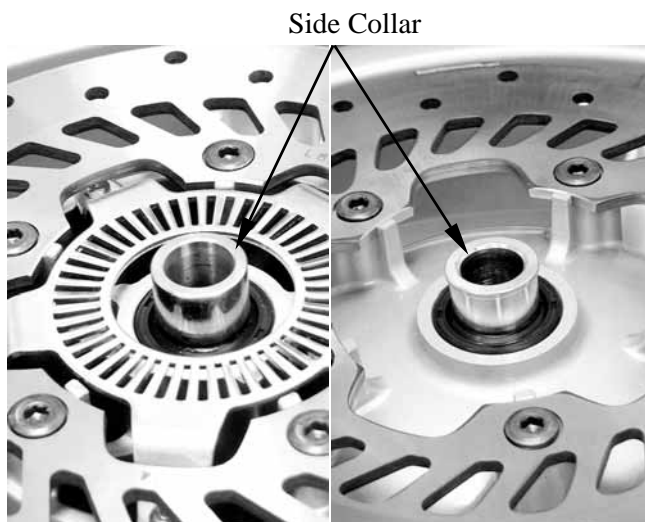
**Torque: 42 N•m (4.3 kgf•m, 31 lbf•ft)**



Discs

### INSTALLATION

Install the side collars into the wheel hub.



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Install the front wheel between the fork leg.  
Install the front axle front left side.  
Tighten the axle bolt to the specified torque.

**Torque: 55 N•m (5.5 kgf•m, 40 lbf•ft)**



Tighten the front axle holder to the specified torque.

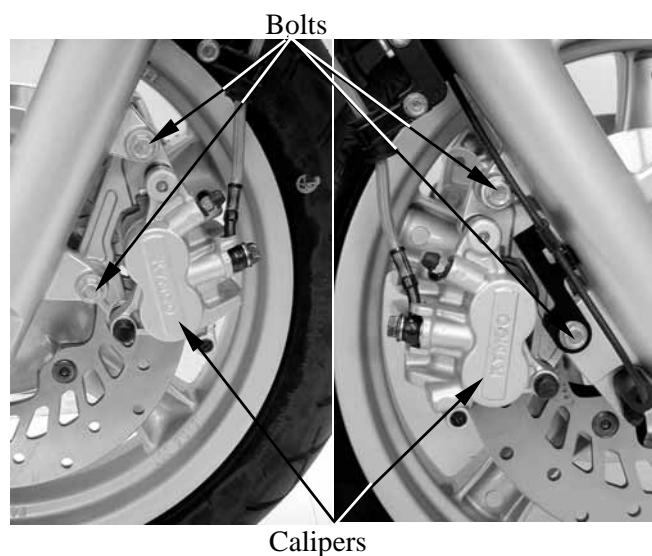
**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**



Install the right and left front calipers onto the fork leg.

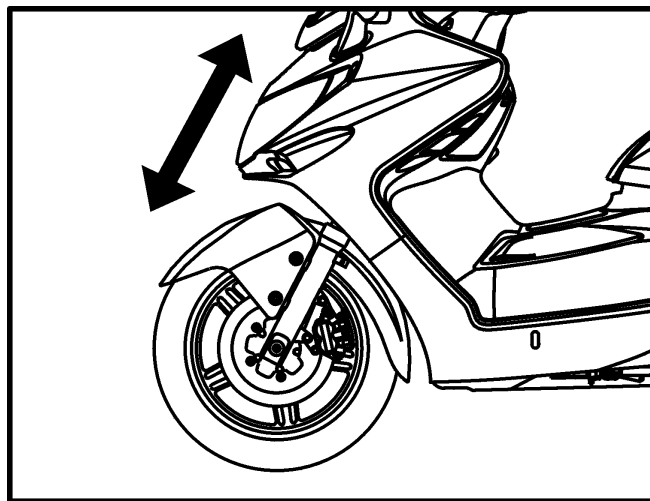
Install and tighten the new front caliper mount bolts to the specified torque.

**Torque: 32 N•m (3.2 kgf•m, 23 lbf•ft)**

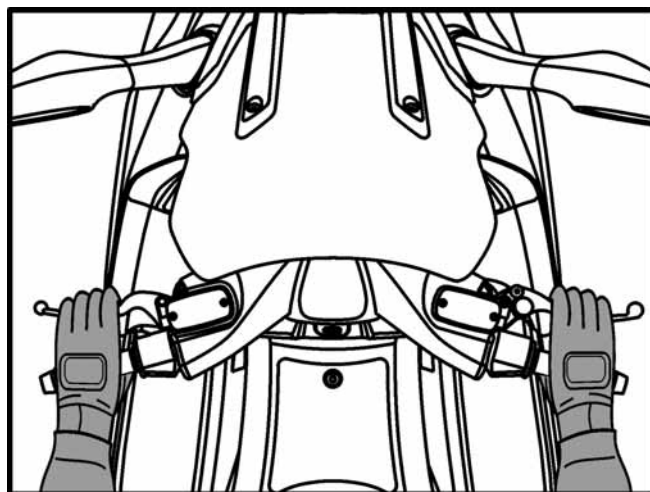


## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

With the front brake applied, pump the fork up and down several times to seat the axle and check brake operation.



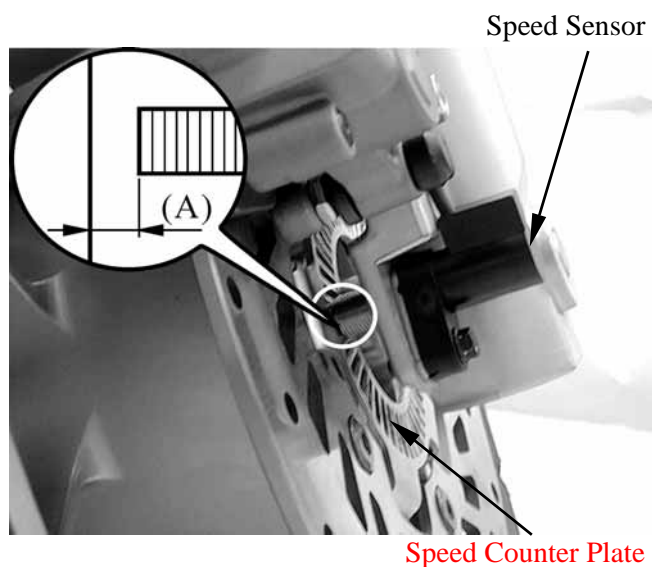
Check the brake operation by applying the brake lever.



Measure the speed sensor to speed sensor guide clearance.

**Standard (A): 0.3 – 1.2 mm (0.0012 – 0.048 in)**

Adjust it if necessary (page 20-5).



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

### FORK

#### REMOVAL

Remove the front wheel (page 14-4).

Remove the front fender (page 2-4).

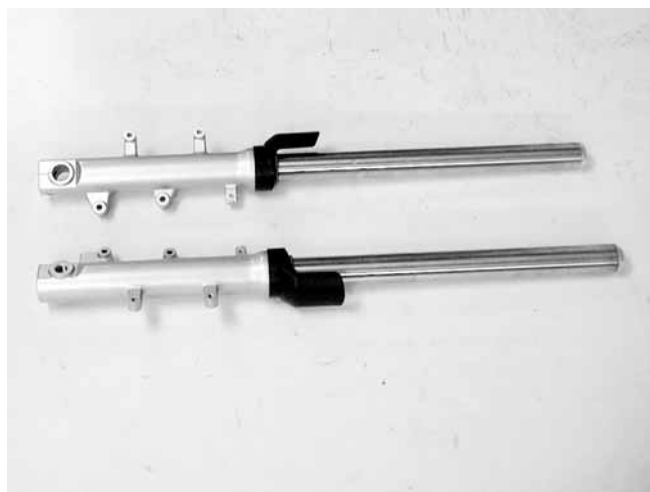
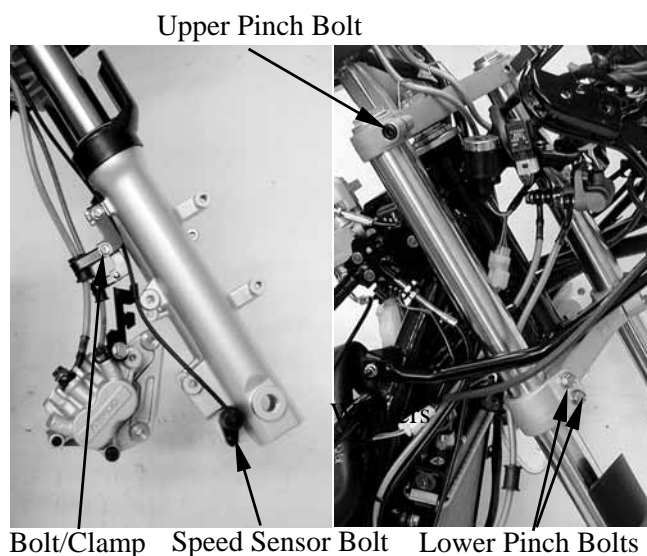
Remove the bolt and hose clamp.

Remove the bolt and speed sensor (only right fork).

Remove the upper fork pinch bolt.

Remove the lower fork pinch bolts.

Remove the fork from the handlebar post and steering stem.

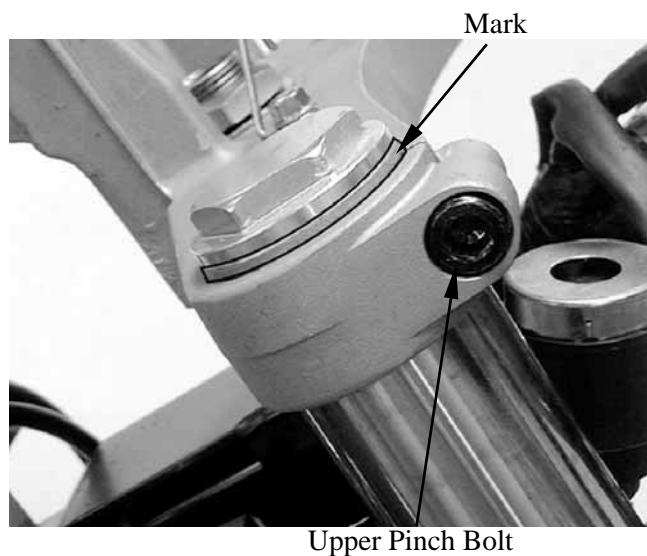


#### INSTALLATION

Install the fork tube into steering stem and handlebar post and align the mark on the fork tube with the handlebar post surface as shown.

Install and tighten the upper pinch bolt to the specified.

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Tighten the lower pinch bolts to specified torque.

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**

Install the brake caliper onto the fork leg with new mount bolts.

**Torque: 32 N•m (3.2 kgf•m, 23 lbf•ft)**

Install the brake hose clamp onto the fork leg with the bolt.

Install the speed sensor onto the right fork leg and tighten the bolt.

Install the front fender.

Install the front wheel.



Lower Pinch Bolts      Bolt/Clamp      Speed Sensor Bolt

## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

### STEERING HANDLEBAR

#### REMOVAL

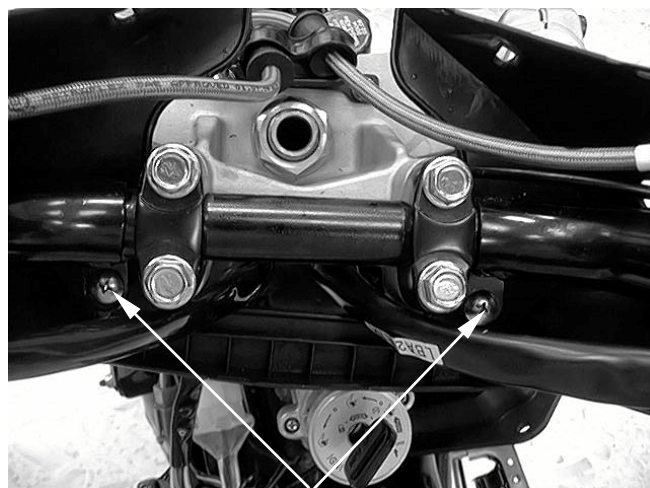
Remove the front cover (page 2-11).

Remove the upper handlebar cover (page 2-5).

Remove the band bolt and disconnect the left handlebar switch connector.



Remove the two screws and lower handlebar cover.

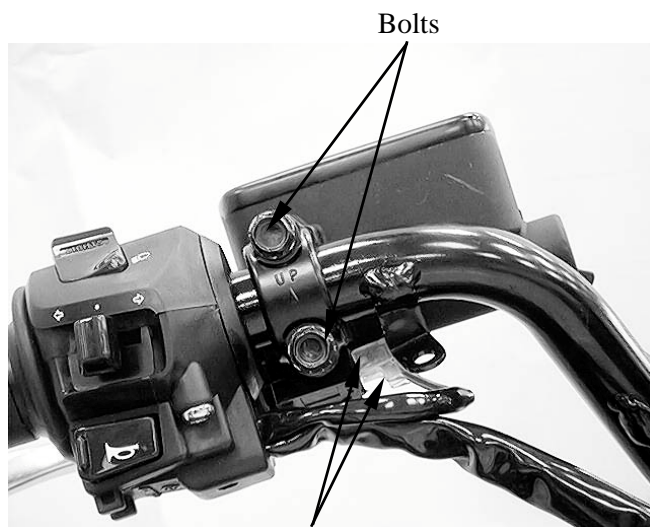


Remove the bolts, master cylinder holders and rear master cylinders.

Disconnect the left brake light switch connectors.

#### NOTE:

**Keep the master cylinder upright to prevent air from entering the hydraulic system.**



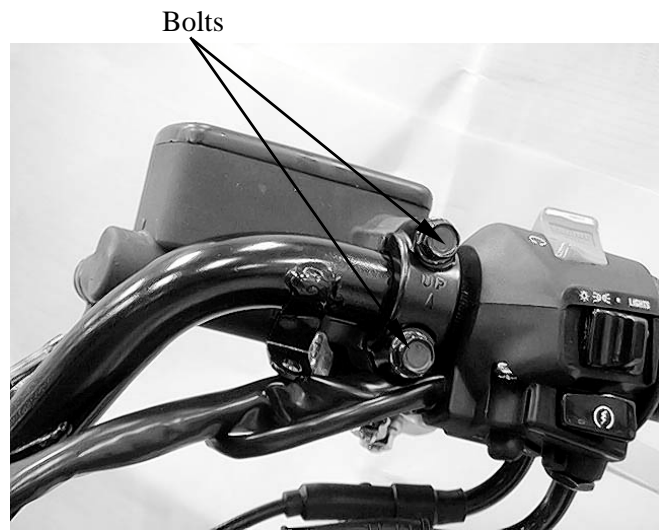
## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

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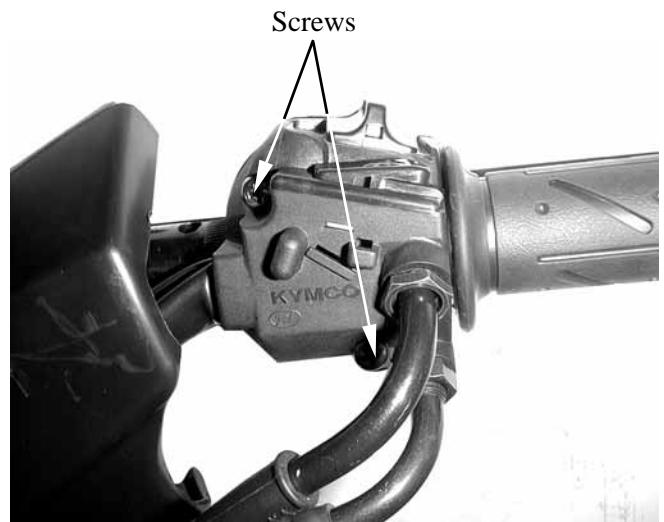
Remove the bolts, master cylinder holders and front master cylinders.

**NOTE:**

**Keep the master cylinder upright to prevent air from entering the hydraulic system.**



Remove the screws and right handlebar switch housing.

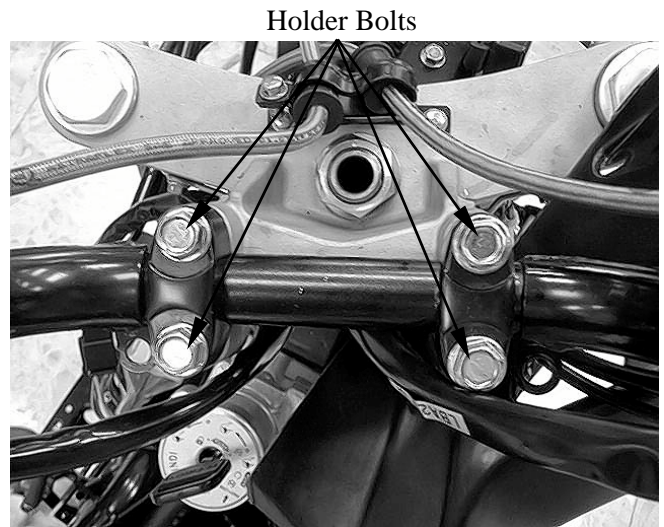


Remove the bolt/right handlebar weight.

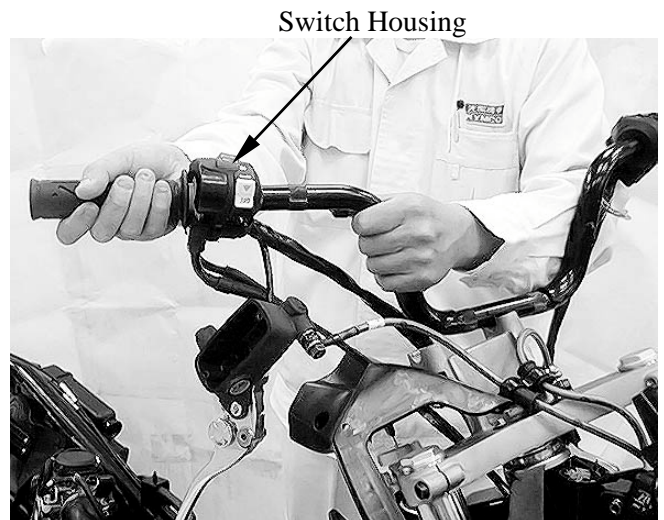


## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Remove the bolts and upper holders.

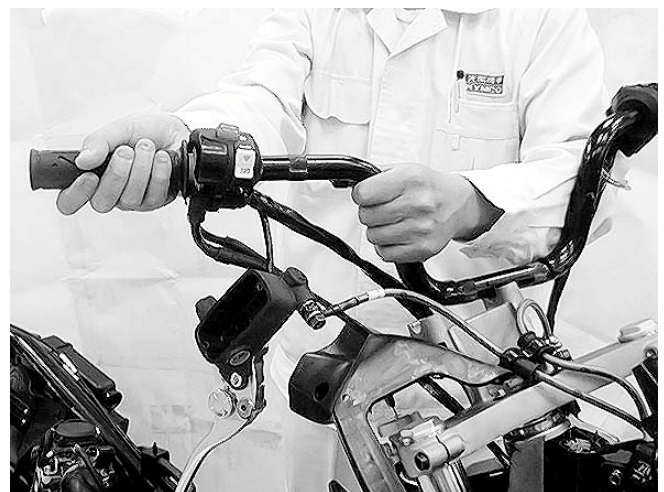


Remove the handlebar from the handlebar post and right handlebar switch housing.



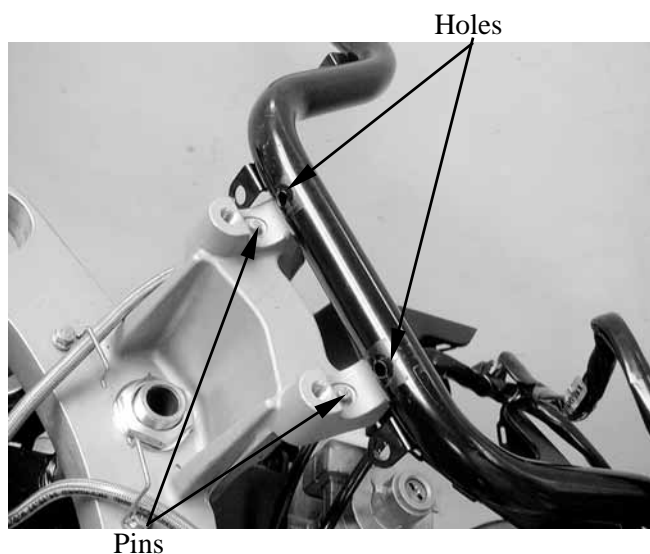
### INSTALLATION

Pass the handlebar through the right handlebar switch housing.



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Align the holes on the handlebar with the pins on the handle post.



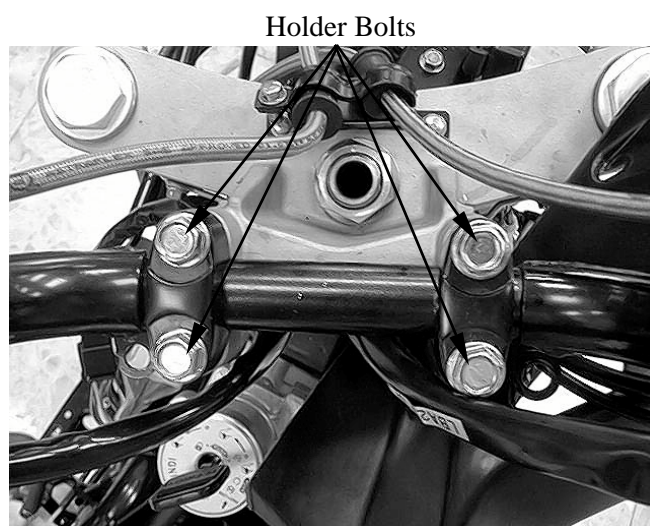
Install the handlebar to the handle post.

Install the upper holders with its punch marks facing toward.

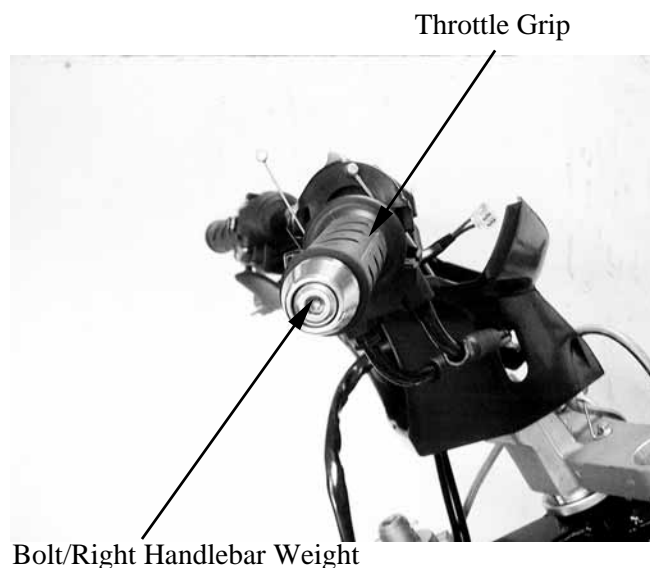
Install the upper holder bolts.

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

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**

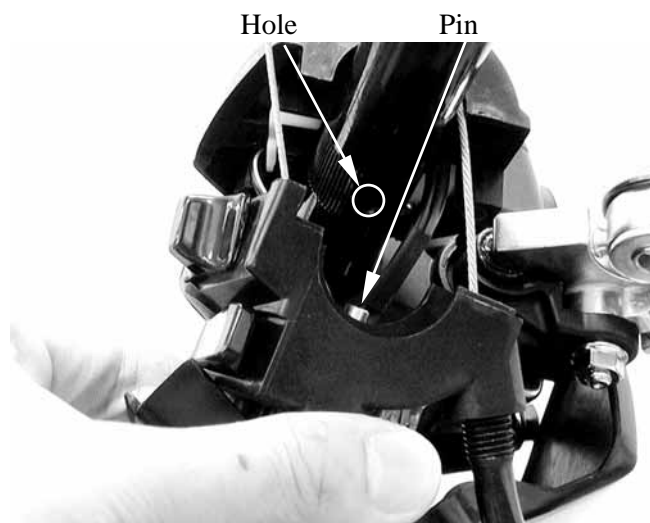


Install the throttle grip and bolt/right handlebar weight and tighten the bolt.

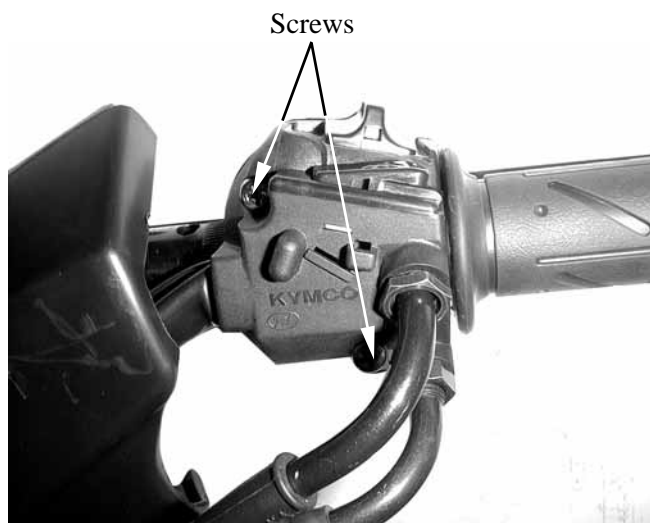


## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Align the pin on the right handlebar switch housing with the hole on the steering handle.



Install the screws and tighten the forward screw first, then tighten the rear screw.

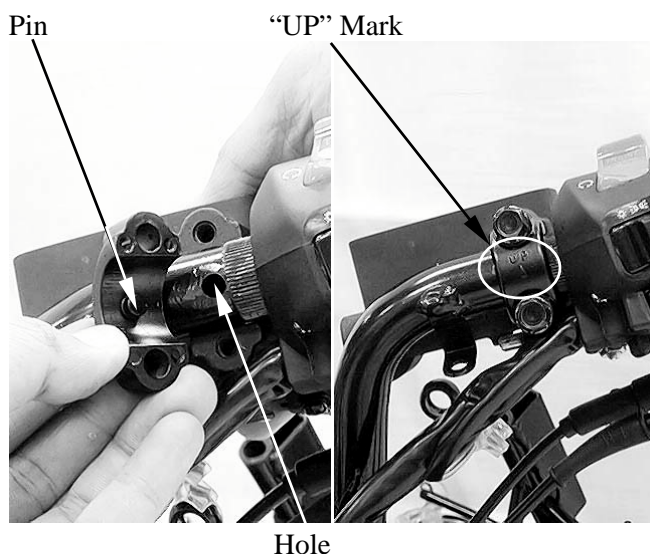


Align the pin on the rear master cylinder holder with the hole on the handlebar.

Install the front master cylinders and holder with the “UP” mark facing up.

Install the bolts and tighten the upper bolt first then tighten the lower bolt to the specified torque.

**Torque: 12 N•m (1.2 kgf•m, 9 lbf•ft)**



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Align the pin on the rear master cylinder holder with the hole on the handlebar.



Install the rear master cylinders and holder with the “UP” mark facing up.

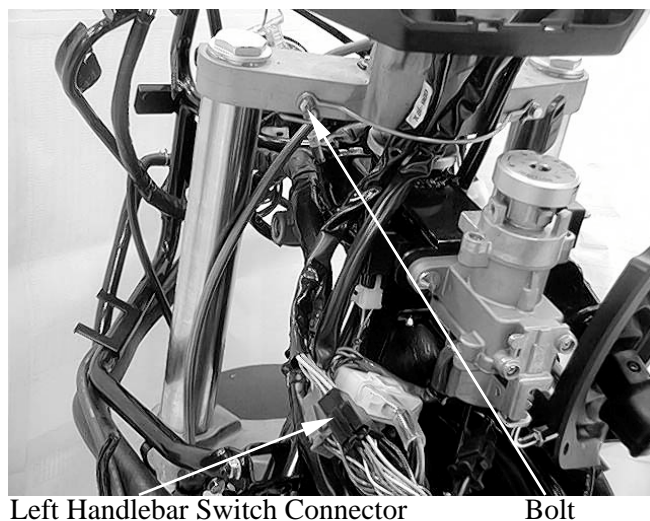
Install the bolts and tighten the upper bolt first then tighten the lower bolt to the specified torque.

**Torque: 12 N•m (1.2 kgf•m, 9 lbf•ft)**

Connect the brake light switch connectors.



Connect the left handlebar switch connector and tighten the band bolt.



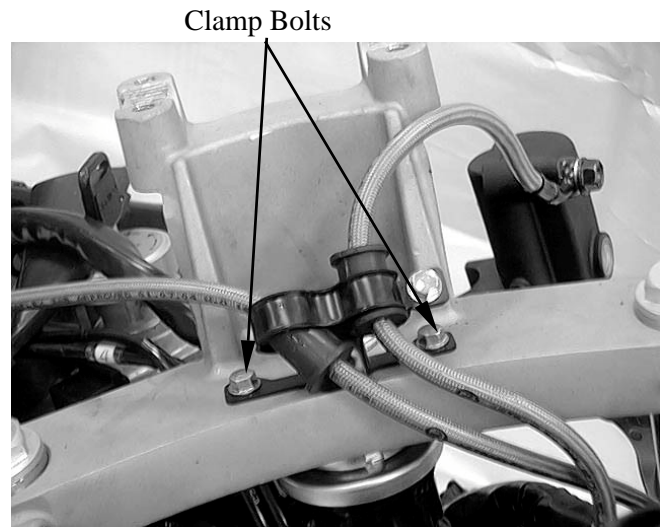
## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

### STEERING STEM

#### REMOVAL

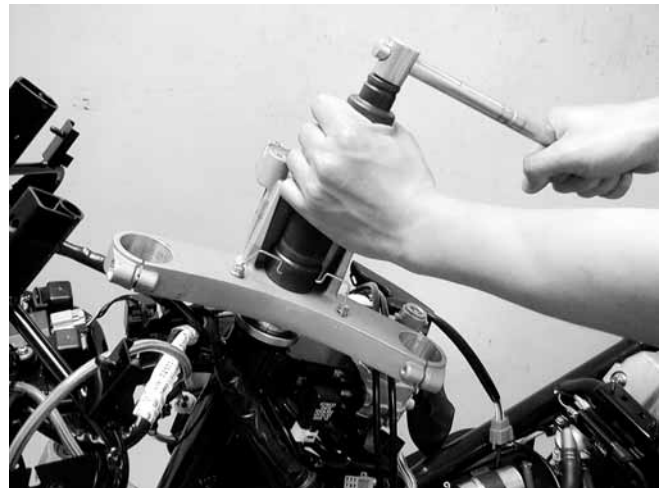
Remove the front fork (page 14-12).  
Remove the steering handle (page 14-14).

Remove the bolts and brake hoses clamp.

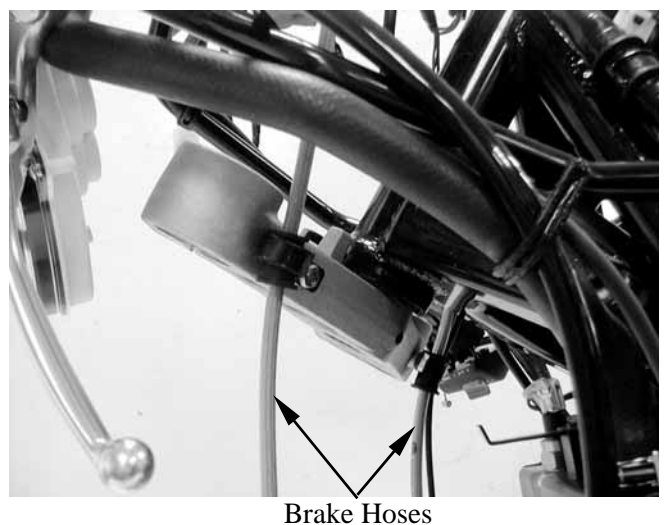


Remove the nut, washer and handle post.

**Special tool: Long socket wrench E015**



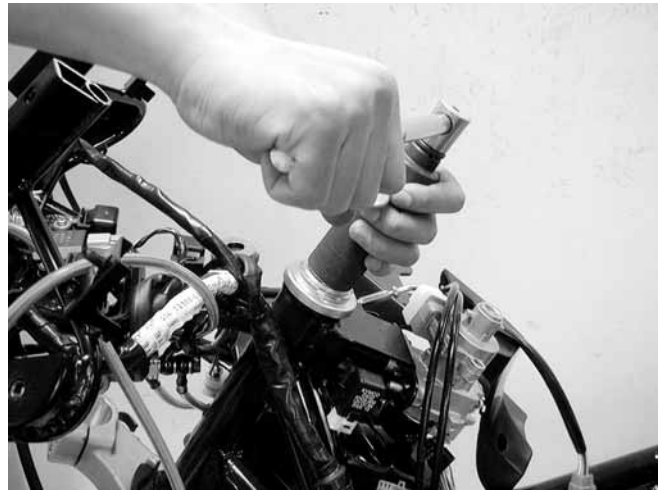
Remove the brake hoses from the clamps on the steering stem.



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Remove the steering stem lock nut.

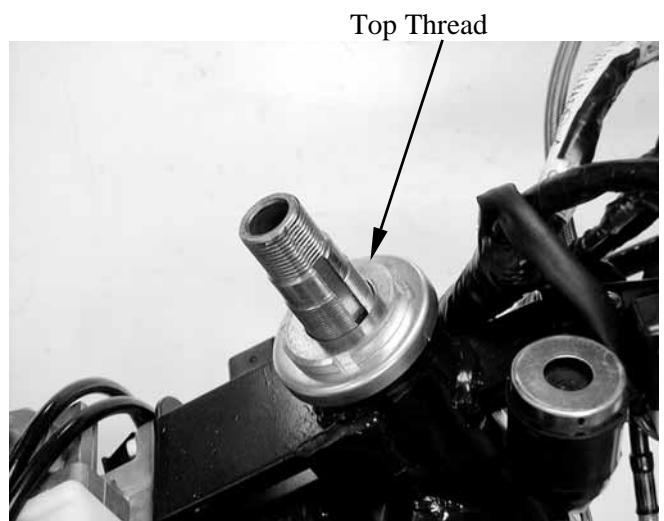
**Special tool: Long socket wrench F007**



Remove the lock washer.

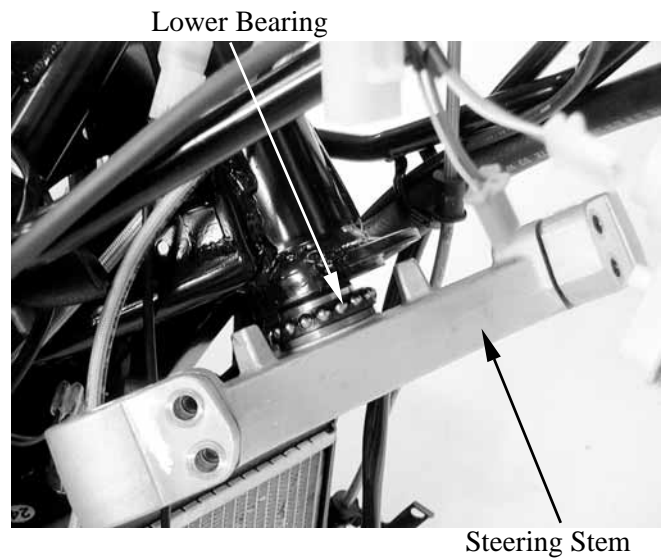


Loosen the steering top thread.  
Hold the steering stem and remove the  
steering stem top thread.

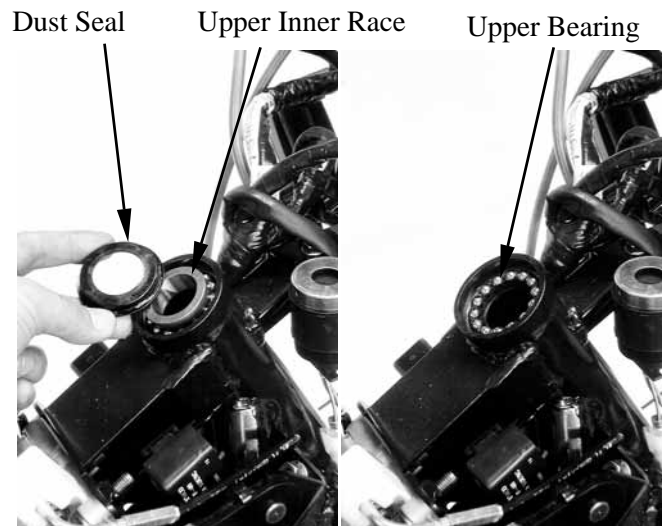


## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Remove the steering stem and lower bearing.



Remove the dust seal, upper inner race and upper bearing

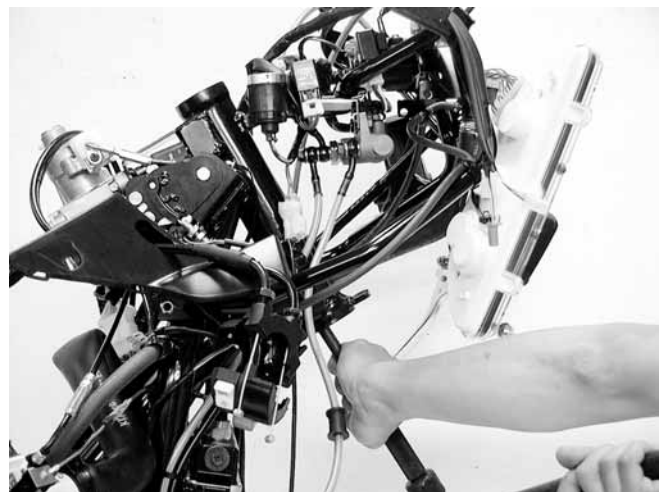


### BEARING REPLACEMENT

Remove the upper bearing outer race.

#### NOTE:

Always replace the bearings and races as a set.



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

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Remove the lower bearing outer race.



Lower Outer Race

Drive a new upper bearing race into the steering head pipe.



Upper Outer Race

Drive a new lower bearing race into the steering head pipe.



Lower Outer Race

## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Install the steering stem lock nut onto the steering to prevent the threads from being damaged when removing the lower bearing inner race from the steering stem.

Remove the lower bearing inner race with a chisel or equivalent tool, being careful not to damage the steering stem.

Remove the dust seal.

Lower Inner Race



Dust Seal

Install the dust seal.

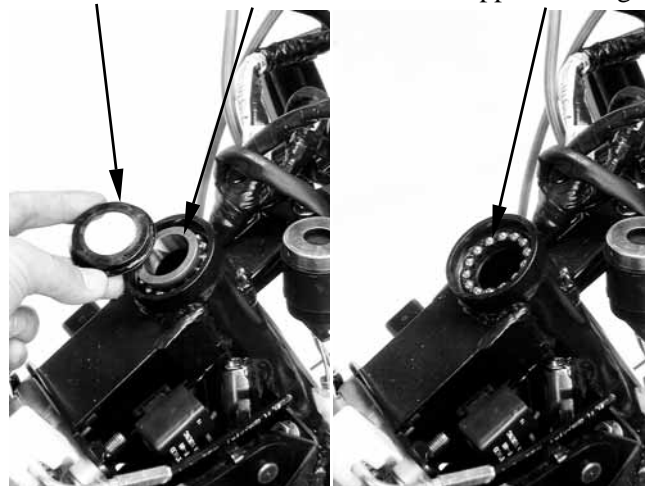
Apply grease to a new lower bearing inner race using a hydraulic press.

### INSTALLATION

Apply grease to each new bearings and inner races.

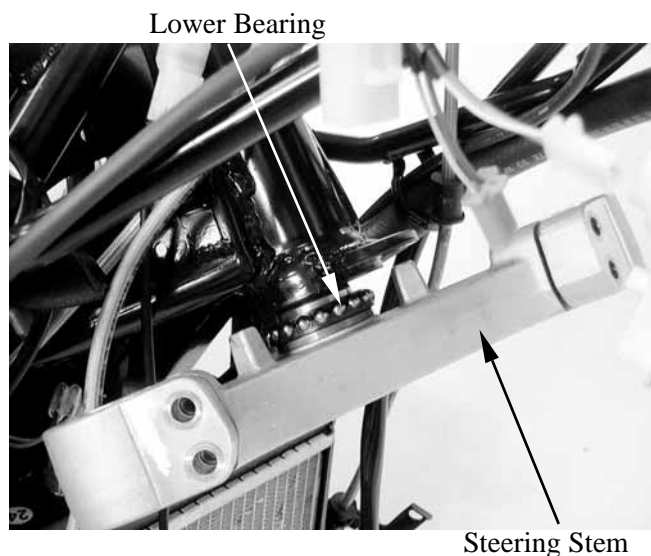
Install the upper bearing, upper inner race and dust seal.

Dust Seal      Upper Inner Race      Upper Bearing



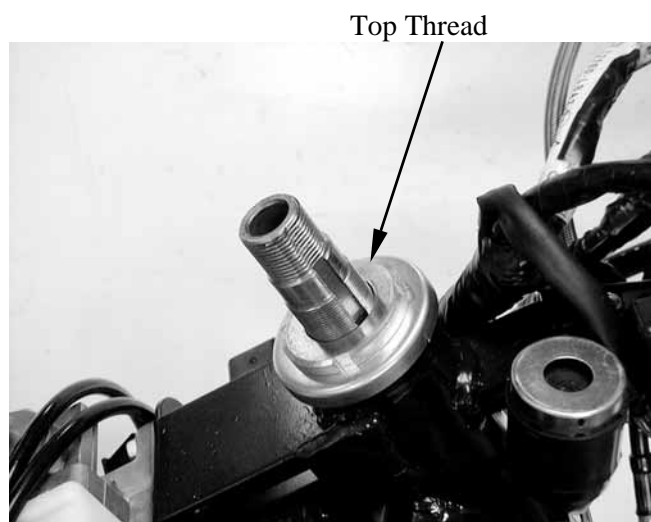
## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

Install the lower bearing onto the stem.  
Insert the steering stem into the steering head pipe.



Install the steering top thread and tighten it to the specified torque.

**Torque: 17 N•m (1.7 kgf•m, 12 lbf•ft)**



Turn the steering stem lock-to-lock several times to seat the bearings.

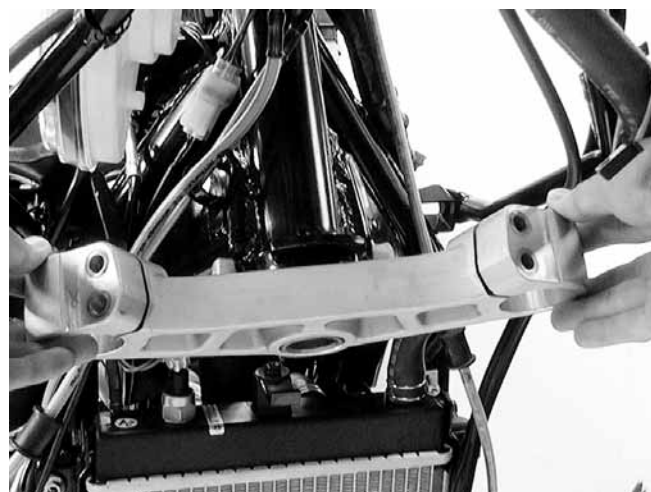
Temporarily loosen the steering stem top thread.

Install the fork (page 14-12).

Install the front wheel (page 14-9).

Install the steering top thread to the specified torque with the front wheel is grounded.

**Torque: 17 N•m (1.7 kgf•m, 12 lbf•ft)**



## 14. STEERING HANDLEBAR/FRONT WHEEL/ FRONT SHOCK ABSORBER

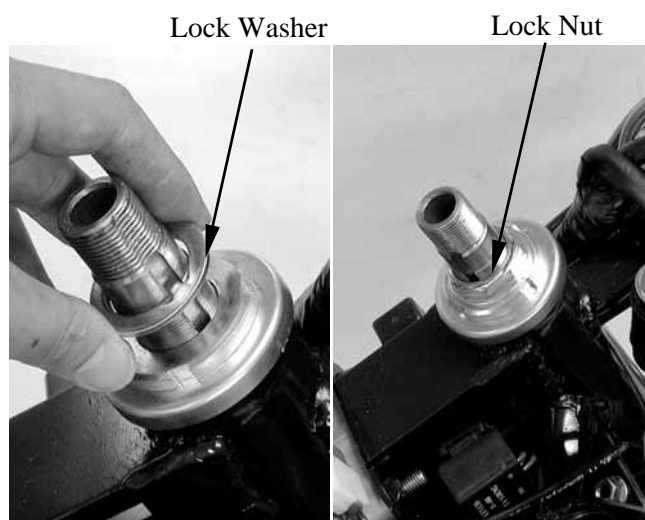
Install the lock washer aligning its tab into the groove on the steering stem.

Install the steering stem lock nut.  
Hold the steering stem top thread and tighten the steering stem lock nut to the specified torque.

**Special tool: Long socket wrench F007**

**Torque: 45 N•m (4.5 kgf•m, 32 lbf•ft)**

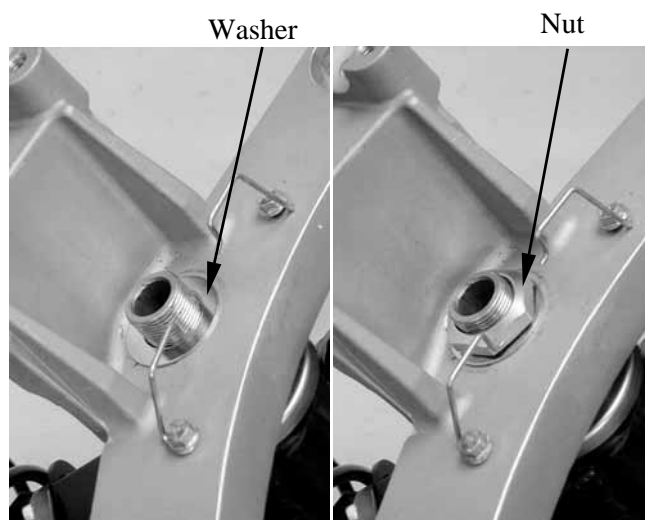
Make sure that the steering stem moves smoothly without play or binding.



Install the handle post to the steering stem and front forks.  
Install the washer and nut.  
Tighten the handle post nut to the specified torque.

**Special tool: Long socket wrench E015**

**Torque: 62 N•m (6.2 kgf•m, 45 lbf•ft)**



Install the brake hose clamp and tighten the bolts securely.

Route the brake hoses and wires properly (page 1-12).

