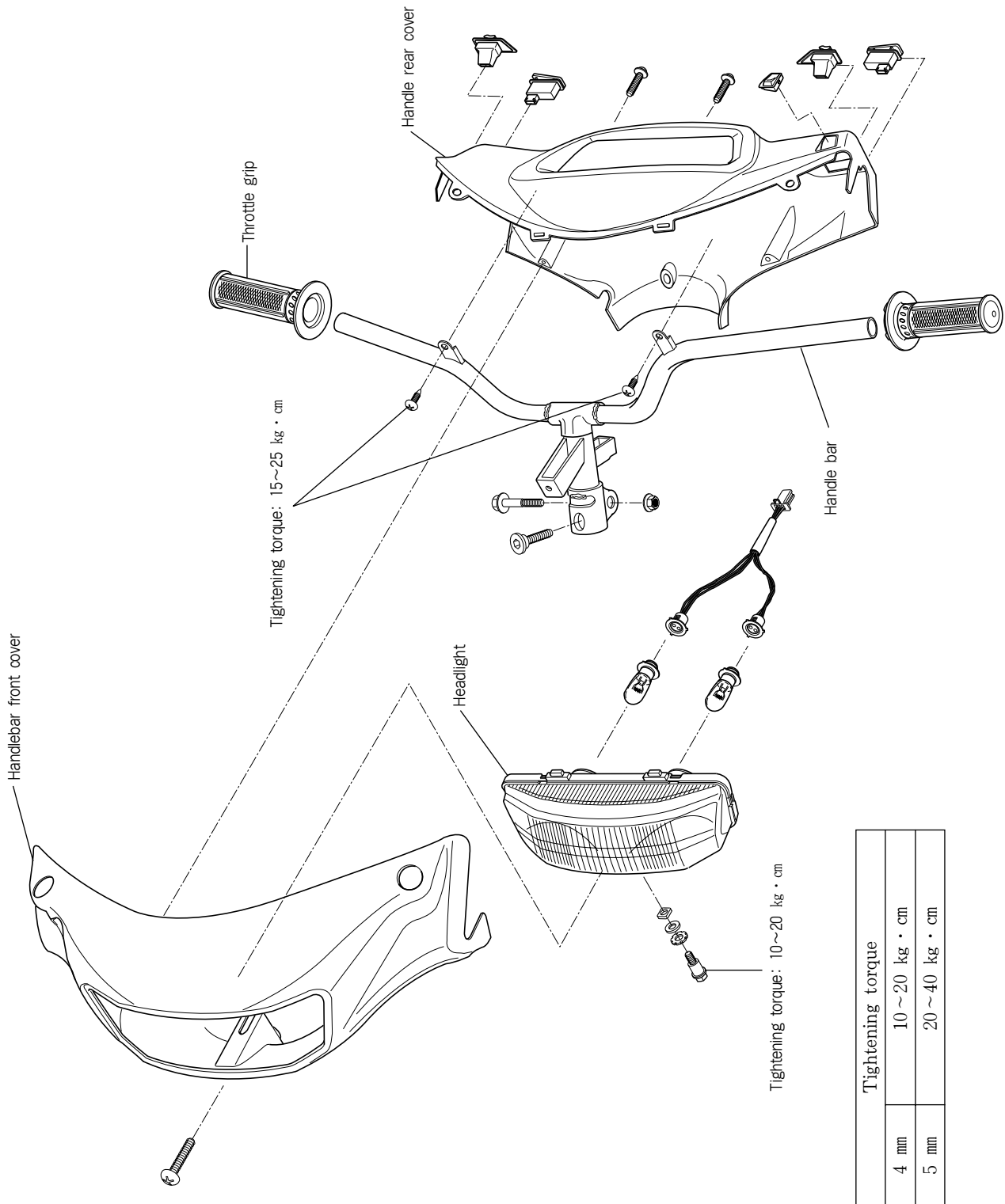


# CHASSIS

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HANDLEBAR COVERS

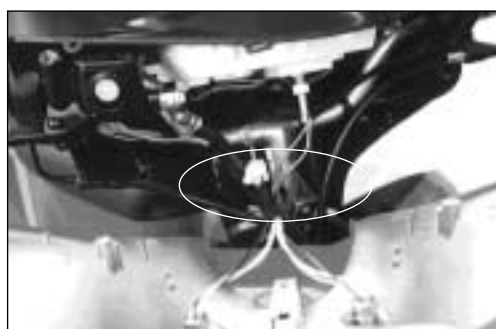


Tightening torque	
4 mm	10 ~ 20 kg · cm
5 mm	20 ~ 40 kg · cm

## REMOVAL

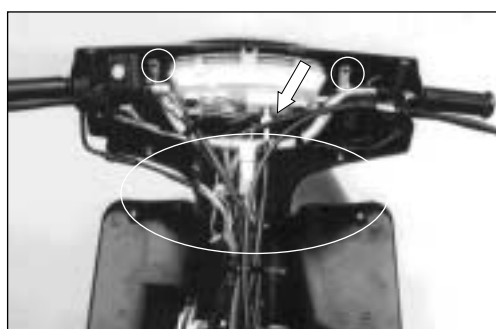
### HANDLEBAR FRONT COVER

- Remove the handlebar front cover by removing the mounting screws and disconnecting the lead wires.



### HANDLEBAR REAR COVER

- Disconnect the lead wire couplers and speedometer cable.



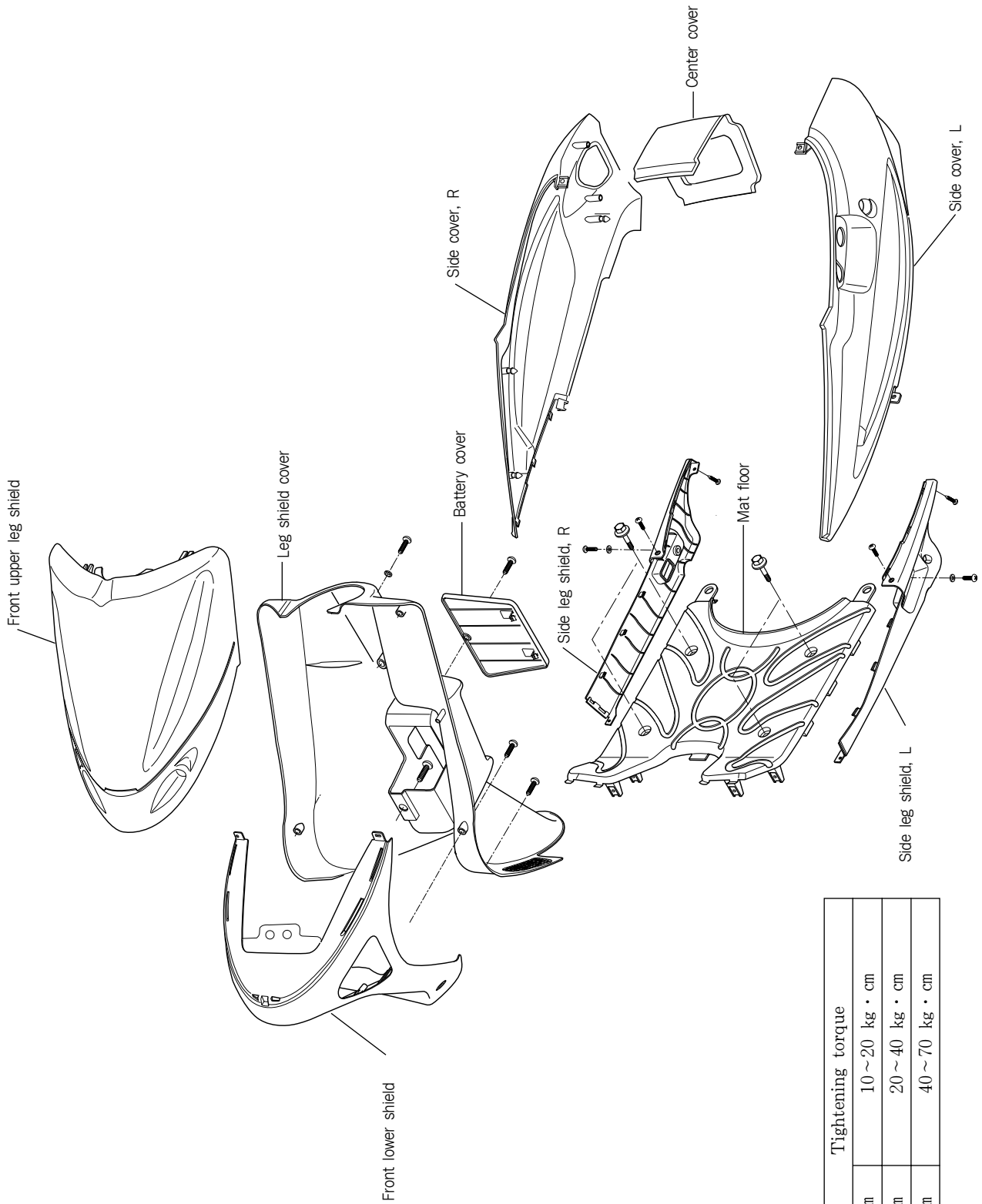
- Remove the handlebar rear cover by removing the mounting screws.

## REMountING

- Remount the handlebar covers in the reverse order of removal.



LEG SHIELD AND SIDE COVERS

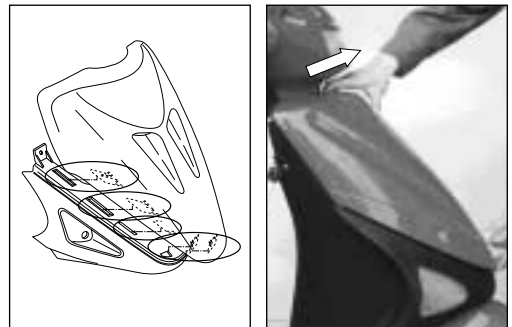


**REMOVAL****FRONT LEG SHIELD UPPER**

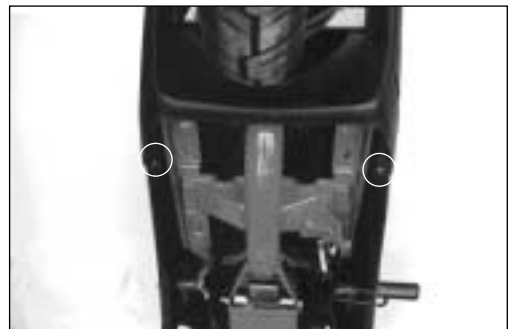
- Loosen the mounting screws.



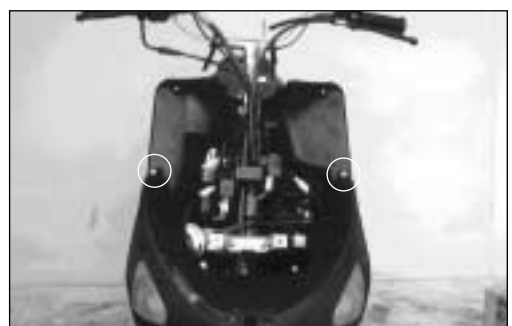
- Remove the front leg shield upper by pull out it forward.

**FRONT LEG SHIELD LOWER**

- Loosen the mounting screws.



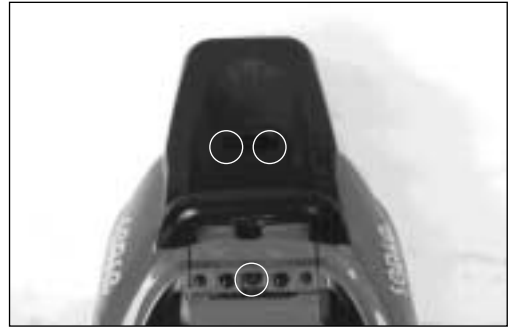
- Remove the front leg shield lower.



## 6-5 CHASSIS

### REAR CARRIER

- Open the seat.
- Remove the rear carrier by removing the bolts and screw.

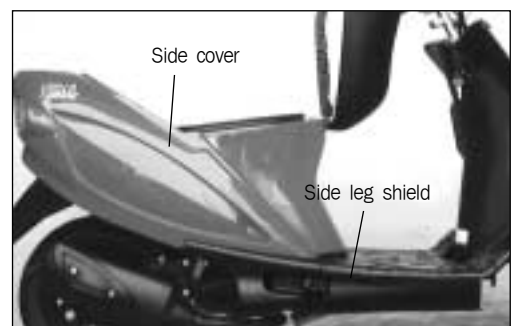


### RIGHT SIDE COVER, RIGHT SIDE LEG SHIELD

- Loosen the mounting screws.



- Remove the right side cover and right side leg shield at the same time.

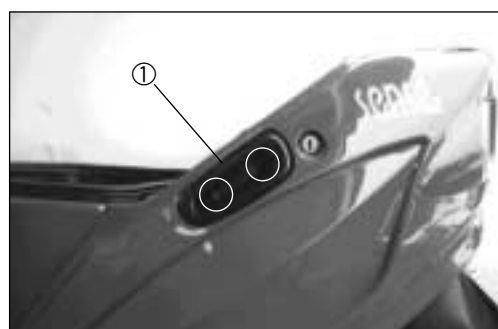


**LEFT SIDE COVER, LEFT SIDE LEG SHIELD**

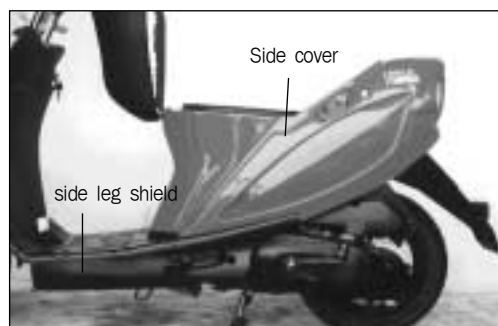
- Loosen the mounting screws.



- Remove the handle grip ① by removing the bolts.



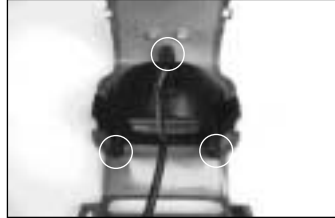
- Remove the left side cover and left side leg shield at the same time.



## 6-7 CHASSIS

### REAR CENTER COVER

- Remove the rear center cover by removing the bolts.



### COVER LEG SHIELD REAR AND LEL SHIELD REAR

- Remove the ignition cap.
- Remove the battery cover by removing the screw.



- Loosen the screw and bolts.



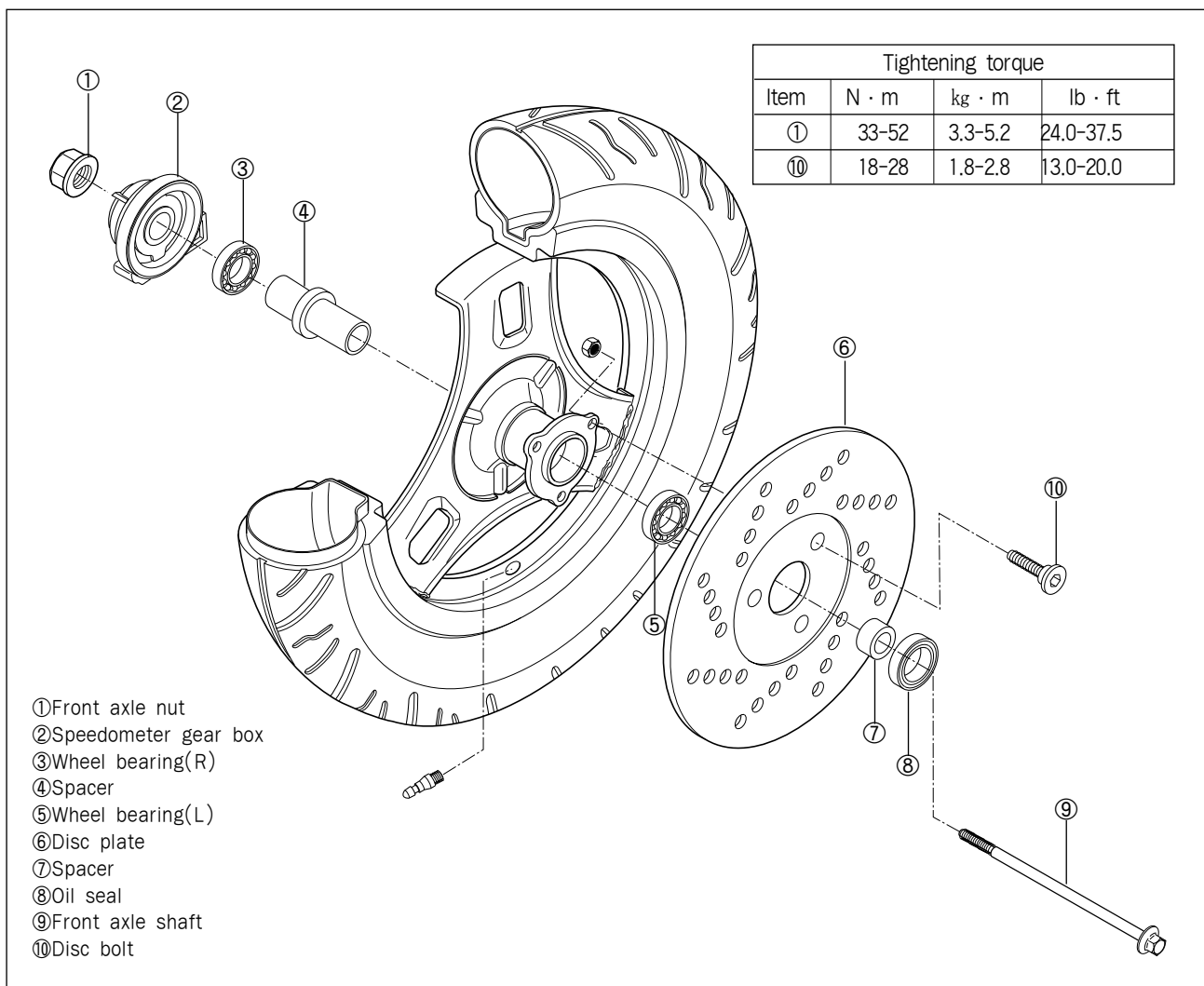
- Remove the cover leg shield ① rear and leg shield rear ② at the same time.

### REMOUNTING

- Remount the leg shield and side covers in the reverse orders of removal.



## FRONT WHEEL



### REMOVAL AND DISASSEMBLY

- Remove the front brake caliper by removing the mounting bolts.

**NOTE:**

Do not operate the front brake lever while dismantling the caliper.



- Remove the front axle nut.
- Support the motorcycle by jack or wooden block.
- Remove the front wheel by removing the front axle shaft.



## 6-9 CHASSIS

- Remove the disc plate ① by removing the bolts.



- Remove the spacer.



- Remove the dust seal ③ with the special tool.

09913-50121	Oil seal remover
-------------	------------------

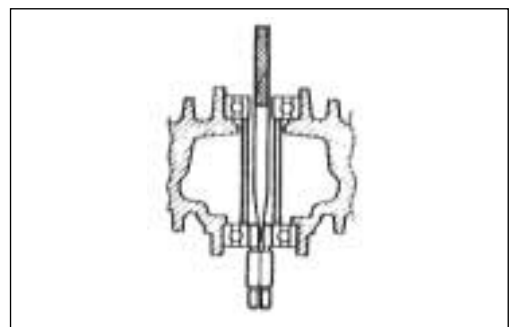


- Drive out the both bearing with the special tool in the following procedures.
- Insert the adapter into the bearing.
- After inserting the wedge bar from the opposite side, lock the wedge bar in the slit of the adapter.
- Drive out the bearing by knocking the wedge bar.

09941-50110	Bearing remover
-------------	-----------------

**CAUTION:**

The removed dust seal and bearing should be replaced with new ones.



## INSPECTION

### WHEEL RIM

Make sure that the wheel rim runout does not exceed the service limit when checked as shown.

An excessive runout is usually due to worn or loose wheel bearings and can be reduced by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.

Service limit (Axle and Radial)	3.0 mm(0.12 in)
------------------------------------	-----------------

### TIRE

Inspect the tires for wear and damage; and check the tire tread depth as shown. Replace a badly worn or damaged tire. A tire with its tread worn down to the limit(in terms of tread depth) must be replaced.

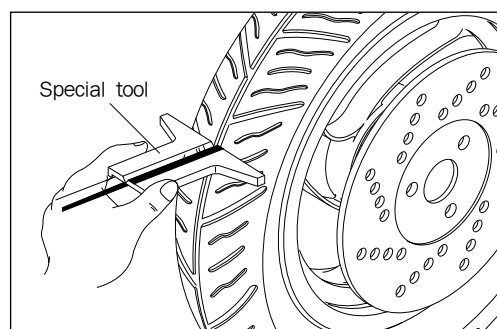
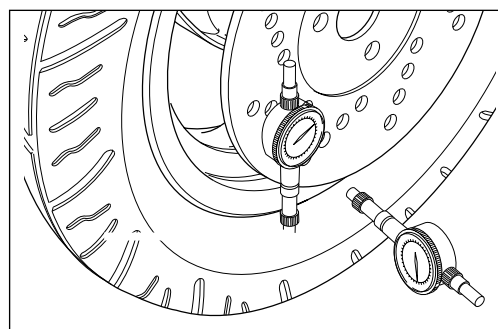
### TIRE DEPTH SERVICE LIMIT

Front & Rear	1.6 mm(0.064 in)
--------------	------------------

Check the tire pressure, and examine the value for evidence of air leakage.

### TIRE DEPTH SERVICE LIMIT

COLD INFLATION TIRE PRESSURE	NORMAL RIDING			
	SOLD RIDING		DUAL RIDING	
	kPa	kg/cm <sup>2</sup>	kPa	kg/cm <sup>2</sup>
FRONT	125	1.25	-	-
REAR	200	2.00	-	-



## REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel in the reverse order of disassembly and removal, and also carry out the following steps.

### WHEEL BEARING

- Apply grease to the bearings before installing.

99000-07C00	Grease "G <sub>2</sub> "
-------------	--------------------------

- Install the wheel bearings by using the special tool.

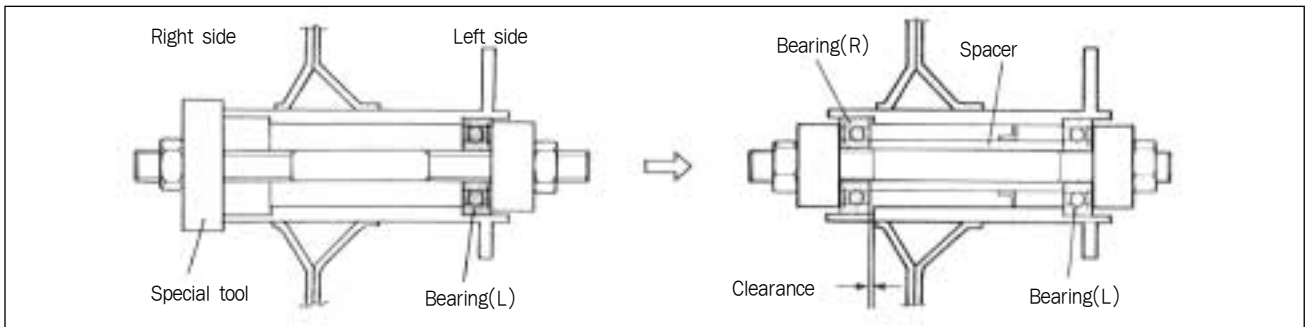
09924-84520	Bearing installer
-------------	-------------------

### CAUTION:

First install the wheel bearing for left side.



## 6-11 CHASSIS



### OIL SEAL

- Install the oil seal ① with the special tool.

09922-55131	Oil seal installer
-------------	--------------------



- Install the spacer ②.



### DISC PLATE

- Install the disc plate and tighten them to the specified torque.

Tightening torque	18-28 N · m (1.8-2.8 kg · m, 13-20 lb-ft)
-------------------	----------------------------------------------

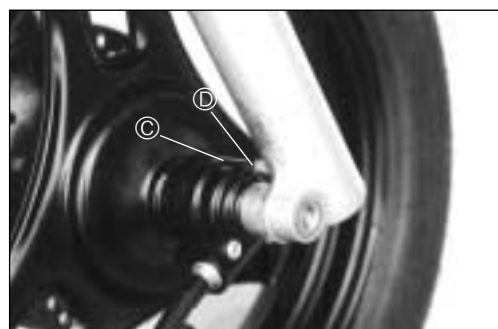
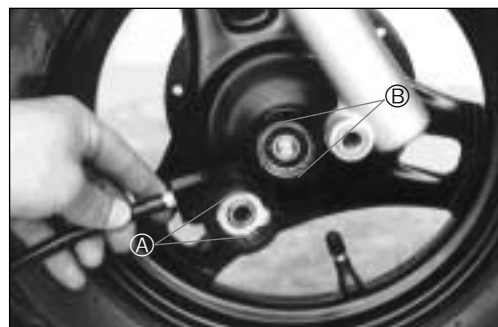


**SPEEDOMETER GEAR BOX**

- When installing the speedometer gear box, align the two drive pawls **A** with the two recesses **B** of the wheel hub.

**CAUTION:**

After touching the speedometer gear box **C** to the stopper **D**, tighten the axle shaft.



**FRONT WHEEL**

- Tighten the front axle nut to the specified torque.

Tightening torque	33-52 N · m (3.3-5.2 kg · m, 24-38 lb · ft)
-------------------	------------------------------------------------



- Tighten the caliper mounting bolts to the specified torque.

Tightening torque	18-28 N · m (1.8-2.8 kg · m, 13-20 lb · ft)
-------------------	------------------------------------------------



FRONT BRAKE

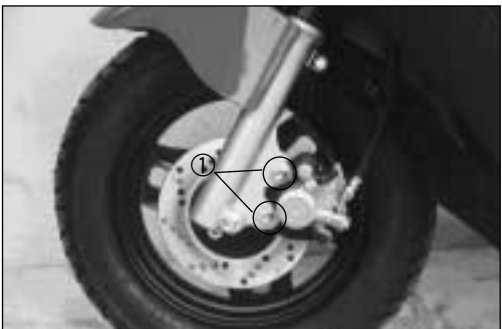
① Master cylinder bolt  
 ② Master cylinder  
 ③ Brake hose union bolt  
 ④ Brake hose  
 ⑤ Pad  
 ⑥ Air bleeder valve  
 ⑦ Dust seal  
 ⑧ Piston  
 ⑨ Piston seal  
 ⑩ Caliper

Tightening torque			
Item	N · m	kg · m	lb-ft
①	8-12	0.8-1.2	6.0-8.5
③	20-25	2.0-2.5	14.5-18.0
⑥	6-9	0.6-0.9	4.5-6.5

**BRAKE PAD REPLACEMENT**

- Remove the caliper by removing the mounting bolts ①.

**NOTE:**  
 Do not operate the front brake lever while dismounting the caliper.



- Remove the brake pads ②.

**CAUTION:**  
 Replace the brake pads as a set, otherwise braking performance will be adversely affected.



**CALIPER REMOVAL AND DISASSEMBLY**

- Remove the brake hose and catch the brake fluid in a suitable receptacle.

**CAUTION:**

Never re-use the brake fluid left over from the last servicing and stored long periods.

- Remove the caliper.
- Remove the brake pads.
  
- Remove the pad holder ① and spring ②.



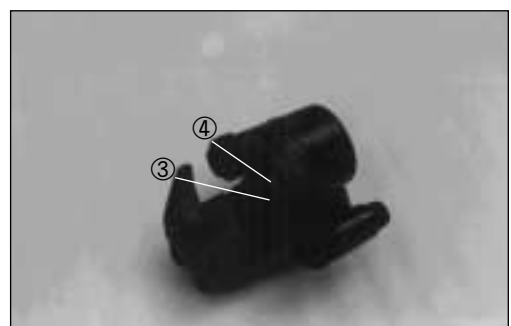
- Place a rag over the piston to prevent popping up. Force out the piston with a air gun.

**CAUTION:**

Do not use high pressure air to prevent piston damage.



- Remove the dust seal ③ and piston seal ④.



## 6-15 CHASSIS

### CALIPER INSPECTION

Inspect the caliper cylinder bore wall for nicks, scratches or other damage.

Inspect piston for damage and wear.



Inspect each rubber part for damage and wear.



### CALIPER REASSEMBLY

Reassemble and remount the caliper in the reverse order of removal and disassembly, and also carry out the following steps.

**CAUTION:**

Wash the caliper components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them. Apply brake fluid to the caliper bore and piston to be inserted into the bore.

- Apply silicone grease to the caliper holder.

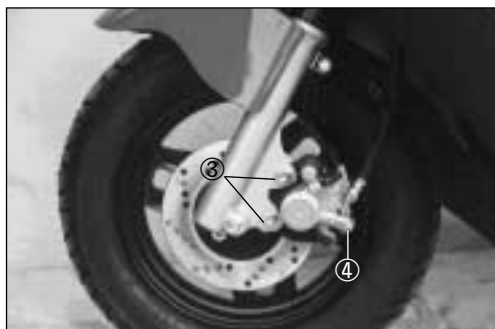
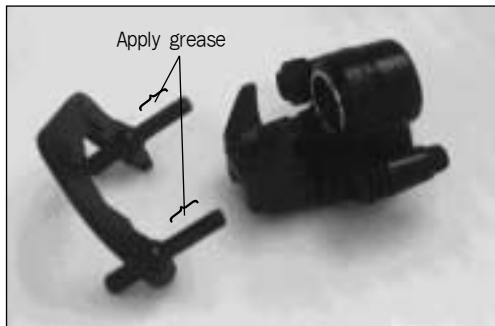
99000-25100	Silicone grease
-------------	-----------------

- Tighten the each bolts.

Item	N · m	kg · m	lb-ft
③	18-28	1.8-2.8	13-20
④	20-25	2.0-2.5	14-18

**WARNING:**

Bleed the air from brake fluid circuit after reassembling caliper(See page 2-8)



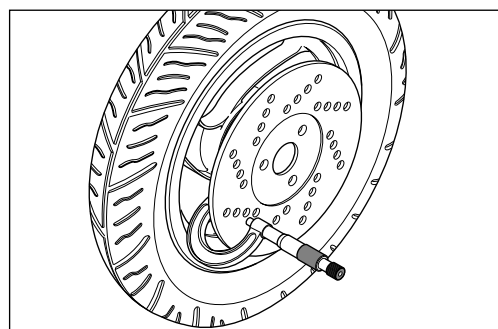
### DISC PLATE REMOVAL AND DISASSEMBLY

- Remove the front wheel(Refer to page 6-8)
- Remove the disc plate(Refer to page 6-9)
- Install the disc plate(Refer to page 6-11)

### DISC PLATE INSPECTION

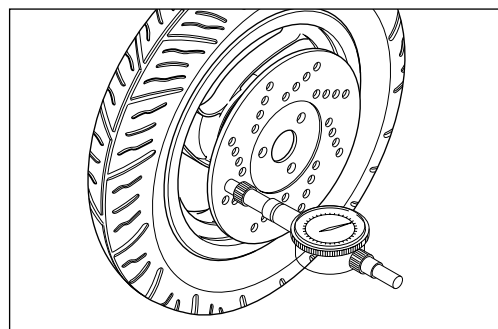
- Check the disc for wear with a micrometer. Its thickness can be checked with disc and wheel in place. Replace the disc if the thickness exceeds the service limit.

Service Limit	3.5 mm(0.14 in)
09900-20205	Micrometer(0-25 mm)



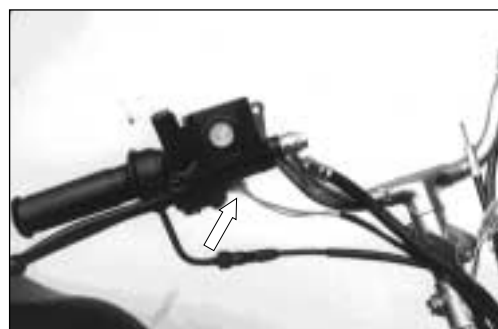
- With the disc mounted on the wheel, check the disc for face runout with a dial gauge as shown. Replace the disc if the runout exceeds the service limit.

Service Limit	0.3 mm(0.012 in)
09900-20606	Dial gauge(1/100 mm)
09900-20701	Magnetic stand

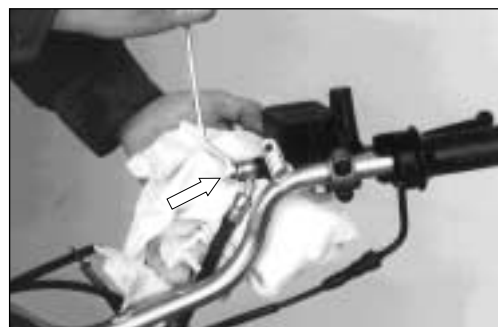


### MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Remove the handlebar cover(Refer to page 6-1)
- Disconnect the front brake light switch lead wires.



- Place a cloth underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose/master cylinder joint.



**CAUTION:**

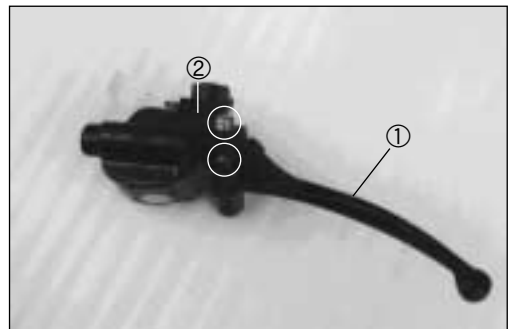
Completely wipe off any brake fluid adhering to any part of motorcycle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

## 6-17 CHASSIS

- Remove the master cylinder.



- Remove the brake lever ① and brake switch ②.



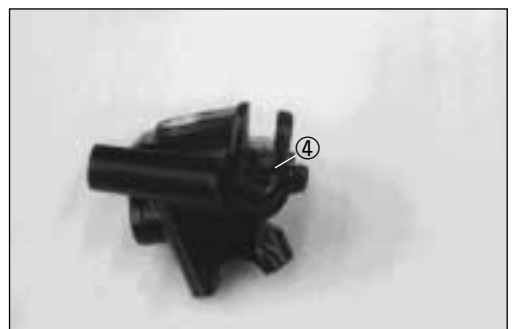
- Remove the dust boot ③.



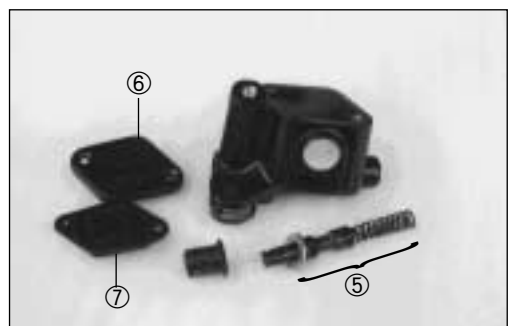
- Remove the circlip ④ with the special tool.

09900-06108

Snapping pliers



- Remove the piston/primary cup with return spring ⑤.
- Remove the reservoir cap ⑥ and diaphragm ⑦.
- Drain brake fluid.



**MASTER CYLINDER INSPECTION**

Inspect the master cylinder bore for any scratches or other damage.  
 Inspect the piston surface for scratches or other damage.  
 Inspect the primary cup and dust boot for wear or damage.

**MASTER CYLINDER REASSEMBLY AND REMOUNTING**

Reassemble and remount the master cylinder in the reverse order of removal and disassembly, and also carry out the following steps.

**CAUTION:**

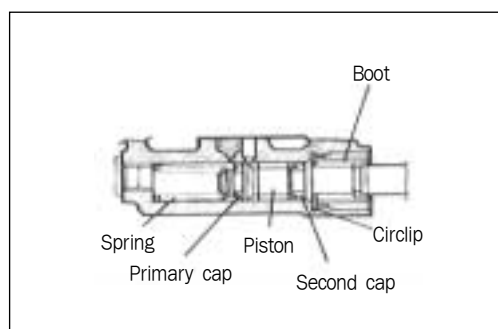
**Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.**

**Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.**

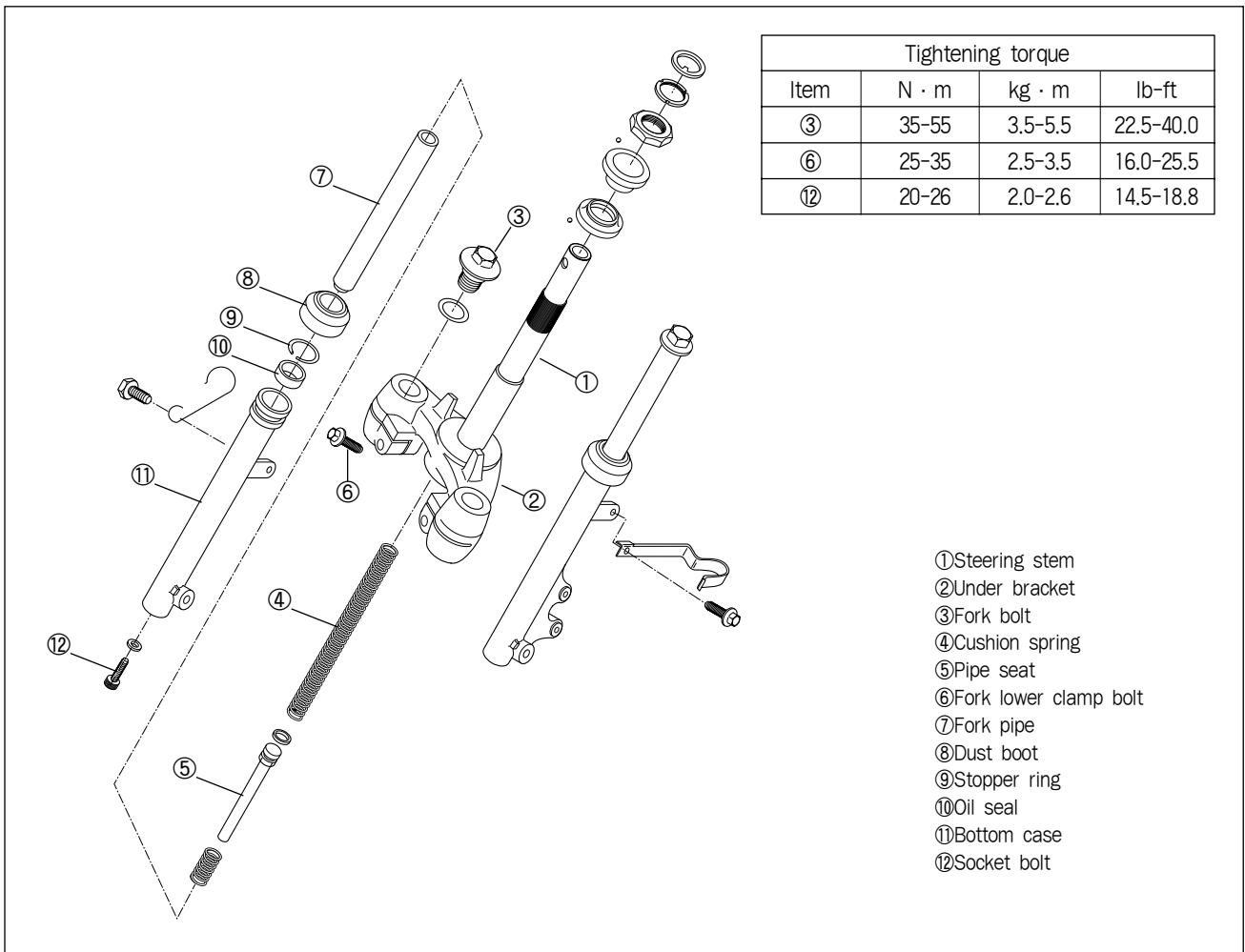
- Reassemble and remount the master cylinder.(Refer to page 6-13)
- When remounting the master cylinder on the handlebar, first tighten the clamp bolt for upside.

**CAUTION:**

**Bleed air after remounting the master cylinder.(Refer to page 2-8)**



FRONT FORK



REMOVAL AND DISASSEMBLY

- Remove the front leg shield(Refer to page 6-3).
- Remove the front brake caliper by removing the mounting bolts.

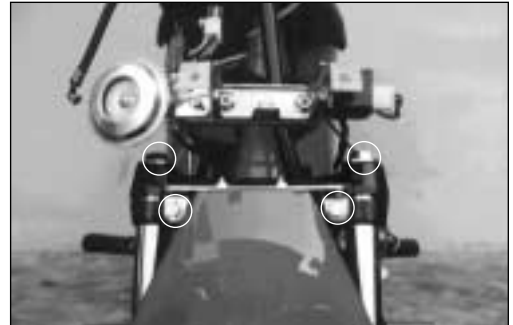
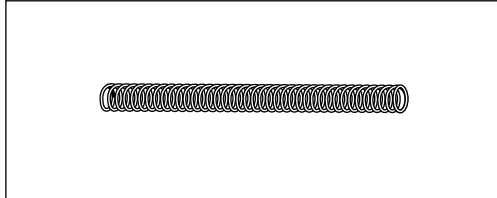
NOTE:

Do not operate the front brake lever while dismantling the caliper.

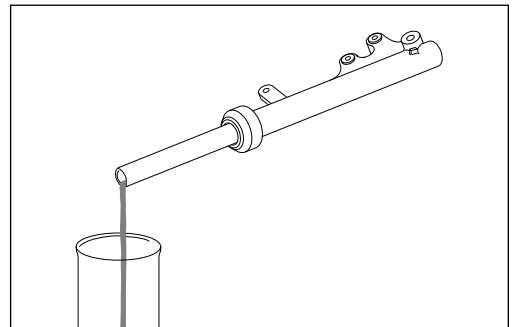
- Remove the front axle nut.
- Remove the motorcycle by jack or wooden block.
- Remove the front wheel by removing the front axle shaft.



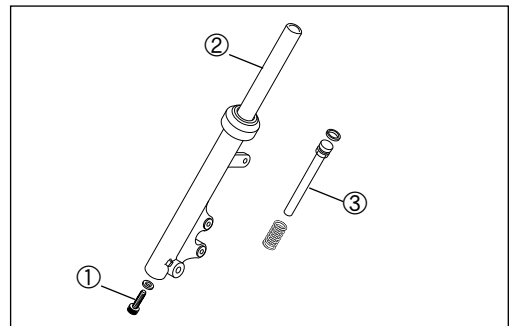
- Loosen the front fork bolt, then draw out the fork spring.
- Loosen the front fork lower clamp bolts.



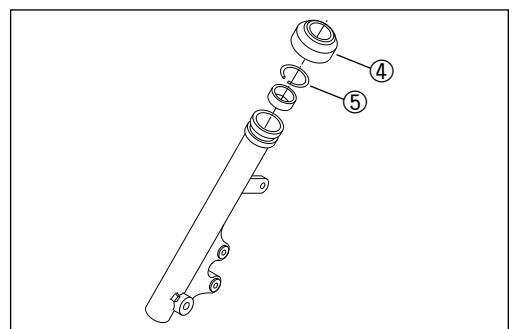
- Invert the fork and stroke it several times to remove the oil.
- Hold the fork inverted for a few minutes.



- Remove the socket bolt ① with the hexagon wrench.
- Separate the fork pipe ② and pipe seat ③.



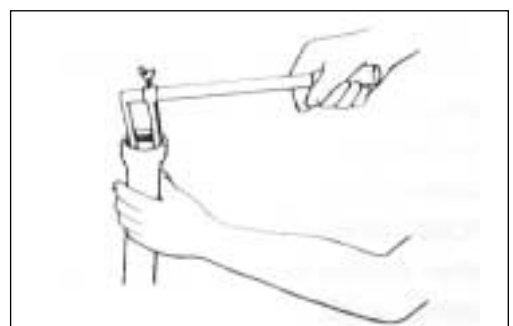
- Remove the dust boot ④ and stopper ring ⑤.



- Remove the oil seal by using the special tool.

**CAUTION:**

The oil seal removed should be replaced with a new oil seal.



## 6-21 CHASSIS

### INSPECTION

Inspect pipe seat for wear and damage.

Inspect fork pipe and bottom case sliding surfaces for any scuffing or flaws.

### CUSHION SPRING

Measure the cushion spring free length, if it is shorter than the service limit, replace it.

Service limit	240 mm(9.45 in)
---------------	-----------------

### REASSEMBLY AND REMOUNTING

Reassemble and remount the fork in the reverse order of removal and disassembly, and also carry out the following steps.

#### FRONT FORK BOLT

- Apply thread lock "1324" to the fork bolt and tighten the bolt with specified torque.

99000-32030	Thread lock "1324"
Tightening torque	35-55 N · m(3.5-5.5 kg · m 25.3-40.0 lb-ft)

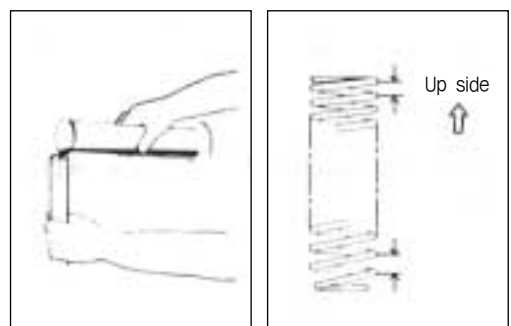
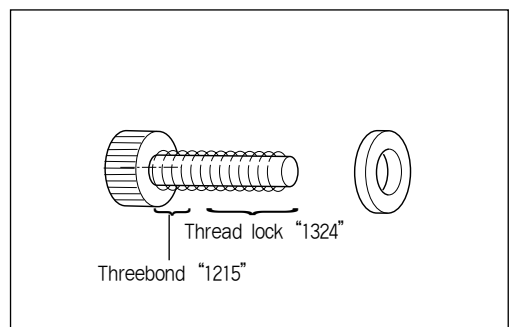
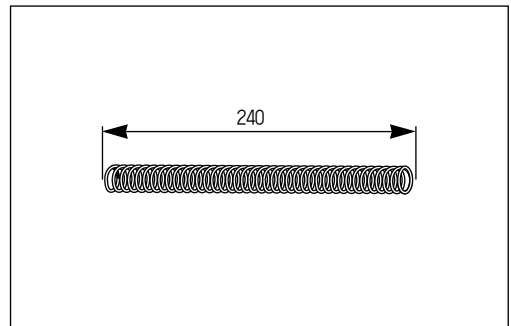
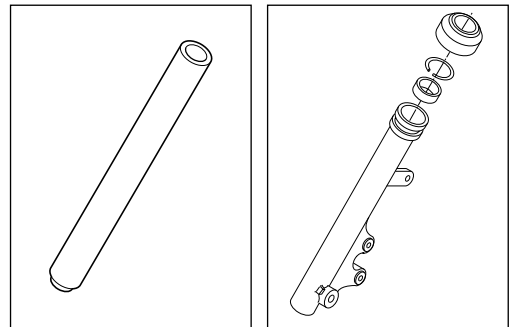
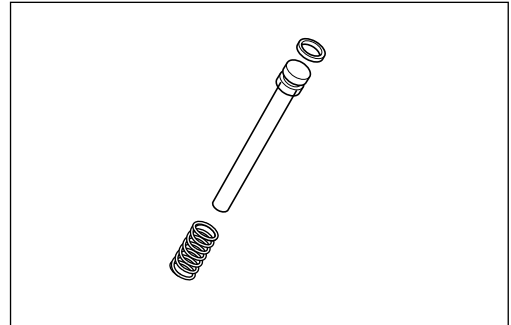
#### FORK OIL

- For the fork oil, be sure to use a front fork oil whose viscosity rating meets specification below.

Fork oil type	TELLUS #22
Capacity	50 ml

#### FORK SPRING

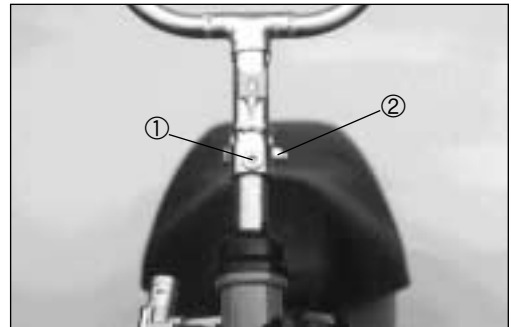
- When installing the front fork spring, the close end should position upside.



## STEERING

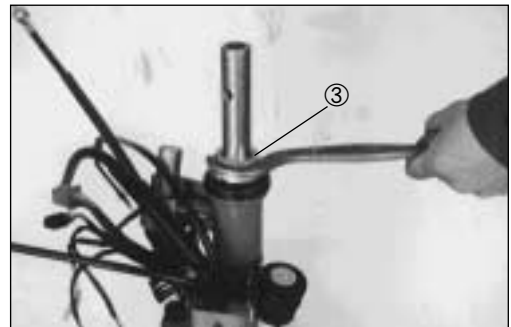
### REMOVAL AND DISASSEMBLY

- Remove the handlebar cover.(Refer to page 6-1)
- Remove the handlebar by removing the clamp bolt ① and set bolt ②.



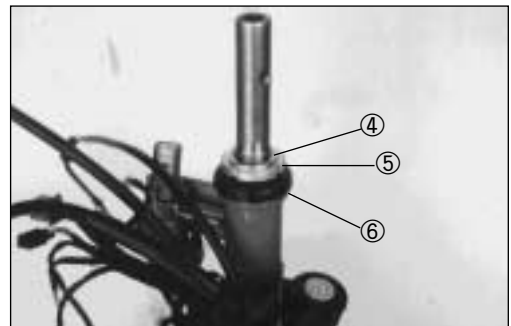
- Loosen the steering stem lock nut ③ with the special tool.

09910-60611	Universal clamp wrench
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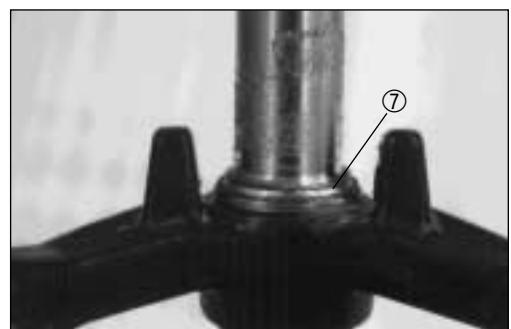


- Remove the front fork assembly by removing the lock washer ④, steering outer upper race ⑤ and dust seal ⑥.

**CAUTION:**  
Do not drop the steering stem steel balls.



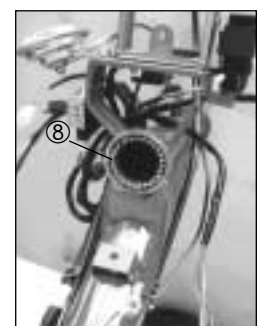
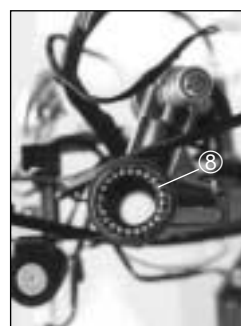
- Remove the lower bearing outer race ⑦ with a chisel.



- Remove the steering stem steel balls ⑧.

#### Number of steel balls

Upper	22 pcs
Lower	25 pcs



## 6-23 CHASSIS

- Remove the upper and lower bearing inner race with a appropriate bar.



### INSPECTION

Inspect the removed parts for the following abnormalities.

- Bearing race wear and brinelling.
- Worn and damaged steel balls.
- Distortion of steering stem or handlebar.



### REASSEMBLY AND REMOUNTING

Reassemble and remount the steering stem, handlebar and front fork in the reverse order of disassembly and removal, and also carry out the following steps.

#### OUTER LOWER RACE

- Press in the outer lower race.



#### INNER RACE

- Press in the upper and lower inner races with special tool.

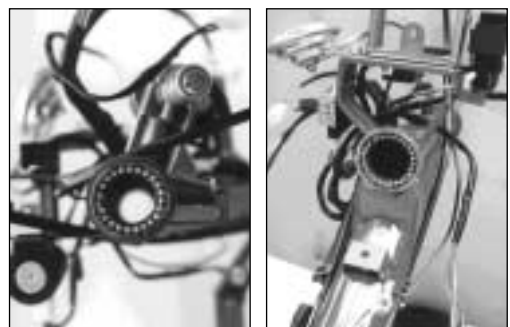
09941-34513	Steering inner race installer
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#### STEEL BALL

- Apply grease when installing the upper and lower steel balls.

99000-07C00	Grease "G2"	
Number of steel balls	Upper	22 pcs
	Lower	25 pcs

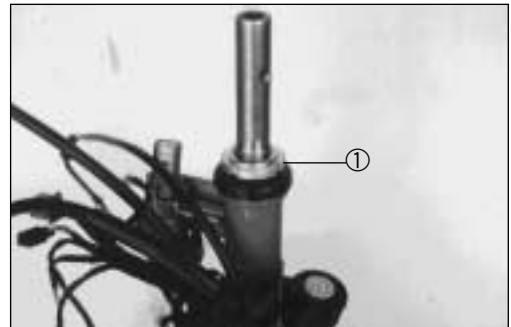


**STEERING OUTER RACE NUT**

- Tighten the steering outer race ① until resistance is felt, then loosen it 1/8-1/4 turn.

**NOTE:**

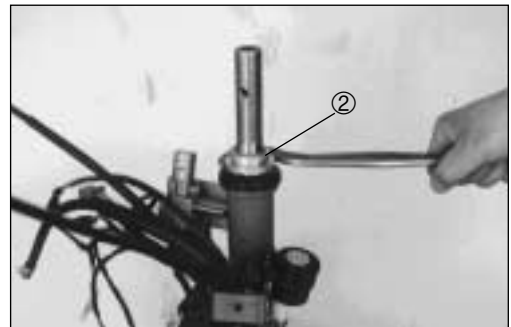
**This adjustment will vary from motorcycle to motorcycle. Make sure that the steering turns smoothly and easily, left to right.**



- Tighten the steering stem lock nut ② with the special tool.

Tightening torque	60-100 N · m (6.0-10.0 kg · m, 43.5-72.5 lb-ft)
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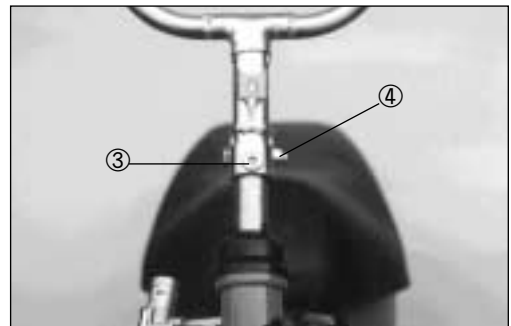
09910-60611	Universal clamp wrench
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- Install the handlebar and tighten the set bolt ③ and clamp nut ④ to the specified torque.

③	Tightening torque	22-28 N · m (2.2-2.8 kg · m, 15.9-20.3 lb-ft)
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④	Tightening torque	48-52 N · m (4.8-5.2 kg · m, 34.5-37.5 lb-ft)
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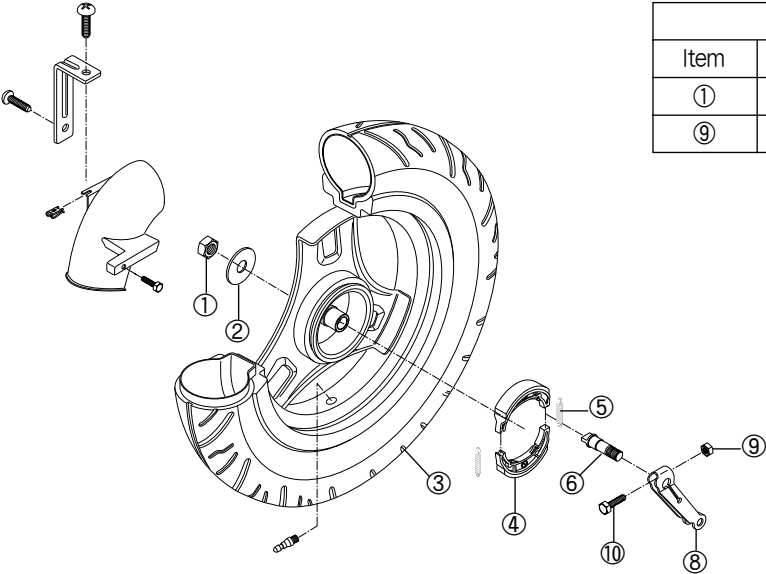


**CAUTION:**

**After performing the adjustment and installing the handlebar, “rock” the front wheel assembly forward and backward to ensure that there is no play and that the procedure was accomplished correctly. If play is noticeable, readjust the steering outer race nut.**



**REAR WHEEL AND BRAKE**



Tightening torque			
Item	N · m	kg · m	lb-ft
①	60-90	6.0-9.0	43.5-65.0
⑨	6-9	0.6-0.9	4.5-6.5

- ①Rear axle nut
- ②Washer
- ③Rear wheel
- ④Brake shoe
- ⑤Spring
- ⑥Rear brake camshaft
- ⑦Indicate plate
- ⑧Brake cam lever
- ⑨Brake cam lever nut
- ⑩Brake cam lever bolt

**REMOVAL AND DISASSEMBLY**

- Place the motorcycle on level ground.
- Remove the muffler.(Refer to page 3-4)
- Remove the rear wheel by removing the axle nut ①.

**INSPECTION**

**BRAKE DRUM**

Measure the brake drum I.D. to determine the extent of wear and, if the limit is exceeded by the wear noted, replace the drum. The value of this limit is indicated inside the drum.

Service Limit	100.7 mm(3.96 in)
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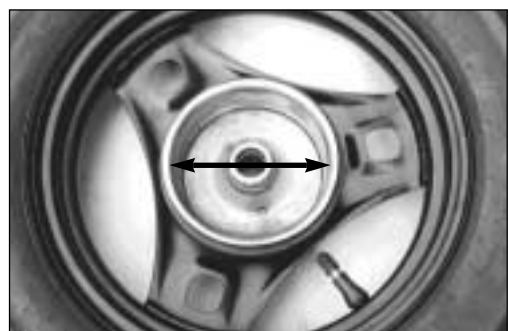
**BRAKE SHOE**

Using a vernier calipers, measure the brake shoe outside diameter at the place as shown in the photo. If the measurement is less than the limit, replace the brake shoe.

Service Limit	96.6 mm(3.78 in)
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**CAUTION:**

**Replace the brake shoe with a set, otherwise braking performance will be adversely affected.**



**WHEEL**

Refer to page 6-10.

**TIRE**

Refer to page 6-10.

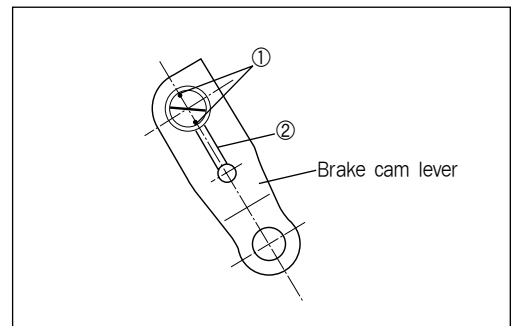
**REASSEMBLY AND REMOUNTING**

Reassemble and remount the rear wheel and brake in the reverse order of removal, and disassembly.

**BRAKE CAM LEVER**

- When installing the brake cam lever, align the punched mark ① of camshaft with the slit ② on cam lever.

Tightening torque	6-9 N · m (0.6-0.9 kg · m, 4.5-6.5 lb-ft)
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**BRAKE SHOE**

- Apply grease to the camshaft and pin before installing the brake shoes.

99000-07C00	Grease "G2"
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**CAUTION:**

**Be careful not to apply too much grease to the camshaft and pin. If grease gets on the lining, brake effectiveness will be lost.**



**REAR AXLE NUT**

- Tighten the rear axle nut to the specified torque.

Tightening torque	60-90 N · m (6.0-9.0 kg · m, 43.5-65.0 lb-ft)
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