



# **YAMAHA**

## **1987 - 1990**

### **MOTORCYCLE**

### **SERVICE MANUAL**

**Model : CE50T, CG50A, CG50U, CG50W**

**2YT281972000** 

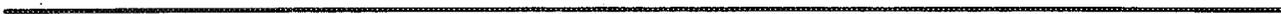
**CE50T.**

**SERVICE MANUAL**

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**1st Edition, November 1986**

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## NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha scooter have a basic understanding of the mechanical concepts and procedures inherent in scooter repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

TECHNICAL PUBLICATIONS  
SERVICE DIVISION  
MOTORCYCLES OPERATIONS  
YAMAHA MOTOR CO., LTD.

## HOW TO USE THIS MANUAL

### PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

**NOTE:** A **NOTE** provides key information to make procedures easier or clearer.

**CAUTION:**

A **CAUTION** indicates special procedures that must be followed to avoid damage to the scooter.

**WARNING:**

A **WARNING** indicates special procedures that must be followed to avoid injury to a scooter operator or person inspecting or repairing the scooter.

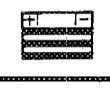
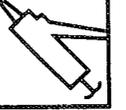
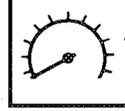
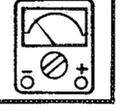
### MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations. In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings  
Pitting/Damage → Replace.

### EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.

<p>①</p> <p>GEN INFO</p> 	<p>②</p> <p>INSP ADJ</p> 	
<p>③</p> <p>ENG</p> 	<p>④</p> <p>COOL</p> 	
<p>⑤</p> <p>CARB</p> 	<p>⑥</p> <p>CHAS</p> 	
<p>⑦</p> <p>ELEC</p> 	<p>⑧</p> <p>APPX</p> 	
<p>⑨</p> 	<p>⑩</p> 	
<p>⑪</p> 	<p>⑫</p> 	
<p>⑬</p> 	<p>⑭</p> 	
<p>⑮</p> 	<p>⑯</p> 	<p>⑰</p> 
<p>⑱</p> 	<p>⑲</p> 	<p>⑳</p> 
<p>㉑</p> 		

### ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑧ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspection and adjustment
- ③ Engine
- ④ Cooling system
- ⑤ Carburetion
- ⑥ Chassis
- ⑦ Electrical
- ⑧ Appendices

Illustrated symbols ⑨ to ⑭ are used to identify the specifications appearing in the text.

- ⑨ Filling fluid
- ⑩ Lubricant
- ⑪ Tightening
- ⑫ Wear limit, clearance
- ⑬ Engine speed
- ⑭  $\Omega$ , V, A

Illustrated symbols ⑮ to ㉑ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑮ Apply engine oil
- ⑯ Apply gear oil
- ⑰ Apply molybdenum disulfide oil
- ⑱ Apply wheel bearing grease
- ⑲ Apply lightweight lithium-soap base grease
- ⑳ Apply molybdenum disulfide grease
- ㉑ Apply locking agent (LOCTITE®)

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<b>GENERAL INFORMATION</b>	 <b>GEN INFO</b>
<b>PERIODIC INSPECTIONS AND ADJUSTMENTS</b>	 <b>INSP ADJ</b>
<b>ENGINE OVERHAUL</b>	 <b>ENG</b>
<b>CARBURETION</b>	 <b>CARB</b>
<b>CHASSIS</b>	 <b>CHAS</b>
<b>ELECTRICAL</b>	 <b>ELEC</b>
<b>APPENDICES</b>	 <b>APPX</b>

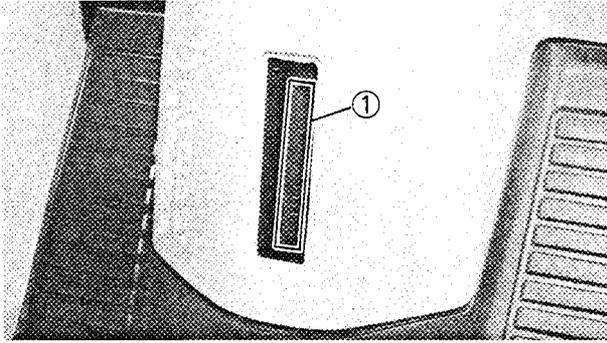


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## CHAPTER 1 GENERAL INFORMATION

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## GENERAL INFORMATION

### SCOOTER IDENTIFICATION

#### VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the frame.

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

The vehicle identification number is used to identify your scooter and may be used to register your scooter with the licensing authority in your state.

**Starting Serial Number:**  
**JYA2UG00\*HA720101**

#### ENGINE SERIAL NUMBER

The engine serial number ② is stamped into the crankcase.

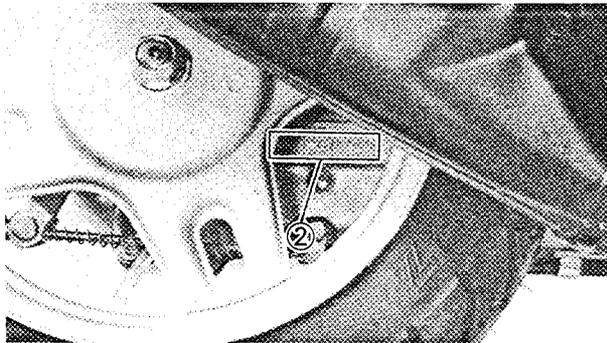
**NOTE:** \_\_\_\_\_

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.

**Starting Serial Number:**  
**14T-720101**

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

Designs and specifications are subject to change without notice.



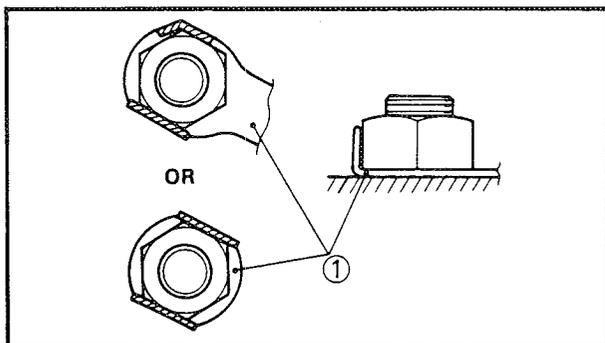
**IMPORTANT INFORMATION**

**ALL REPLACEMENT PARTS**

1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.

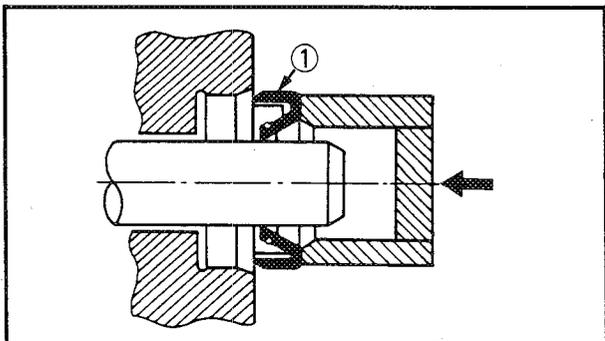
**GASKETS, OIL SEALS, AND O-RINGS**

1. All gaskets, seals, and O-rings should be replaced when an engine is overhauled. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



**LOCK WASHERS/PLATES AND COTTER PINS**

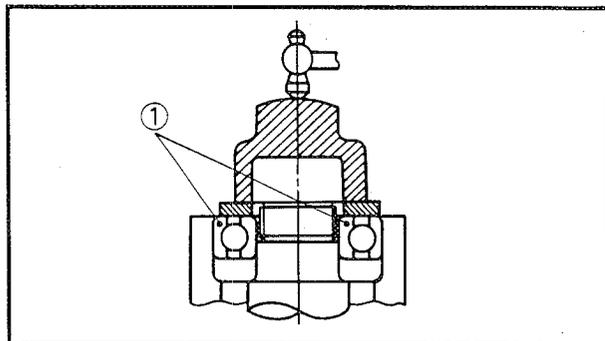
1. All lock washers/Plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



**BEARINGS AND OIL SEALS**

1. Install the bearing(s) and oil seal(s) with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease to the seal lip(s). Oil the bearings liberally when installing.

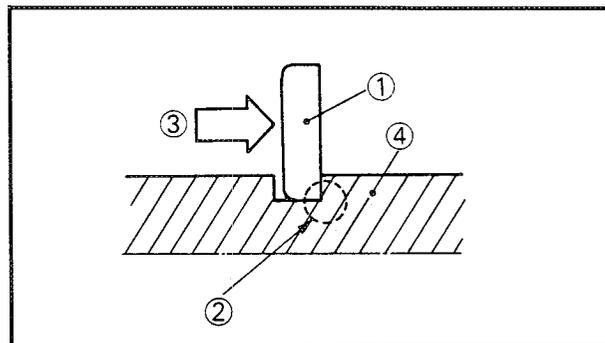
① Oil seal



**CAUTION:**

Do not use compressed air to spin the bearings dry. This causes damage to the bearing surfaces.

① Bearing



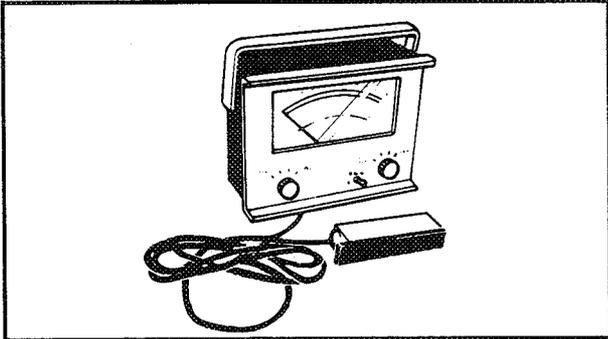
**CIRCLIPS**

1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

**SPECIAL TOOLS**

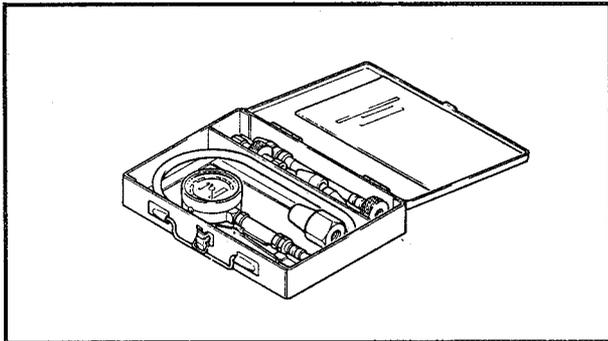
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.

**FOR TUNE-UP**

1. Inductive Tachometer

P/N. YU-08036

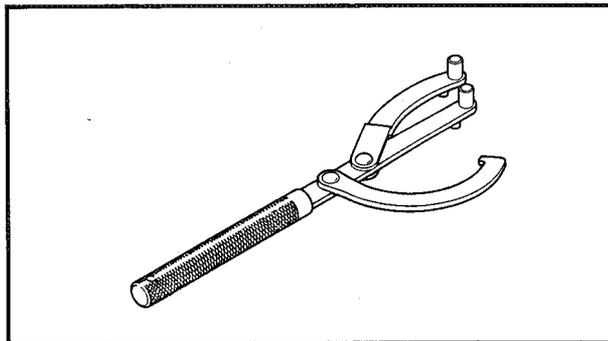
This tool is needed for detecting engine rpm.



2. Compression Gauge

P/N. YU-33223

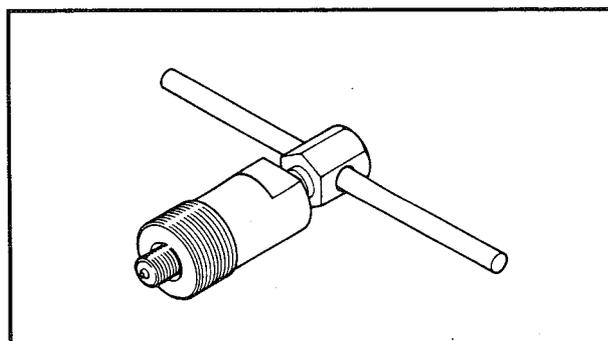
This gauge is used to measure engine compression.

**FOR ENGINE SERVICE**

1. Flywheel Holding Tool

P/N. YU-01235

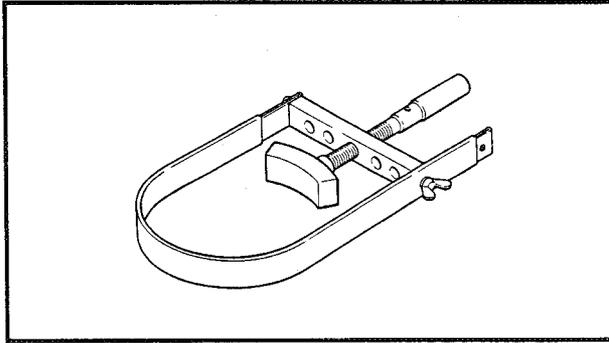
This tool is used to hold the flywheel magneto and clutch assembly when removing or installing the securing nut.



2. Flywheel Magneto Puller

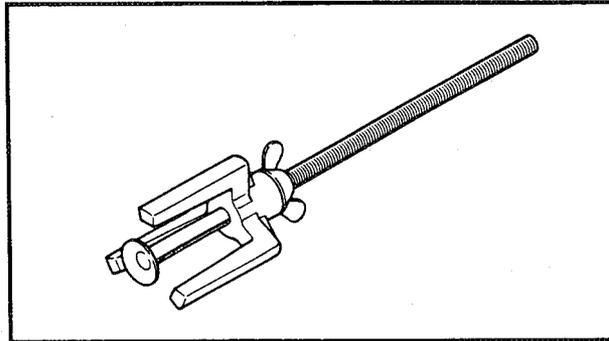
P/N. YM-01189

This tool is used to remove the flywheel.



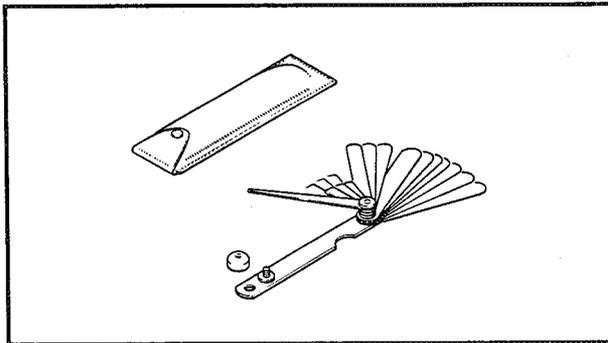
**3. Primary Sheave Holder**  
P/N. YS-01880

This tool is used when holding the clutch hub.

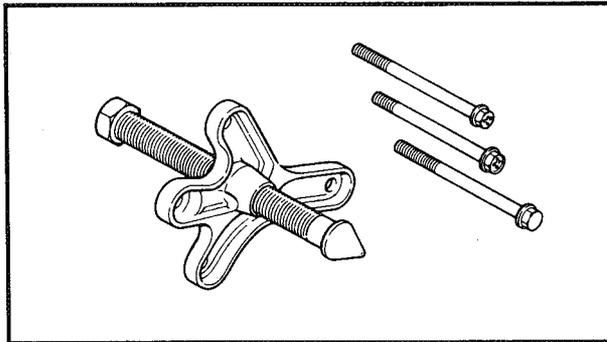


**4. Clutch Spring Holder**  
P/N. YS-28891

This tool is used to disassembly and assembly the secondary sheave.

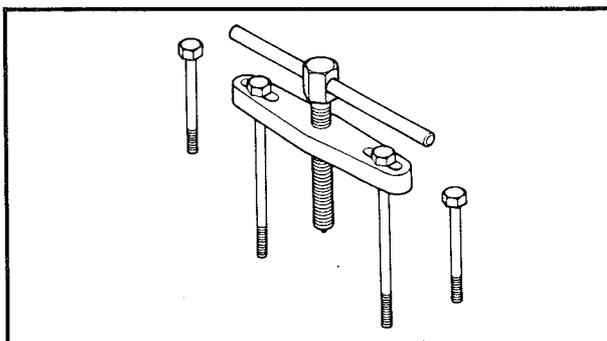


**5. Thickness Gauge**  
P/N. YU-03001



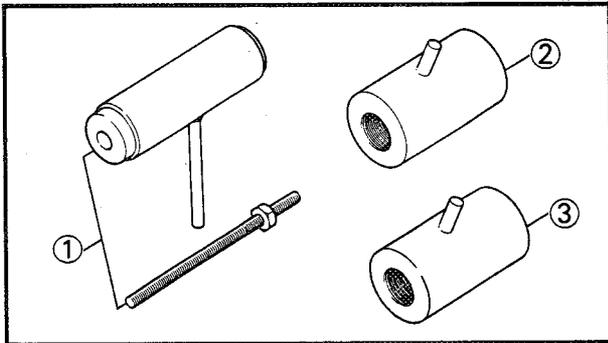
**6. Universal Puller Set**  
P/N. YU-33270

This tool is used to remove the crankshaft from the crankcase.

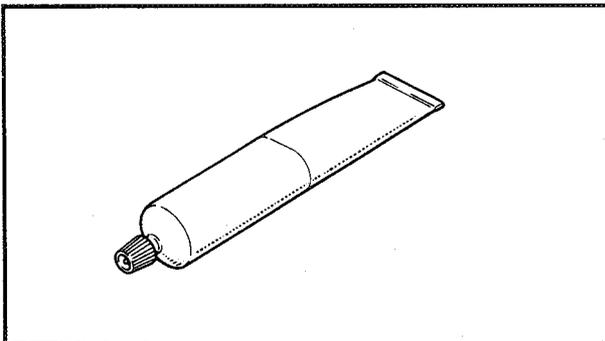


**7. Crankcase Separating Tool**  
P/N. YU-01135

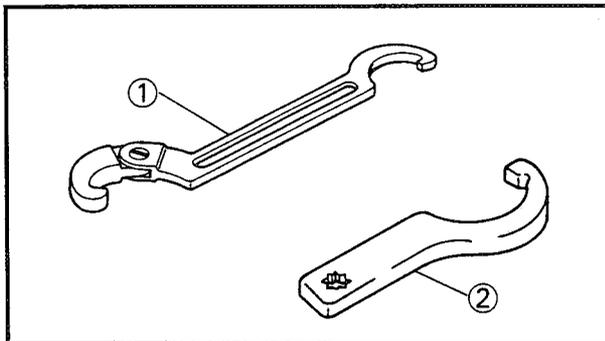
This tool is used to remove the crankshaft or separate the crankcase.



8. Crankshaft Installation Set  
 P/N. YU-90050 ..... ①  
 Adapter (M10)  
 P/N. YM-90062 ..... ②  
 Adapter (M12)  
 P/N. YM-90063 ..... ③  
 These tools are used to install the crankshaft.



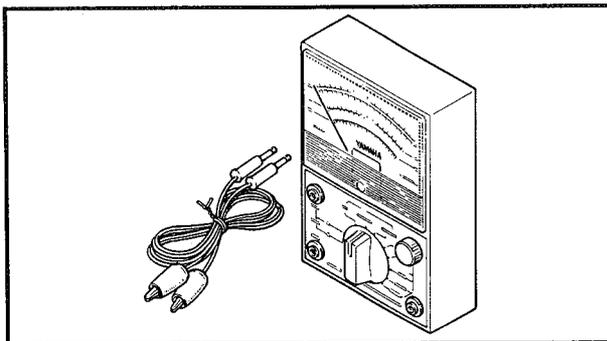
9. Sealant (Quick Gasket®)  
 P/N. ACC-11001-05-01  
 This sealant (bond) is used for crankcase mating surfaces.



**FOR CHASSIS SERVICE**

1. Ring Nut Wrench  
 P/N. YU-01268 ..... ①  
 P/N. YU-33975 ..... ②

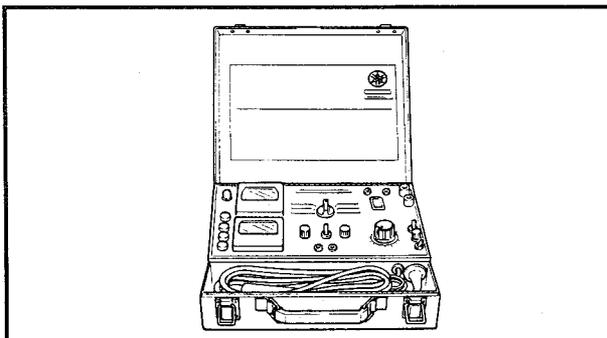
This tool is used to loosen and tighten the steering ring nut.



**FOR ELECTRICAL COMPONENTS**

1. Pocket Tester  
 P/N. YU-03112

This instrument is invaluable for electrical system inspection and adjustment.



2. Electro Tester  
 P/N. YU-33260

This instrument is necessary for ignition system inspection.

## CHAPTER 2

# PERIODIC INSPECTIONS AND ADJUSTMENTS

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# INTRODUCTION/PERIODIC MAINTENANCE/ LUBRICATION INTERVALS

## PERIODIC INSPECTIONS AND ADJUSTMENTS

### INTRODUCTION

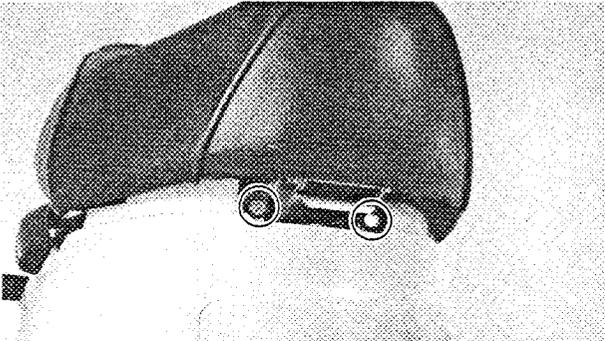
This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

### PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: km (mi)

ITEM	REMARKS	BREAK-IN 500 (300)	EVERY	
			3,000 (2,000) or 6 months	6,000 (4,000) or 12 months
Spark plug	Check/Clean or replace.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor	Check/Adjust/idle speed, starter operation.	○		○
Fuel line	Check fuel hose for cracks or damage.		○	○
Transmission oil	Replace (Warm engine before draining). Every 12,000 (8,000) or 24 months.	Replace	Check	Check
Autolube pump	Check/Adjust/Air bleeding.	○		○
Brake	Check operation. Adjust if necessary.		○	○
Wheels*	Check balance/damage/runout.		○	○
Wheel bearings	Check bearings assembly for looseness/ damage. Replace if damaged.		○	○
Steering bearing	Check bearings assembly for looseness. Moderately repack every 12,000 (8,000) or 24 months.**	Check	Check	Check
Rear shock absorber	Check operation.		○	○
Fittings/Fasteners	Check all chassis fittings and fasteners.	○	○	○
Battery	Check specific gravity. Check breather pipe for proper operation.		○	○
V-belt	Check damage and wear. Replace if necessary.			○

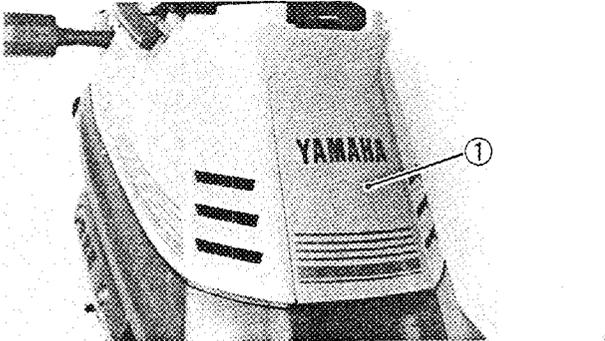
\*\* : Medium weight wheel bearing grease.



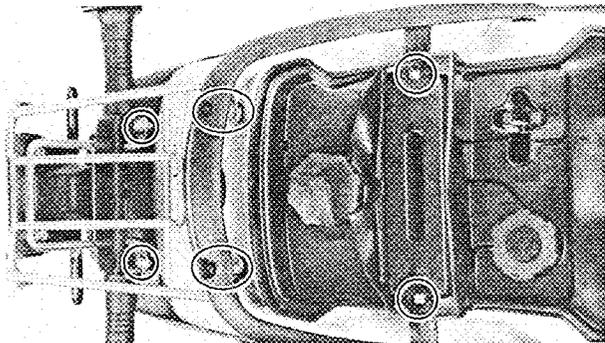
**TAIL COVER  
REMOVAL**

1. Open the seat lock.

2. Remove:  
• Seat

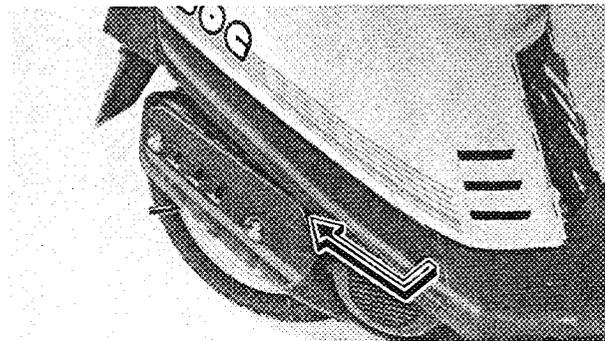


3. Remove:  
• Cover ①



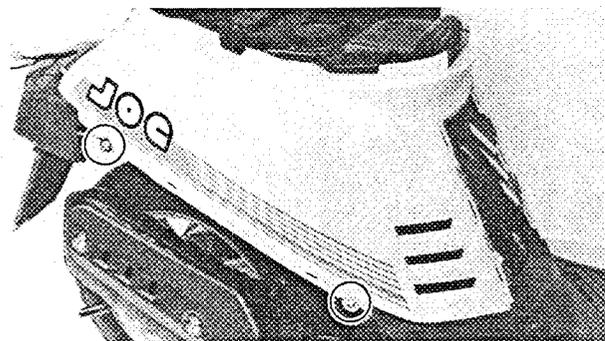
4. Remove:  
• Grab bar  
• Rear carrier  
(With rear flasher lights and taillight)

5. Disconnect:  
• Rear flasher light leads  
• Taillight leads



6. Remove:  
• Side covers (Right and left)

**NOTE:** \_\_\_\_\_  
When removing the side cover, unhook it at the front and slide it forward.  
\_\_\_\_\_

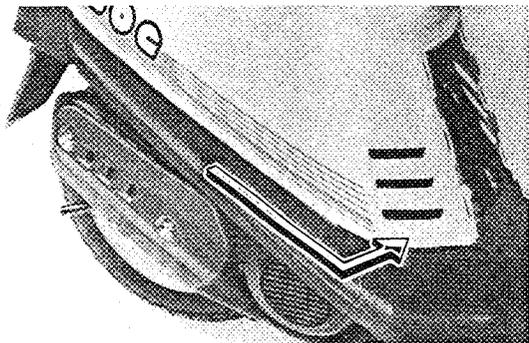


7. Remove:  
• Tail cover

## INSTALLATION

When installing the tail cover, reverse the "REMOVAL" procedure.

Note the following points.



1. Install:
  - Side covers

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

After installing the side covers, make sure that all hooks are securely fitted.

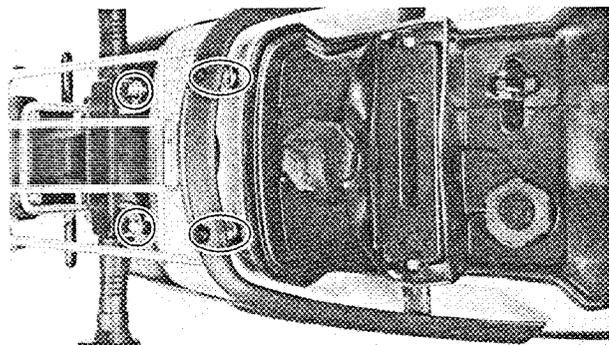
\_\_\_\_\_

2. Connect:
  - Rear flasher light leads

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

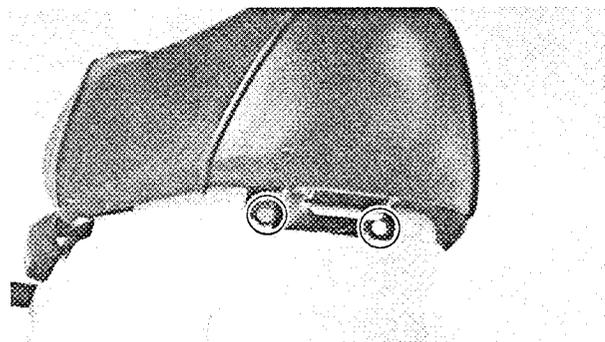
The leads of identical colors should be connected.

\_\_\_\_\_



3. Install:
  - Rear carrier

	<b>7 Nm (0.7 m•kg, 5.1 ft•lb)</b>
---	-----------------------------------



4. Install:
  - Seat

	<b>7 Nm (0.7 m•kg, 5.1 ft•lb)</b>
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FRONT FENDER, FRONT PANEL  
AND FOOTREST BOARD

## REMOVAL

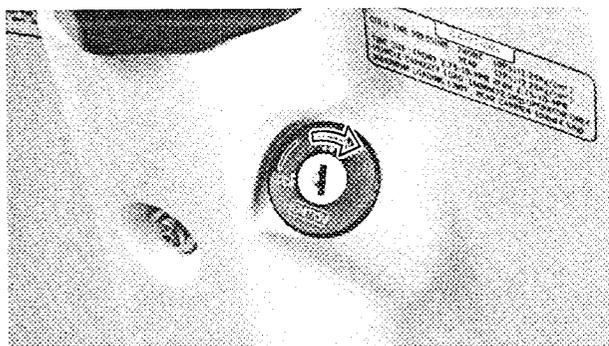
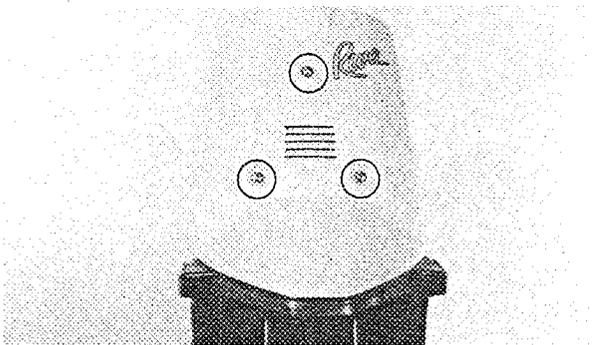
1. Remove:
  - Tail cover
 Refer to "TAIL COVER" section.

2. Remove:
  - Front fender

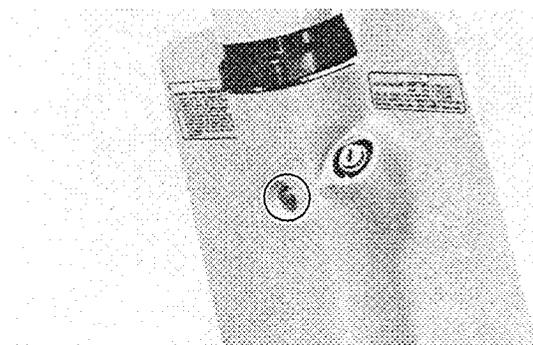
**NOTE:** \_\_\_\_\_

Before removing the fender, make sure that all hooks are free.

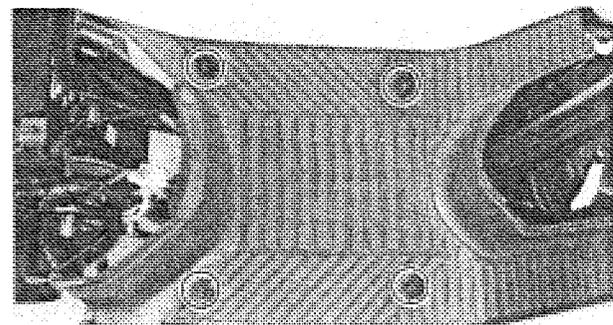
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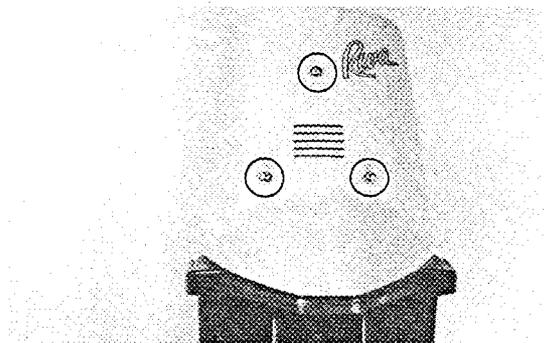
3. Remove:
  - Main switch cap
 Turn the cap counterclockwise.



4. Remove:
  - Front panel



5. Remove:
  - Footrest board



## INSTALLATION

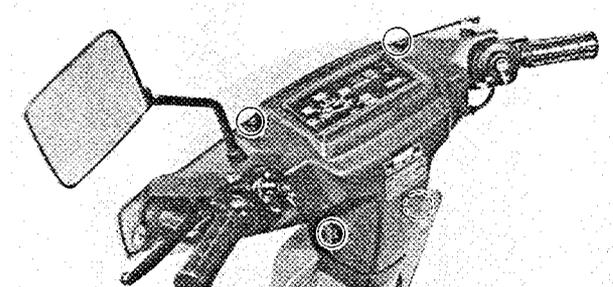
Reverse the "REMOVAL" procedure.  
Note the following points.

1. Install:
  - Front fender

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

After installing the front fender, make sure that all hooks are securely fitted.

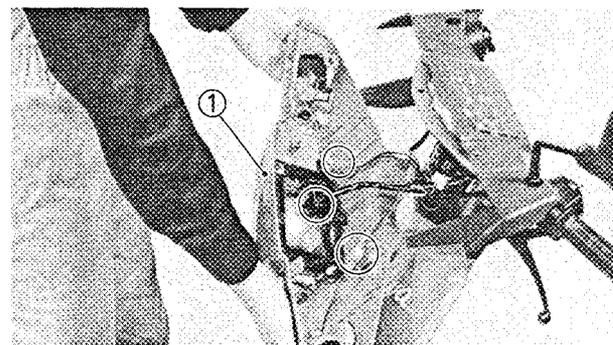
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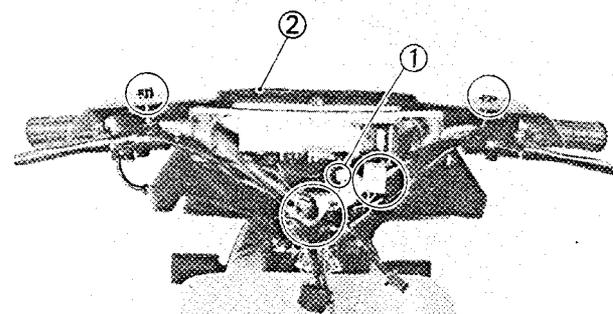
## HANDLEBAR COVERS

### REMOVAL

1. Remove:
  - Screws (Handlebar cover — Front)
  - Rear view mirror(s)



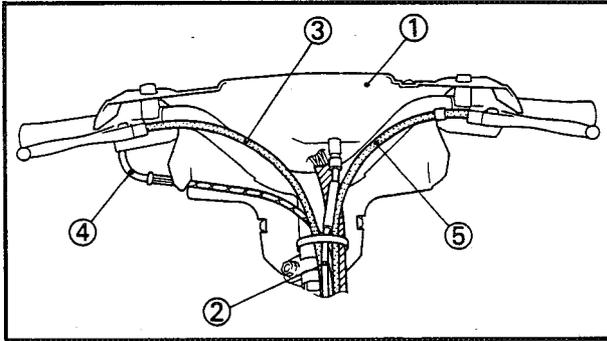
2. Disconnect:
  - Headlight lead and flasher light leads
3. Remove:
  - Handlebar cover (Front) ①



4. Disconnect:
  - Leads
  - Speedometer cable ①
5. Remove:
  - Handlebar cover (Rear) ②

## HANDLEBAR COVERS/ ENGINE IDLE SPEED ADJUSTMENT

INSP  
ADJ



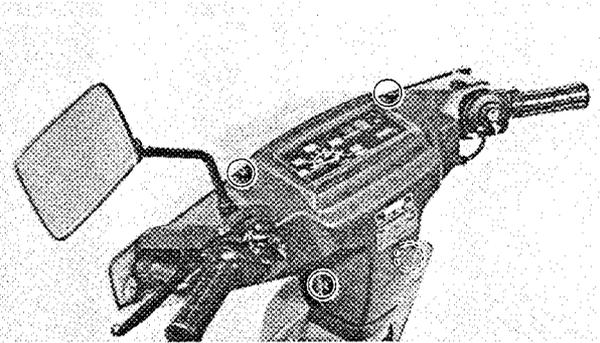
### INSTALLATION

1. Install:
  - Handlebar cover (Rear) ①
2. Connect:
  - Leads
  - Speedometer cable ②

### NOTE:

Position the cables as shown.

- ③ Front brake cable
- ④ Throttle cable
- ⑤ Rear brake cable



3. Connect:
  - Headlight lead and flasher light leads
4. Install:
  - Handlebar cover (Front)
  - Rear view mirror(s)

## ENGINE

### ENGINE IDLE SPEED ADJUSTMENT

1. Remove:
  - Tail cover.

Refer to "TAIL COVER" section.

2. Start the engine and warm it up before checking the idle speed.

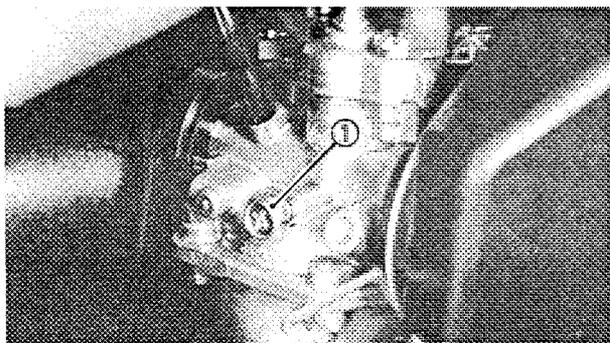
### NOTE:

A warm engine is defined as one which had been operated for about 3 minutes at 3,000 r/min with no load.

3. Attach:
- Inductive Tachometer (YU-08036)

4. Check:
- Engine idle speed  
Out of specification → Adjust.

	<b>Engine Idle Speed:</b> 1,500 ~ 2,100 r/min
---	--

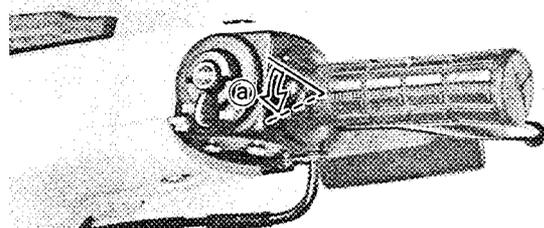


- Engine idle speed adjustment steps;**
- Start the engine at idle speed.
  - Turn the throttle stop screw ① clockwise to increase engine speed and counterclockwise to decrease engine speed.

5. Install:
- Tail cover  
Refer to "TAIL COVER" section.

### THROTTLE CABLE FREE PLAY ADJUSTMENT

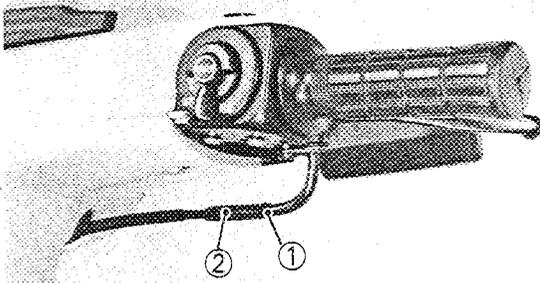
1. Check:
- Throttle cable free play ②  
Out of specification → Adjust.



	<b>Throttle Cable Free Play ②:</b> 3.0 ~ 7.0 mm (0.12 ~ 0.28 in)
---	---

- Throttle cable free play adjustment steps;**
- NOTE:** \_\_\_\_\_
- Before adjusting the throttle cable free play, the engine idle speed should be adjusted.

## AUTOLUBE PUMP CABLE ADJUSTMENT

INSP  
ADJ

- Loosen the locknut ①.
- Turn the adjuster ② in or out until the correct free play is obtained.
- Tighten the locknut.

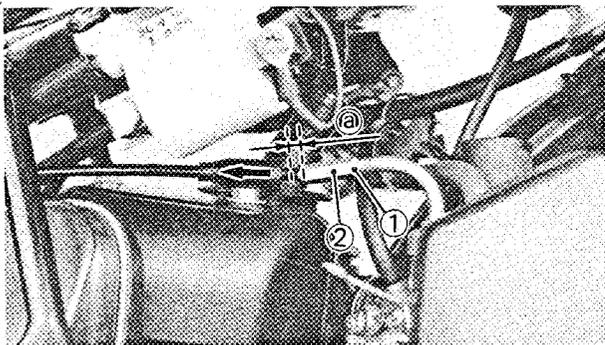
## AUTOLUBE PUMP CABLE ADJUSTMENT

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

Before adjusting the pump cable, adjust the throttle cable free play.

## 1. Remove:

- Tail cover  
Refer to "TAIL COVER" section.
- Front fender
- Front panel
- Footrest board  
Refer to "FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" section.



## 2. Check:

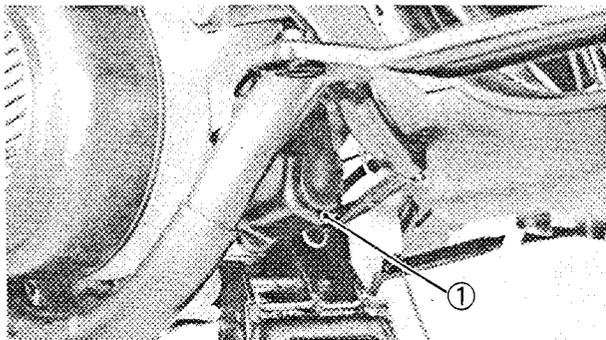
- Throttle cable free play (a)  
(at carburetor side)  
Out of specification → Adjust.



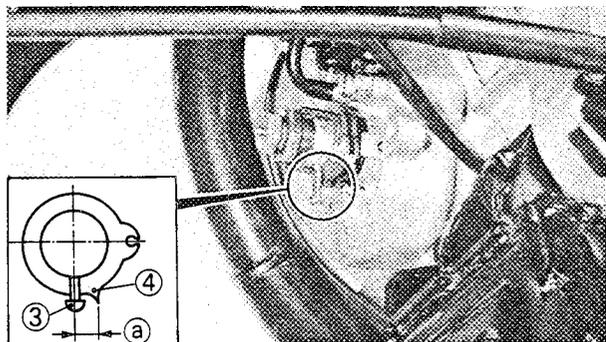
**Throttle Cable Free Play (a):**  
1.0 mm (0.04 in)

**Throttle cable free play adjustment steps;**

- Loosen the locknut ①.
- Turn the adjuster ② in or out until the correct free play is obtained.
- Tighten the locknut.



3. Remove:
- Autolube pump cover ①



4. Close the throttle grip completely.  
5. Check:
- Autolube pump pulley position ①  
Out of position → Adjust.



**Autolube Pump Pulley Position**

①:  
0.0 ~ 1.0 mm (0.0 ~ 0.04 in)



**Autolube pump pulley position adjustment steps:**

- Loosen the locknut ①.
- Turn the adjuster ② in or out until the pump plunger pin ③ is aligned with the mark ④ on the pump pulley.
- Tighten the locknut.

6. Install:
- Autolube pump cover
  - Footrest board
  - Front panel
  - Front fender
  - Tail cover
- Refer to "FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" and "TAIL COVER" section.

**AUTOLUBE PUMP AIR BLEEDING**

The Autolube pump and delivery lines must be bled on the following occasions:

- Whenever the Autolube tank has run dry.
- Whenever any portion of the Autolube system is disconnected.
- If the scooter lies on its side after falling over.

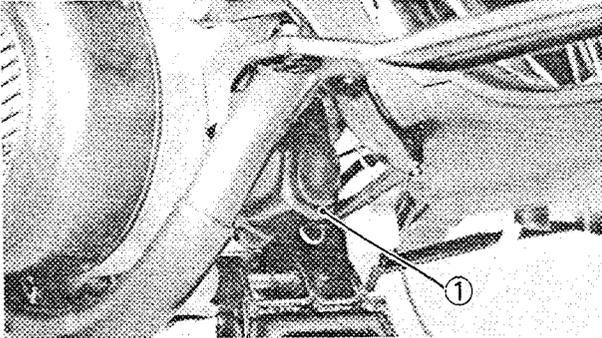
## AUTOLUBE PUMP AIR BLEEDING



1. Remove:

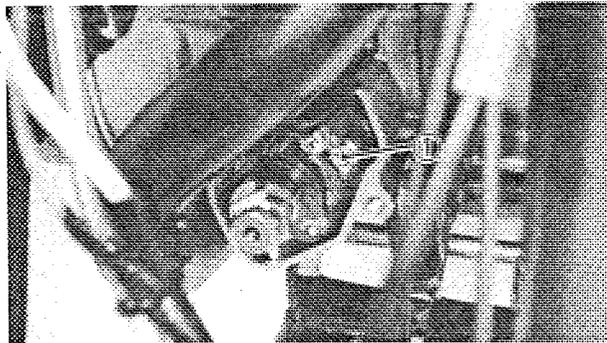
- Tail cover
- Front fender
- Front panel
- Footrest board

Refer to "TAIL COVER" and "FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" section.



2. Remove:

- Autolube pump cover ①



3. Remove:

- Bleed screw ①

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

Place a rag under the Autolube pump.

\_\_\_\_\_

4. Start the engine at idle speed.

5. Air bleed:

Keep the oil running out until air bubbles disappear.

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

Pull the pump cable all the way out to set the pump stroke to a maximum.

\_\_\_\_\_

6. Inspect:

- Bleed screw gasket
- Damage → Replace.

7. Install:

- Bleed screw gasket
- Bleed screw

8. Keep the engine running at about 2,000 r/min for two minutes or so, and both distributor and delivery pipe can be completely bled.

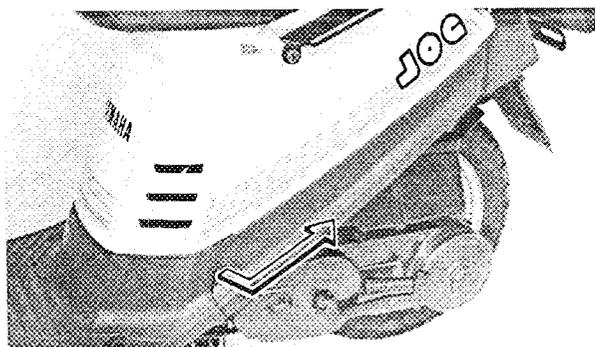
**NOTE:** \_\_\_\_\_

It is difficult to bleed the distributor completely with the pump stroke at a minimum, and therefore the pump stroke should be set to a maximum.

9. Install:

- Autolube pump cover
- Footrest board
- Front panel
- Front fender
- Tail cover

Refer to "FRONT PANEL, FRONT FENDER ANT FOOTREST BOARD" and "TAIL COVER" section.



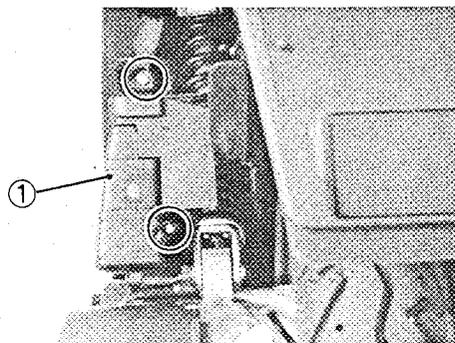
### AIR CLEANER ELEMENT CLEANING

1. Remove:

- Side cover (Left)

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

When removing the side cover, unhook it at the front and slide it forward.



2. Remove:

- Air cleaner case cover ①
- Air cleaner element

**CAUTION:** \_\_\_\_\_

Never operate the engine with the air cleaner element removed. This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the cleaner element will affect carburetor jetting with subsequent poor performance and possible engine overheating. Be careful not to have rags or the like blocking the intake area of the air cleaner.

3. Clean:
- Air cleaner element

**Air cleaner element cleaning steps:**

- Wash the element gently, but thoroughly in solvent.

**WARNING:**

Never use low flash point solvents such as gasoline to clean the element. Such solvent may lead to a fire or explosion.

- Squeeze the excess solvent out of the element and let dry.

**CAUTION:**

Do not twist the element when squeezing the element.

4. Inspect:
- Element  
Damage → Replace.
5. Apply:
- Foam-air-filter oil or SAE 10W30 type SE motor oil  
Onto the element.
6. Squeeze out the excess oil.

**NOTE:**

The element should be wet but not dripping.

7. Install:
- Air cleaner element
  - Air cleaner case cover
  - Side cover (Left)

**FUEL COCK CLEANING**

1. Remove:
- Tail cover  
Refer to "TAIL COVER" section.



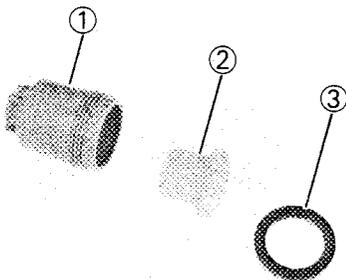
2. Drain:

- Fuel

**WARNING:**

**FUEL IS HIGHLY FLAMMABLE:**

- Always turn off the engine when draining.
- Take care not to spill any fuel on the engine or exhaust pipe/muffler when draining.
- Never drain fuel while smoking or in the vicinity of an open flame.



3. Remove:

- Cap ①
- Filter ②
- O-ring ③

4. Clean:

- Filter
- Cap

Wash the filter and cap gently using solvent.

5. Inspect:

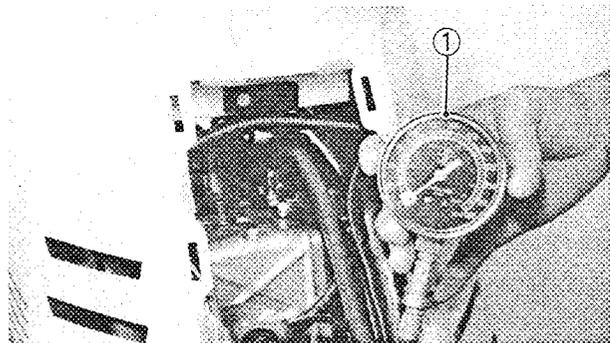
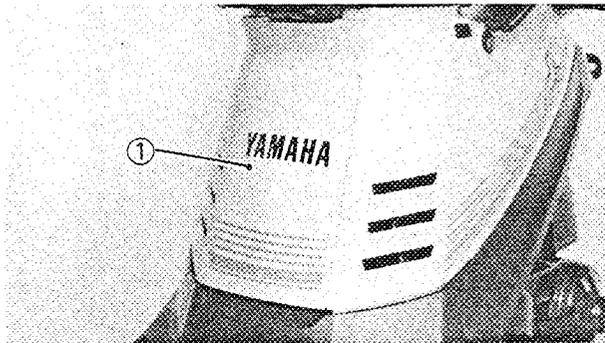
- Filter
- O-ring

Damage → Replace.

6. Install:

- O-ring
- Filter
- Cap
- Tail cover

Refer to "TAIL COVER" section.



**COMPRESSION PRESSURE MEASUREMENT**

Insufficient compression pressure will result in performance loss and may indicate worn or damaged piston rings.

1. Remove:
  - Cover ①
2. Warm up engine for several minutes, then stop the engine.
3. Remove:
  - Spark plugs
4. Connect:
  - Compression Gauge (YU-33223) ①
5. Measure:
  - Compression

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

Start the starter motor and throttle valve wide-open until the pressure indicated on gauge can rise no further. Compression should be within the specified levels.

<b>Compression Pressure (at sea level):</b>	
Standard . . . . .	800 kPa (8.0 kg/cm <sup>2</sup> , 114 psi)
Minimum . . . . .	640 kPa (6.4 kg/cm <sup>2</sup> , 91 psi)

**WARNING:** \_\_\_\_\_

When cranking engine, ground spark plug wires to prevent sparking.

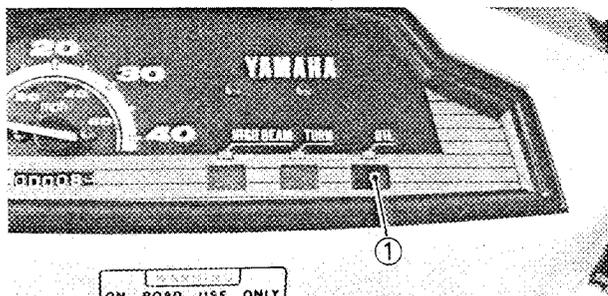
<b>Compression test steps (below minimum levels):</b>	
<ul style="list-style-type: none"> <li>• Squirt a few drops of oil into cylinder.</li> <li>• Measure compression again.</li> </ul>	
Reading	Diagnosis
Higher than without oil	• Worn cylinder, piston and piston rings
Same as without oil	• Defective piston, ring(s), valve(s) and cylinder head gasket
<b>Compression test steps (above standard levels):</b>	
<ul style="list-style-type: none"> <li>• Check cylinder head or piston crown for carbon deposits.</li> </ul>	

## ENGINE OIL LEVEL INSPECTION

1. Place the scooter on the level place.

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

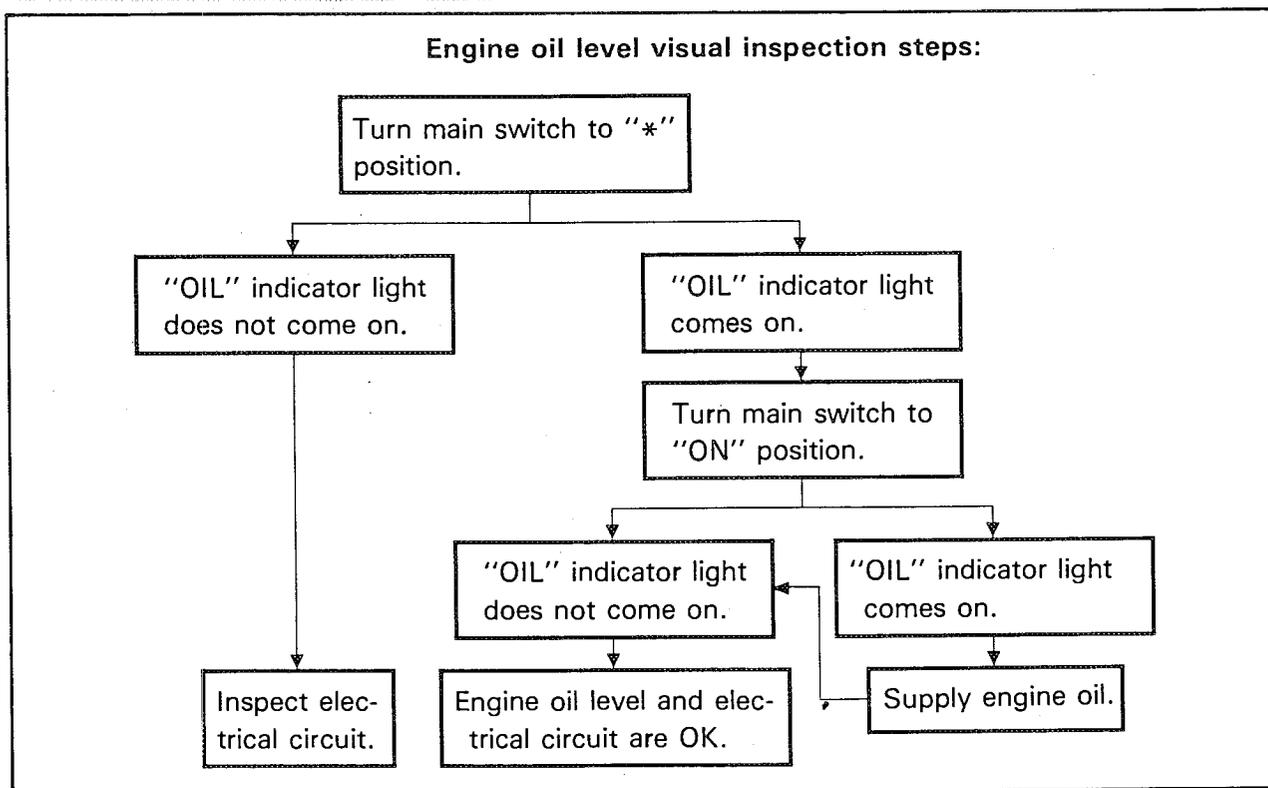
Be sure the scooter is positioned straight up and on both wheels when inspecting the oil level.



2. Inspect:

- Engine oil level
- Oil level low → Add sufficient oil by the following inspection steps.

① "OIL" indicator light



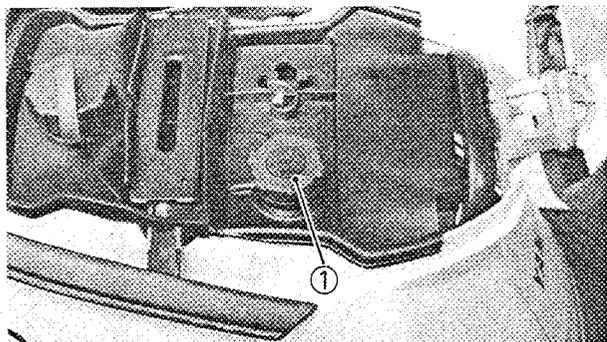
**Recommended Oil:**

Yamalube 2 or Air Cooled 2  
Stroke Engine Oil

**Oil Capacity:**

**Total:**

0.8 L (0.7 Imp qt, 0.84 US qt)

**NOTE:**

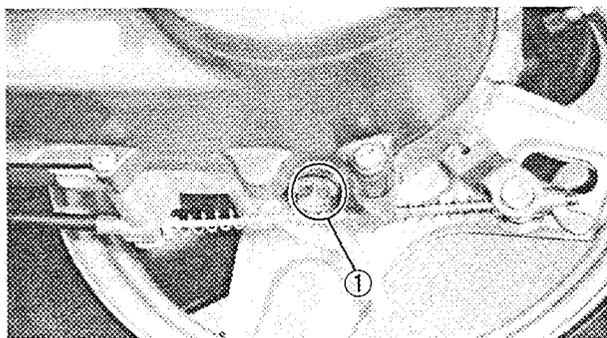
Install the oil tank filler cap ① and push it fully into the filler.

**CAUTION:**

Always use the same type of engine oil; mixing oils may result in a harmful chemical reaction and lead to poor performance.

**TRANSMISSION OIL REPLACEMENT**

1. Warm up the engine at idle speed, then stop it.
2. Place the oil pan under the drain hole.

**3. Remove:**

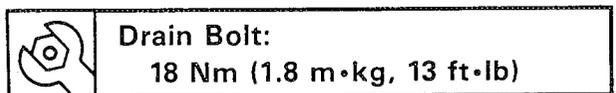
- Drain bolt ①  
Drain the transmission oil.
- Oil filler plug



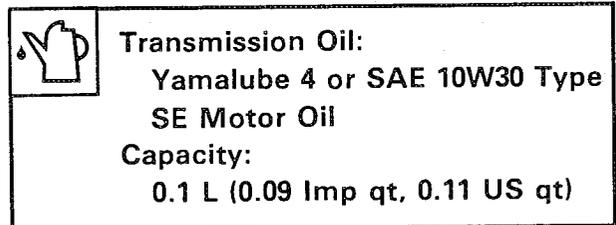
## TRANSMISSION OIL REPLACEMENT/ FUEL LINE INSPECTION

4. Inspect:
- Gasket (Drain bolt)
  - O-ring (Oil filler plug)
- Damage → Replace.

5. Install:
- Gasket
  - Drain bolt



6. Fill:
- Transmission case



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

Wipe off any oil split on the crankcase, tire or wheel.

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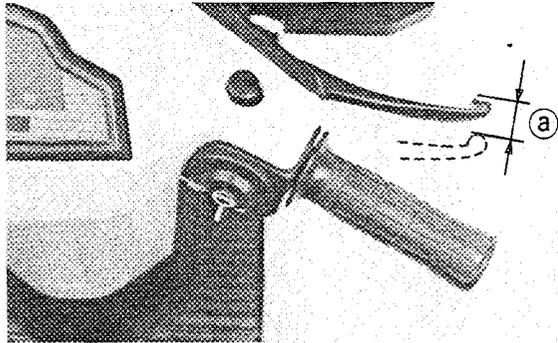
7. Install:
- Oil filler plug

### FUEL LINE INSPECTION

1. Remove:
- Tail cover
- Refer to "TAIL COVER" section.



- 2. Inspect:
  - Fuel pipe ①  
Cracks/Damage → Replace.
- 3. Install:
  - Tail cover  
Refer to "TAIL COVER" section.

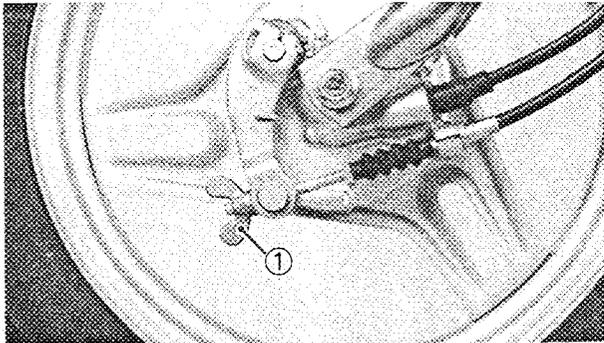


### CHASSIS

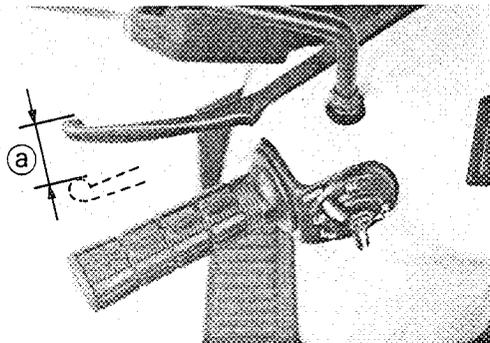
#### FRONT BRAKE LEVER FREE PLAY CHECK

- 1. Check:
  - Front brake lever free play ②  
Out of specification → Adjust.

	10 ~ 20 mm (0.4 ~ 0.8 in)
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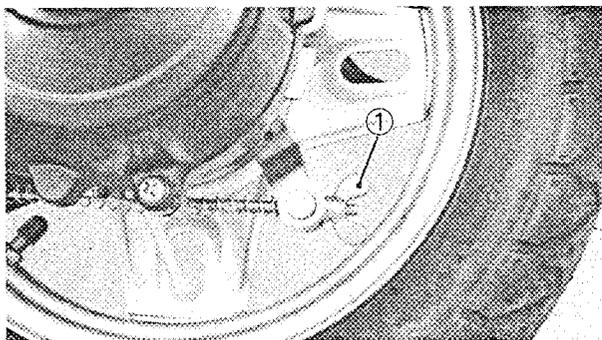
<b>Front brake lever free play adjustment steps:</b>	
• Turn the adjuster ① in or out until the correct free play is obtained.	



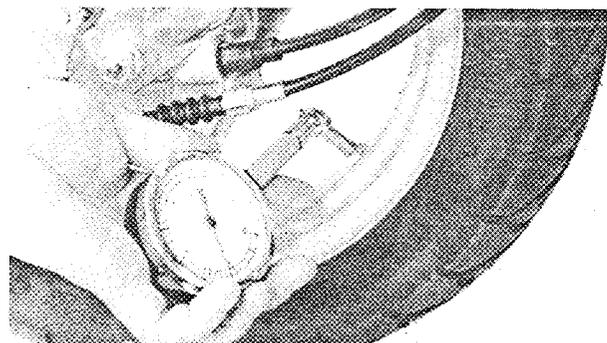
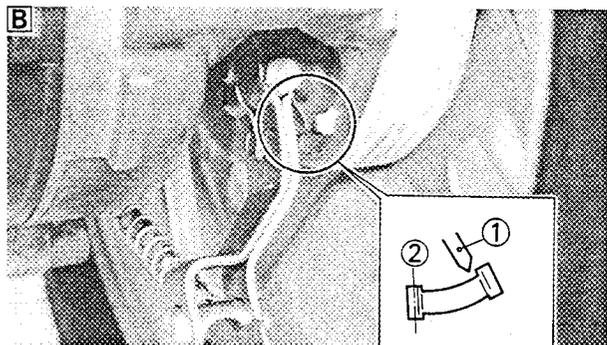
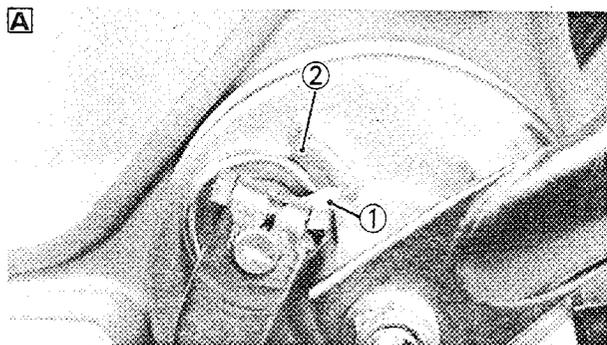
#### REAR BRAKE LEVER FREE PLAY CHECK

- 1. Check:
  - Rear brake lever free play ②  
Out of specification → Adjust.

	10 ~ 20 mm (0.4 ~ 0.8 in)
---	---------------------------



<b>Rear brake lever free play adjustment steps:</b>	
• Turn the adjuster ① in or out until the correct free play is obtained.	



**FRONT AND REAR BRAKE LINING**

1. Activate the brake lever.
2. Inspect:
  - Wear indicator ①
  - Indicator at wear limit line ② → Replace brake shoes.

- Ⓐ Front
- Ⓑ Rear

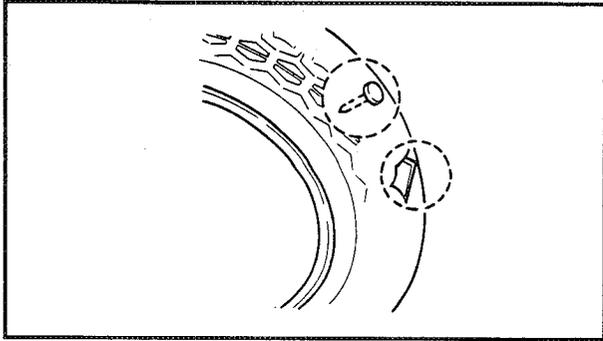
**TIRE AND WHEEL INSPECTION**

1. Measure:
  - Air pressure
  - Out of specification → Adjust.

	Cold tire pressure
Front	125 kPa (1.25 kg/cm <sup>2</sup> , 18 psi)
Rear	225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi)

**WARNING:**

Proper loading of your scooter is important for the handling, braking, and other performance and safety characteristics of your scooter. Do not carry loosely packed items that can shift. Securely pack your heaviest items close to the center of the scooter, and distribute the weight evenly from side to side. And check the condition and pressure of your tires. **NEVER OVERLOAD YOUR SCOOTER.** Make sure the total weight to the cargo, rider, passenger, and accessories (fairing, saddlebags, etc. if approved for this model) does not exceed the maximum load of the scooter. Operation of an overloaded scooter could cause tire damage, an accident, or even injury.

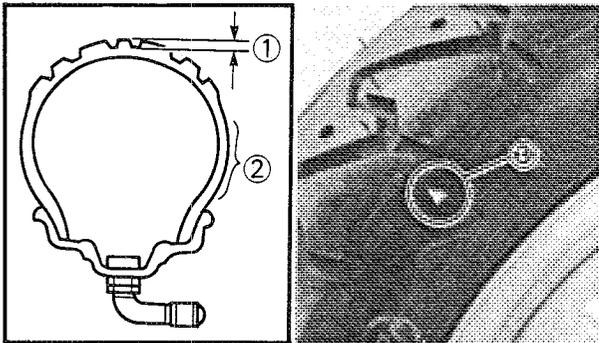


2. Inspect:

- Tire surface  
Wear/Damage/Cracks/Road hazards → Replace.
- Aluminum wheels  
Damage/Bends → Replace.  
Never attempt even small repairs to the wheel.

**WARNING:**

Ride conservatively after installing a tire to allow it to seat itself properly on the rim.



3. Measure:

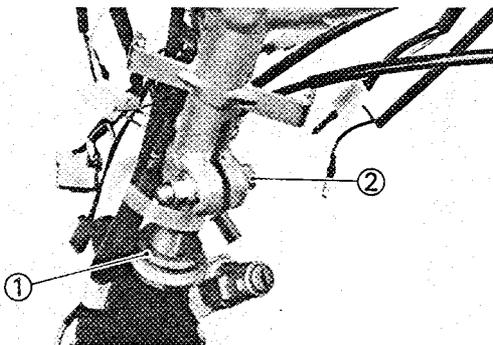
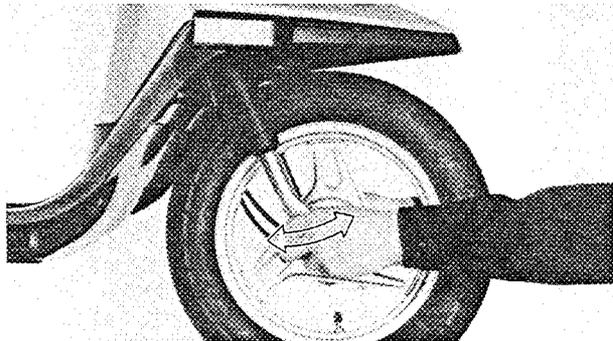
- Tire tread depth  
Out of specification → Replace.

	<b>Minimum Tire Tread Depth:</b> (front and rear) 0.8 mm (0.03 in)
---	--

- ① Tread depth
- ② Side wall
- ③ Wear indicator

**STEERING ADJUSTMENT**

1. Place the scooter on its centerstand, then elevate the front wheel.



**2. Check:**

- Steering assembly bearings  
Grasp the bottom of the forks and gently rock the rock assembly back and forth.  
Looseness→Adjust.

**Steering head adjustment steps:**

- Remove the front fender and front panel. Refer to "FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" section.
- Tighten the ring nut ① to specification using the Ring Nut Wrench (YU-33975).



**Ring Nut ①:**  
**30 Nm (3.0 m•kg, 22 ft•lb)**

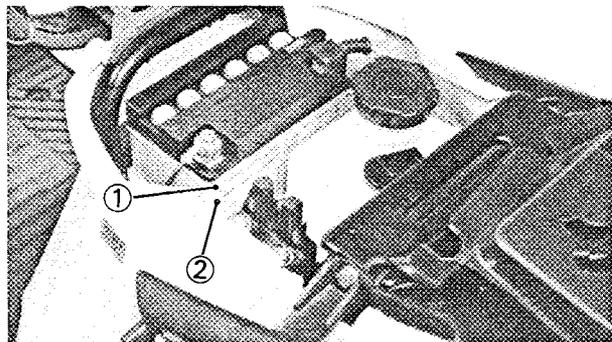
**NOTE:** \_\_\_\_\_  
Set the torque wrench to the ring nut wrench so that they form right angle.

- Move the handlebar up and down, and/or back and forth. If handlebar free play is excess, tighten the bolt ② to specification.



**Bolt ②:**  
**60 Nm (6.0 m•kg, 43 ft•lb)**

- Install the front fender and front panel.



**ELECTRICAL**

**BATTERY**

**1. Check:**

- Fluid level  
Incorrect→Refill.  
Fluid level should be between upper and lower level marks.

- ① Upper level
- ② Lower level

**CAUTION:** \_\_\_\_\_

**Refill with distilled water only; tap water contains minerals harmful to a battery.**

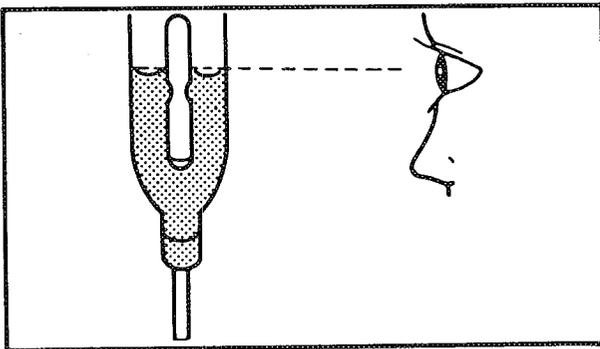


2. Inspect:
- Breather hose  
Obstruction → Remove.  
Damage → Replace.

3. Inspect:
- Battery

**Replace the battery if:**

- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate one cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.



4. Measure:
- Specific gravity:  
Less than 1.280 → Recharge battery.

**Charging Current:**  
0.4 amps/10 hrs  
**Specific Gravity:**  
1.280 at 20°C (68°F)

**CAUTION:**

Always charge a new battery before using it to ensure maximum performance.

**WARNING:**

Battery electrolyte is dangerous; it contains sulfuric acid and therefore is poisonous and highly caustic.

Always follow these preventive measures:

- Avoid bodily contact with electrolyte as it can cause severe burns or permanent eye injury.
- Wear protective eye gear when handling or working near batteries.

Antidote (EXTERNAL):

- SKIN—Flush with water.
- EYES—Flush with water for 15 minutes and get immediate medical attention.

Antidote (INTERNAL):

- Drink large quantities of water or milk (follow with milk of magnesia) beaten egg, or vegetable oil. Get immediate medical attention.

Batteries also generate explosive hydrogen gas, therefore you should always follow these preventive measures:

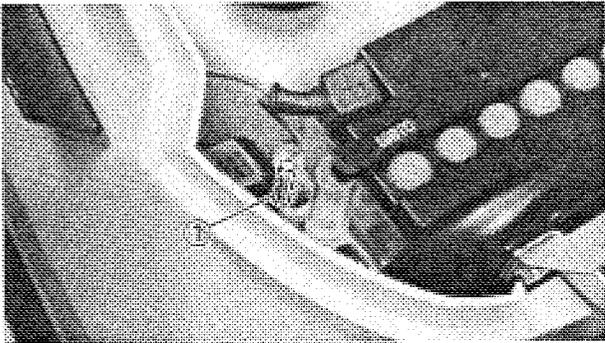
- Charge batteries in a well-ventilated area.
- Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)
- DO NOT SMOKE when charging or handling batteries.

**KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.**



**FUSE INSPECTION**

1. Open the seat lock.



- Inspect:
  - Fuse ①  
Defective → Replace.

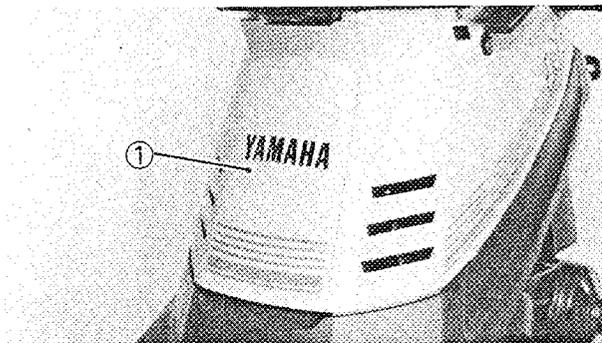
**Blown fuse procedure steps:**

- Turn off ignition and the circuit.
- Install a new fuse of proper amperage.
- Turn on switches to verify operation of electrical device.
- If fuse blows immediately again, check circuit in question.

**WARNING:**

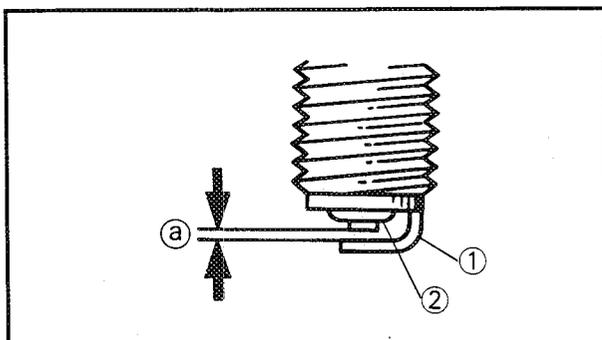
Do not use fuses of higher amperage rating than recommended. Extensive electrical system damage and fire could result from substitution of a fuse of improper amperage:

Description	Amperage	Quantity
Main	7A	1



**SPARK PLUG INSPECTION**

- Remove:
  - Cover ①
  - Spark plug



- Inspect:
  - Electrode ①  
Wear/Damage → Replace.
  - Insulator ②  
Abnormal Color → Replace.

**Standard Spark Plug:**  
BPR6HS (N.G.K.)

### 3. Measure:

- Plug gap (a)  
Out of specification → Regap.  
Use a Wire Gauge or Feeler Gauge.

	<b>Spark Plug Gap (a):</b> 0.9 ~ 1.0 mm (0.035 ~ 0.039 in)
---	---

4. Clean the plug with a spark plug cleaner if necessary.

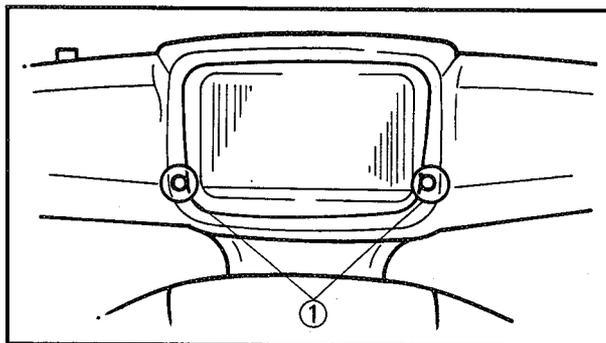
### 5. Tighten:

- Before installing a spark plug, clean the gasket and plug surfaces.

### NOTE:

Finger-tighten the spark plug before torquing to specification.

	<b>Spark Plug:</b> 20 Nm (2.0 m•kg, 14 ft•lb)
--	--



## HEADLIGHT BEAM ADJUSTMENT

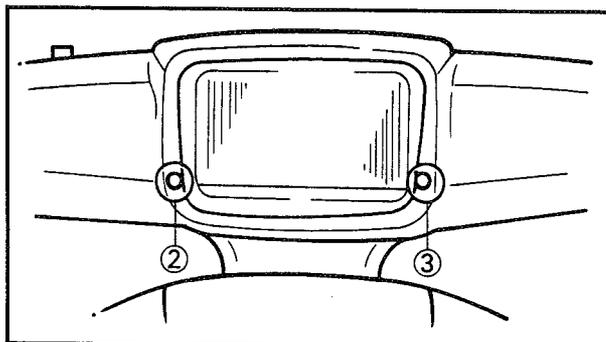
### 1. Adjust:

- Headlight (Vertically)

	Vertical adjustment
Higher	Loosen the adjusters ①
Lower	Tighten the adjusters ①

- Headlight (Horizontal)

	Horizontal adjustment
Right	Loosen the adjuster ② or tighten the adjuster ③
Left	Loosen the adjuster ③ or tighten the adjuster ②



## IGNITION TIMING

Adjustment free.





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## CHAPTER 3 ENGINE OVERHAUL

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## ENGINE OVERHAUL

### ENGINE REMOVAL

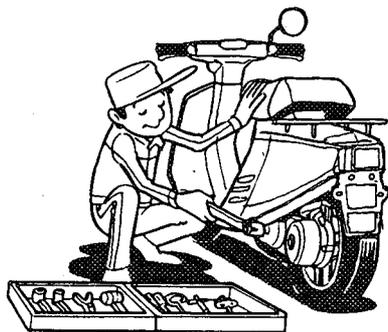
**NOTE:** \_\_\_\_\_

It is necessary to remove the engine in order to remove the following components.

- Cylinder head
  - Cylinder
  - Piston
  - CDI magneto
  - Starter motor
  - Primary and secondary sheave
- 

**PREPARATION FOR REMOVAL**

1. Remove all dirt, mud, dust and foreign material before removal and disassembly.



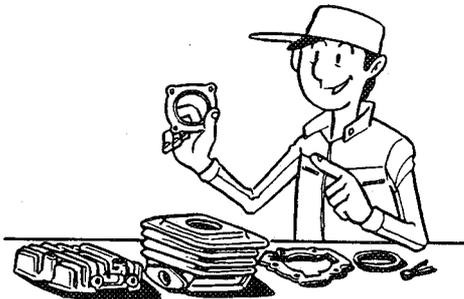
2. Use proper tools and cleaning equipment.  
Refer to "CHAPTER 1. GENERAL INFORMATION—SPECIAL TOOLS" section.

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

When disassembling the engine, keep mated parts together. This includes gears, cylinder, piston and other parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.

---





3. During engine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled in the engine.

4. Drain the transmission oil completely. Refer to "CHAPTER 2.—TRANSMISSION OIL REPLACEMENT" section.

**TAIL COVER**

1. Remove:

- Seat
- Tail cover
- Rear carrier

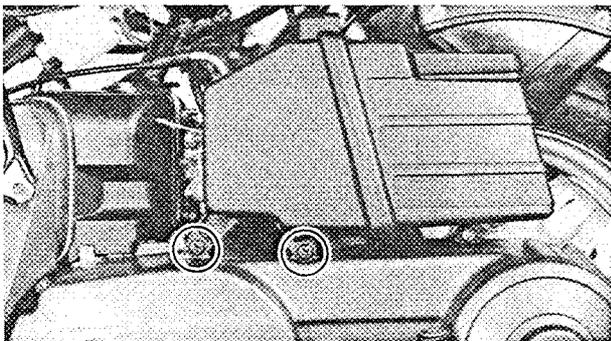
Refer to "CHAPTER 2.—TAIL COVER" section.

**FRONT FENDER, FRONT PANEL AND FOOTREST BOARD**

1. Remove:

- Front fender
- Front panel
- Footrest board

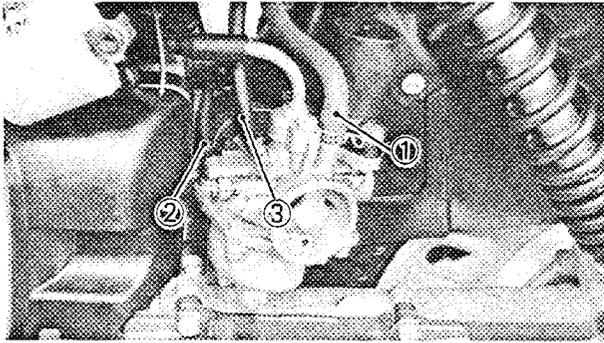
Refer to "CHAPTER 2.—FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" section.



**CARBURETOR**

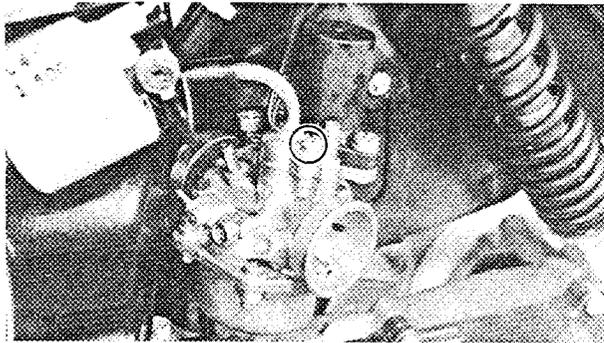
1. Remove:

- Air cleaner case



## 2. Remove:

- Fuel pipe ①
- Oil delivery pipe ②
- Vacuum pipe ③
- Auto choke unit lead



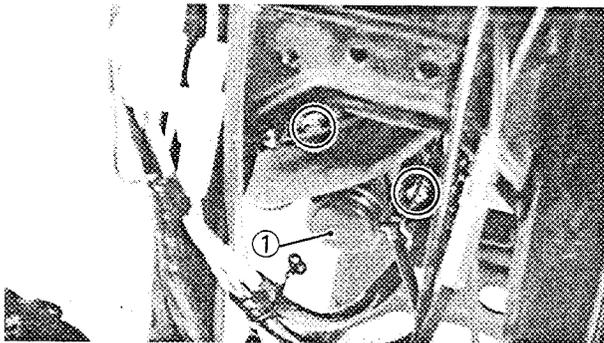
## 3. Remove:

- Carburetor top cover
- Carburetor

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

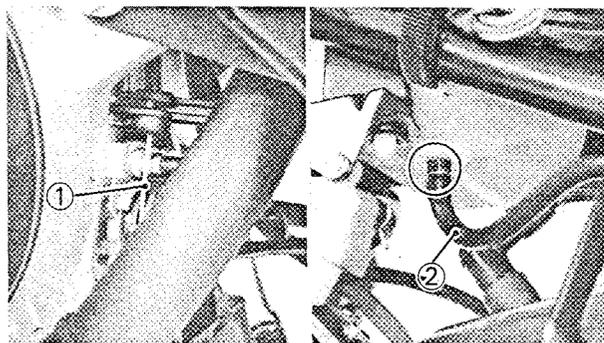
Cover the carburetor with a clean rag to prevent dirt or foreign matter into the carburetor.

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**CABLES, LEADS AND PIPES**

## 1. Remove:

- Autolube pump cover ①



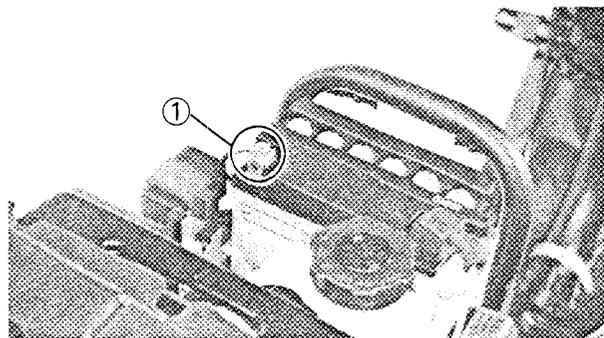
## 2. Remove:

- Oil pump cable ①
- Oil pipe ②

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

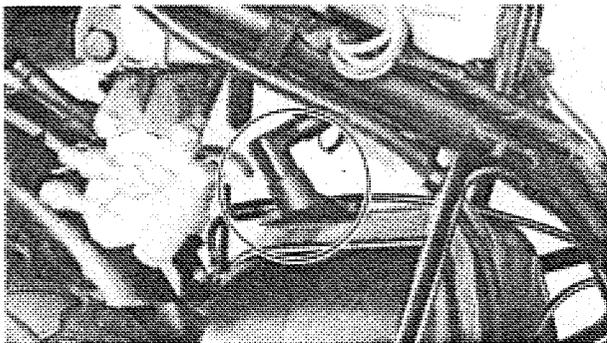
Plug the oil pipe so the oil will not run out of the oil tank.

---

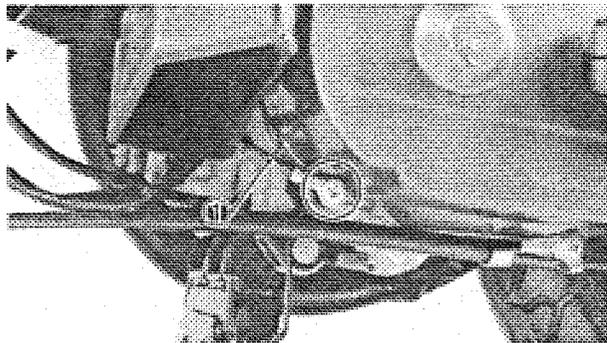


## 3. Remove:

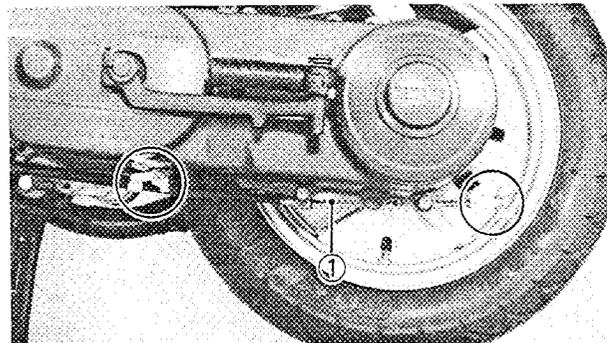
- Battery negative lead ①



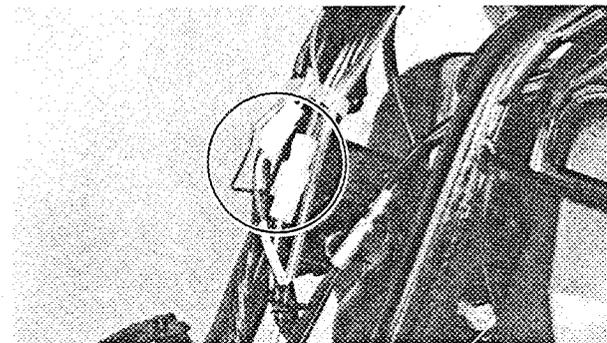
- 4. Remove:
  - Spark plug cap



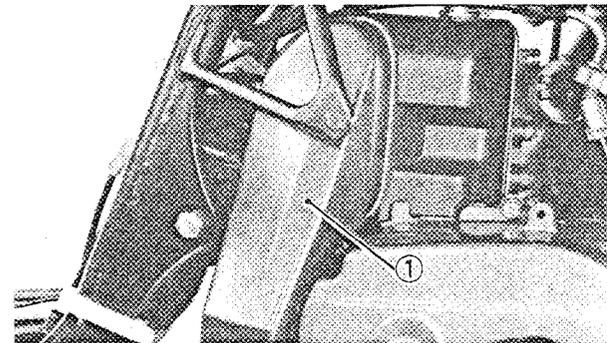
- 5. Remove:
  - Earth lead ①



- 6. Remove:
  - Rear brake cable ①

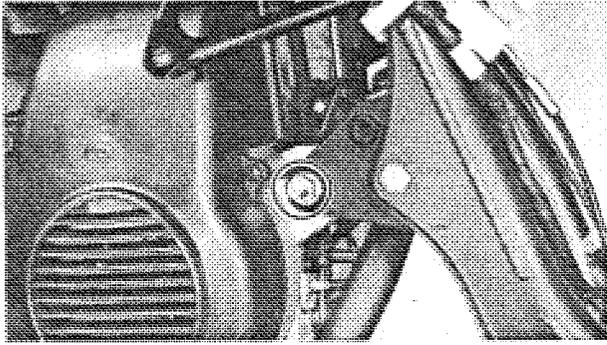


- 7. Disconnect:
  - C.D.I. magneto leads
  - Starter motor leads

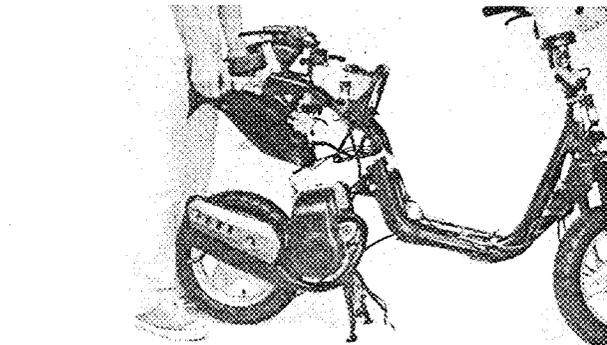
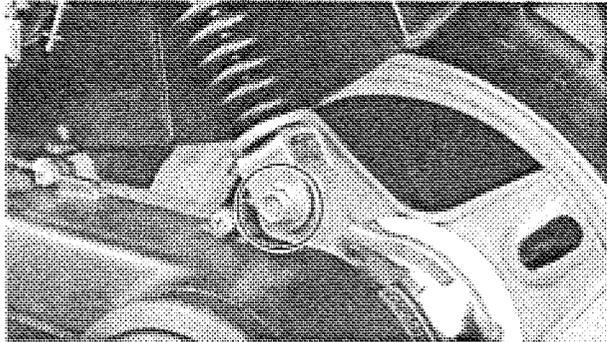


ENGINE REMOVAL

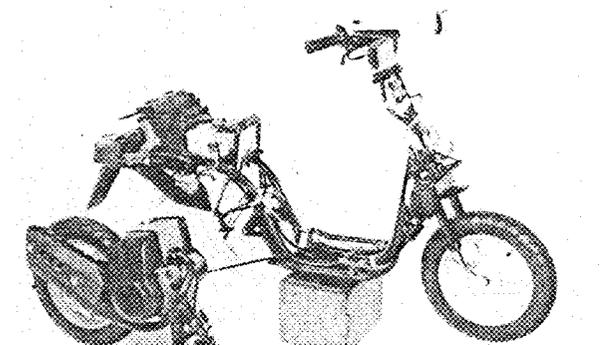
- 1. Remove:
  - Air shroud ①



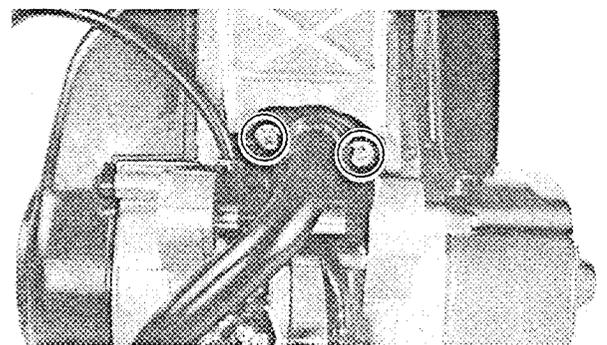
2. Remove:
  - Engine mounting bolts



3. Remove:
  - EngineLift up the frame and remove the engine.



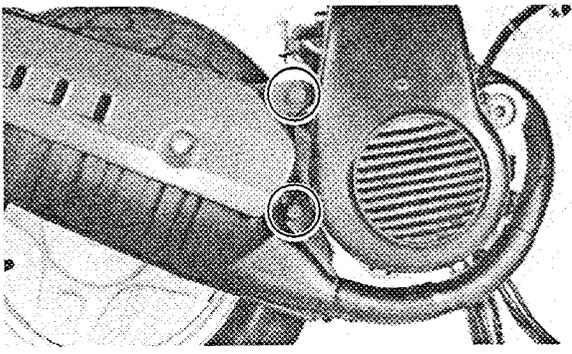
4. Place the frame on a suitable stand.



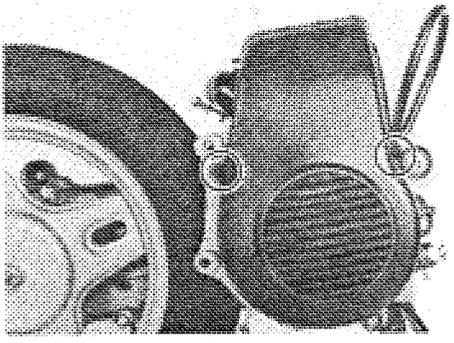
## DISASSEMBLY

### MUFFLER

1. Remove:
  - Exhaust pipe

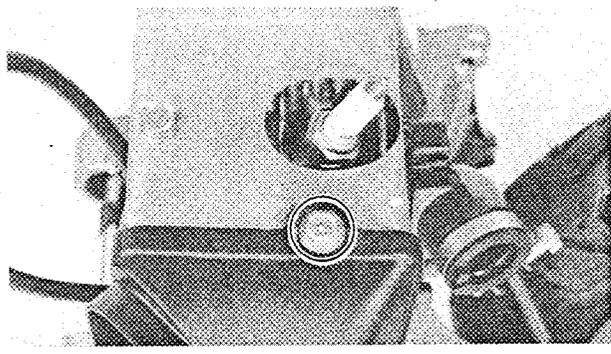


- 2. Remove:
  - Muffler

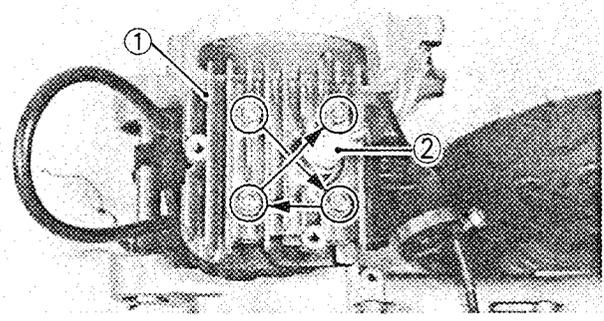
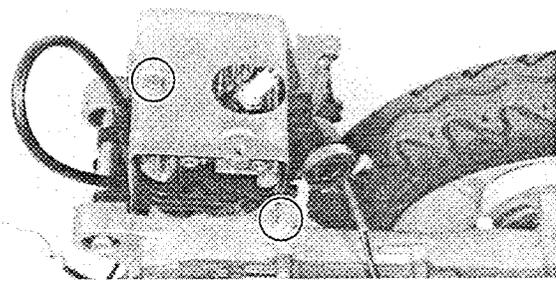


**CYLINDER HEAD**

- 1. Remove:
  - Fan cover



- 2. Remove:
  - Air shroud

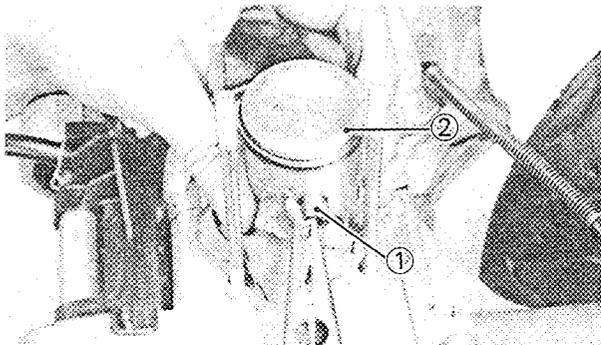
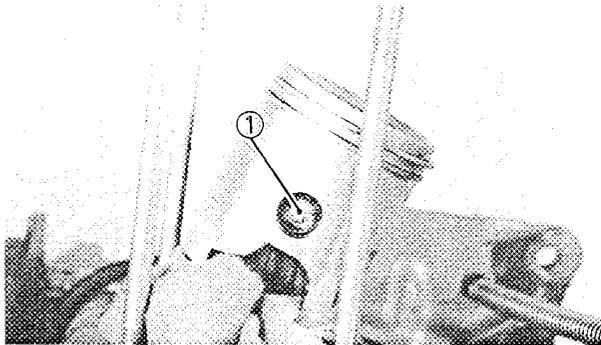
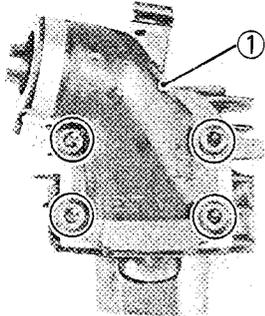
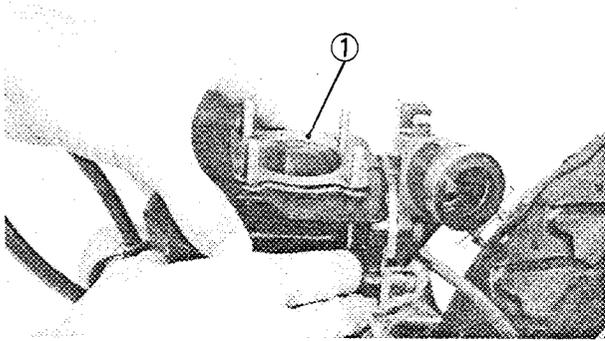


- 3. Remove:
  - Cylinder head ①
  - Cylinder head gasket

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

- Before loosening the cylinder head, loosen the spark plug ②.
- The cylinder head holding nuts should be loosened 1/2 turn each time, and remove.

\_\_\_\_\_

**CYLINDER**

## 1. Remove:

- Cylinder ①
- Cylinder gasket

## 2. Remove:

- Carburetor joint ①
- Reed valve assembly

**PISTON PIN AND PISTON**

## 1. Remove:

- Piston pin clip ①

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

Before removing the piston pin clip, cover the crankcase with a clean rag so you will not accidentally drop the clip into the crankcase.

## 2. Remove:

- Piston pin ①
- Piston ②
- Piston pin bearing

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

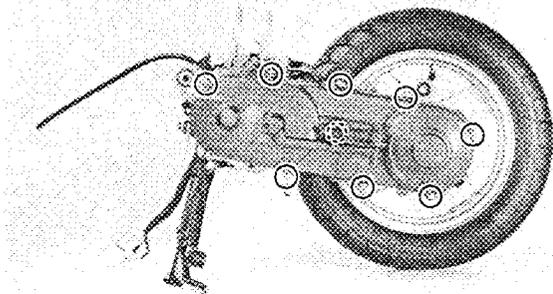
Before removing the piston pin, deburr the clip groove and pin hole area. If the piston pin groove is deburred and piston pin is still difficult to remove, use Piston Pin Puller (YU-01304).

**CAUTION:** \_\_\_\_\_

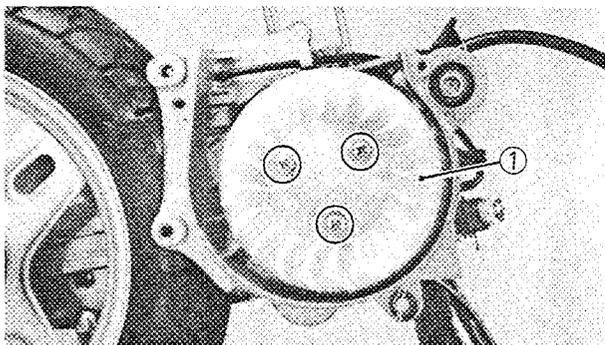
Do not use a hammer to drive the piston pin out.

**PRIMARY AND SECONDARY SHEAVE**

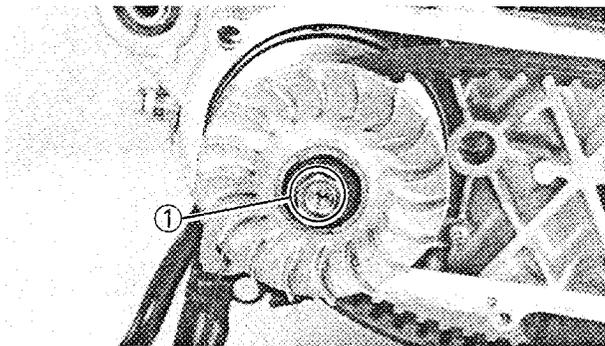
1. Remove:
- Crankcase cover (Left)
  - Dowel pins



2. Remove:
- Fan ①



3. Remove:
- Nut ① (Primary sheave)

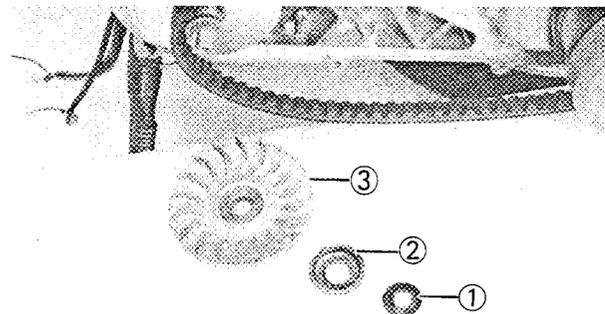
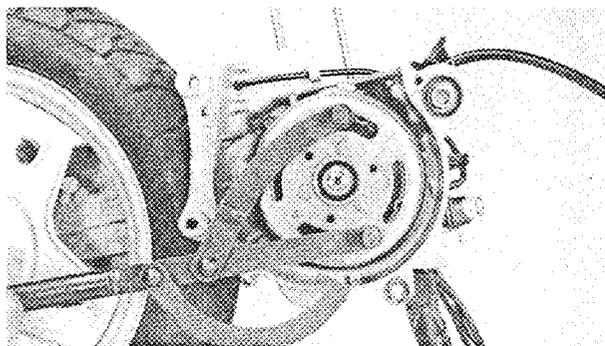


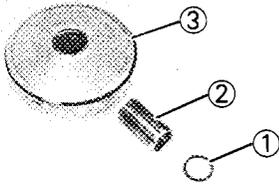
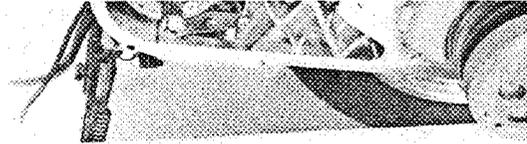
**NOTE:** \_\_\_\_\_

When loosening the nut (primary sheave), hold the C.D.I. magneto using Flywheel Holding Tool (YU-01235).

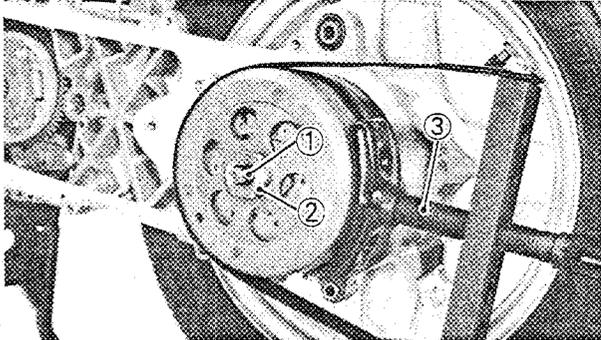
\_\_\_\_\_

4. Remove:
- Conical spring washer ①
  - One-way clutch ②
  - Primary fixed sheave ③
  - V-Belt



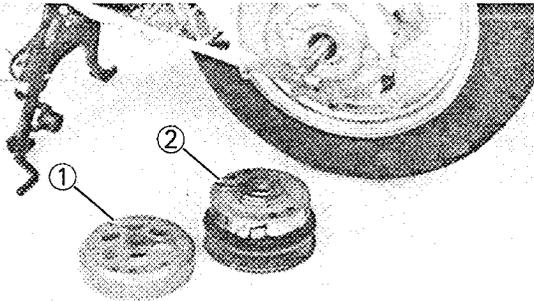


5. Remove:
- Shim ①
  - Collar ②
  - Primary sheave assembly ③

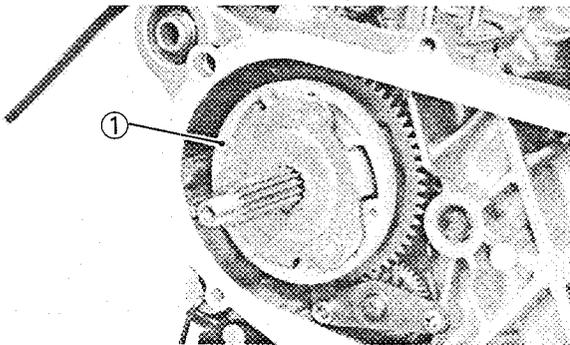


6. Remove:
- O-ring ①
  - Nut ② (Secondary sheave)

**NOTE:** \_\_\_\_\_  
 Hold the secondary sheave using Sheave Holder (YS-01880) ③.  
 \_\_\_\_\_

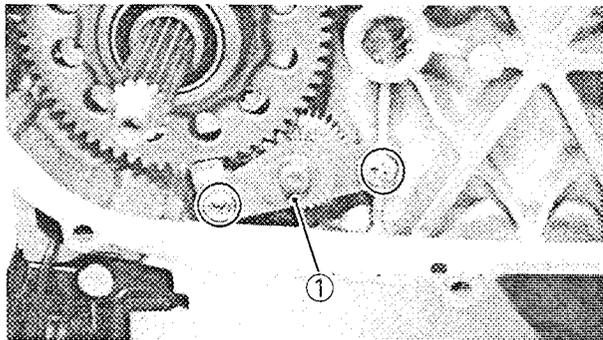


7. Remove:
- Clutch housing ①
  - Secondary sheave assembly ②

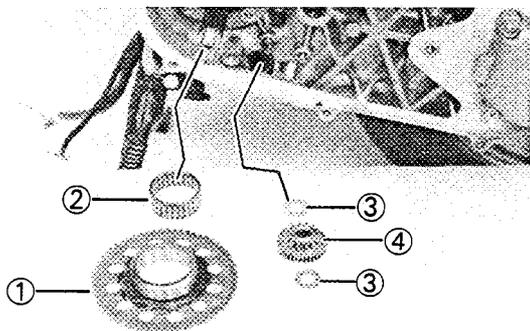


**STARTER SYSTEM**

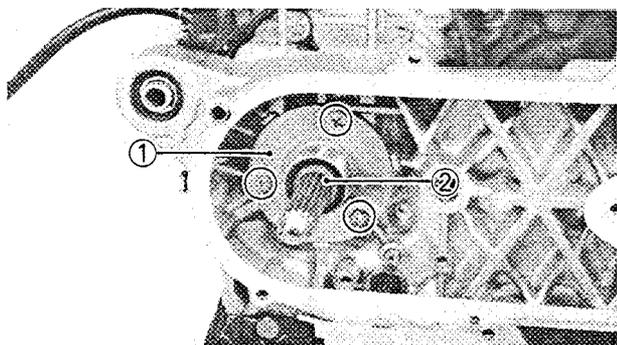
1. Remove:
- Starter clutch assembly ①



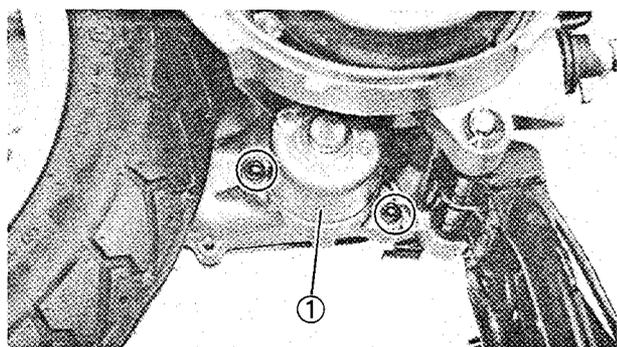
2. Remove:
- Plate ① (Idle gear)



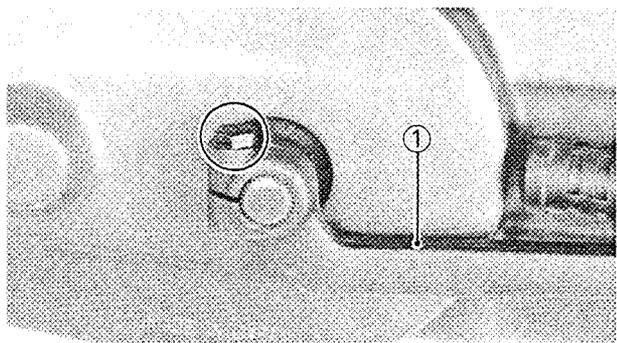
3. Remove:
- Starter wheel gear ①
  - Bearing ②
  - Washers ③
  - Idle gear ④



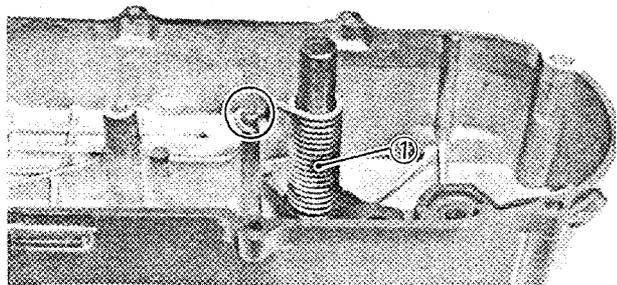
4. Remove:
- Stay ①
  - Collar ②



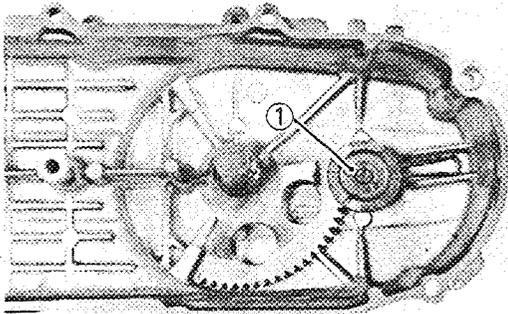
5. Remove:
- Starter motor ①



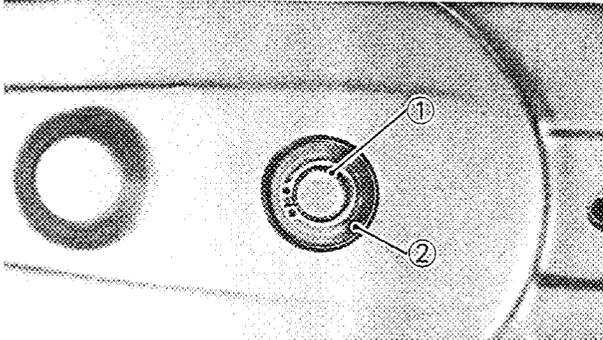
6. Remove:
- Kick crank ①



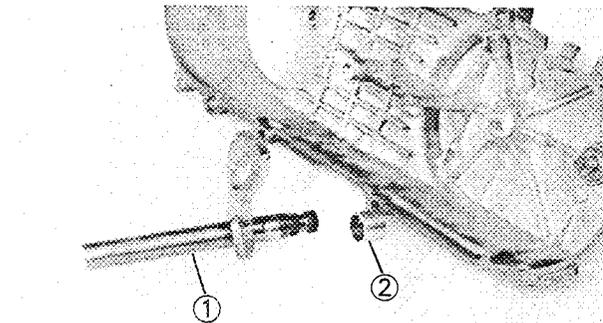
7. Remove:
- Kick torsion spring ①



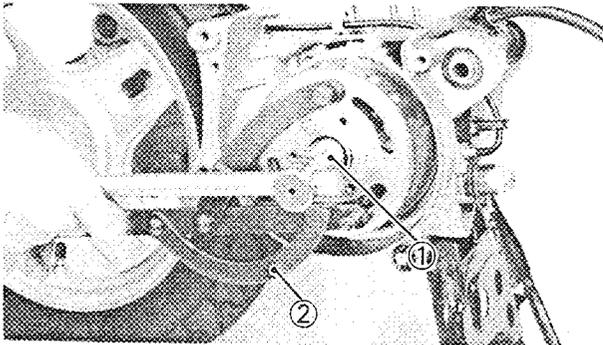
8. Remove:
- Kick pinion gear ①



9. Remove:
- Circlip ①
  - Plain washer ②

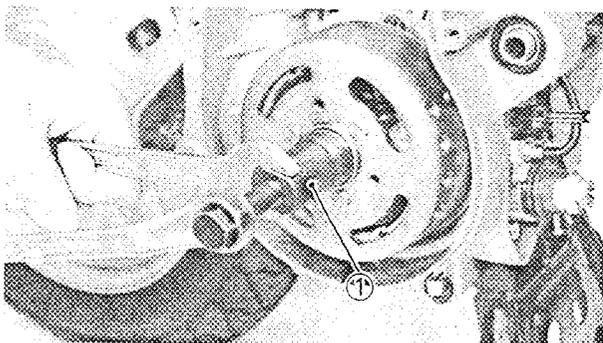


10. Remove:
- Kick shaft ①
  - Collar ②

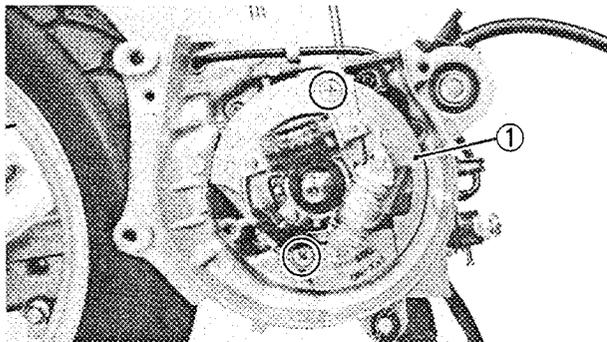


### C.D.I. MAGNETO

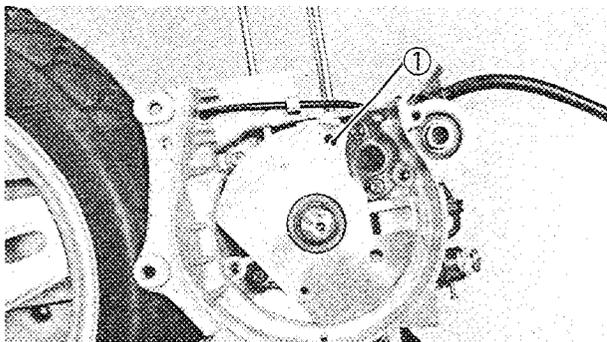
1. Remove:
- Nut ① (C.D.I. magneto)
  - Use Flywheel Holding Tool (YU-01235) ②.



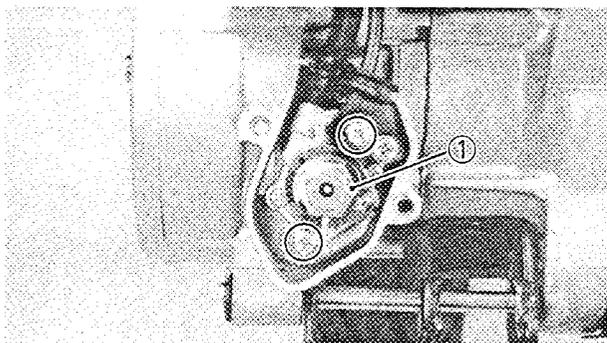
2. Remove:
- C.D.I. magneto
  - Use Flywheel Magneto Puller (YM-01189) ①.
  - Woodruff key



- 3. Remove:
  - Stator assembly ①

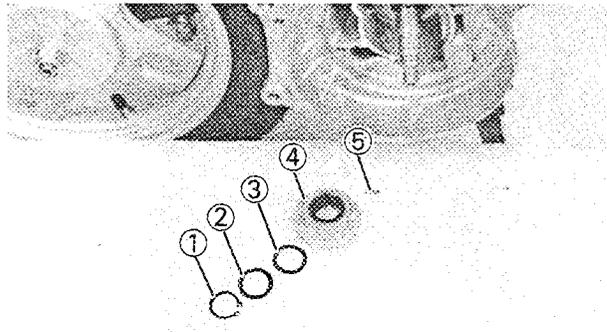


- 4. Remove:
  - Gasket ①



**AUTOLUBE PUMP**

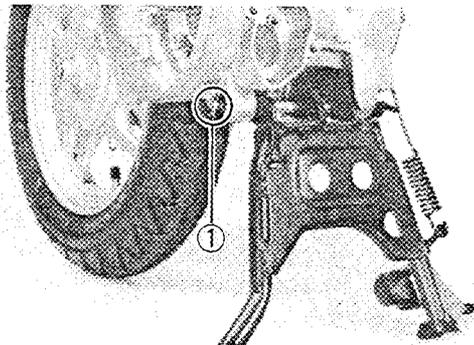
- 1. Remove:
  - Autolube pump ①



- 2. Remove:
  - Circlip ①
  - Shim ②
  - Wave washer ③
  - Pump drive gear ④
  - Pin ⑤

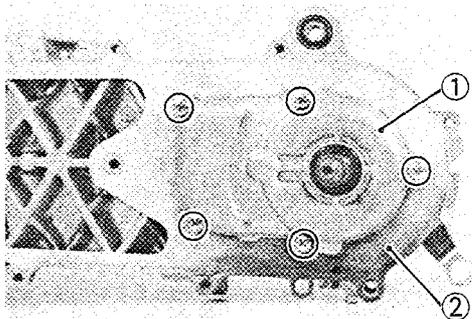
**TRANSMISSION**

- 1. Remove:
  - Rear wheel
  - Brake shoe plate

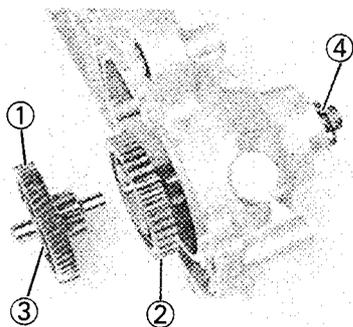


2. Unhook:  
• Spring (Centerstand)

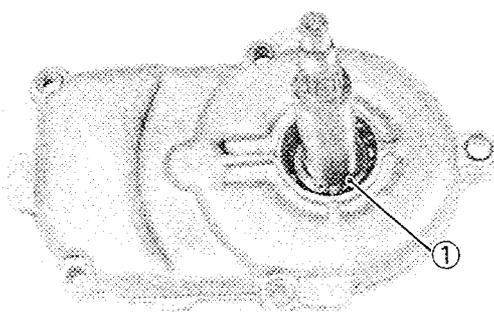
3. Remove:  
• Clip ①  
• Centerstand



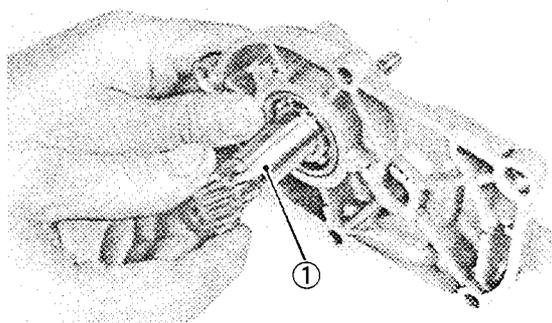
4. Remove:  
• Transmission case cover ①  
• Gasket ②



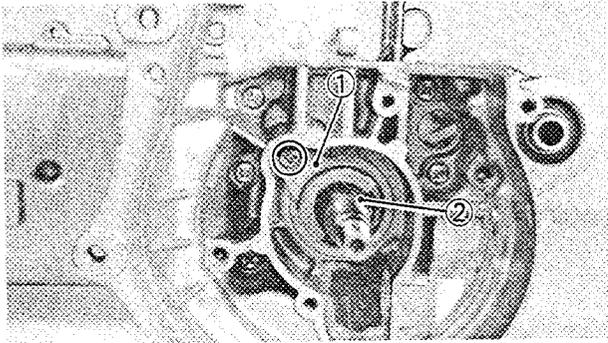
5. Remove:  
• Main axle ①  
• Drive axle ②  
• Washer ③ (Main axle)  
• Washer ④ (Drive axle)



6. Remove:  
• Oil seal  
• Circlip ①

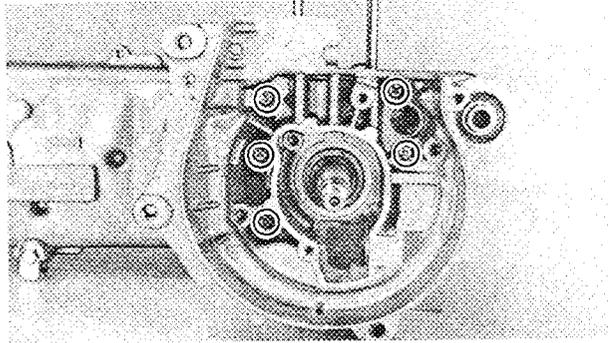


7. Remove:  
• Secondary sheave axle ①



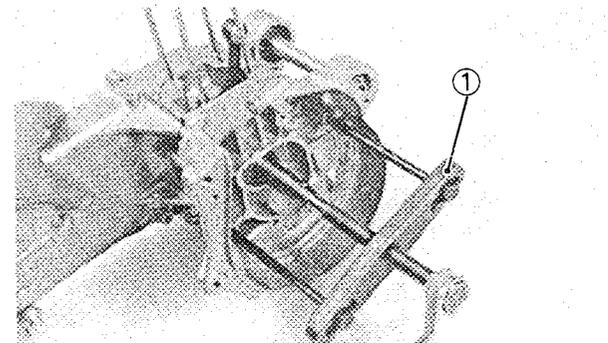
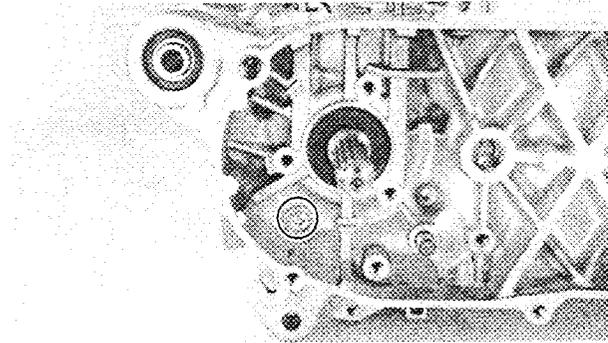
**CRANKCASE AND CRANKSHAFT**

- 1. Remove:
  - Oil seal stopper ①
  - Circlip ②



- 2. Remove:
  - Screws (Crankcase)

**NOTE:** \_\_\_\_\_  
 Loosen each screw 1/4 turn, and remove them after all are loosened.  
 \_\_\_\_\_



- 3. Attach:
  - Crankcase Separating Tool (YU-01135) ①

**NOTE:** \_\_\_\_\_  
 Fully tighten the tool holding bolts, but make sure the tool body is parallel with the case. If necessary, one screw may be backed out slightly to level tool body.  
 \_\_\_\_\_

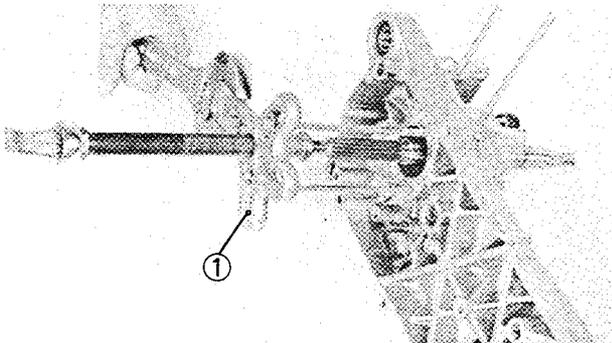
- 4. Remove:
  - Crankcase (Left)
 As pressure is applied, alternately tap on the engine mounting bosses.

**CAUTION:** \_\_\_\_\_

Use soft hammer to tap on the case half. Tap only on reinforced portions of case. Do not tap on gasket mating surface. Work slowly and carefully. Make sure the case halves separate evenly. If one end "hangs up", take



pressure off the push screw, realign, and start over. If the cases do not separate, check for a remaining case screw or fitting. Do not force.



5. Remove:

- Crankshaft

Use Universal Puller Set (YU-33270) ①.

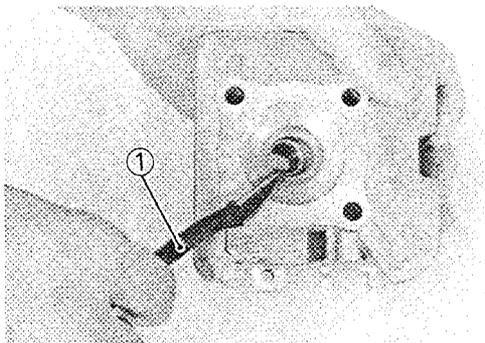
**NOTE:**

Use the following bolts available on the market.

Length: 160 mm (6.3 in)

Thread: 6 mm (0.24 in)

Pitch: 1.25 mm



## INSPECTION AND REPAIR CYLINDER HEAD

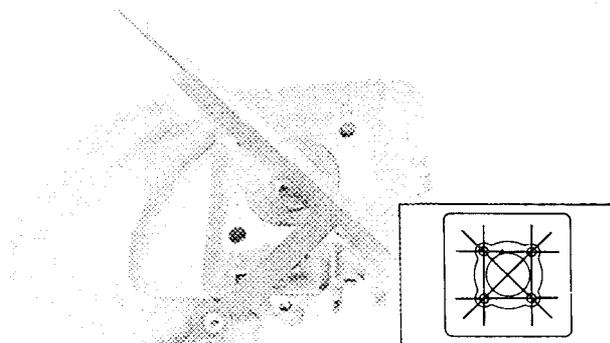
1. Remove:

- Carbon deposits

Use a rounded scraper ①.

**NOTE:**

Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the aluminum.



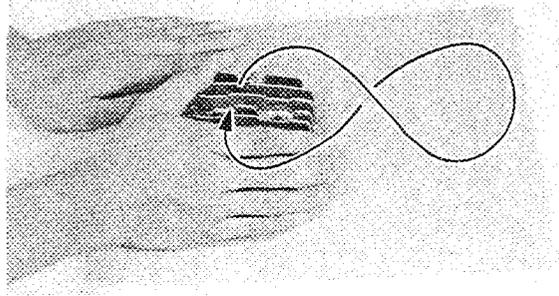
2. Inspect:

- Cylinder head warpage

Out of specification → Re-surface.

### Warpage measurement and re-surfacing steps:

- Attach a straight edge and a thickness gauge on the cylinder head.
- Measure the warpage limit.

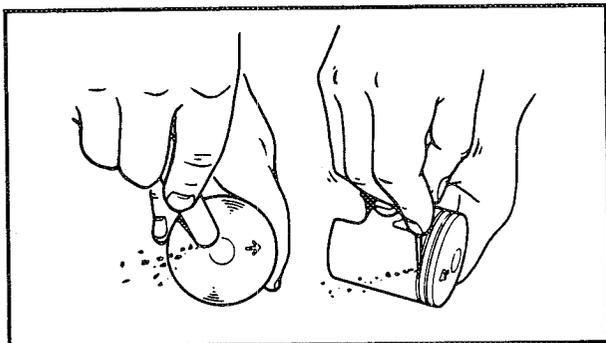


**Warpage Limit:**  
0.02 mm (0.0008 in)

- If the warpage is out of specification, reface the cylinder head.
- Place a 400 ~ 600 grit wet sandpaper on the surface plate, and re-surface the head using a figure-eight sanding pattern.

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

Rotate the head several times to avoid removing too much material from one side.



### CYLINDER AND PISTON

1. Eliminate:

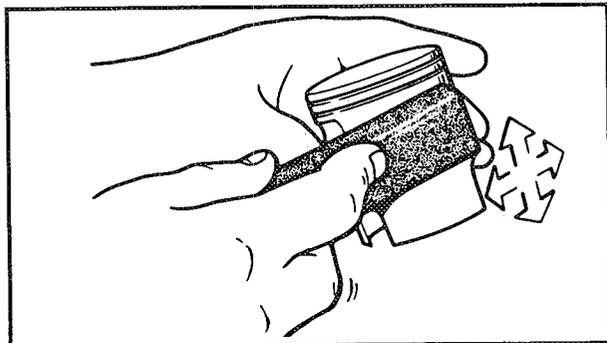
- Carbon deposits  
From the piston crown and ring grooves.

2. Eliminate:

- Score marks and lacquer deposits  
From the sides of piston.  
Use a 600 ~ 800 grit wet sandpaper.

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

Sand in a crisscross pattern. Do not sand excessively.

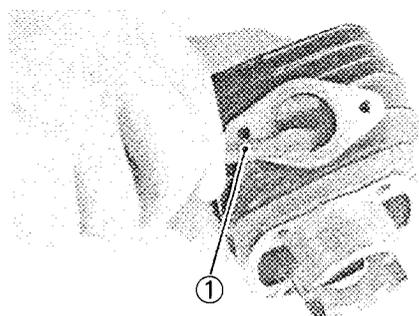


3. Inspect:

- Piston wall  
Wear/Scratches/Damage → Replace.

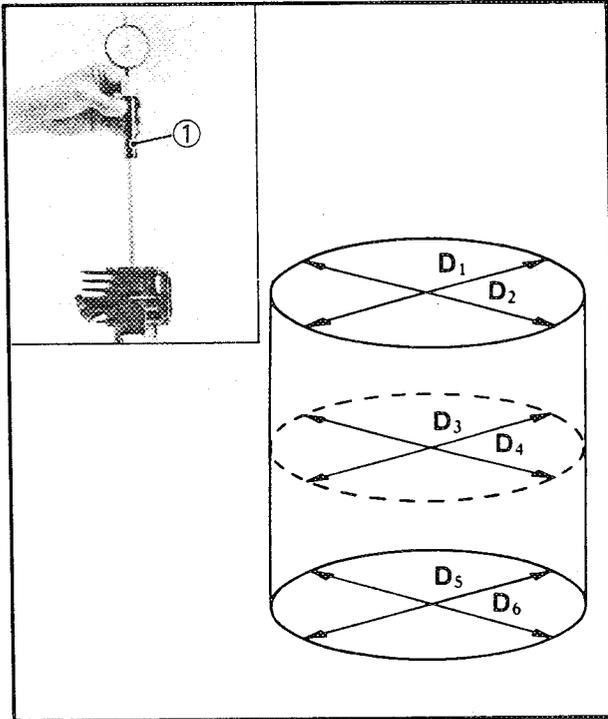
4. Eliminate:

- Carbon deposits  
Use a rounded scraper ①.





5. Inspect:
- Cylinder wall
  - Wear/Scratches → Rebore or replace.



6. Measure:
- Piston-to-cylinder clearance

**Piston-to-cylinder clearance measurement steps:**

First step:

- Measure the cylinder bore "C" with a Cylinder Bore Gauge.

**NOTE:**

Measure the cylinder bore "C" in parallel to and at right angles to the crankshaft. Then, find the average of the measurements.

	Standard	Wear Limit
 Cylinder bore "C"	40.00 ~ 40.02 mm (1.575 ~ 1.583 in)	40.50 mm (1.594 in)
Taper "T"	—	0.05 mm (0.0019 in)
Out of round "R"	—	0.01 mm (0.0004 in)

C = Maximum D

T = (Maximum D<sub>1</sub> or D<sub>2</sub>) -  
(Maximum D<sub>5</sub> or D<sub>6</sub>)

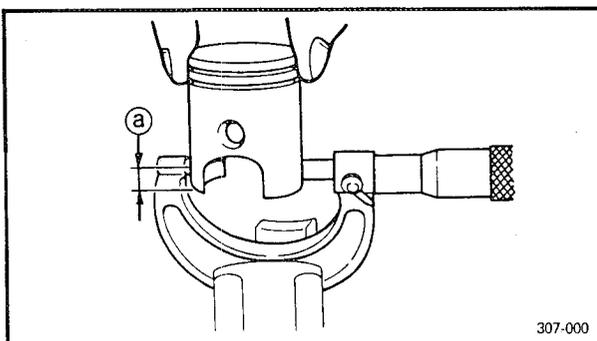
R = (Maximum D<sub>1</sub>, D<sub>3</sub> or D<sub>5</sub>) -  
(Minimum D<sub>2</sub>, D<sub>4</sub> or D<sub>6</sub>)

- If out of specification, rebore or replace cylinder, and replace piston and piston rings as a set.

2nd step:

- Measure the piston skirt diameter "P" with a micrometer.

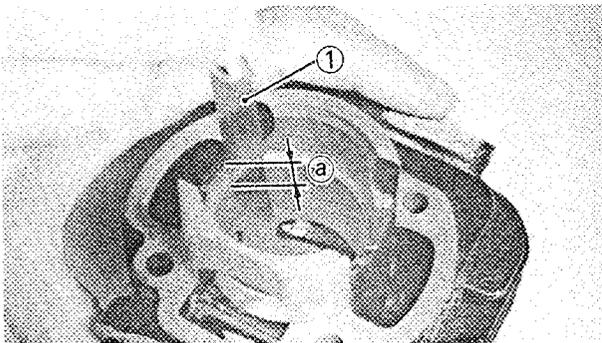
- Ⓐ 5.0 mm (0.2 in) from the piston bottom edge.



307-000



	<b>Piston Size P</b>	
Standard	40.05 ~ 40.07 mm (1.577 ~ 1.578 in)	
Oversize 1	40.25 mm (1.585 in)	
Oversize 2	40.50 mm (1.594 in)	
<p>• If out of specification, replace piston and piston rings as a set.</p> <p>3rd step:</p> <p>• Calculate the piston-to-cylinder clearance with following formula:</p>		
<p><b>Piston-to-cylinder Clearance =</b>  <b>Cylinder bore "C" –</b>  <b>Piston skirt diameter "P"</b></p>		
<p>• If out of specification, rebore or replace cylinder, and replace piston and piston rings as a set.</p>		
	<p><b>Piston-to-cylinder Clearance:</b>                  0.034 ~ 0.047 mm                  (0.0013 ~ 0.0018 in)                  Limit: 0.1 mm (0.004 in)</p>	



7. Measure:

- End gap

Out of specification → Replace rings as a set.  
 Use a Feeler Gauge ①.

	Standard	Limit
Top ring	0.15 ~ 0.30 mm (0.006 ~ 0.012 in)	0.70 mm (0.028 in)
2nd ring	0.15 ~ 0.30 mm (0.006 ~ 0.012 in)	0.70 mm (0.028 in)

① Measuring Point 20 mm (0.8 in)



## 8. Oversize piston ring size:

Ring size is stamped on top of the ring.

Oversize piston ring	
Oversize 1	25
Oversize 2	50

## PISTON PIN AND PISTON PIN BEARING

## 1. Apply:

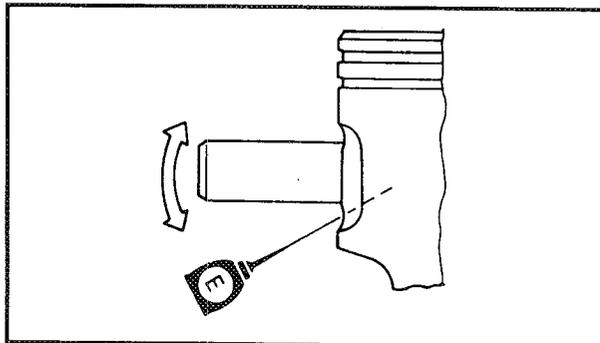
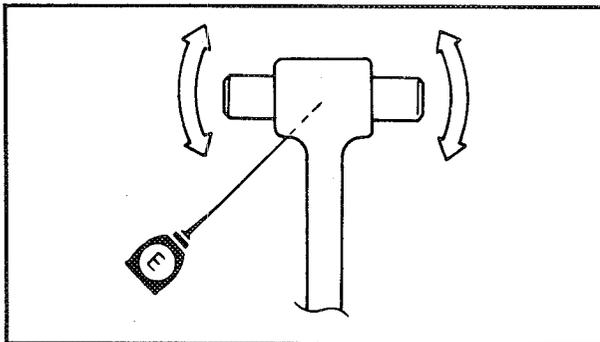
- 2 cycle oil

To the piston pin and bearing.

## 2. Install:

- Piston pin
- Piston pin bearing

Into the small end of the connecting rod.



## 3. Check:

- Free play

There should be no noticeable for the play.  
Free play exists → Inspect the connecting rod for wear/Replace the pin and/or connecting rod as required.

## 4. Install:

- Piston pin

Into the piston pin hole.

## 5. Check:

- Free play (when the piston pin is in place in the piston)

There should be no noticeable for the play.  
Free play exists → Replace piston pin and/or piston.

## 6. Inspect:

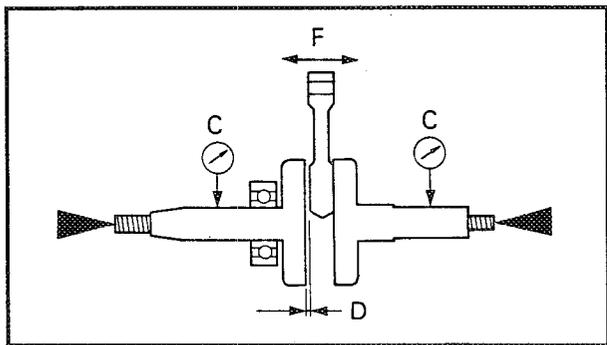
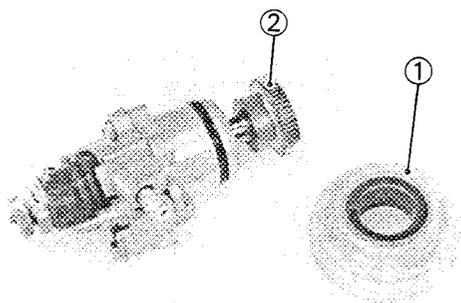
- Piston pin and bearing

Signs of heat discoloration → Replace.

**AUTOLUBE PUMP**

Wear or an internal malfunction may cause pump output to vary from the factory setting. This situation is, however, extremely rare. If improper output is suspected, inspect the following:

1. Inspect:
  - Delivery line  
Obstructions → Blow out.
  - O-ring  
Wear/Damage → Replace.
2. Inspect:
  - Autolube pump drive gear teeth ①
  - Autolube pump driven gear teeth ②  
Pitting/Wear/Damage → Replace.

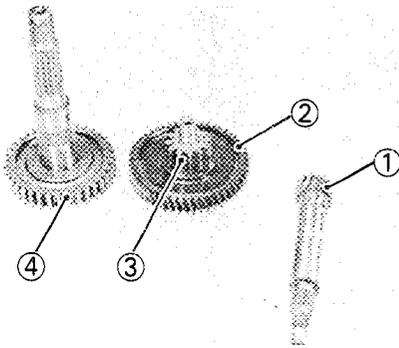


**CRANKSHAFT**

1. Measure:
  - Runout limit "C"
  - Connecting rod big end side clearance "D"
  - Small end free play limit "F"  
Out of specification → Replace.  
Use V-Blocks, Dial Gauge and thickness gauge.

	<b>Runout Limit "C":</b> 0.03 mm (0.0012 in)
	<b>Connecting Rod Big End Side Clearance "D":</b> 0.2 ~ 0.5 mm (0.008 ~ 0.02 in)
	<b>Small End Free Play:</b> 0.4 ~ 0.8 mm (0.015 ~ 0.031 in)

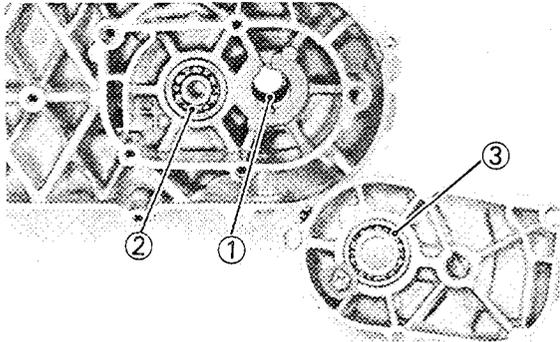
2. Inspect:
  - Bearings (Crankshaft)  
Spin the bearing inner race.  
Excessive play/Roughness → Replace.  
Pitting/Damage → Replace.



**TRANSMISSION**

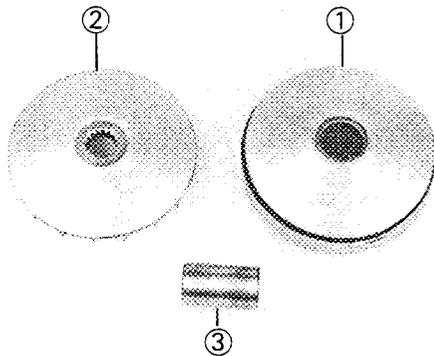
1. Inspect:

- Primary drive gear teeth ①
  - Primary driven gear teeth ②
  - Secondary drive gear teeth ③
  - Secondary driven gear teeth ④
- Burrs/Chips/Roughness/Wear → Replace.



2. Inspect:

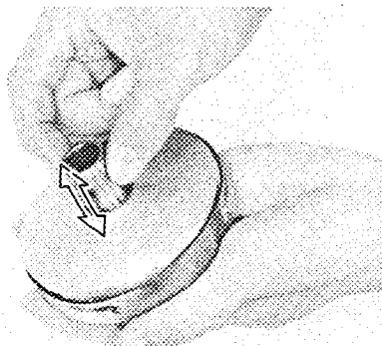
- Drive gear bearing ①
  - Main axle bearing ②
  - Secondary sheave axle bearing ③
- Spin the bearing inner race.  
Excessive play/Roughness → Replace.  
Pitting/Damage → Replace.



**PRIMARY SHEAVE**

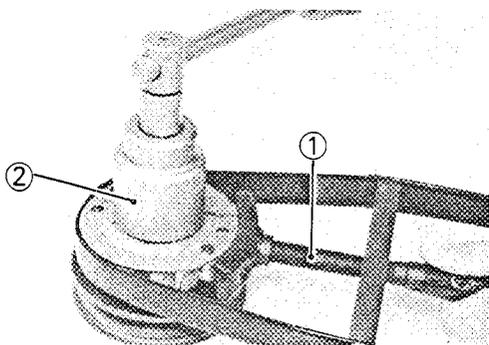
1. Inspect:

- Primary sliding sheave ①
  - Primary fixed sheave ②
  - Collar ③
- Wear/Cracks/Scratch/Damage → Replace.



2. Check:

- Free movement
- Insert the collar into the primary sliding sheave, and check for free movement.  
Stick or excessive play → Replace the sheave or collar.



**SECONDARY SHEAVE**

**Disassembly**

1. Attach:

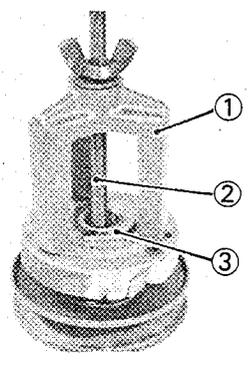
- Primary Sheave Holder (YS-01880) ①
- Socket Wrench (41 mm) ②

2. Loosen:

- Clutch securing nut

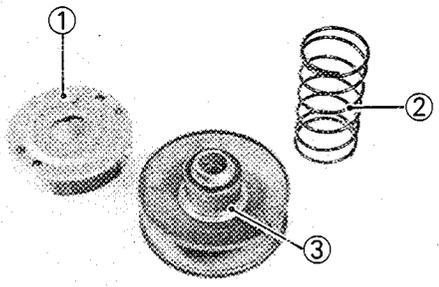
**CAUTION:**

Do not remove the clutch securing nut yet.

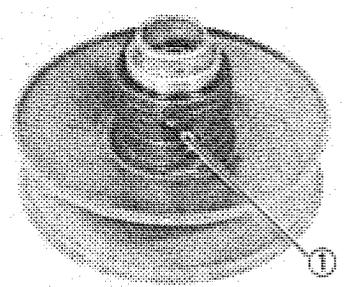


- 3. Attach:
  - Clutch Spring Holder (YS-28891) ①

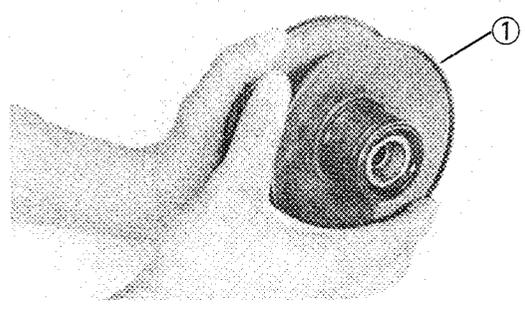
**NOTE:** \_\_\_\_\_  
 Use the following bolt ② available on the market.  
 Thread: 10 mm (0.39 in)  
 Pitch: 1.25 mm



- 4. Remove:
  - Clutch securing nut ③
- 5. Remove:
  - Clutch assembly ①
  - Clutch spring ②
  - Spring seat ③

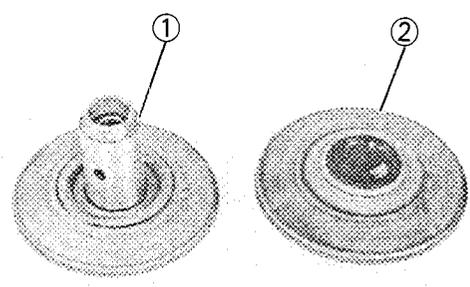


- 6. Remove:
  - Guide pins ①

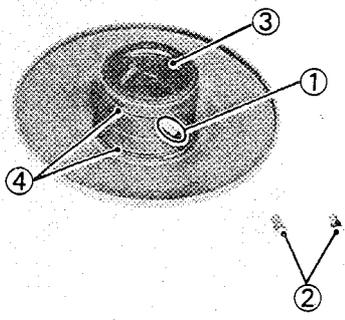


- 7. Remove:
  - Secondary sliding sheave ①

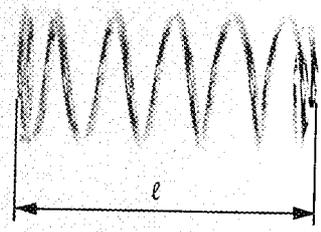
**Inspection**



- 1. Inspect:
  - Secondary fixed sheave ①
  - Secondary sliding sheave ②
 Scratch/Crack/Damage → Replace as a set.

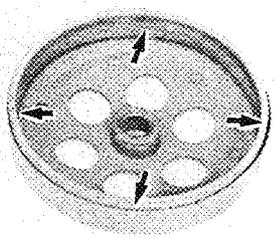


2. Inspect:
- Torque cam groove ①
  - Guide pin ②  
Wear/Damage→Replace as a set.
  - Oil seals ③
  - O-rings ④  
Damage→Replace.



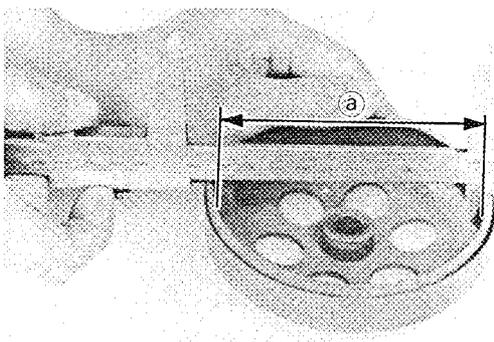
3. Measure:
- Clutch spring free length ℓ  
Out of specification→Replace.

	<b>Clutch Spring Free Length:</b>
	109.6 mm (4.31 in)
	< Limit >: 94.0 mm (3.70 in)



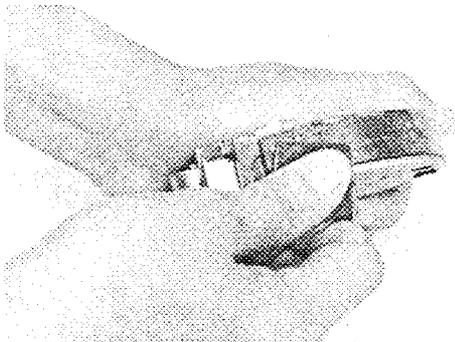
4. Inspect:
- Clutch housing inner surface  
Oil/Scratches→Remove.

Oil	Use a rag soaked in lacquer thinner or solvent.
Scratches	Use an emery cloth (lightly and evenly polishing).



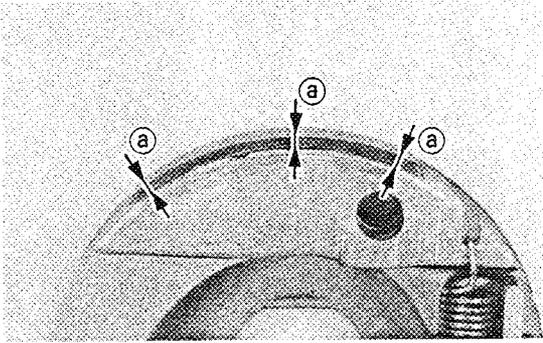
5. Measure:
- Clutch housing inside diameter a  
Out of specification→Replace.

	<b>Clutch Housing Inside Diameter:</b>
	105.0 mm (4.13 in)
	< Wear Limit >: 105.4 mm (4.15 in)



6. Inspect:
- Clutch shoes  
Glazed parts→Sand with coarse sandpaper.

**NOTE:** \_\_\_\_\_  
After using the sand paper, clean of the polished particles with cloth.



## 7. Measure:

- Clutch shoe thickness (a)
- Out of specification → Replace.

**Clutch Shoe Thickness:**

4.0 mm (0.16 in)

&lt; Wear Limit &gt; :

2.5 mm (0.10 in)

**Assembly**

When assembling the secondary sheave, reverse the disassembly procedure. Note the following points.

## 1. Apply:

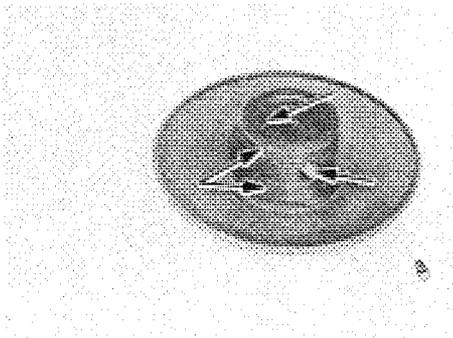
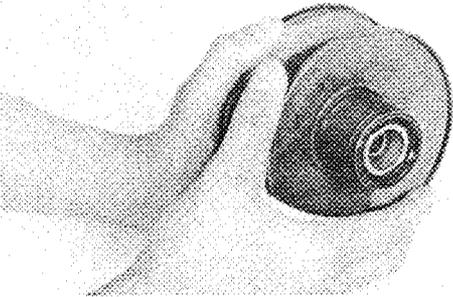
- BEL-RAY Assembly Lube®  
(to the inside of the sliding sheave)

## 2. Install:

- Sliding sheave

**NOTE:**

Be careful so that the oil seal lips are not turned over when installing the sheave.

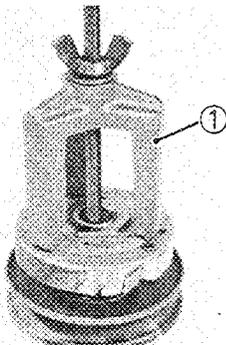


## 3. Apply:

- BEL-RAY Assembly Lube®  
(to the torque cam grooves and O-rings)

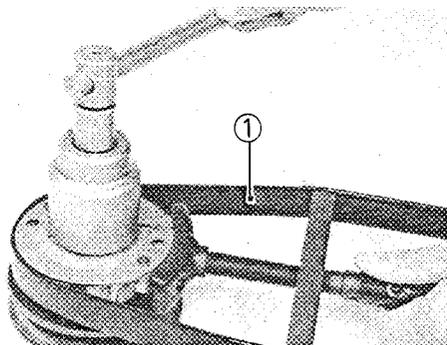
## 4. Check:

- Sliding sheave
- Unsmooth operation → Repair.



5. Install:

- Clutch securing nut  
Use Clutch Spring Holder ① (YS-28891).



6. Tighten:

- Clutch securing nut  
Use Sheave Holder ① (YS-01880) and Wrench (41 mm).

	<b>50 Nm (5.0 m•kg, 36 ft•lb)</b>
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**V-BELT**

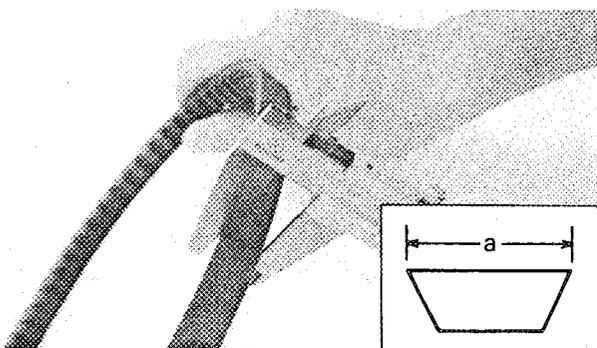
1. Inspect:

- V-belt  
Crack/Wear → Replace.

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

Replace the V-belt smeared with a lot of oil or grease.

\_\_\_\_\_



2. Measure:

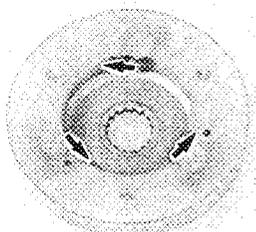
- V-belt width ②  
Out of specification → Replace.

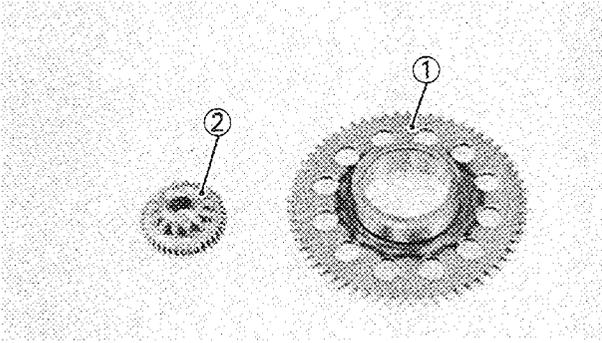
	<p><b>V-Belt Width:</b>  <b>15.0 mm (0.59 in)</b>  <b>&lt;Wear Limit&gt;:</b>  <b>13.5 mm (0.53 in)</b></p>
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**STARTER CLUTCH AND GEARS**

1. Inspect:

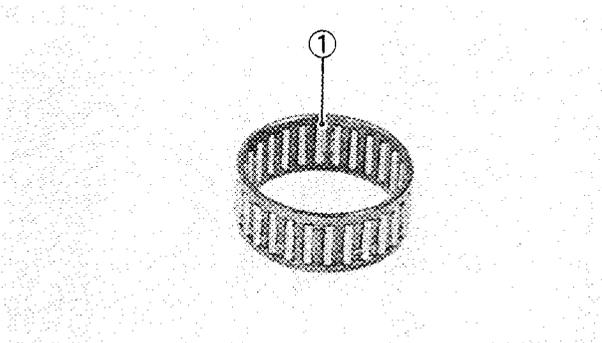
- Starter clutch  
Push the dowel pin to arrow direction.  
Unsmooth operation → Replace starter clutch assembly.





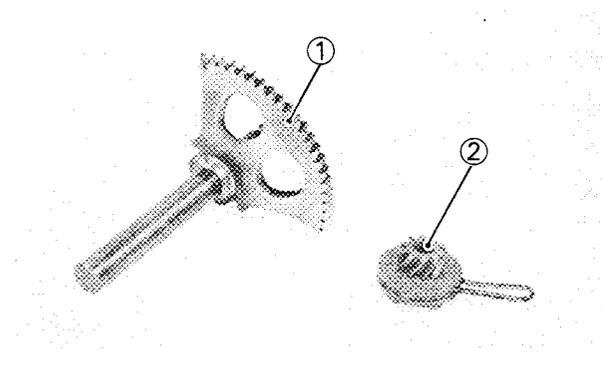
## 2. Inspect:

- Starter wheel gear teeth ①
  - Idle gear teeth ②
- Burrs/Chips/Roughness/Wear → Replace.



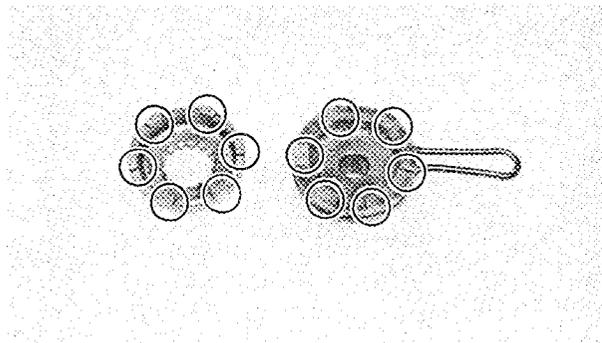
## 3. Inspect:

- Bearing ① (Starter wheel gear)
- Pitting/Damage → Replace.



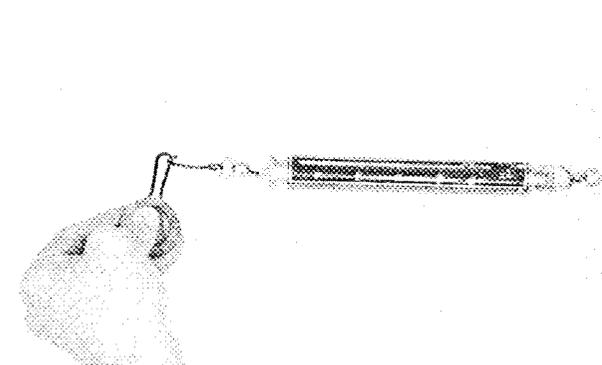
## 4. Inspect:

- Kick gear teeth ①
  - Kick pinion gear teeth ②
- Burrs/Chips/Roughness/Wear → Replace.



## 5. Inspect:

- Mating dogs (Kick pinion gear and one-way clutch)
- Rounded edges/Damage → Replace.



## 6. Measure:

- Clip tension (Kick pinion gear)
- Out of specification → Replace.  
Use a spring balance.

**Standard Tension:**  
250 ~ 300 g (8.83 ~ 10.6 oz)



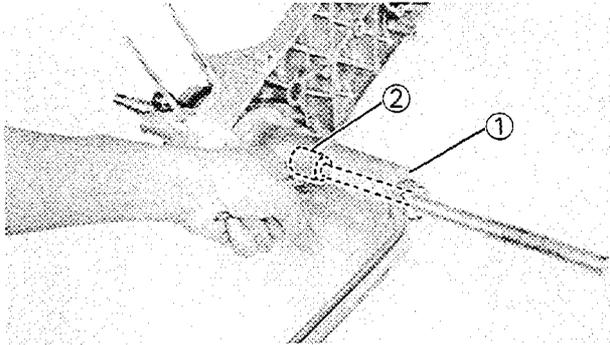
## ENGINE ASSEMBLY AND ADJUSTMENT

### CRANKSHAFT AND CRANKCASE

#### CAUTION:

To protect the crankshaft against scratches or to facilitate the operation of the installation.

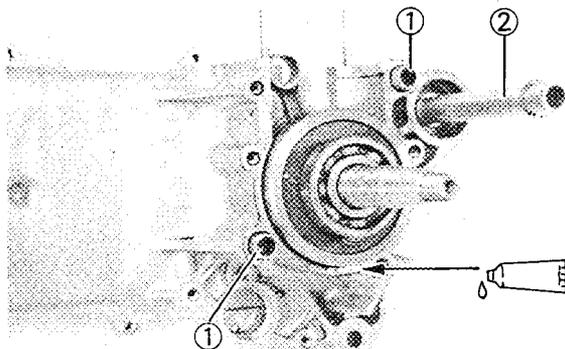
Apply the grease to the oil seal lips, and apply the engine oil to each bearing.



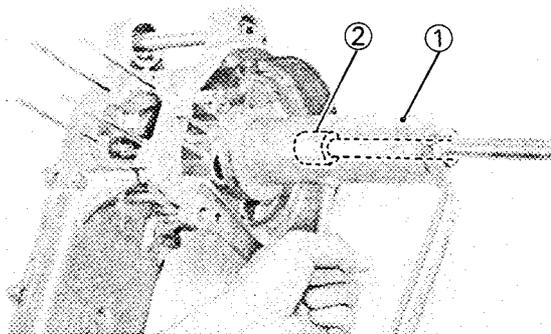
1. Attach:
  - Crankshaft Installing Tool (YU-90050 ①, YM-90062 ②)
2. Install:
  - Crankshaft
  - To left crankcase.

#### NOTE:

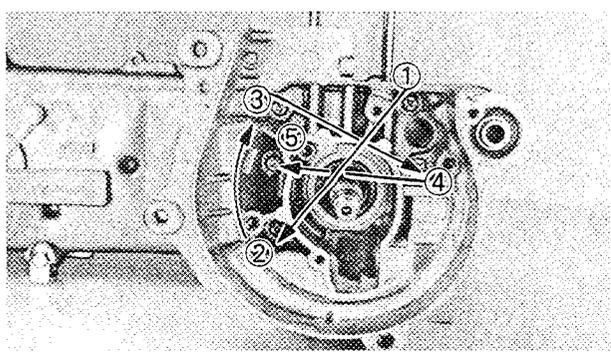
Hold the connecting rod at top dead center with one hand while turning the nut of the Installing Tool with the other. Operate the Installing Tool until the crankshaft bottoms against the bearing.



3. Apply:
  - Sealant (Quick Gasket® ) (ACC-11001-30-00)
  - To the mating surfaces of both case halves.
4. Install:
  - Dowel pins ①
  - Spacer ②



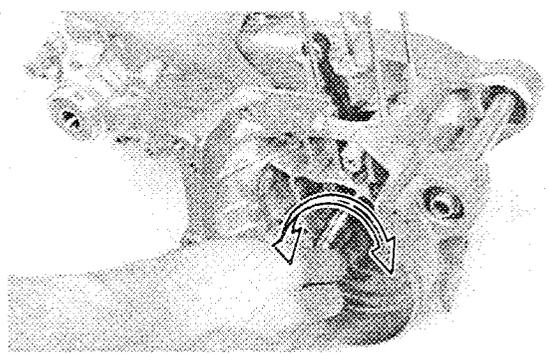
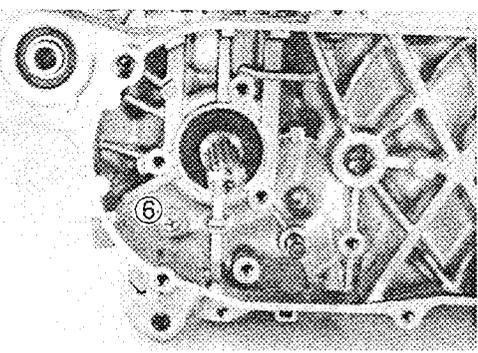
5. Install:
  - Right crankcase
  - Use crankshaft Installing Tool (YU-90050 ①, YM-90063 ②).



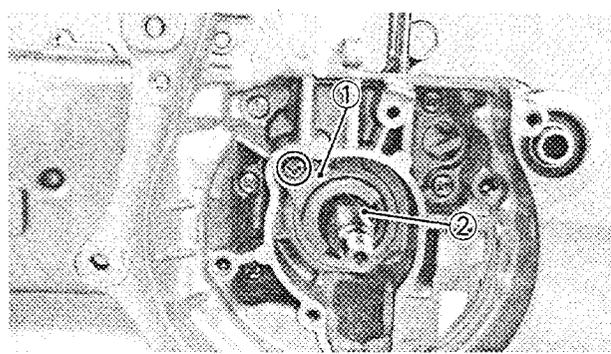
- 6. Tighten:
  - Crankcase holding screws

**NOTE:** \_\_\_\_\_  
Tighten the crankcase holding screws in stage, using a crisscross pattern.

 **8 Nm (0.8 m·kg, 5.8 ft·lb)**



- 7. Check:
  - Crankshaft operation
  - Unsmooth operation → Repair.



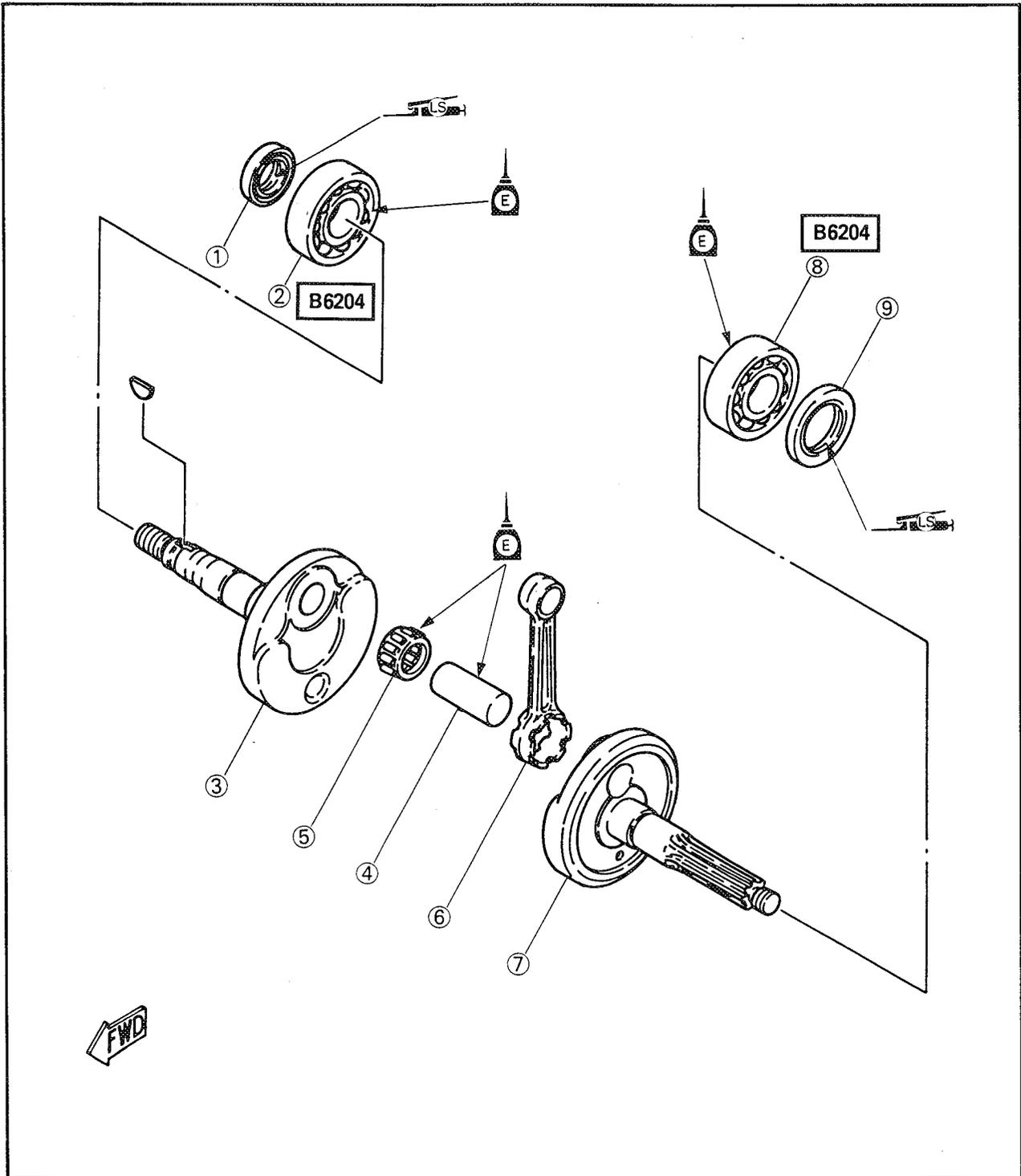
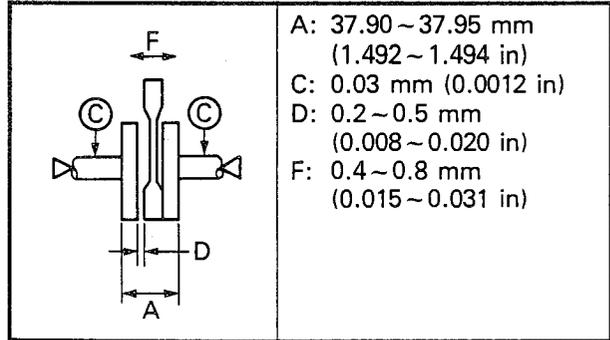
- 8. Install:
  - Oil seal stopper plate ①
  - Circlip ②

 **Screw (Oil Seal Stopper Plate):**  
**13 Nm (1.3 m·kg, 9.4 ft·lb)**



**CRANKSHAFT**

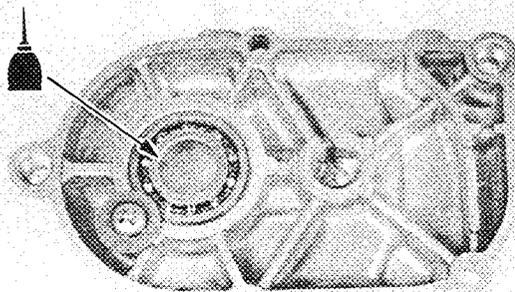
- ① Oil seal
- ② Bearing
- ③ Crank (Right)
- ④ Crank pin
- ⑤ Bearing
- ⑥ Connecting rod
- ⑦ Crank (Left)
- ⑧ Bearing
- ⑨ Oil seal



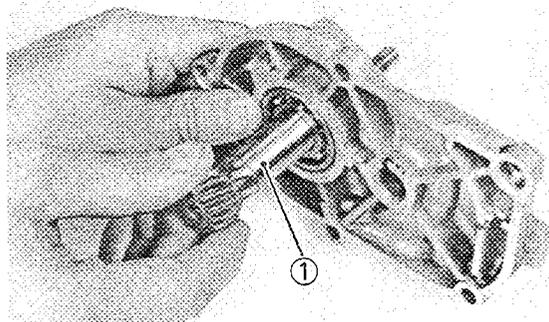


### TRANSMISSION

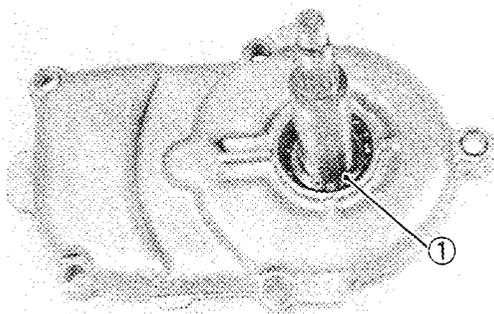
1. Apply:
  - 10W30 Type SE Motor oil  
(to transmission case cover bearing)



2. Install:
  - Secondary sheave axle ①  
(to transmission case cover)

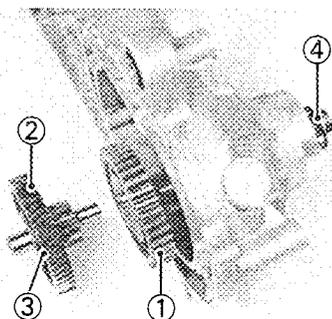


3. Install:
  - Circlip ①
  - Oil seal

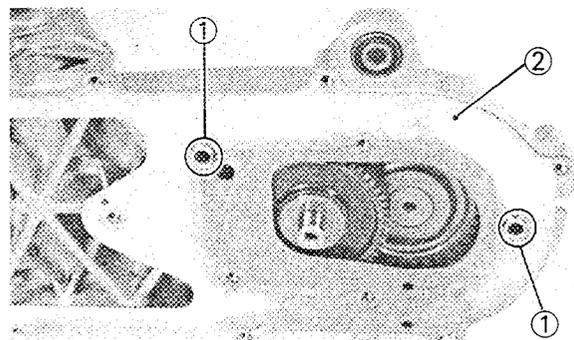


**NOTE:** \_\_\_\_\_  
Apply lithium soap base grease onto the oil seal lips.  
\_\_\_\_\_

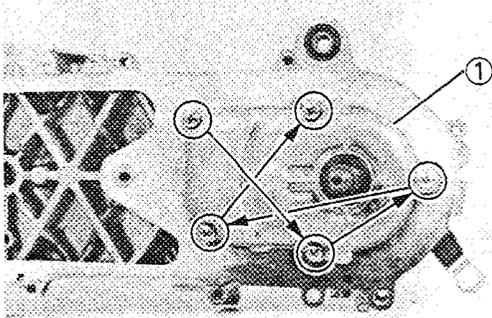
4. Apply:
  - 10W30 type SE Motor oil  
(to main axle bearing and drive axle bearing)



5. Install:
  - Drive axle ①
  - Main axle ②
  - Washer ③ (Main axle)
  - Washer ④ (Drive axle)



6. Install:
  - Dowel pins ①
  - Gasket ②

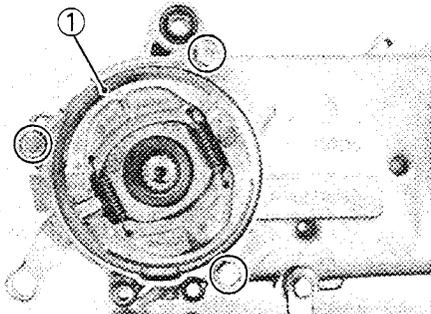


7. Install:  
 •Transmission case cover ①



**Screw (Case cover):**  
 8 Nm (0.8 m•kg, 5.8 ft•lb)

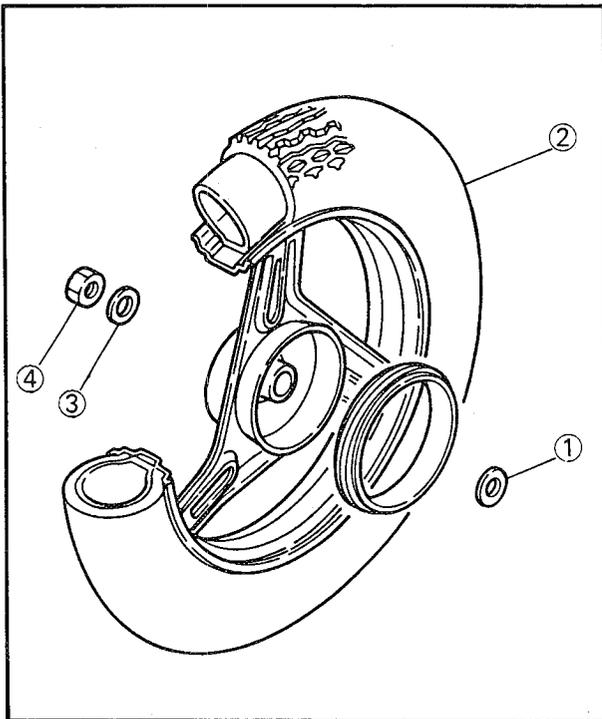
8. Install:  
 •Centerstand



9. Install:  
 •Brake shoe plate ①



**Bolt (Brake Shoe Plate):**  
 18 Nm (1.8 m•kg, 13 ft•lb)



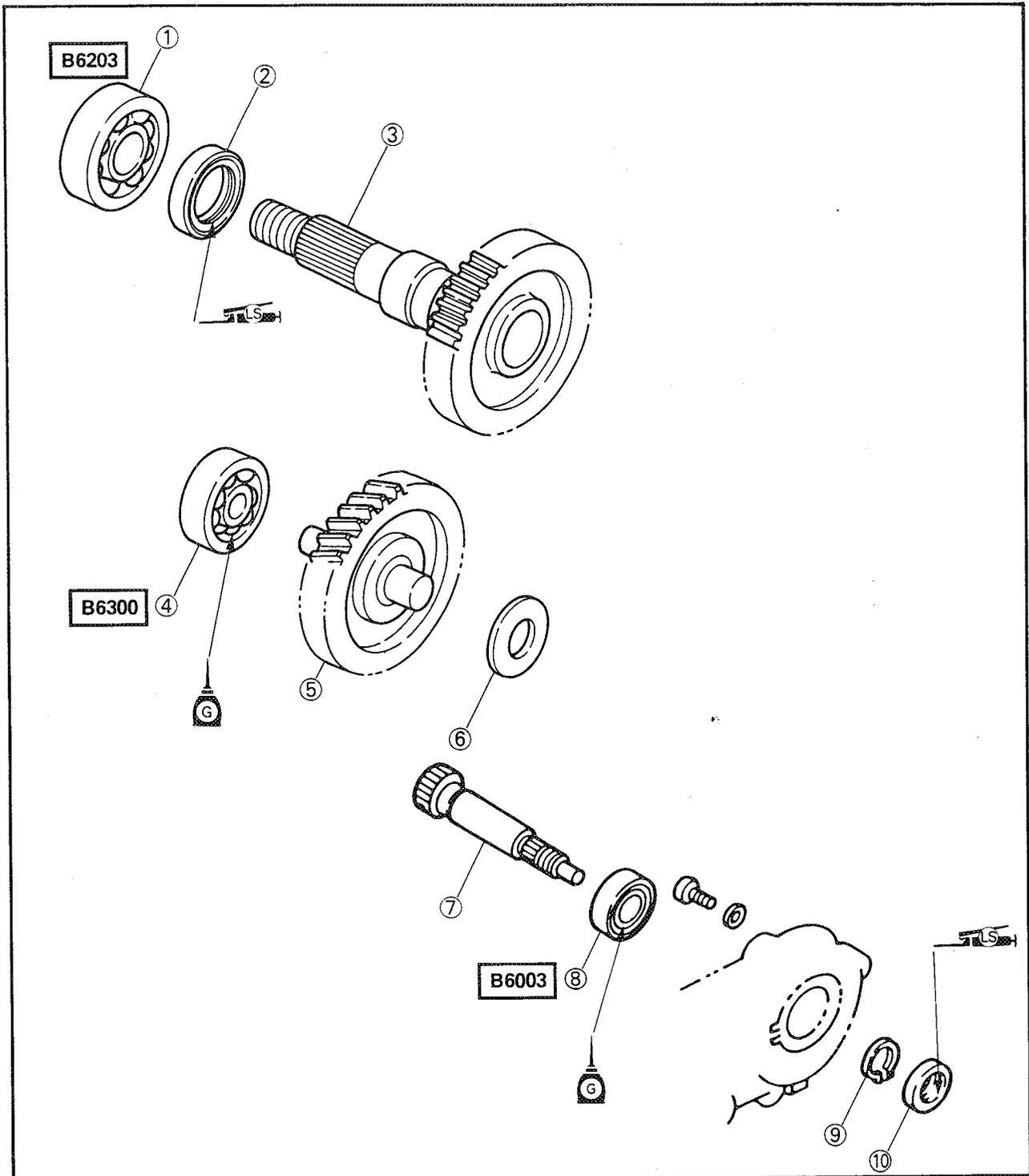
10. Install:  
 •Plain washer ①  
 •Rear wheel ②  
 •Plain washer ③  
 •Nut ④

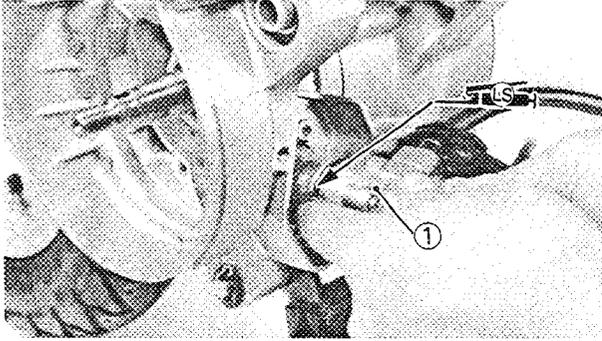


**93 Nm (9.3 m•kg, 67 ft•lb)**

TRANSMISSION

- ① Bearing
- ② Oil seal
- ③ Drive axle
- ④ Bearing
- ⑤ Main axle
- ⑥ Plain washer
- ⑦ Secondary sheave axle
- ⑧ Bearing
- ⑨ Circlip
- ⑩ Oil seal

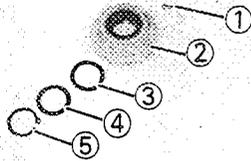
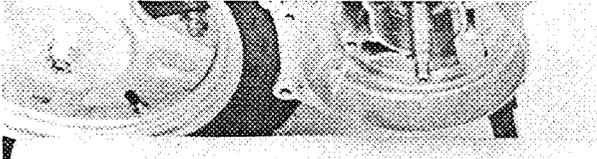




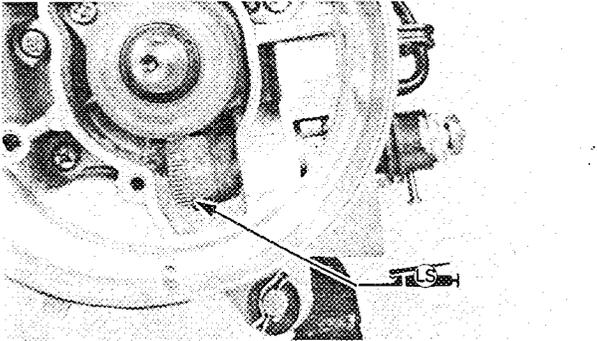
**AUTOLUBE PUMP**

1. Apply:
  - Lithium soap base grease  
(to O-ring)
  
2. Install:
  - Autolube pump ①

	<p><b>Screw (Autolube Pump):</b> 4 Nm (0.4 m•kg, 2.9 ft•lb)</p>
---	---



3. Install:
  - Pin ①
  - Pump drive gear ②
  - Wave washer ③
  - Shim ④
  - Circlip ⑤



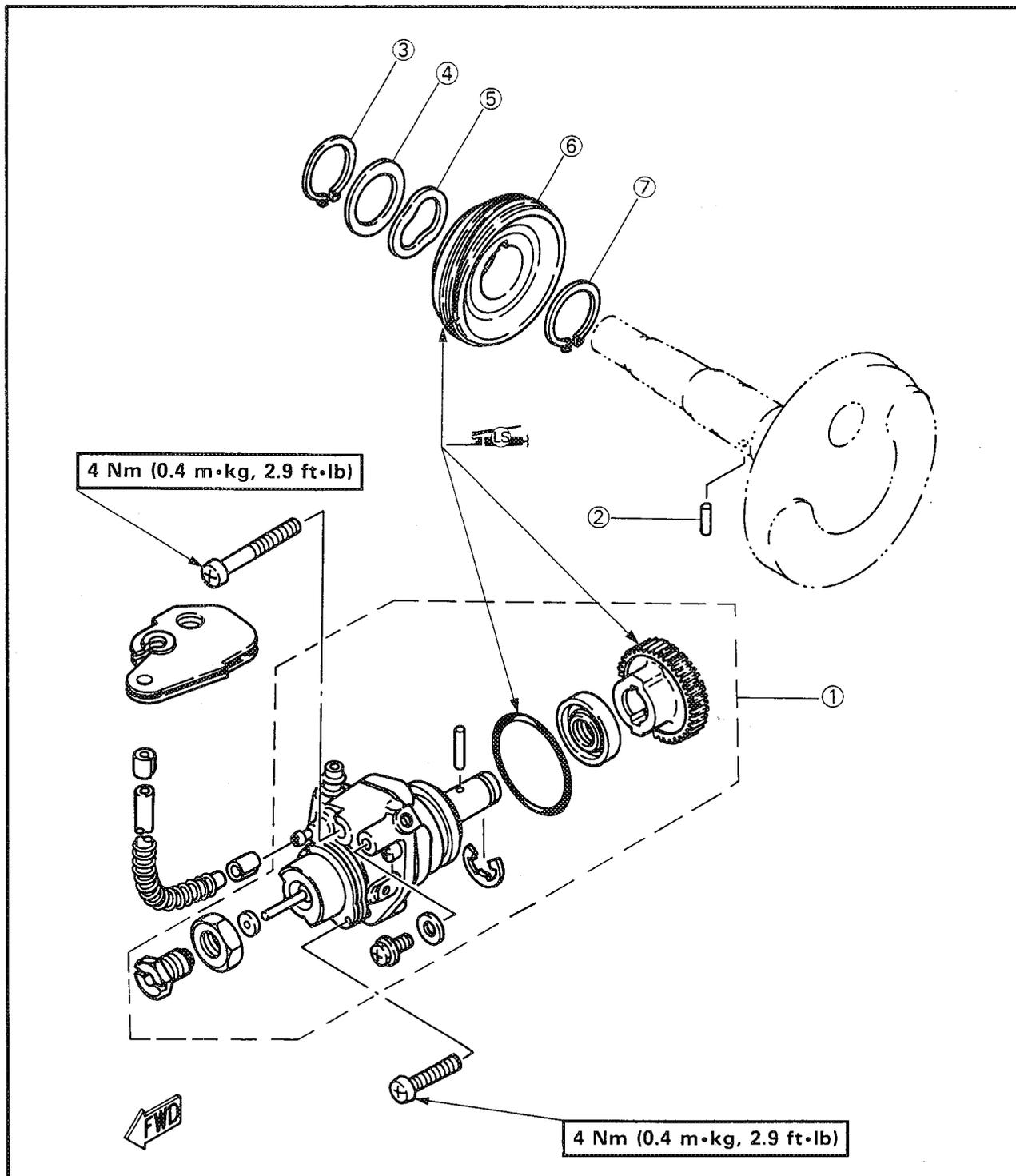
4. Apply:
  - Lithium soap base grease  
(to Autolube pump gear)

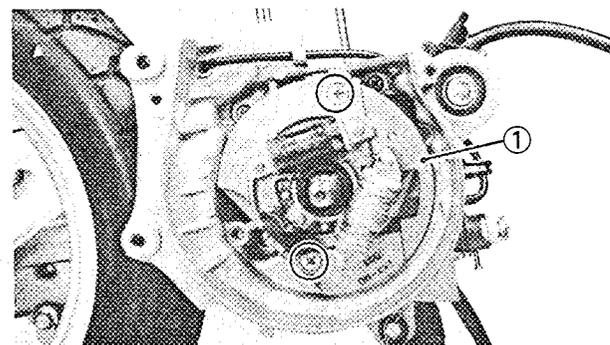
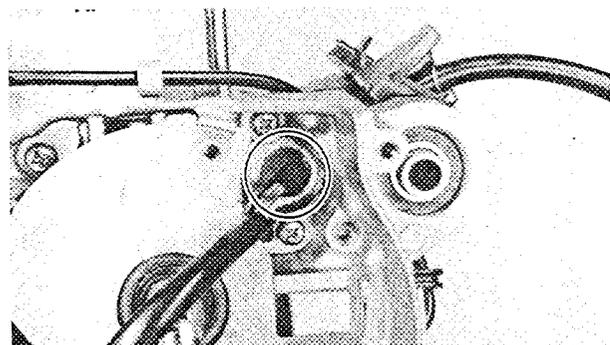
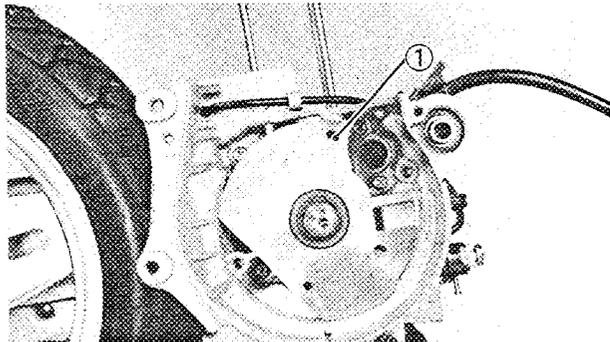
	<p><b>15 cc (0.92 cu•in)</b></p>
---	----------------------------------



## AUTOLUBE PUMP

- ① Autolube pump
- ② Pin
- ③ Circlip
- ④ Shim
- ⑤ Wave washer
- ⑥ Pump drive gear
- ⑦ Circlip



**C.D.I. MAGNETO**

## 1. Install:

- Gasket ①

## 2. Pass the C.D.I. magneto lead through the crankcase hole.

## 3. Install:

- Stator assembly ①



**Screw (Stator Assembly):**  
8 Nm (0.8 m•kg, 5.8 ft•lb)

## 4. Install:

- Woodruff key
- C.D.I. magneto
- Plain washer
- Spring washer
- Nut

**NOTE:**

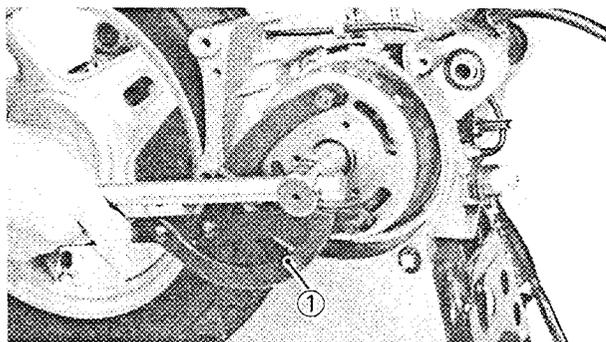
When installing the C.D.I. magneto, make sure the woodruff key is properly seated in the key way of the crankshaft. Apply a light coating of lithium soap base grease to the tapered portion of the crankshaft end.

## 5. Tighten:

- Nut (C.D.I. magneto)
- Use Flywheel Holding Tool (YU-01235) ①.



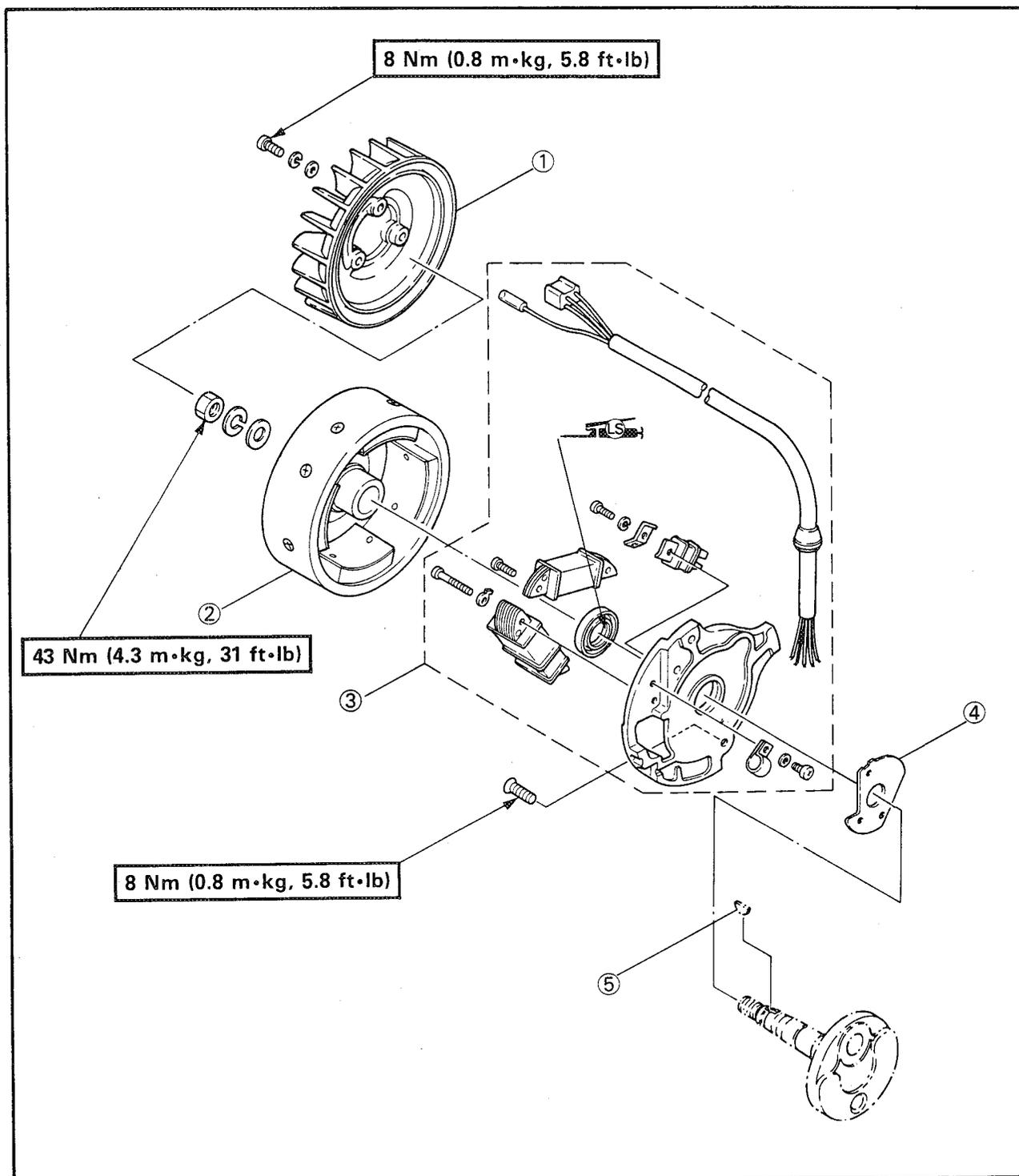
**43 Nm (4.3 m•kg, 31 ft•lb)**

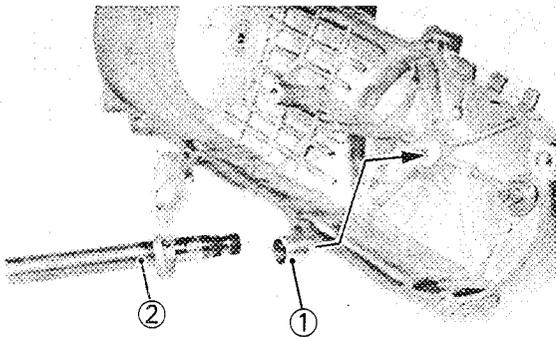




### C.D.I. MAGNETO

- ① Fan
- ② C.D.I. magneto
- ③ Stator assembly
- ④ Gasket
- ⑤ Woodruff key

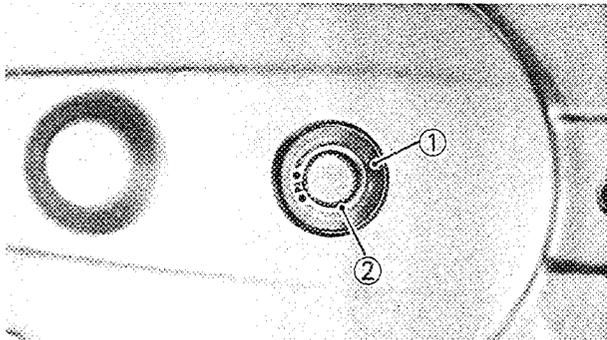




**STARTER SYSTEM**

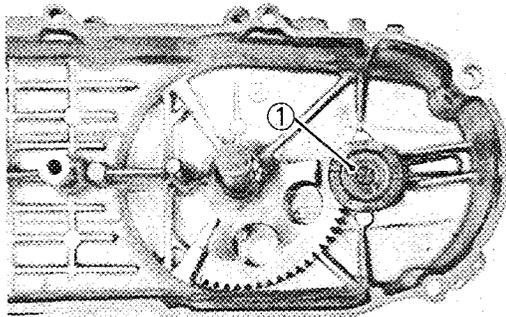
1. Install:

- Collar ①
- Kick shaft ②



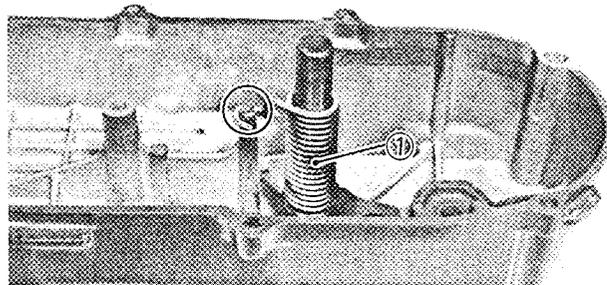
2. Install:

- Plain washer ①
- Circlip ②



3. Install:

- Kick pinion gear ①



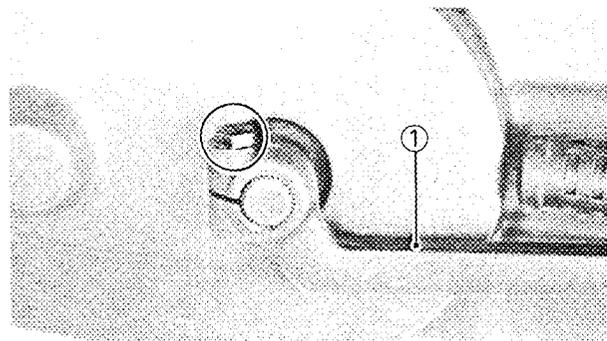
4. Install:

- Kick torsion spring ①

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

Set the kick torsion spring to the spring hook.

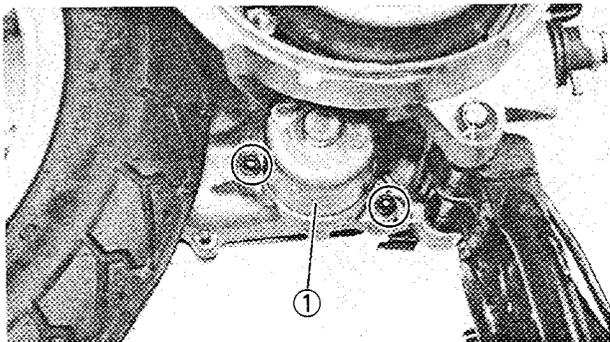
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5. Install:

- Kick crank ①

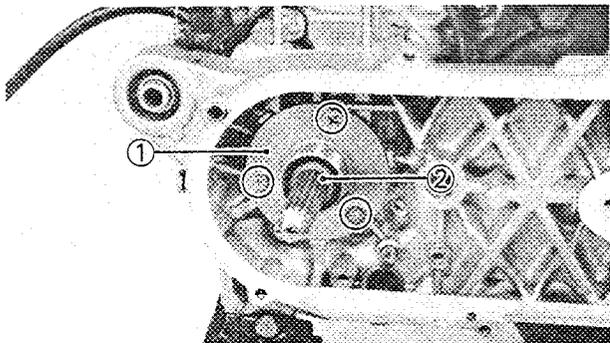
	<p><b>10 Nm (1.0 m•kg, 7.2 ft•lb)</b></p>
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- 6. Install:
  - Starter motor ①

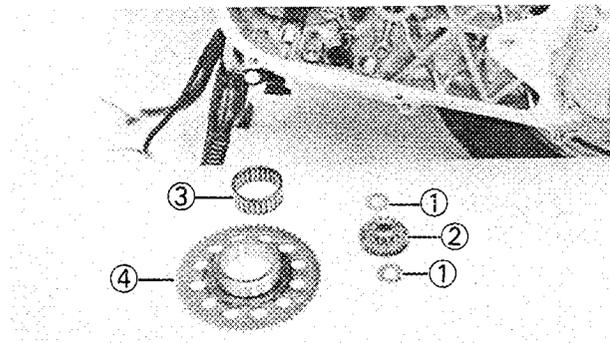
 **8 Nm (0.8 m•kg, 5.8 ft•lb)**

**NOTE:** \_\_\_\_\_  
Apply lithium soap base grease to the O-ring of the starter motor.



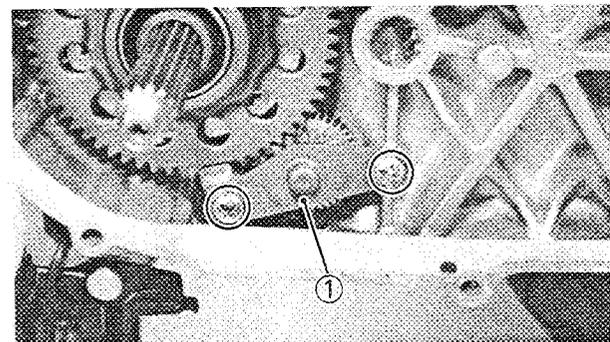
- 7. Install:
  - Stay ①
  - Collar ②

 **Screw (Stay):**  
**8 Nm (0.8 m•kg, 5.8 ft•lb)**



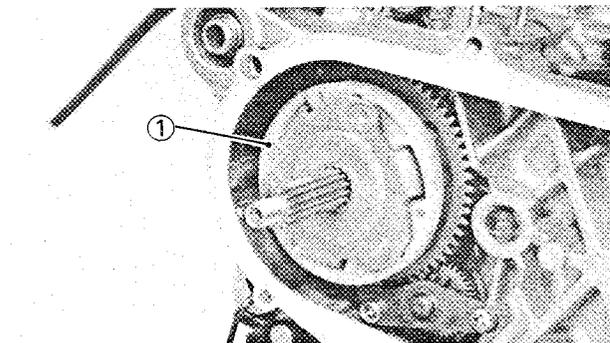
- 8. Install:
  - Plain washers ①
  - Idle gear ②
  - Bearing ③
  - Starter wheel gear ④

**NOTE:** \_\_\_\_\_  
• Apply Yamalube 2 cycle oil to the idle gear ②.  
• Apply lithium soap base grease to the bearing ③.



- 9. Install:
  - Plate ① (Idle gear)

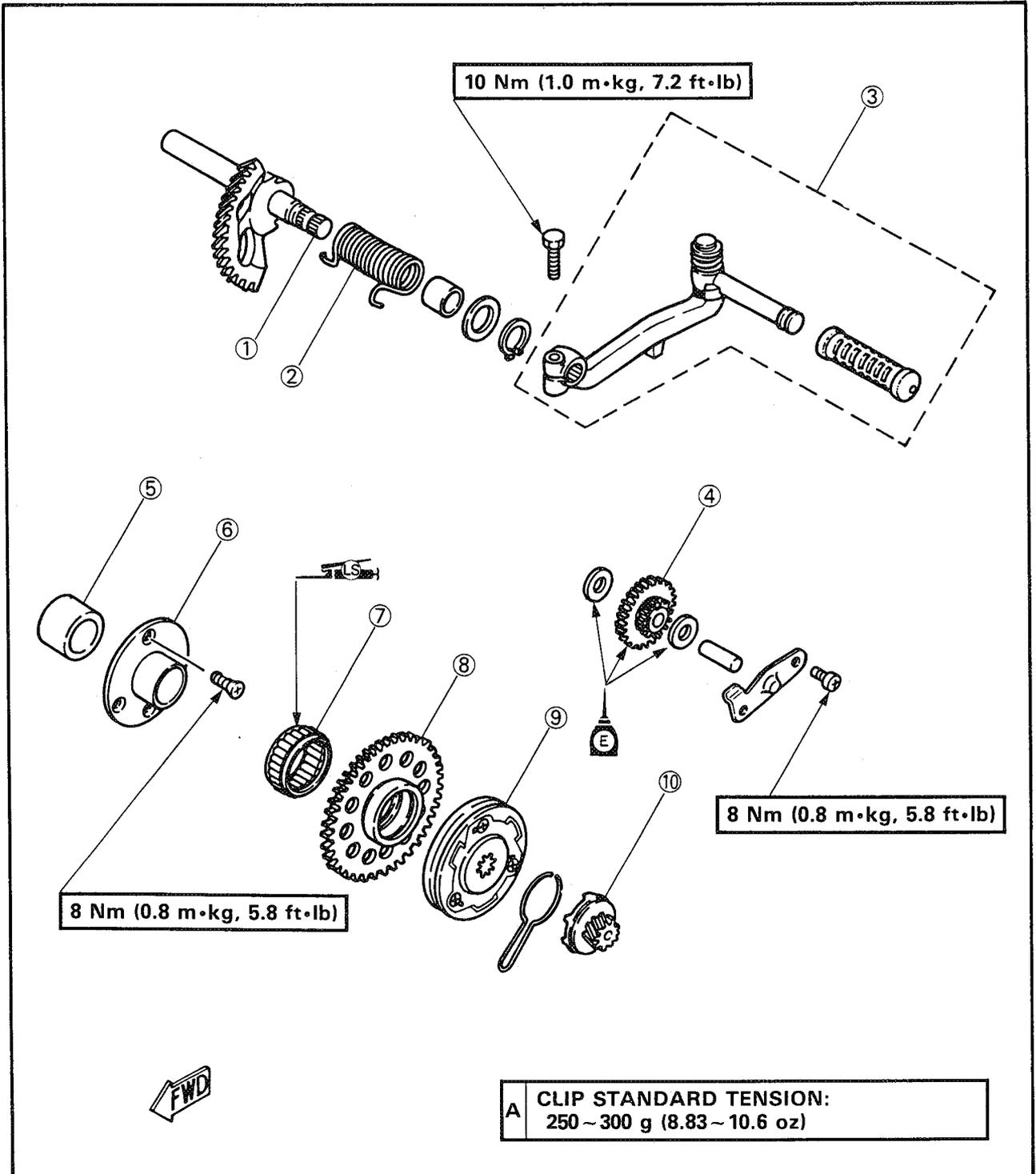
 **Screw (Idle Gear Plate):**  
**8 Nm (0.8 m•kg, 5.8 ft•lb)**

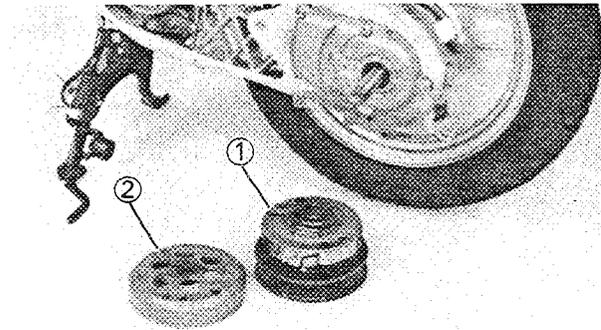


- 10. Install:
  - Starter clutch assembly ①

**STARTER SYSTEM**

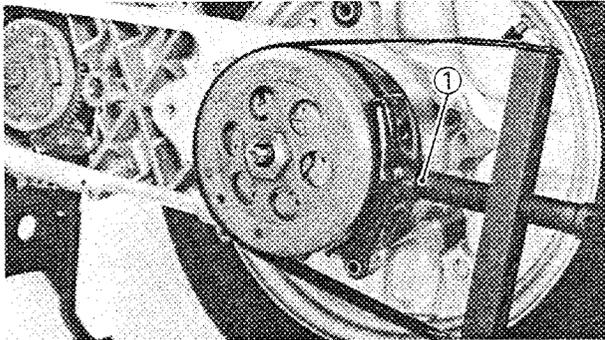
- ① Kick shaft
- ② Kick torsion spring
- ③ Kick crank
- ④ Idle gear
- ⑤ Collar
- ⑥ Stay
- ⑦ Bearing
- ⑧ Starter wheel gear
- ⑨ Starter clutch assembly
- ⑩ Kick pinion gear





### PRIMARY AND SECONDARY SHEAVE

1. Install:
  - Secondary sheave assembly ①
  - Clutch housing ②

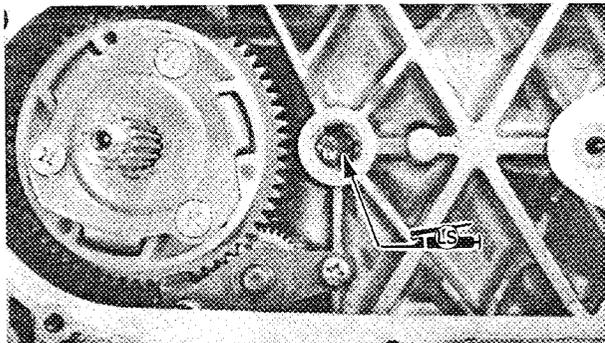


2. Tighten:
  - Nut (Secondary sheave)
  - Use Sheave Holder ① (YS-01880).

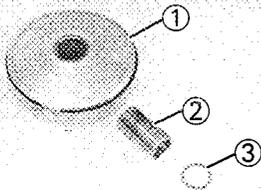
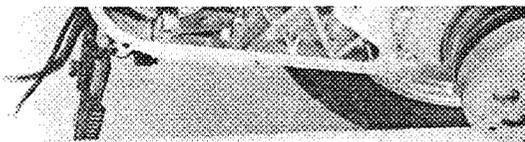


40 Nm (4.0 m·kg, 29 ft·lb)

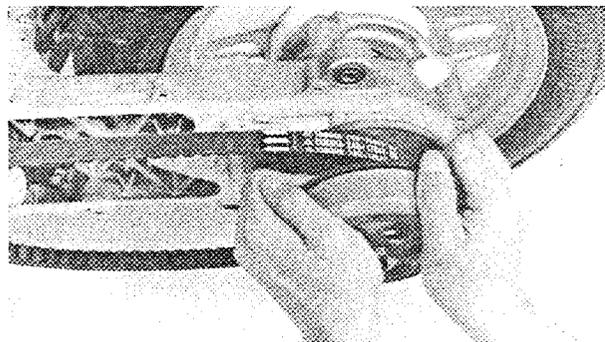
3. Install:
  - O-ring



4. Apply:
  - Lithium soap base grease



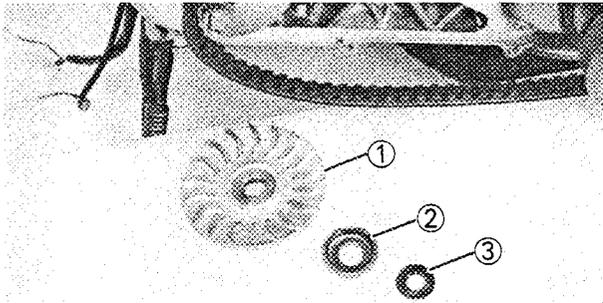
5. Install:
  - Primary sheave assembly ①
  - Collar ②
  - Shim ③



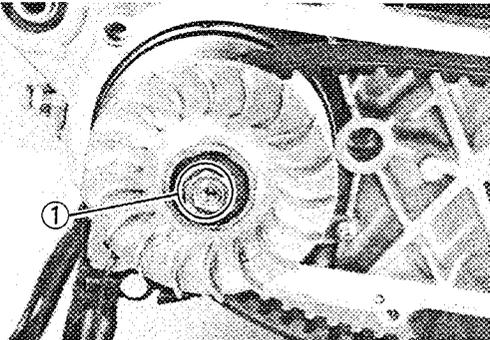
6. Install:
  - V-belt
  - Place the V-belt around the secondary sheave, and compress the secondary sheave spring hard so that the V-belt moves toward the clutch hub.

#### NOTE:

The V-belt must be installed with the arrow forward.

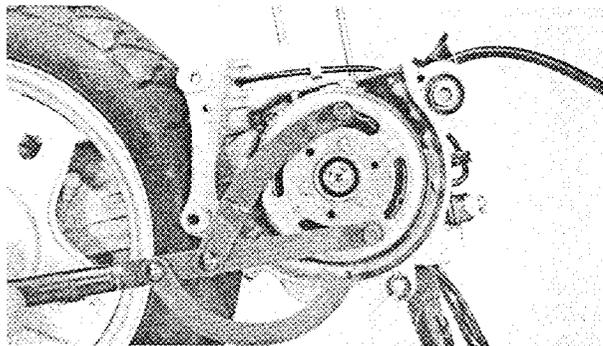


7. Install:
- Primary fixed sheave ①
  - One-way clutch ②
  - Conical spring washer ③
  - Nut

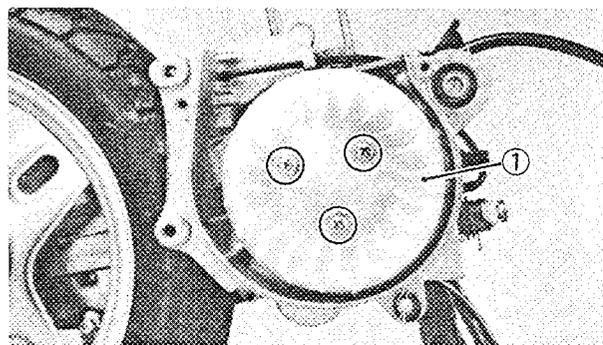


8. Tighten:
- Nut (primary sheave) ①

	<b>30 Nm (3.0 m•kg, 22 ft•lb)</b>
---	-----------------------------------

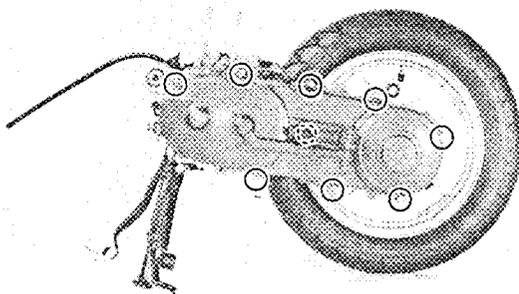


**NOTE:** \_\_\_\_\_  
 When tightening the nut (primary sheave), hold the C.D.I. magneto using Flywheel Holding Tool (YU-01235).  
 \_\_\_\_\_



9. Install:
- Fan ①

	<b>Screw (Fan): 8 Nm (0.8 m•kg, 5.8 ft•lb)</b>
---	--



10. Install:
- Dowel pins
  - Crankcase cover (Left)

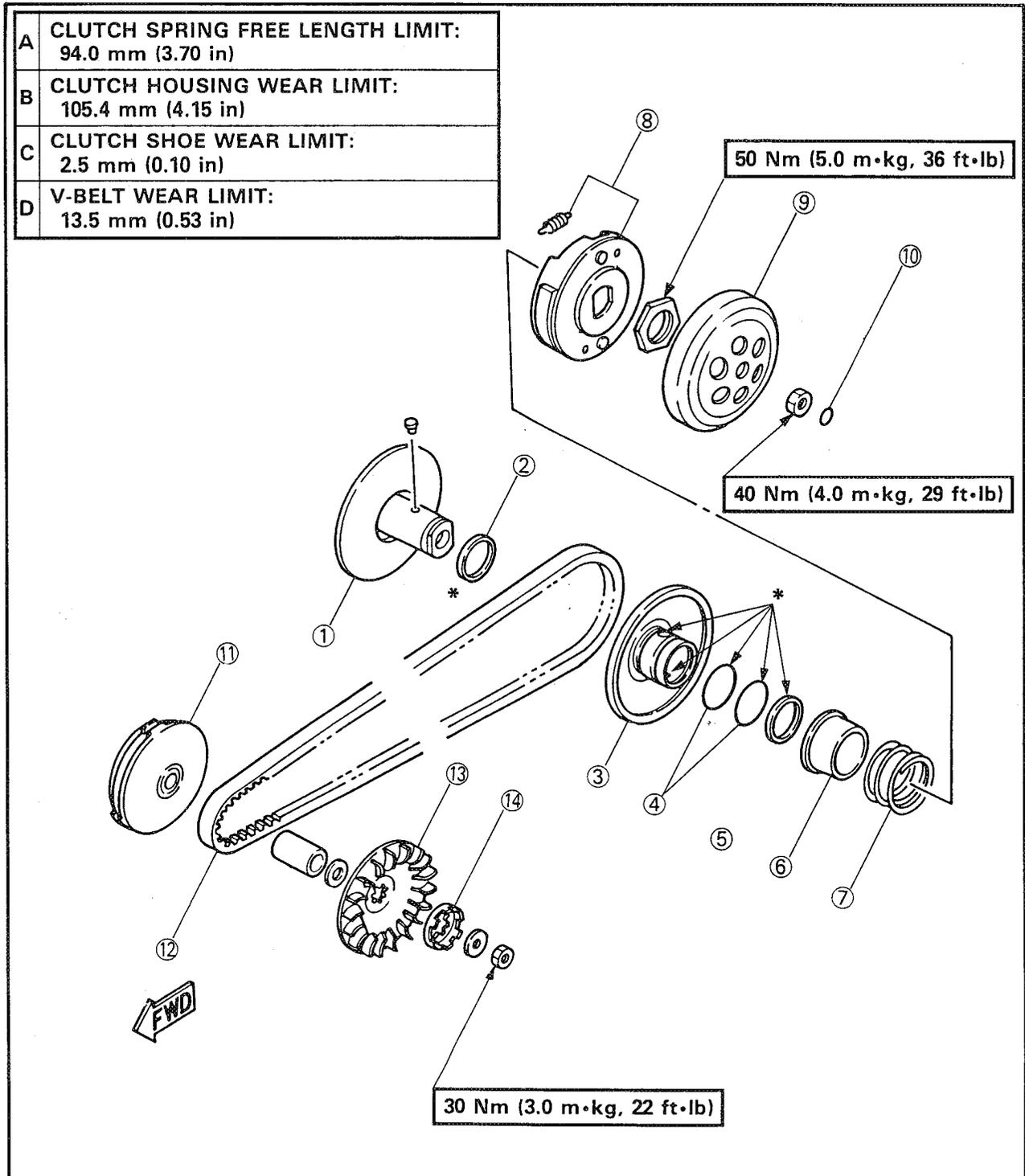
	<b>Screw (Crankcase Cover): 8 Nm (0.8 m•kg, 5.8 ft•lb)</b>
---	--



### PRIMARY AND SECONDARY SHEAVE

- |                            |                           |
|----------------------------|---------------------------|
| ① Secondary fixed sheave   | ⑧ Clutch assembly         |
| ② Oil seal                 | ⑨ Clutch housing          |
| ③ Secondary sliding sheave | ⑩ O-ring                  |
| ④ O-ring                   | ⑪ Primary sheave assembly |
| ⑤ Oil seal                 | ⑫ V-belt                  |
| ⑥ Spring seat              | ⑬ Primary fixed sheave    |
| ⑦ Clutch spring            | ⑭ One-way clutch          |

\*Apply BEL-RAY Assembly Lube®

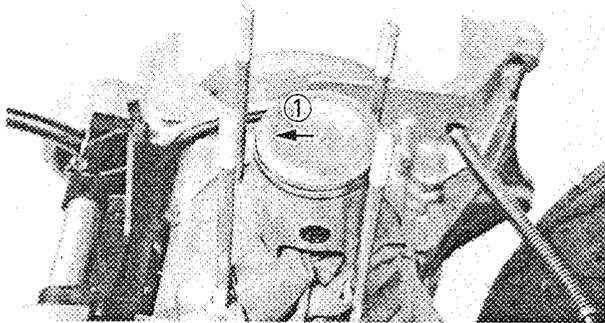


**PISTON PIN AND PISTON**

## 1. Apply:

- Yamalube 2 cycle oil

To the piston pin, bearing, piston ring grooves and piston skirt areas.



## 2. Install:

- Small end bearing
- Piston
- Piston pin
- Piston pin clip

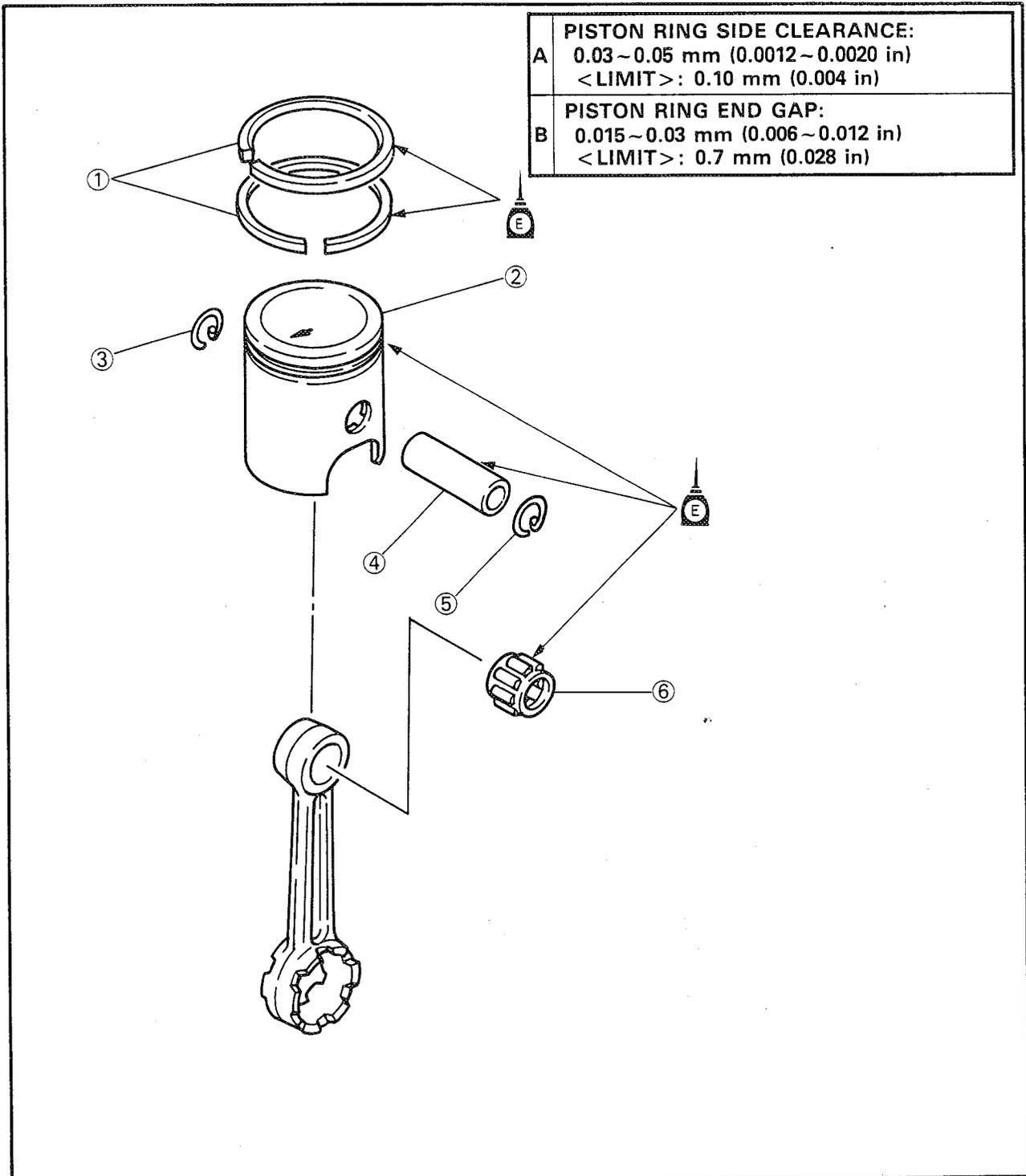
**NOTE:** \_\_\_\_\_

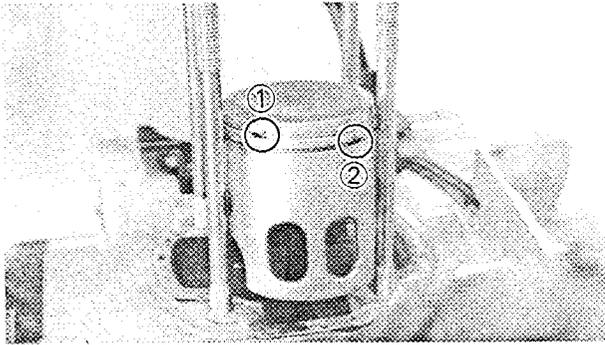
- The arrow ① on the piston must point to the front of the engine.
- Before installing the piston pin clip, cover the crankcase with a clean towel or rag so you will not accidentally drop the pin clip and material into the crankcase.
- Always use a new piston pin clip.



## PISTON PIN AND PISTON

- ① Piston ring (1st, 2nd)
- ② Piston
- ③ Piston pin clip
- ④ Piston pin
- ⑤ Piston pin clip
- ⑥ Small end bearing



**CYLINDER AND CYLINDER HEAD**

## 1. Install:

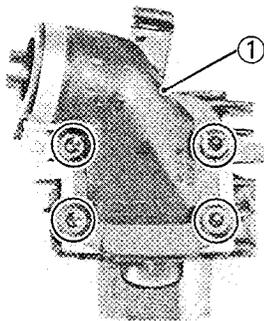
- Cylinder gasket (New gasket)

## 2. Offset the piston ring end gaps as shown.

- ① 1st ring
- ② 2nd ring

**NOTE:**

- Be sure to check the manufacturer's marks or numbers stamped on the rings are on the top side of the rings.
- Before installing the cylinder, apply a liberal coating of 2-stroke to the piston rings.

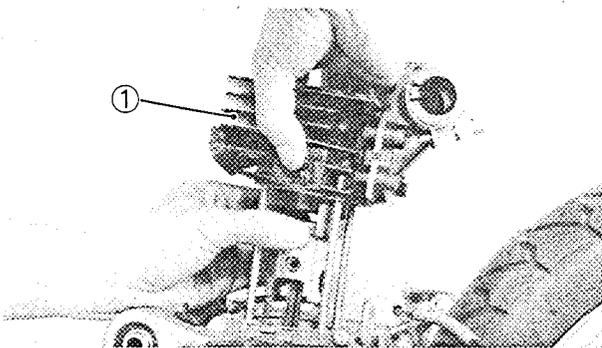


## 3. Install:

- Reed valve
- Carburetor joint ①



**Bolt (Carburetor Joint):**  
8 Nm (0.8 m•kg, 5.8 ft•lb)

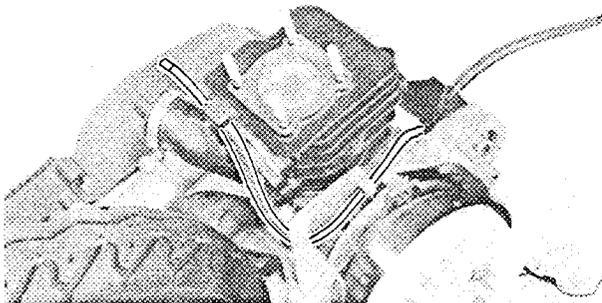


## 4. Install:

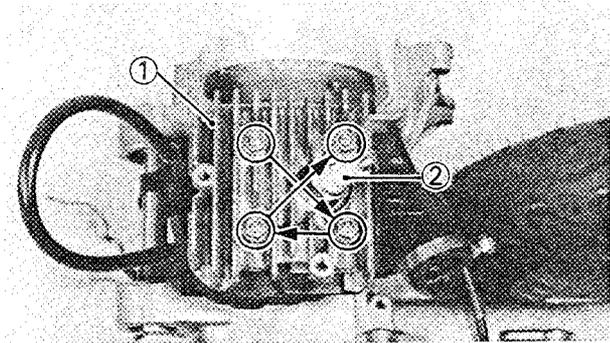
- Cylinder ①

**NOTE:**

Install the cylinder with one hand while compressing the piston rings with the other hand.



## 5. Pass the oil delivery pipe as shown.



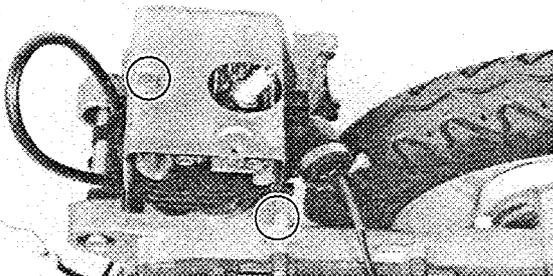
6. Install:
  - Cylinder head gasket (New gasket)
7. Install:
  - Cylinder head ①
  - Spark plug ②

**NOTE:** \_\_\_\_\_  
Tighten the cylinder head holding nuts in stage, using a crisscross pattern.

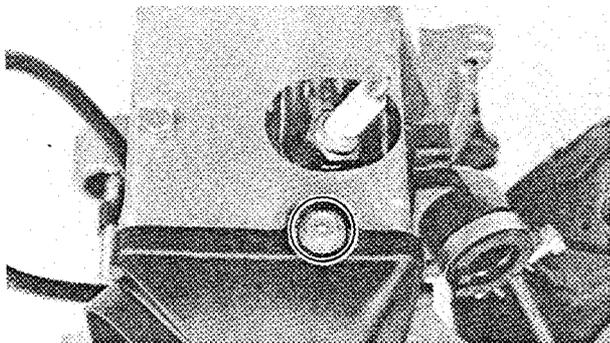


**Cylinder Head Holding Nuts:**  
10 Nm (1.0 m•kg, 7.2 ft•lb)  
**Spark Plug:**  
20 Nm (2.0 m•kg, 14 ft•lb)

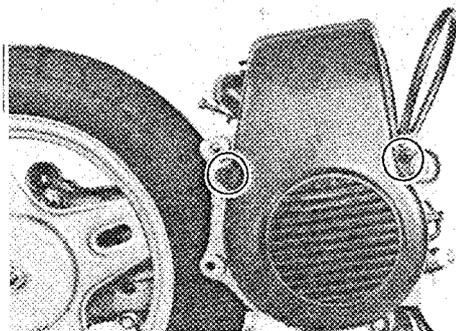
8. Install:
  - Air shroud



**Bolt (Air Shroud):**  
8 Nm (0.8 m•kg, 5.8 ft•lb)



9. Install:
  - Fan cover

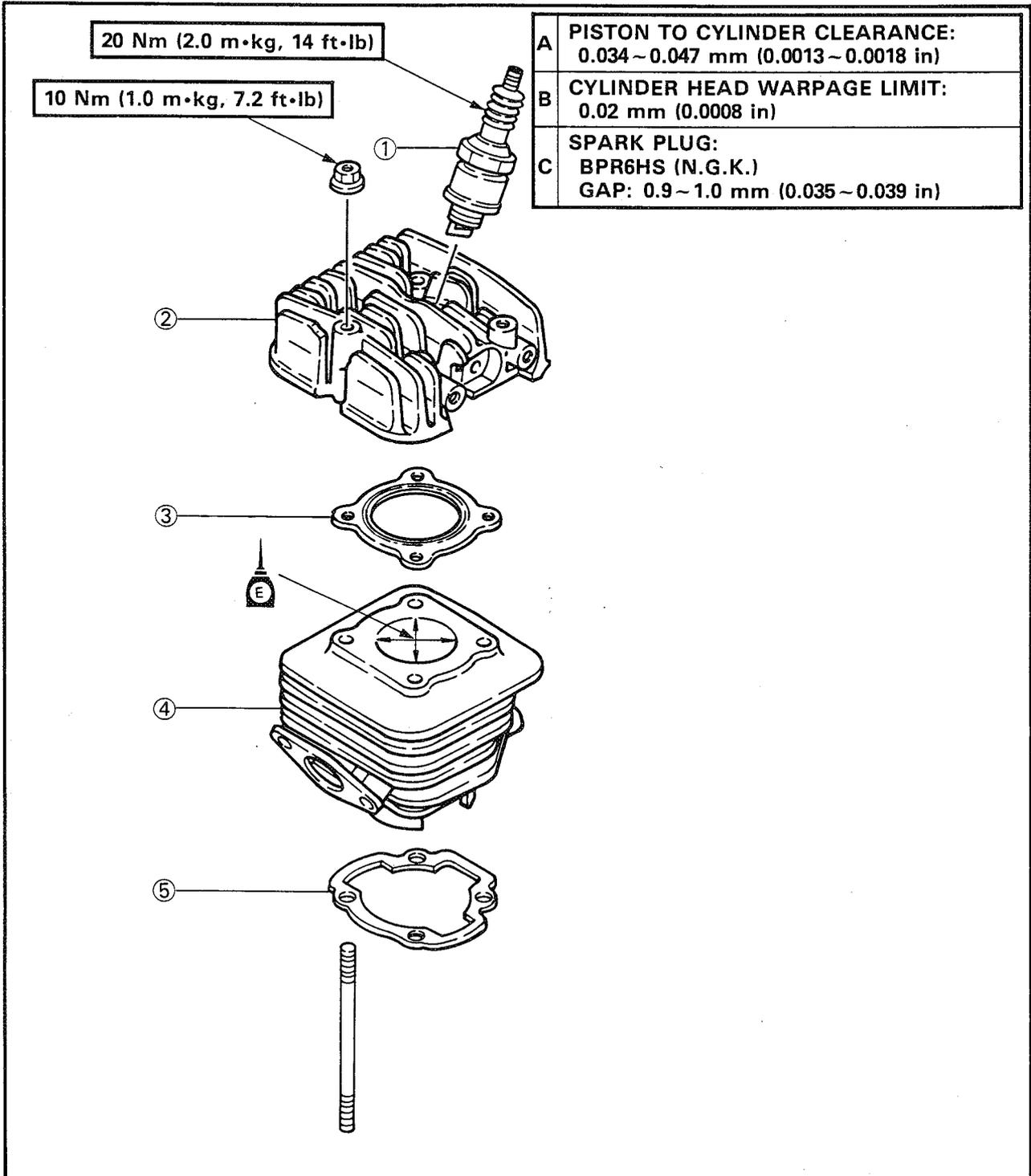


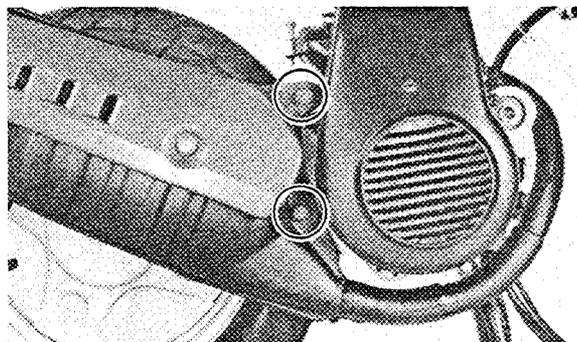
**Screw (Fan cover):**  
8 Nm (0.8 m•kg, 5.8 ft•lb)



**CYLINDER AND CYLINDER HEAD**

- ① Spark plug
- ② Cylinder head
- ③ Gasket
- ④ Cylinder
- ⑤ Gasket



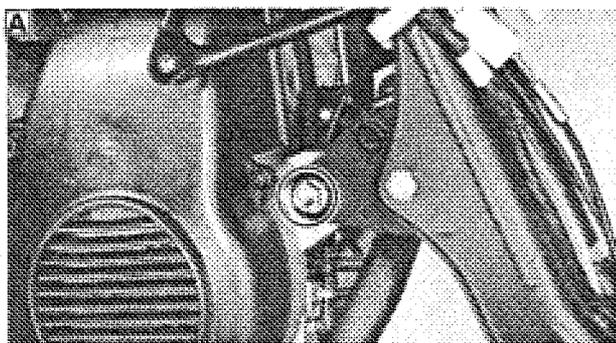
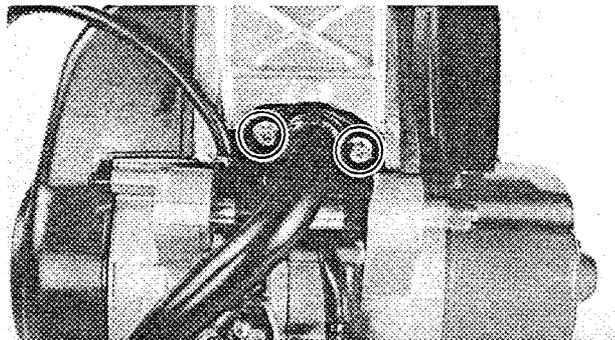


### MUFFLER

1. Install:
  - Muffler



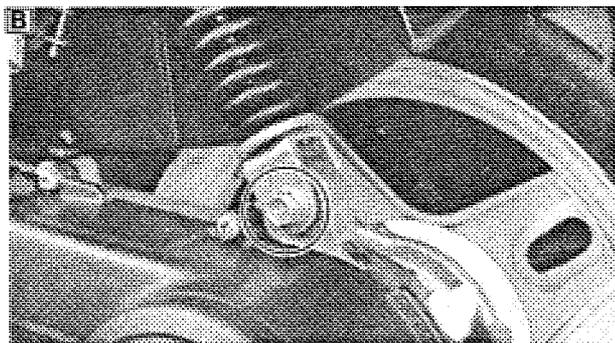
**Bolt (Muffler):**  
 27 Nm (2.7 m•kg, 19 ft•lb)  
**Bolt (Exhaust pipe):**  
 8 Nm (0.8 m•kg, 5.8 ft•lb)



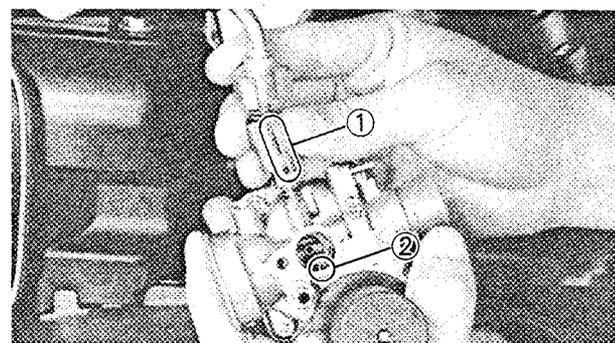
### REMounting ENGINE

When remounting the engine, reverse the removal procedure.

1. Install:
  - Engine mounting bolts
  - These bolts should be temporarily secured.
2. Tighten:
  - Engine mounting bolts



**Bolt A :**  
 42 Nm (4.2 m•kg, 30 ft•lb)  
**Bolt B :**  
 17 Nm (1.7 m•kg, 12 ft•lb)



3. Install:
  - Carburetor
  - Carburetor top together with throttle valve

### NOTE: \_\_\_\_\_

When installing the throttle valve into the carburetor, align the groove ① of the throttle valve with the projection ② of the carburetor.



4. Air bleeding:
  - Autolube pump  
Refer to "CHAPTER 2—AUTOLUBE PUMP AIR BLEEDING" section.
5. Apply:
  - Transmission oil  
Refer to "CHAPTER 2—TRANSMISSION OIL REPLACEMENT" section.
6. Adjust:
  - Brake lever free play  
Refer to "CHAPTER 2—BRAKE LEVER FREE PLAY ADJUSTMENT" section.
  - Autolube pump cable  
Refer to "CHAPTER 2—AUTOLUBE PUMP CABLE ADJUSTMENT" section.
  - Throttle cable free play  
Refer to "THROTTLE CABLE FREE PLAY ADJUSTMENT" section.





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## CHAPTER 4 CARBURETION

<b>AUTO CHOKE SYSTEM</b> .....	F-3
CONSTITUENTS .....	F-3
WIRING SCHEMATIC .....	F-3
OPERATION .....	F-3
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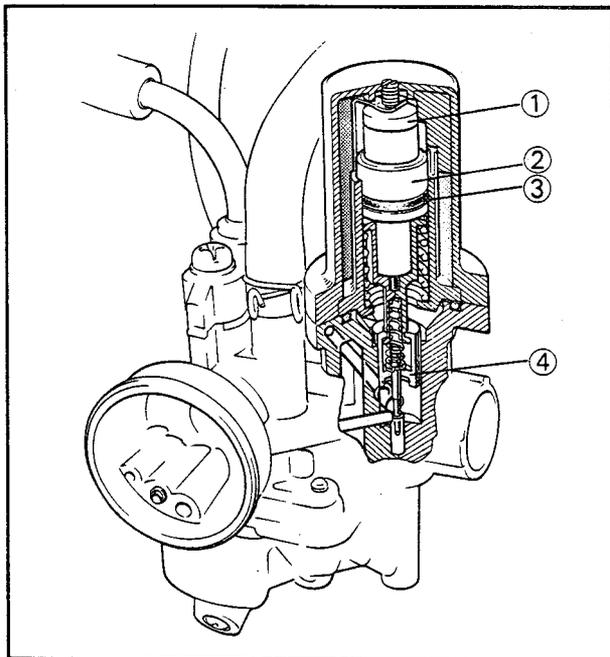


**CARBURETION**

**AUTO CHOKE SYSTEM**

**CONSTITUENTS**

The electric auto-choke consists of the Positive Temperature Coefficient (P.T.C.) thermistor, wax element and starter plunger.



- ① P.T.C. thermistor
- ② Wax element
- ③ O-ring
- ④ Starter plunger

**P.T.C. thermistor**

When electric current flows in this thermistor, it begins to be heated up to a specified temperature. This specified temperature is then regained.

**Wax element**

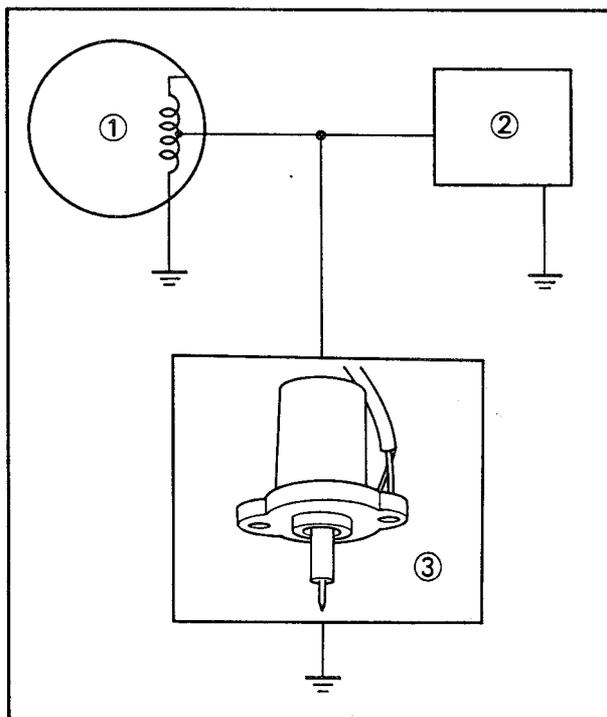
The wax element changes its volume according to a varying temperature of the thermistor, thereby causing the starter plunger to operate.

**Starter plunger**

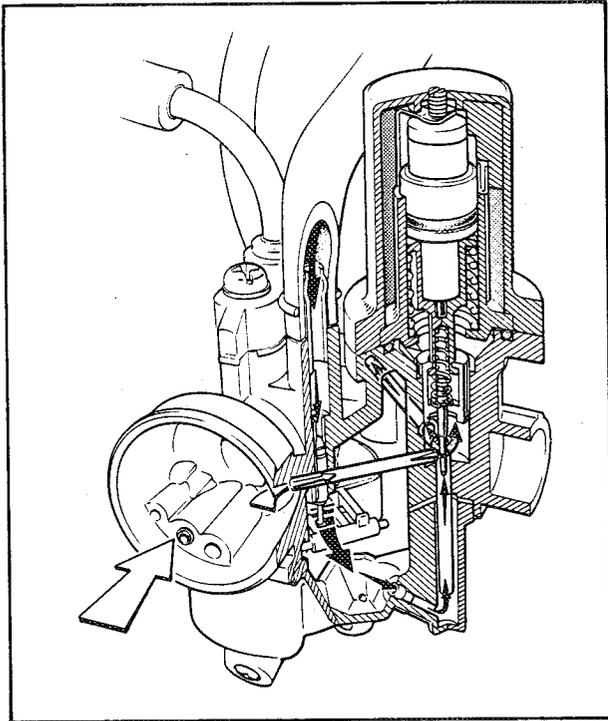
The starter plunger opens or closes the starter passage according to changes in the volume of the wax element.

**WIRING SCHEMATIC**

Power source is provided by the C.D.I. magneto lighting coil.



- ① C.D.I. magneto
- ② Rectifier/Regulator
- ③ Auto choke unit



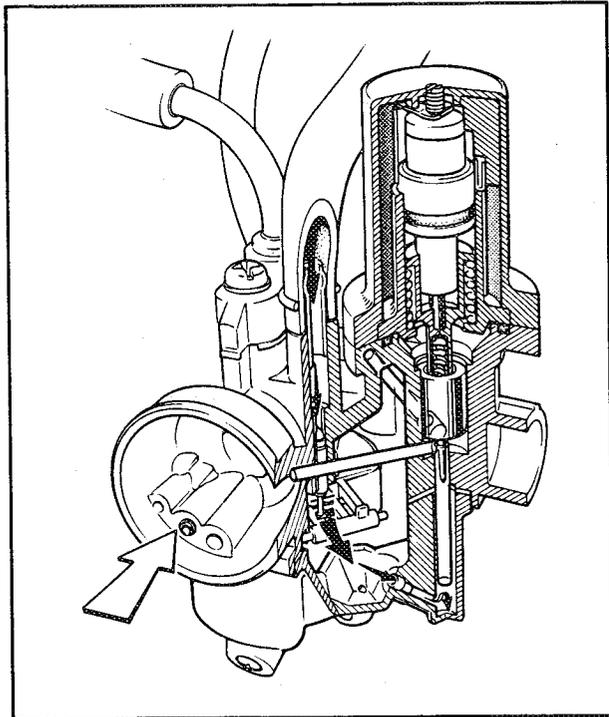
OPERATION

Cold engine

On the cold engine the wax element changes (reduces) its volume according to the ambient temperature.

In this state the starter plunger is at the top, thereby opening the starter passage.

← : Air  
→ : Fuel



Running engine

When the engine is started, the heated P.T.C. thermistor expands the wax element, gradually pushing the starter plunger and controlling the opening of the starter passage. The further heated thermistor expands the wax element to a complete extent, thereby fully closing the starter passage.

This in turn causes the engine r.p.m. to change (be reduced) with time, finally coming to specified idling.

The wax element expands during the ride as well by means of the P.T.C. thermistor, thereby keeping the starter passage fully closed.

← : Air  
→ : Fuel

**Restarting after engine warm-up**

## 1. Restarting right after ride:

The wax element is fully expanded, so the starter passage is fully closed by the starter plunger.

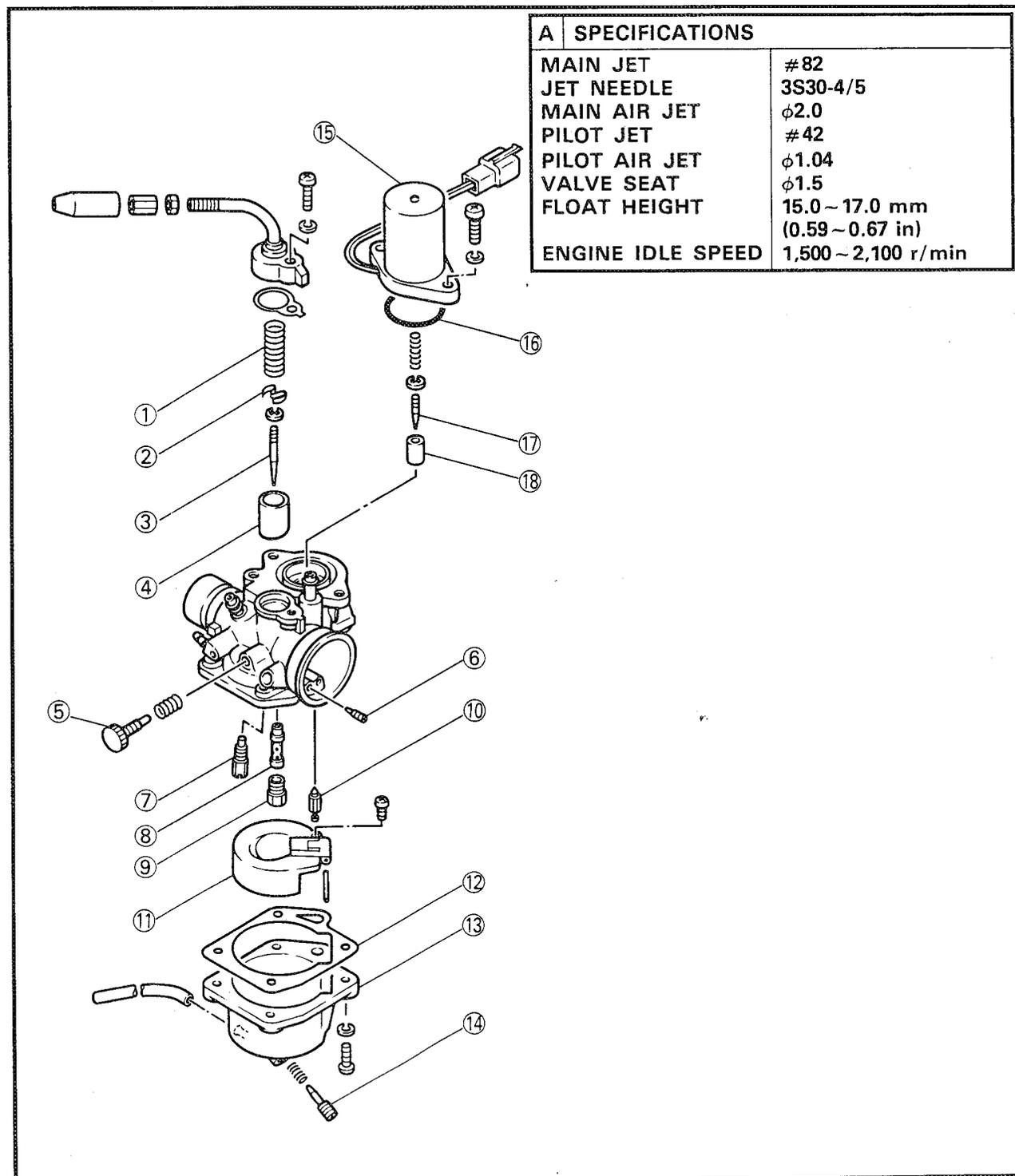
## 2. Restarting after leaving engine for a particular time:

The wax element begins to reduce its volume according to the ambient temperature, permitting the starter plunger to open the passage to meet the engine requirement.



CARBURETOR

- ① Spring
- ② Spring seat
- ③ Jet needle
- ④ Throttle valve
- ⑤ Throttle stop screw
- ⑥ Pilot air jet
- ⑦ Pilot jet
- ⑧ Main nozzle
- ⑨ Main jet
- ⑩ Needle valve
- ⑪ Float
- ⑫ Gasket
- ⑬ Float chamber
- ⑭ Drain screw
- ⑮ Auto choke unit
- ⑯ O-ring
- ⑰ Starter jet needle
- ⑱ Starter plunger



A SPECIFICATIONS	
MAIN JET	#82
JET NEEDLE	3S30-4/5
MAIN AIR JET	φ2.0
PILOT JET	#42
PILOT AIR JET	φ1.04
VALVE SEAT	φ1.5
FLOAT HEIGHT	15.0 ~ 17.0 mm (0.59 ~ 0.67 in)
ENGINE IDLE SPEED	1,500 ~ 2,100 r/min

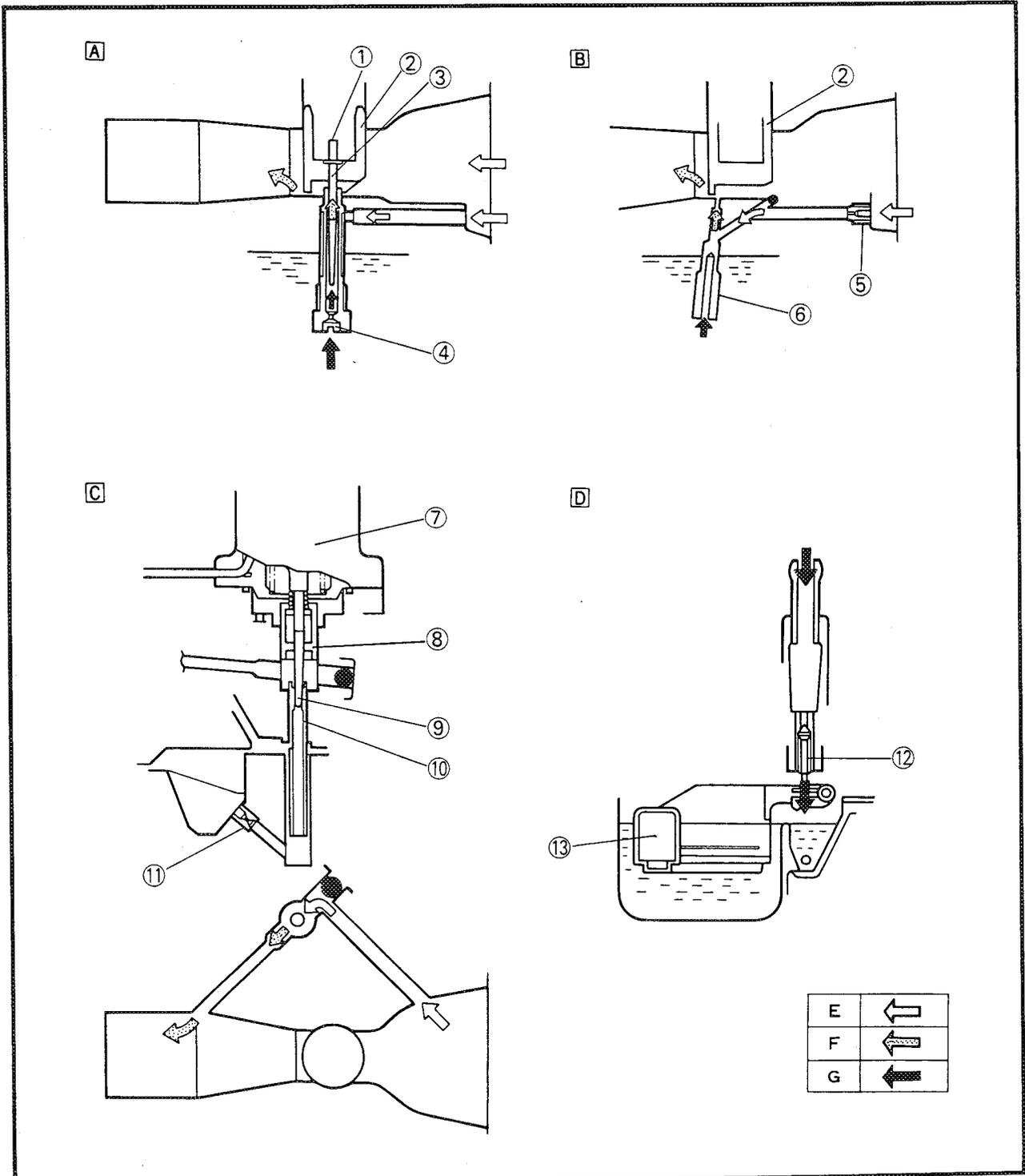


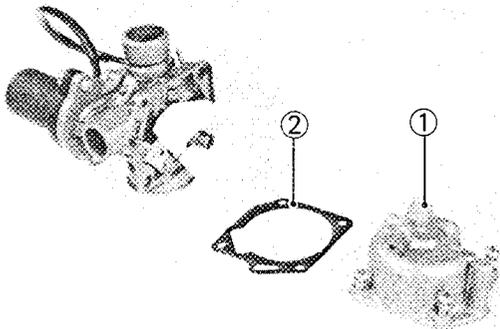
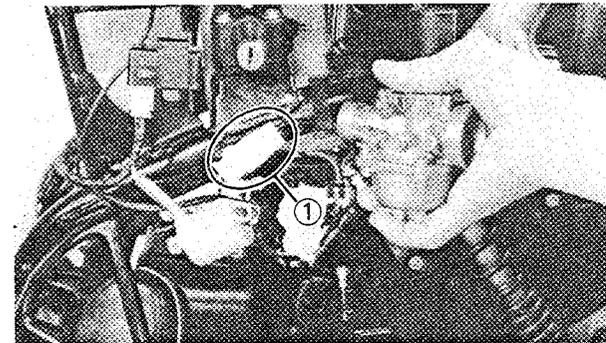
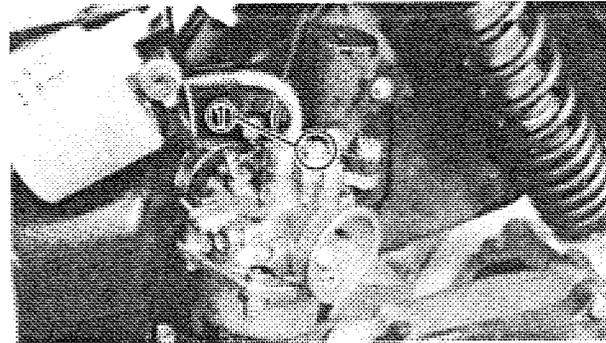
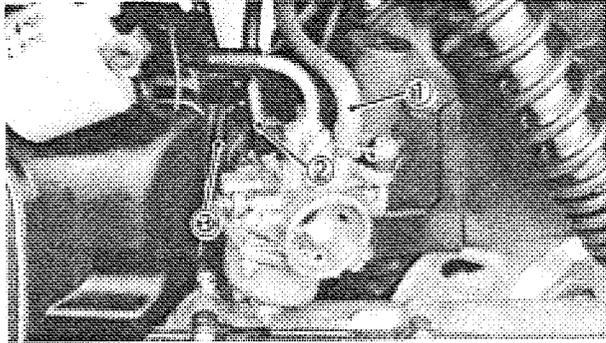
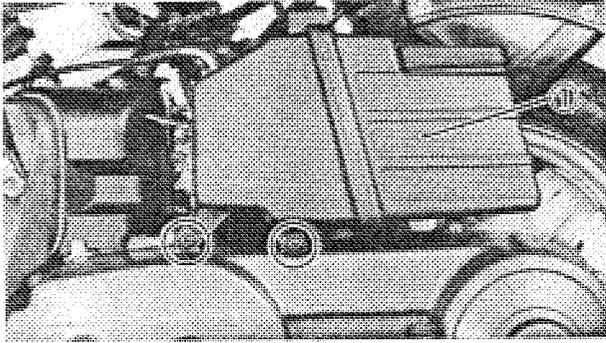
**SECTION VIEW**

- ① Jet needle
- ② Throttle valve
- ③ Main nozzle
- ④ Main jet
- ⑤ Pilot air jet
- ⑥ Pilot jet
- ⑦ Auto choke unit

- ⑧ Starter plunger
- ⑨ Starter jet needle
- ⑩ Starter needle jet
- ⑪ Starter jet
- ⑫ Needle valve
- ⑬ Float

- A Main metering system
- B Slow metering system
- C Starter metering system
- D Fuel metering system
- E Air
- F Mixture
- G Fuel



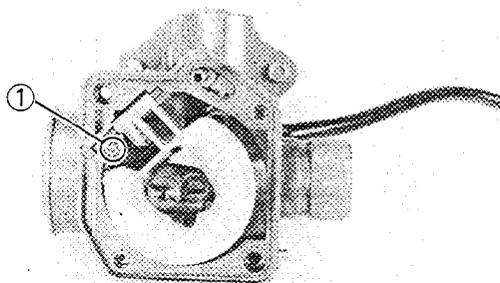


**REMOVAL**

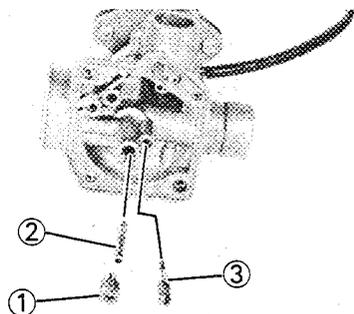
1. Remove:
  - Tail cover  
Refer to "CHAPTER 2-TAIL COVER" section.
  - Air cleaner case ①
  
2. Disconnect:
  - Fuel pipe ①
  - Vacuum pipe ②
  - Oil delivery pipe ③
  
3. Remove:
  - Carburetor top ①
  
4. Remove:
  - Carburetor assembly
  
5. Disconnect:
  - Auto choke unit leads ①

**DISASSEMBLY**

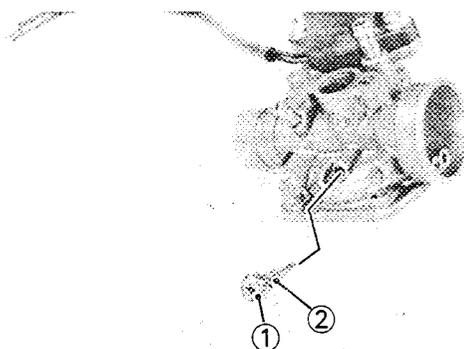
1. Remove:
  - Float chamber ①
  - Gasket ②



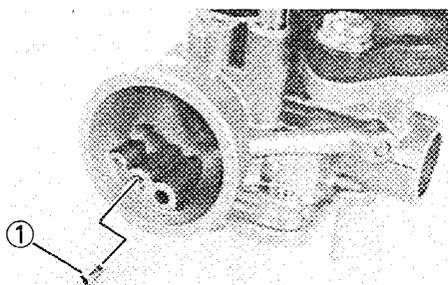
2. Remove.
- Float pin stop screw ①
  - Float pin
  - Float
  - Needle valve



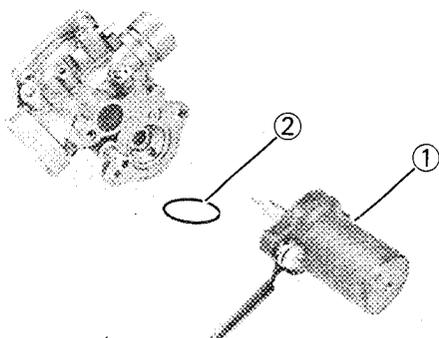
3. Remove:
- Main jet ①
  - Main nozzle ②
  - Pilot jet ③



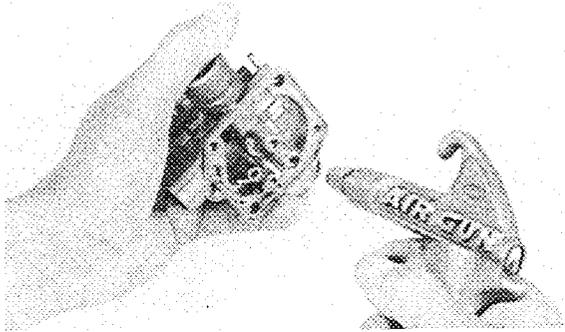
4. Remove:
- Throttle stop screw ①
  - Spring ② (Throttle stop screw)



5. Remove:
- Pilot air jet ①



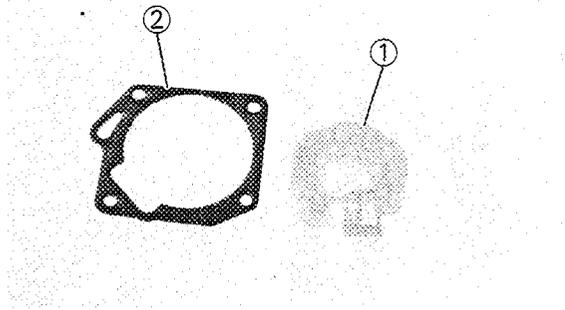
6. Remove:
- Auto choke unit ①
  - O-ring ②



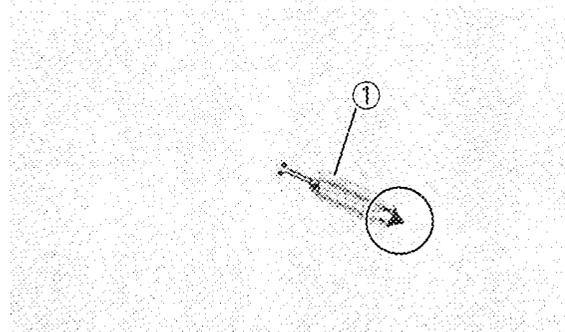
**INSPECTION**

- 1. Inspect:
  - Carburetor body
  - Contamination → Clean.

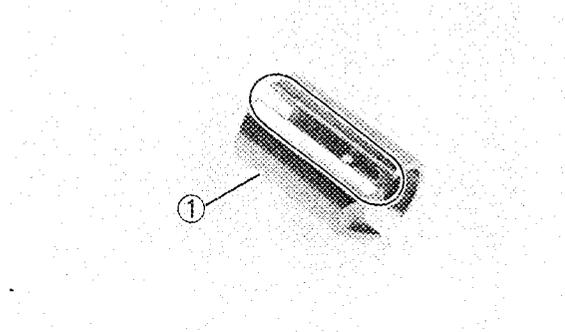
**NOTE:** \_\_\_\_\_  
 Use a petroleum based solvent for cleaning. Blow out all passages and jets with compressed air.  
 \_\_\_\_\_



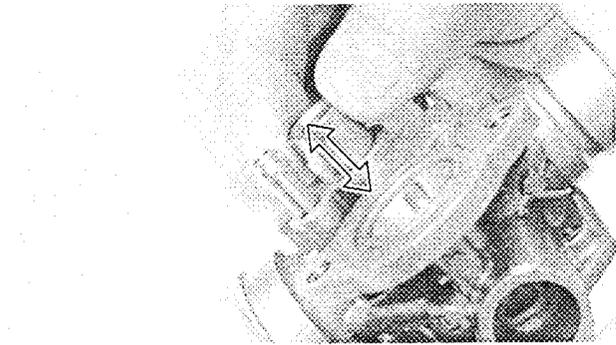
- 2. Inspect:
  - Float ①
  - Damage → Replace.
  - Gasket ②
  - Damage → Replace.



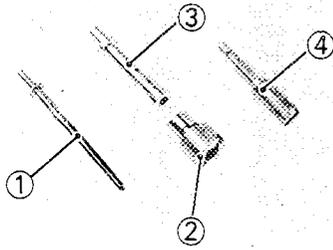
- 3. Inspect:
  - Needle valve ①
  - Wear/Contamination → Replace.



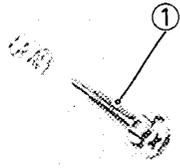
- 4. Inspect:
  - Throttle valve ①
  - Wear/Damage → Replace.



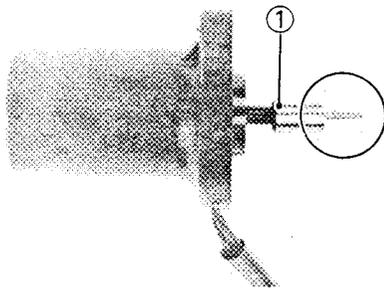
- 5. Check:
  - Free movement
  - Stick → Replace.
 Insert the throttle valve into the carburetor body, and check for free movement.



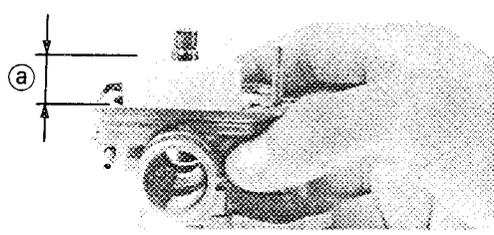
6. Inspect:
- Jet needle ①  
Bends/Wear → Replace.
  - Main jet ②
  - Main nozzle ③
  - Pilot jet ④  
Contamination → Replace.



7. Inspect:
- Throttle stop screw ①  
Wear/Damage → Replace.



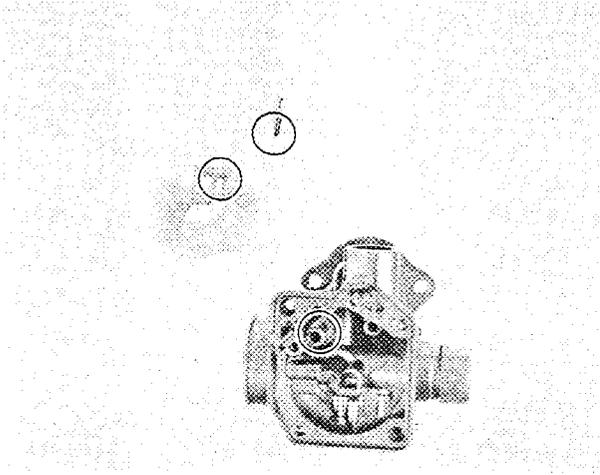
8. Inspect:
- Starter plunger ①  
Wear/Damage → Replace.



9. Measure:
- Float height ①  
Out of specification → Inspect needle valve, float and valve seat.

	<p><b>Float Height:</b> 15.0 ~ 17.0 mm (0.59 ~ 0.67 in)</p>
--	---

<p><b>Float height measurement steps:</b></p> <ul style="list-style-type: none"> <li>• Install the needle valve, float and float pin to the carburetor body.</li> <li>• Hold the carburetor in an upside down position.</li> </ul>
--



- Measure the distance between the mating surface of the float chamber (gasket removed) and top of the float using a gauge.

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

The float arm should be resting on the needle valve, but not compressing the needle valve.

- If the float height is not within specification, inspect the needle valve, float and valve seat.
- If it is worn, replace it.

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

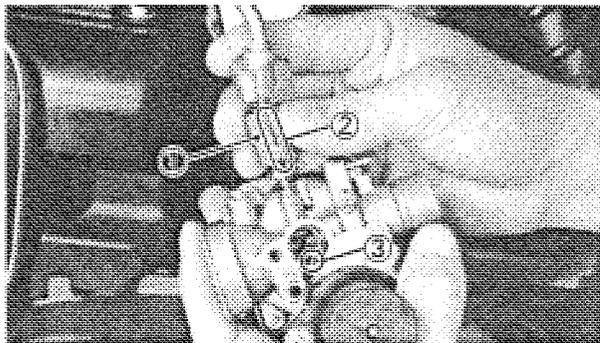
The float height is properly adjusted at the Yamaha factory. Never attempt to adjust it.

**ASSEMBLY**

To assemble the carburetor, reverse the disassembly procedures. Note the following points.

**CAUTION:** \_\_\_\_\_

- Before reassembling, wash all parts in clean gasoline.
- Always use a new gasket.



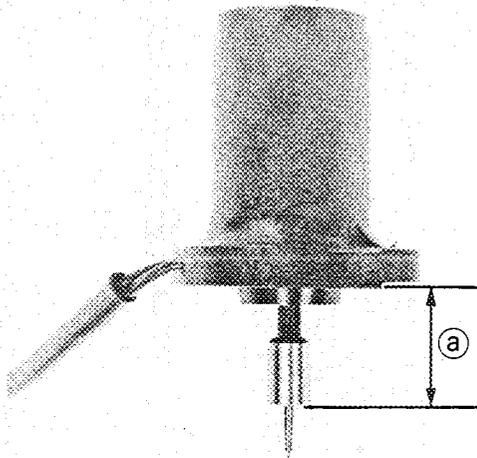
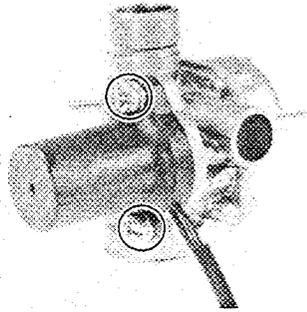
1. Install:
  - Throttle valve ①

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

Align the groove ② of the throttle valve with the projection ③ of the carburetor body.

**INSTALLATION**

1. Install:
  - Carburetor assembly
 Reserve the removal procedure.



**AUTO CHOKE UNIT CHECK**

1. Remove:
  - Auto choke unit
  
2. Measure:
  - Starter plunger height (a)

Plunger height will not change with the temperature change → Replace.

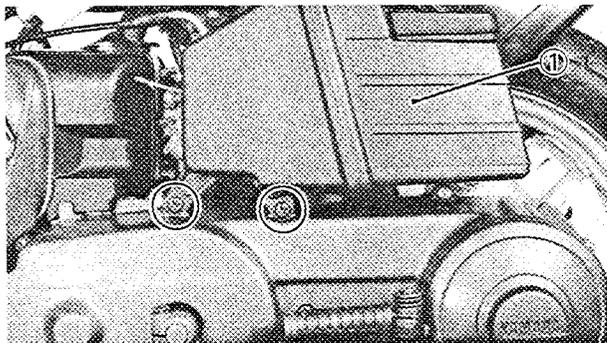
**Plunger height measurement steps:**

- Freeze auto choke unit to  $-5^{\circ}\text{C}$  ( $23.5^{\circ}\text{F}$ ) in freezer.
- Measure plunger height at  $-5^{\circ}\text{C}$  ( $23.5^{\circ}\text{F}$ ).
- Take auto choke unit out of freezer and after about 30 minutes, again measure plunger height at room temperature.
- If both measurements are the same, auto choke unit is defective. Replace it. For reference, below is a table of plunger heights at respective temperature.

Temperature	Plunger height
$-5^{\circ}\text{C}$ ( $23.5^{\circ}\text{F}$ )	$16.1 \pm 0.3$ mm ( $0.63 \pm 0.01$ in)
$10^{\circ}\text{C}$ ( $50.5^{\circ}\text{F}$ )	$17.8 \pm 0.3$ mm ( $0.70 \pm 0.01$ in)
$20^{\circ}\text{C}$ ( $68.5^{\circ}\text{F}$ )	$18.8 \pm 0.3$ mm ( $0.74 \pm 0.01$ in)
$30^{\circ}\text{C}$ ( $86.5^{\circ}\text{F}$ )	$19.7 \pm 0.3$ mm ( $0.78 \pm 0.01$ in)
$40^{\circ}\text{C}$ ( $104.5^{\circ}\text{F}$ )	$20.1 \pm 0.3$ mm ( $0.79 \pm 0.01$ in)

**NOTE:**

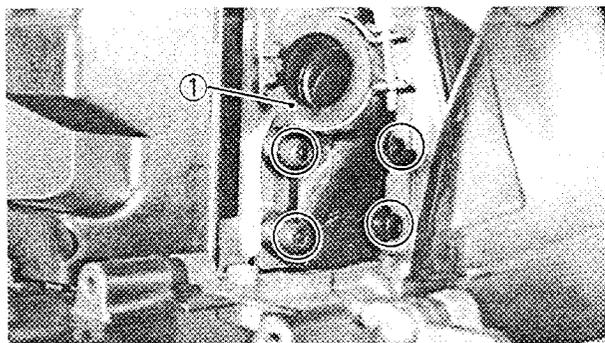
In the above table, auto choke was first freeze-d to  $-5^{\circ}\text{C}$  ( $23.5^{\circ}\text{F}$ ) and then the measurements were made at while the temperature was raised gradually.



### REED VALVE

#### REMOVAL

1. Remove:
  - Tail cover  
Refer to "CHAPTER 2-TAIL COVER" section.
  - Air cleaner case ①
  
2. Remove:
  - Carburetor  
Refer to "CARBURETOR-REMOVAL" section.



3. Remove:
  - Carburetor joint ①
  - Reed valve assembly

#### INSPECTION

1. Inspect:
  - Carburetor joint  
Damage/Cracks → Replace.
  - Reed valve  
Fatigue/Cracks → Replace.

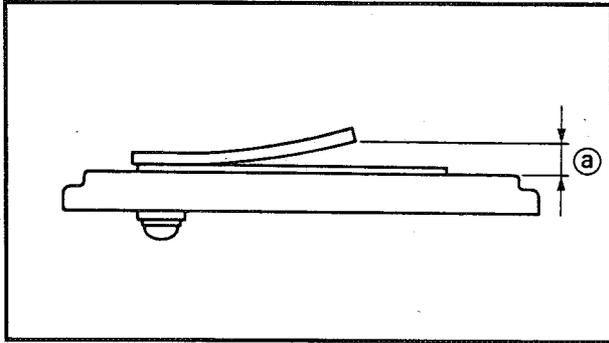
**Inspection steps:**

- Visually inspect the reed valve.

**NOTE:** \_\_\_\_\_  
 Correct reed valve should fit flush or nearly flush against valve seat.

\_\_\_\_\_

- If in doubt as to sealing ability, apply suction to carburetor side of assembly.
- Leakage should be slight to moderate.



2. Measure:

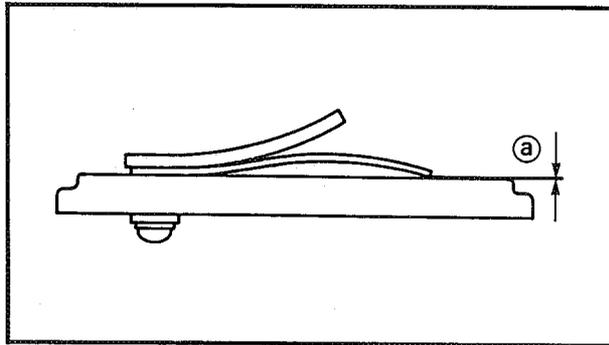
- Valve stopper height (a):  
Out of specification → Adjust stopper/  
Replace valve stopper.



**Valve Stopper Height (a):**  
3.0 ~ 3.4 mm (0.12 ~ 0.13 in)

NOTE:

If it is 0.4 mm (0.016 in) more or less than specified, replace the valve stopper.



3. Measure:

- Reed valve clearance (a)  
Out of specification → Replace reed valve.



**Reed Valve Clearance (a):**  
Less than 0.2 mm (0.008 in)

**INSTALLATION**

When installing the reed valve assembly, reverse the removal procedure. Note the following points.

1. Install:

- Gasket (New)

2. Tighten:

- Reed valve securing bolts



**9 Nm (0.9 m•kg, 6.5 ft•lb)**

NOTE:

Tighten each bolt gradually to avoid warping.

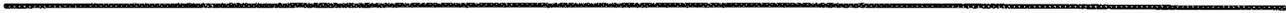




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## CHAPTER 5 CHASSIS

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<b>REAR SHOCK ABSORBER</b> .....	G-12
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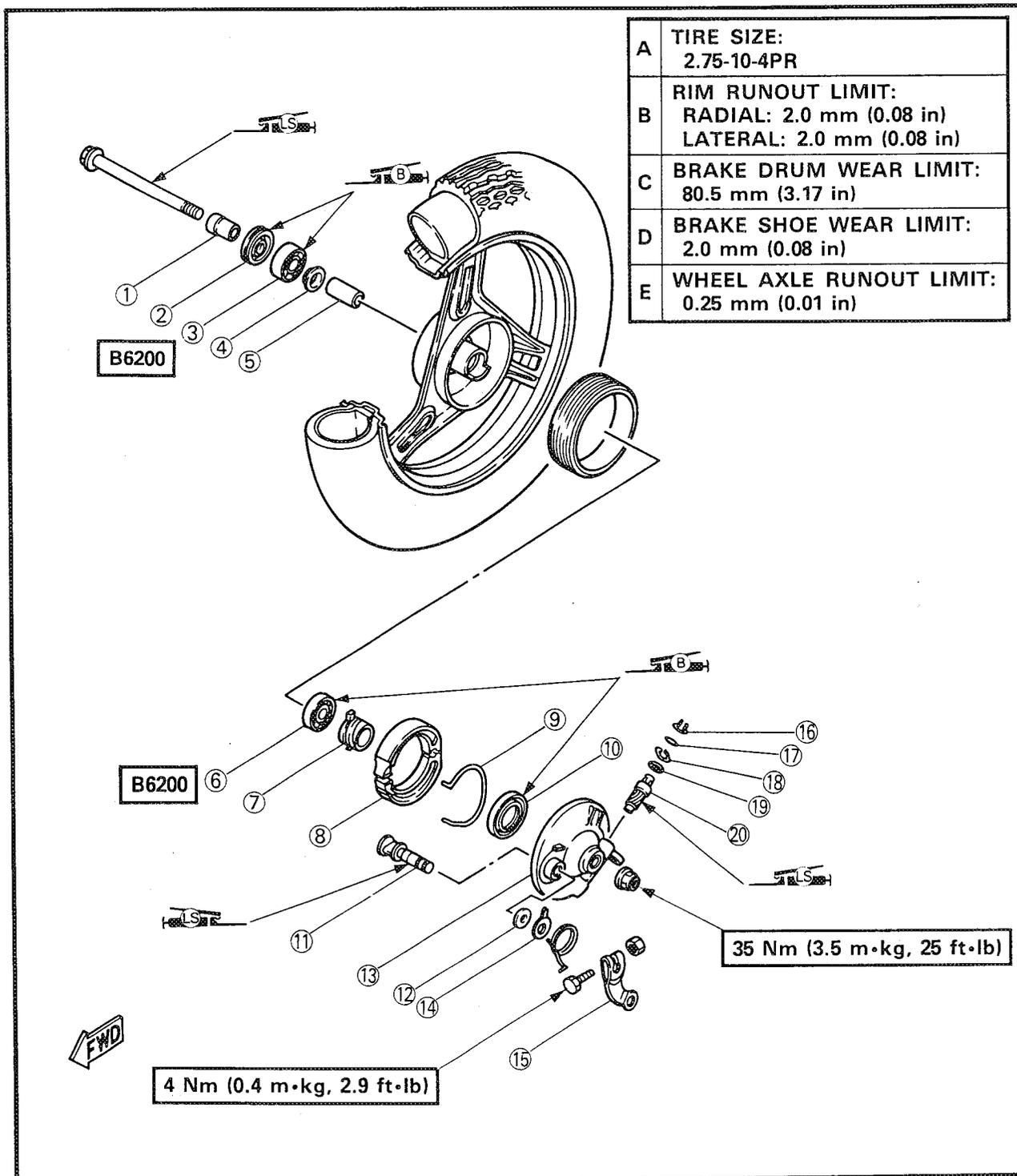


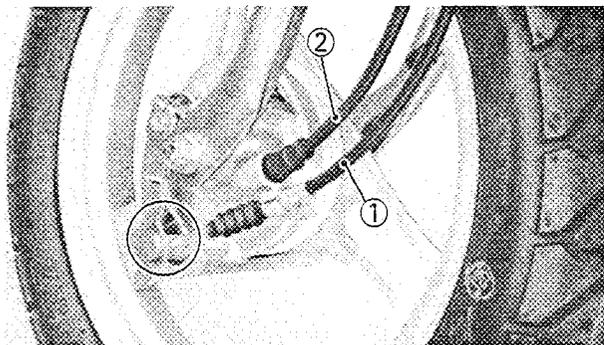


CHASSIS

FRONT WHEEL

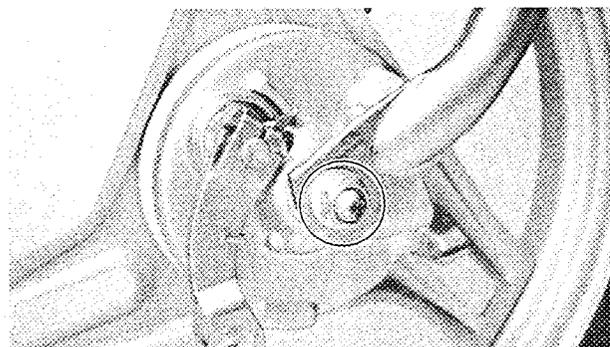
- ① Collar
- ② Oil seal
- ③ Bearing
- ④ Spacer (Flange)
- ⑤ Spacer
- ⑥ Bearing
- ⑦ Speedometer drive gear
- ⑧ Brake shoe
- ⑨ Return spring
- ⑩ Dust seal
- ⑪ Brake camshaft
- ⑫ Camshaft seal
- ⑬ Brake shoe plate
- ⑭ Wear indicator
- ⑮ Camshaft lever
- ⑯ Stop ring
- ⑰ O-ring
- ⑱ Stop ring
- ⑳ Speedometer driven gear



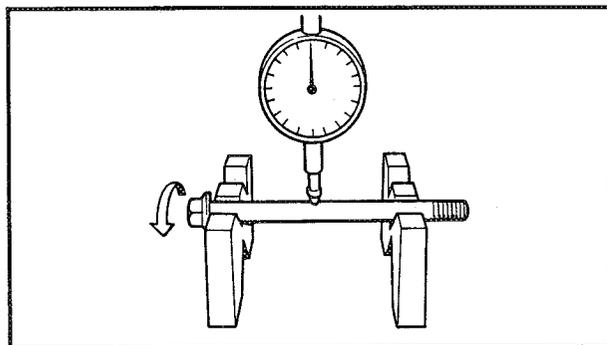


**REMOVAL**

1. Place the scooter on its centerstand.
2. Remove:
  - Brake cable ①
  - Speedometer cable ②



3. Remove:
  - Front wheel



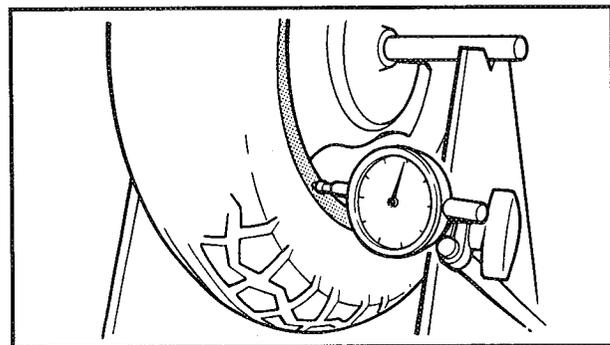
**INSPECTION**

1. Measure:
  - Wheel axle runout
 Out of specification → Replace.

	<b>Wheel Axle Runout Limit:</b> 0.25 mm (0.01 in)
---	--

**WARNING:**

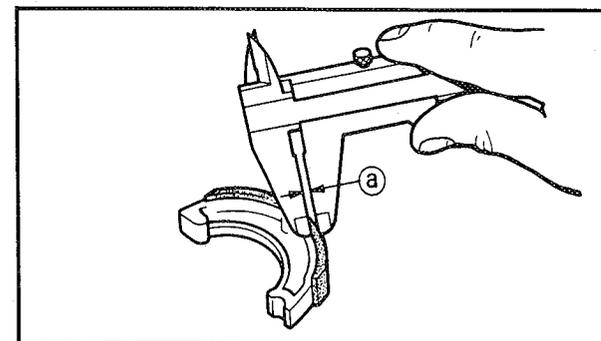
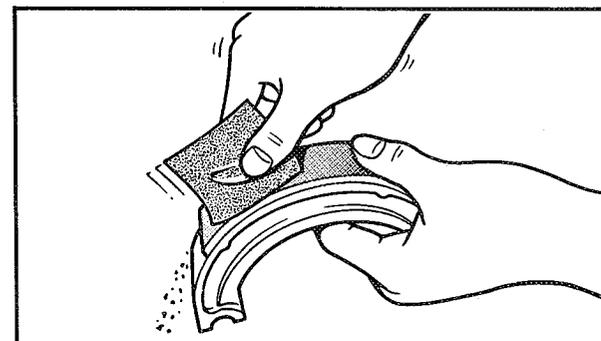
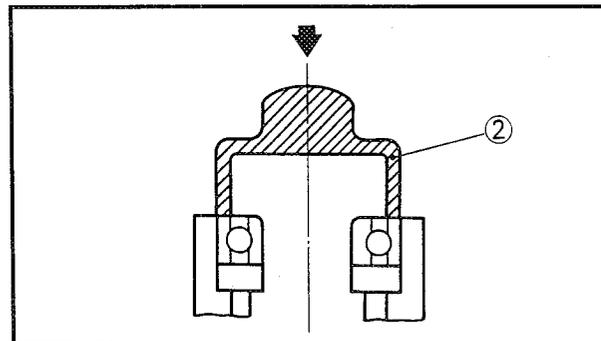
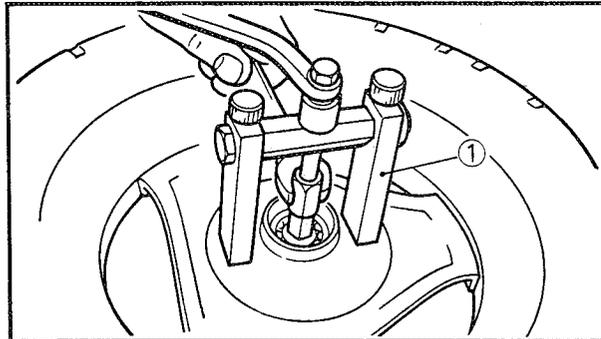
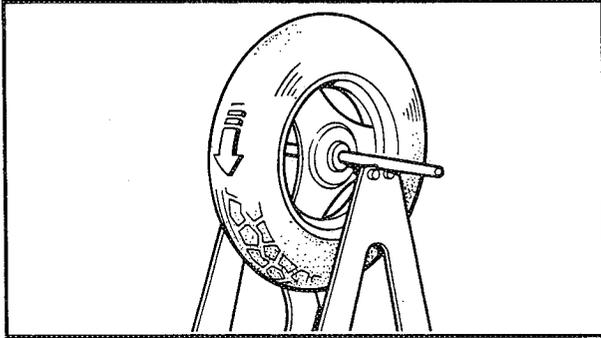
Do not attempt to straighten a bent axle.



2. Measure:
  - Wheel runout
 Out of specification → Replace.

	<b>Runout Limit:</b> Radial 2.0 mm (0.08 in) Lateral 2.0 mm (0.08 in)
---	---

3. Inspect:
  - Wheel
 Cracks/Bends/Warpage → Replace.



4. Inspect:

- Wheel bearings

Bearings allow play in the wheel hub or wheel turns roughly → Replace.

**Wheel bearing replacement steps:**

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

**NOTE:**

Use a socket ② that matches the outside diameter of the race of the bearing.

**CAUTION:**

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

5. Inspect:

- Brake shoes

Glazed parts → Sand with coarse sandpaper.

**NOTE:**

After using the sand paper, clean of the polished particles with cloth.

6. Measure:

- Brake shoe thickness (a)

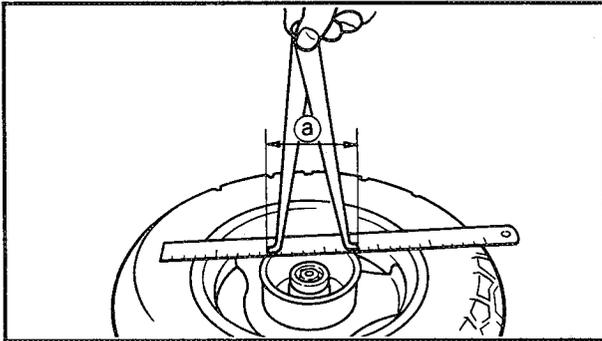
Out of specification → Replace.



**Brake Shoe Thickness:**  
 S.T.D.: 3.5 mm (0.14 in)  
 Limit: 2.0 mm (0.08 in)

- 7. Inspect:
  - Brake drum inner surface
  - Oil/Scratches → Remove.

Oil	Use a rag soaked in lacquer thinner or solvent.
Scratches	Use an emery cloth (lightly and evenly polishing).



- 8. Measure:
  - Brake drum inside diameter (a)
  - Out of specification → Replace.

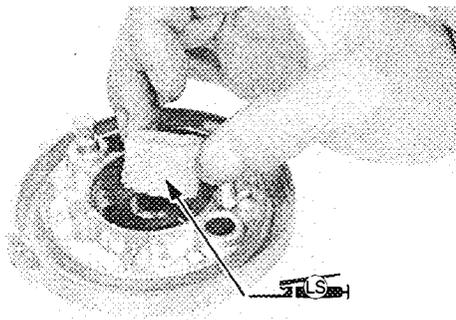
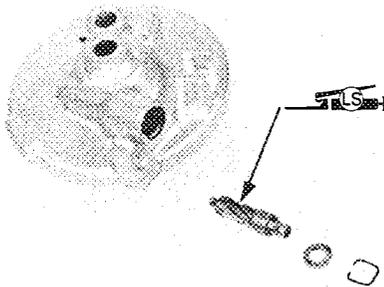
	<b>Brake Drum Wear Limit:</b> 80.5 mm (3.17 in)
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**ASSEMBLY (BRAKE SHOE PLATE)**

When assembling the brake shoe plate, reverse the disassembly procedure.

Note the following points.

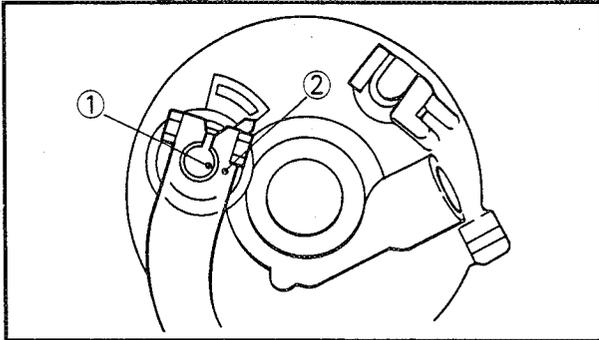
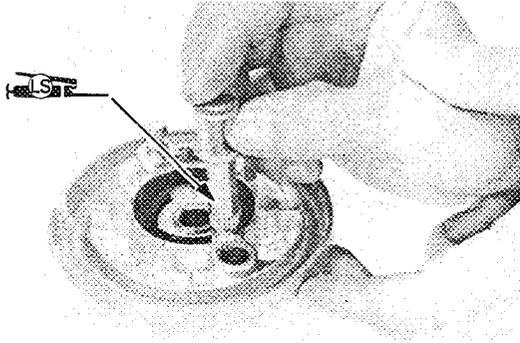
1. Apply:
  - Lithium-soap base grease (to speedometer driven gear)
2. Apply:
  - Lithium-soap base grease (to speedometer drive gear)



3. Install:
  - Dust seal (New)

**NOTE:** \_\_\_\_\_  
 Install the dust seal with their manufacturer's marks or numbers facing outward.

---



4. Apply:
- Lithium-soap base grease (to the brake camshaft)

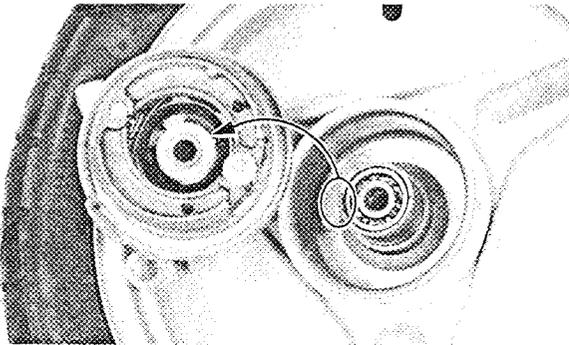
5. Install:
- Brake camshaft
  - Camshaft lever

**NOTE:** \_\_\_\_\_  
Align the camshaft mark ① with the lever mark ② as shown.  
\_\_\_\_\_

### INSTALLATION

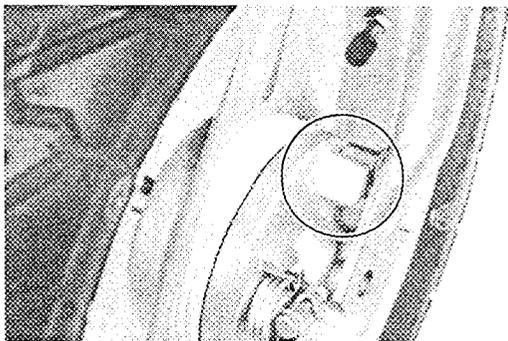
When installing the front wheel, reverse the removal procedure.

Note the following points.



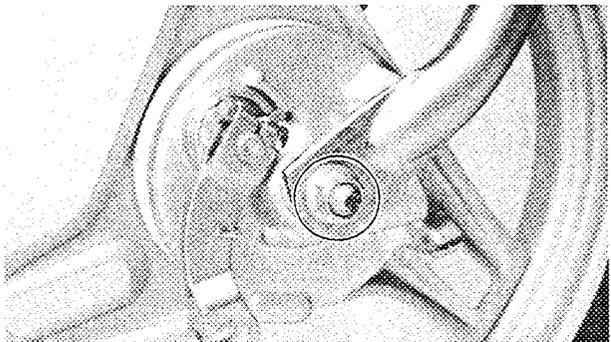
1. Install:
- Brake shoe plate

**NOTE:** \_\_\_\_\_  
Make sure the projections inside the gear unit are meshed with the flats in the wheel hub.  
\_\_\_\_\_



2. Install:
- Front wheel

**NOTE:** \_\_\_\_\_  
Be sure the boss on the front fork correctly engages with the locating slot on the brake shoe plate assembly.  
\_\_\_\_\_

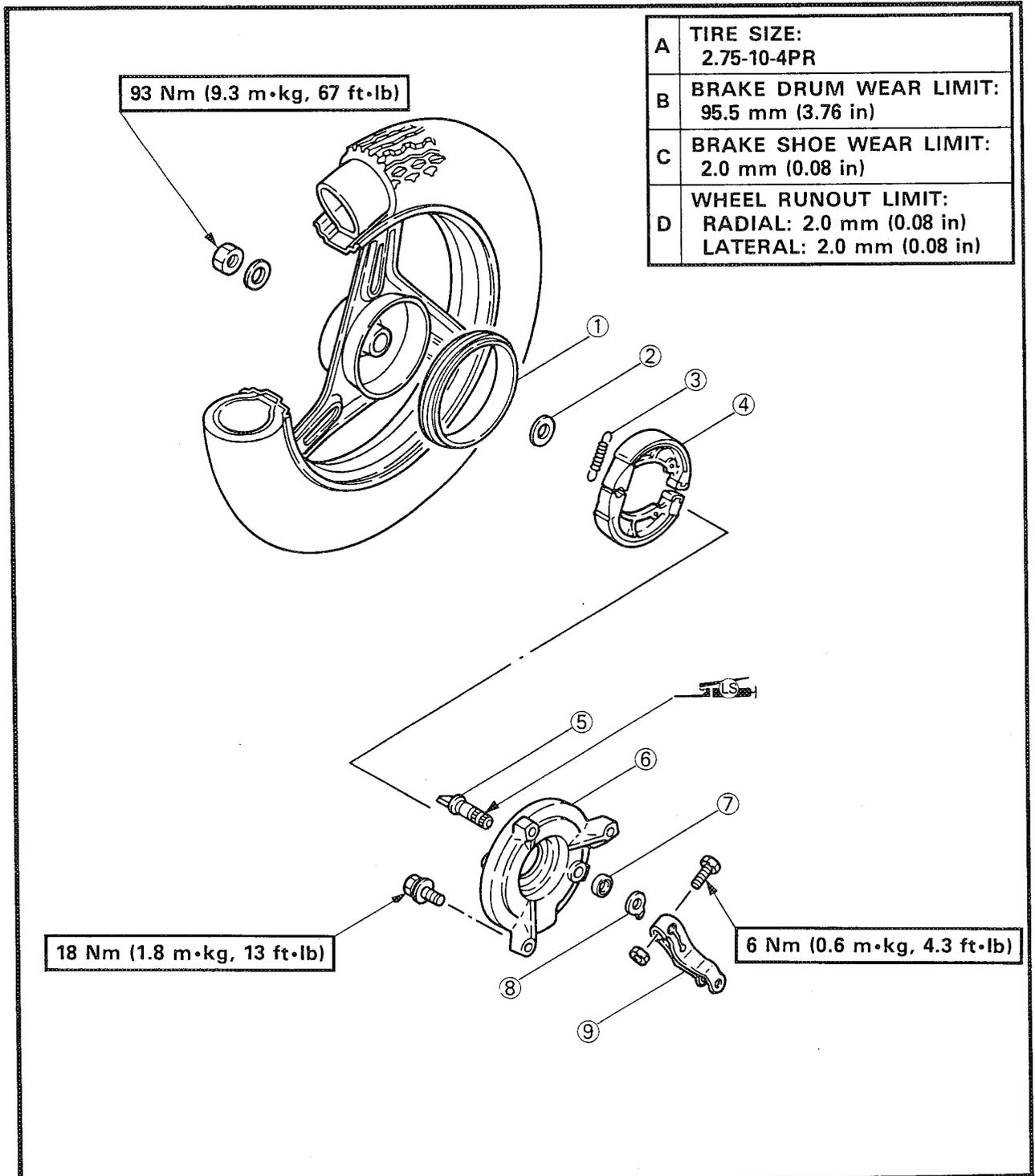


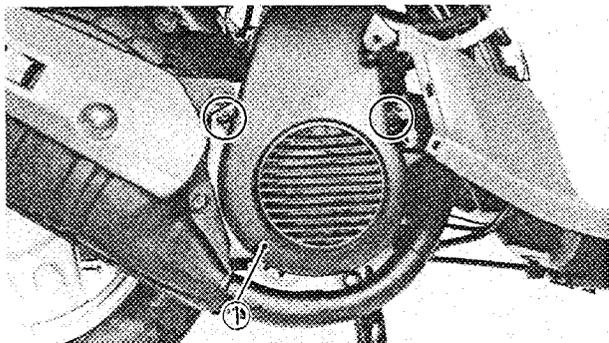
- 3. Tighten:
  - Axle nut

	35 Nm (3.5 m•kg, 25 ft•lb)
---	----------------------------

**REAR WHEEL**

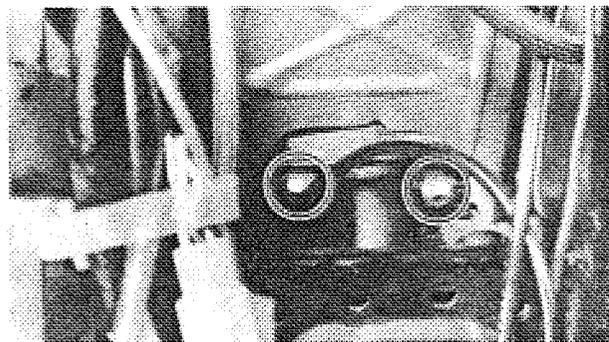
- ① Wheel ring
- ② Plain washer
- ③ Spring
- ④ Brake shoes
- ⑤ Brake camshaft
- ⑥ Brake shoe plate
- ⑦ Camshaft seal
- ⑧ Wear indicator
- ⑨ Camshaft lever



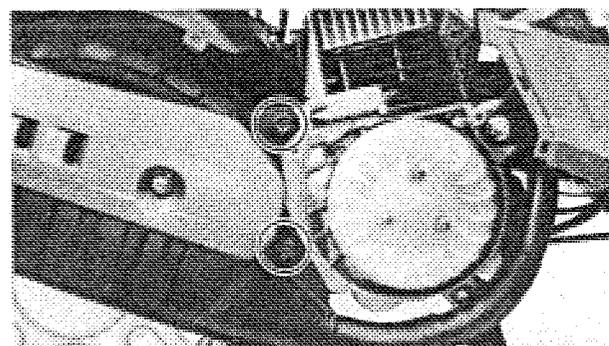
**REMOVAL**

1. Remove:
  - Tail cover
 Refer to "CHAPTER 2—TAIL COVER" section.

2. Remove:
  - Fan cover ①

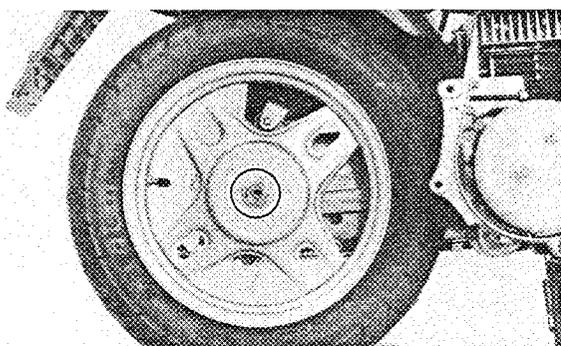


3. Remove:
  - Exhaust pipe
  - Muffler

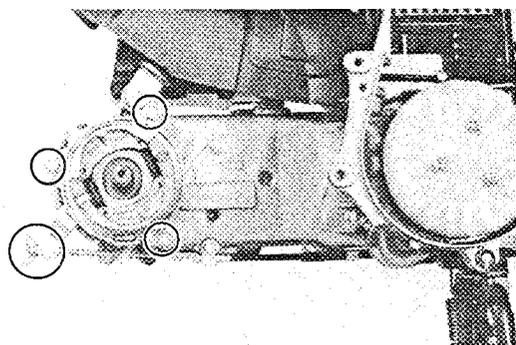


4. Remove:
  - Rear axle nut

**NOTE:** \_\_\_\_\_  
 When loosening axle nut, apply the rear brake.



5. Remove:
  - Rear wheel

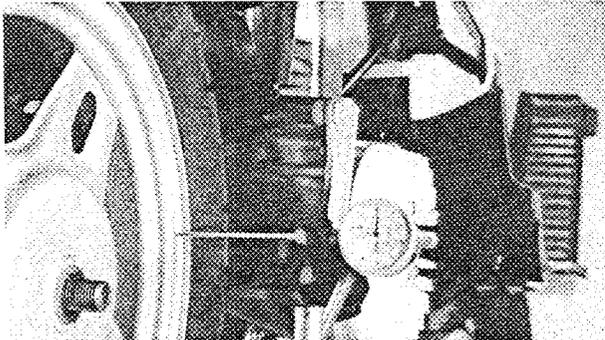


6. Remove:
  - Adjuster
  - Rear brake cable
  - Brake shoe plate



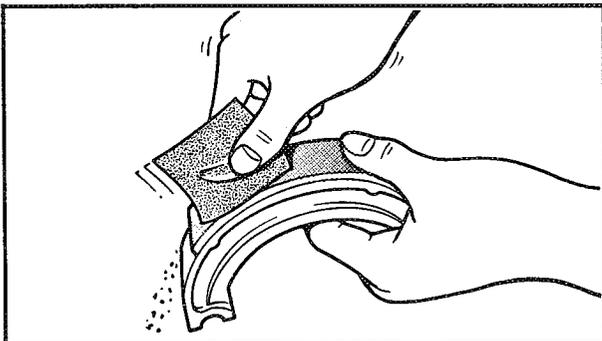
**INSPECTION**

1. Inspect:
  - Wheel  
Cracks/Bends/Warping → Replace.



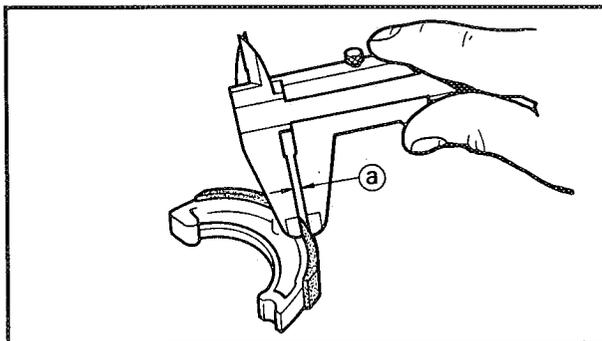
2. Measure:
  - Wheel runout  
Out of specification → Replace.

	<p><b>Runout Limit:</b>                      Radial 2.0 mm (0.08 in)                      Lateral 2.0 mm (0.08 in)</p>
--	--



3. Inspect:
  - Brake shoes  
Glazed parts → Sand with coarse sandpaper.

**NOTE:** \_\_\_\_\_  
 After using the sand paper, clean of the polished particles with cloth.  
 \_\_\_\_\_

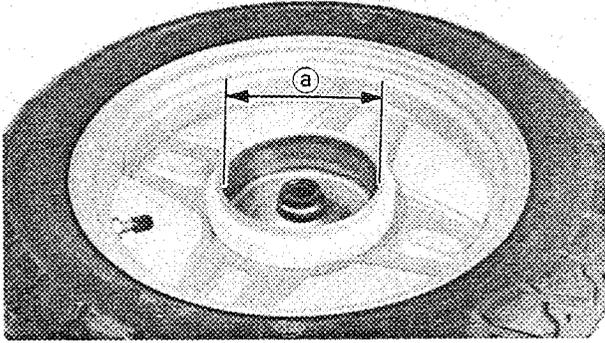


4. Measure:
  - Brake shoe thickness (a)  
Out of specification → Replace.

	<p><b>Brake Shoe Thickness:</b>                      S.T.D.: 3.0 mm (0.12 in)                      Limit: 2.0 mm (0.08 in)</p>
--	--

5. Inspect:
  - Brake drum inner surface  
Oil/Scratches → Remove.

Oil	Use a rag soaked in lacquer thinner or solvent.
Scratches	Use an emery cloth (lightly and evenly polishing).



6. Measure:

- Brake drum inside diameter (a)  
Out of specification → Replace.

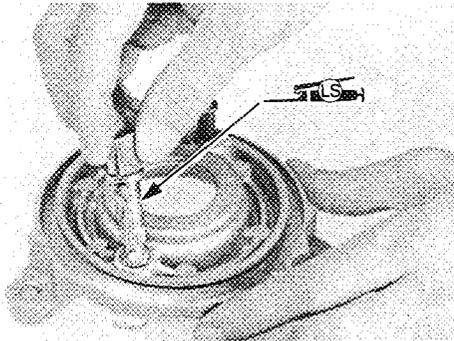


**Brake Drum Wear Limit:**  
95.5 mm (3.76 in)

**ASSEMBLY (BRAKE SHOE PLATE)**

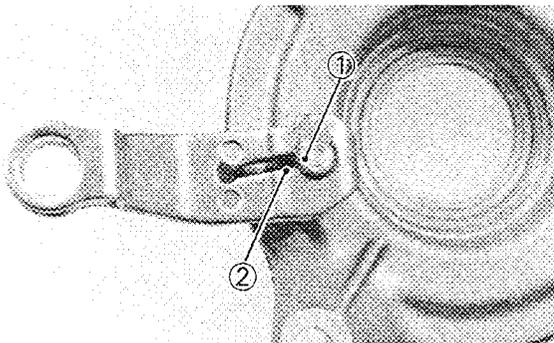
When assembling the brake shoe plate, reverse the disassembly procedure.

Note the following points.



1. Apply:

- Lithium-soap base grease  
(to the brake camshaft)



2. Install:

- Brake camshaft
- Camshaft lever

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

Align the camshaft mark ① with the lever mark ②.

**INSTALLATION**

When installing the rear wheel, reverse the removal procedure.

Note the following points.

1. Install:

- Brake shoe plate



**18 Nm (1.8 m·kg, 13 ft·lb)**

- 2. Install:
  - Rear wheel

	<b>93 Nm (9.3 m•kg, 67 ft•lb)</b>
---	-----------------------------------

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

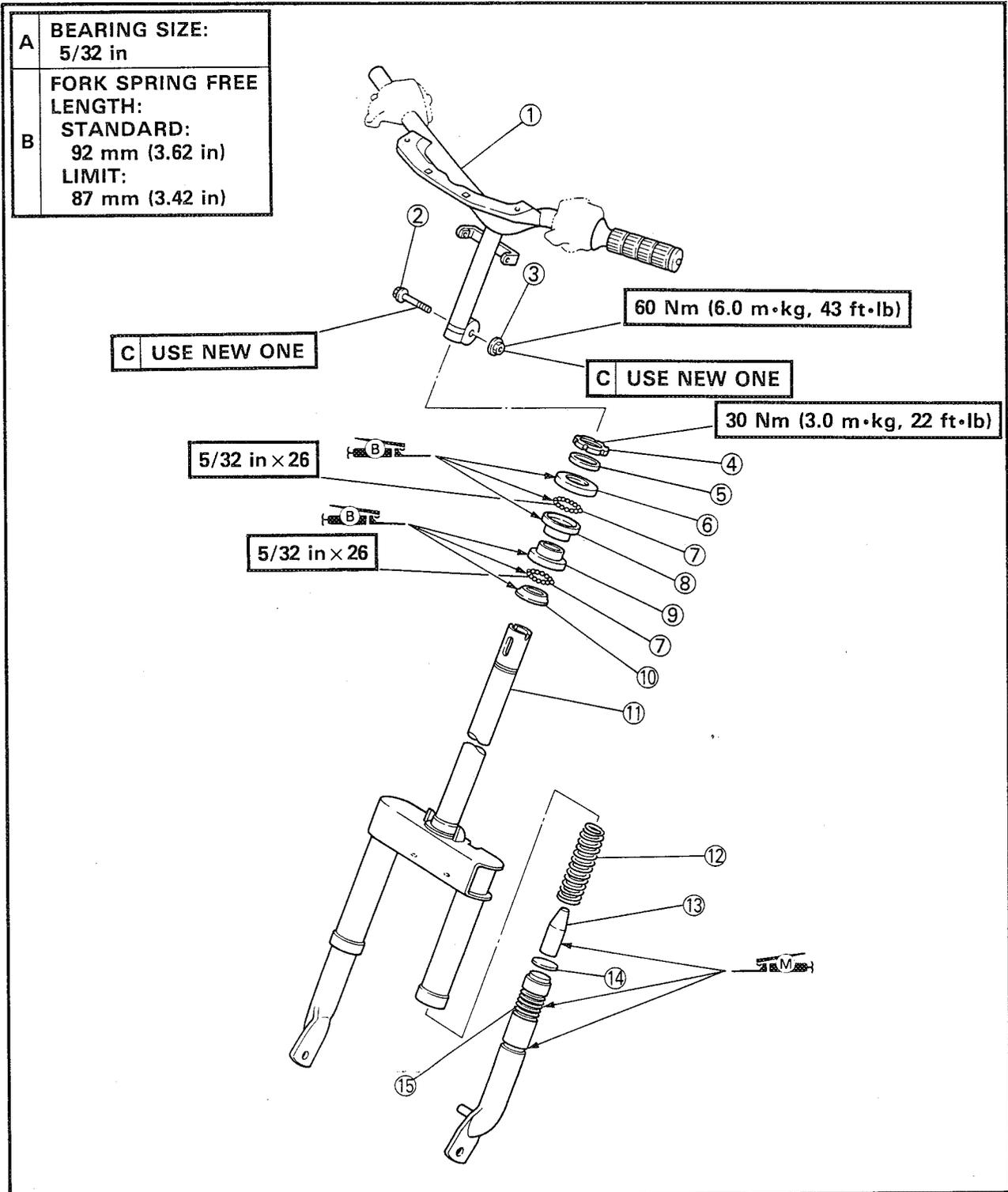
Make sure the splines on the wheel hub fit the rear drive axle.

- 3. Install:
  - Muffler
  - Exhaust pipe

	<b>Muffler:</b>
	<b>18 Nm (1.8 m•kg, 13 ft•lb)</b>
	<b>Exhaust pipe:</b>
	<b>8 Nm (0.8 m•kg, 5.8 ft•lb)</b>

FRONT FORK AND STEERING

- ① Handlebar
- ② Flange bolt
- ③ Frange nut
- ④ Ring nut
- ⑤ Washer
- ⑥ Upper bearing race (Top)
- ⑦ Bearings
- ⑧ Upper bearing race (Bottom)
- ⑨ Lower bearing race (Top)
- ⑩ Lower bearing race (Bottom)
- ⑪ Steering column
- ⑫ Front fork spring
- ⑬ Rubber (Left side only)
- ⑭ Spring seat
- ⑮ Inner tube (Right and left)



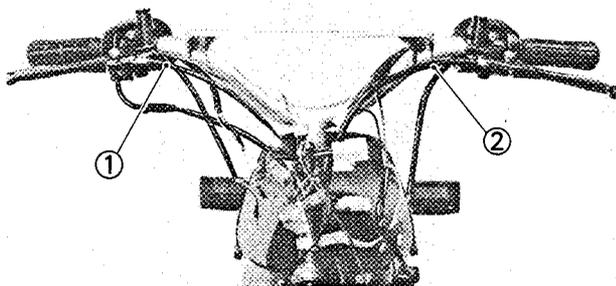


## REMOVAL

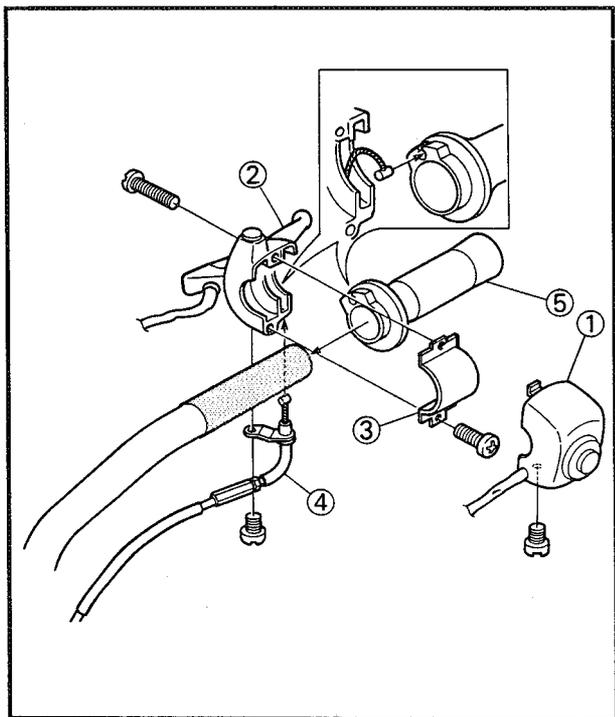
1. Place the scooter on the centerstand.

**WARNING:**

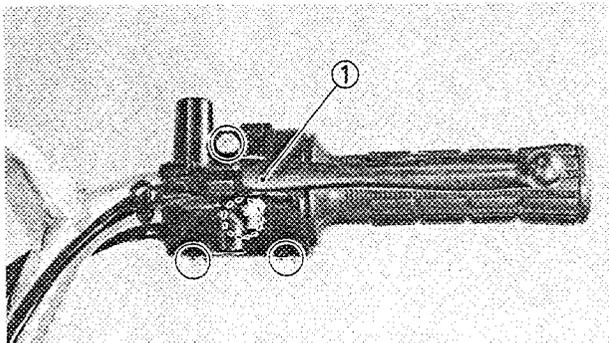
Securely support the scooter so there is no danger of it falling over.



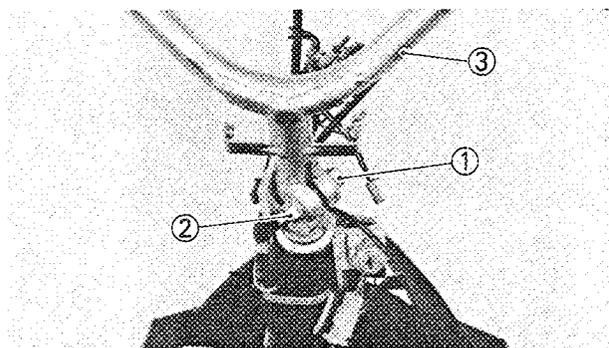
2. Remove:
  - Front wheel  
Refer to "FRONT WHEEL—REMOVAL" section.
3. Remove:
  - Front fender
  - Front panel  
Refer to "CHAPTER 2 — FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" section.
4. Remove:
  - Handlebar cover  
Refer to "CHAPTER 2 — HANDLEBAR COVER" section.
5. Remove:
  - Front brake cable ①
  - Rear brake cable ②



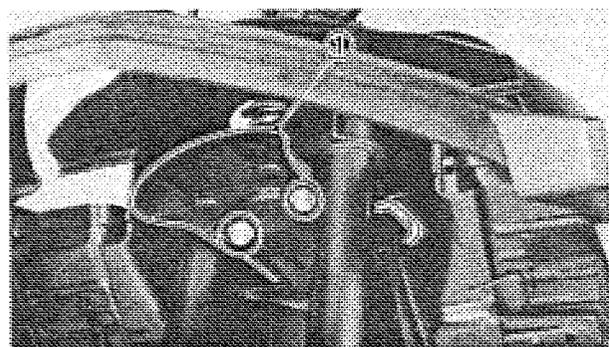
6. Remove:
  - Handlebar switch (Right) ①
  - Front brake lever assembly ②
  - Bracket ③
  - Throttle cable ④
  - Throttle grip ⑤



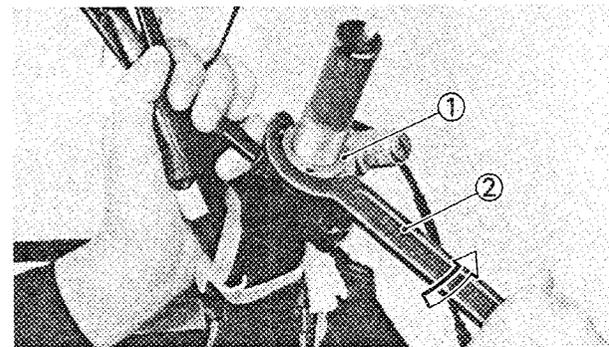
7. Remove:  
 •Rear brake lever assembly ①



8. Remove:  
 •Bolt ①  
 •Nut ②  
 •Handlebar ③

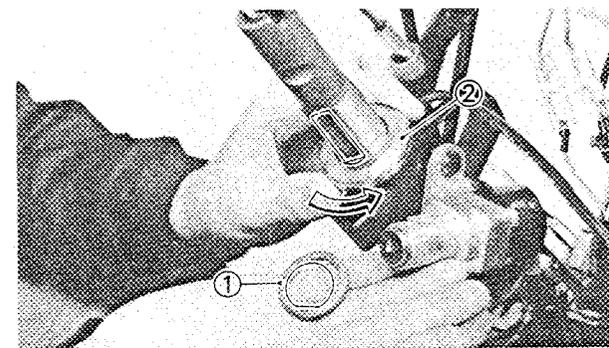


9. Remove:  
 •Inner fender with cable guide ①



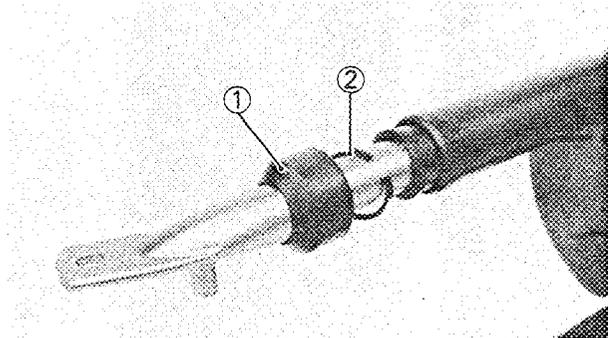
10. Remove:  
 •Ring nut ①  
 Using the Ring Nut Wrench ② (YU-01268).

**NOTE:** \_\_\_\_\_  
 Support the steering column so that it may not fall down.  
 \_\_\_\_\_



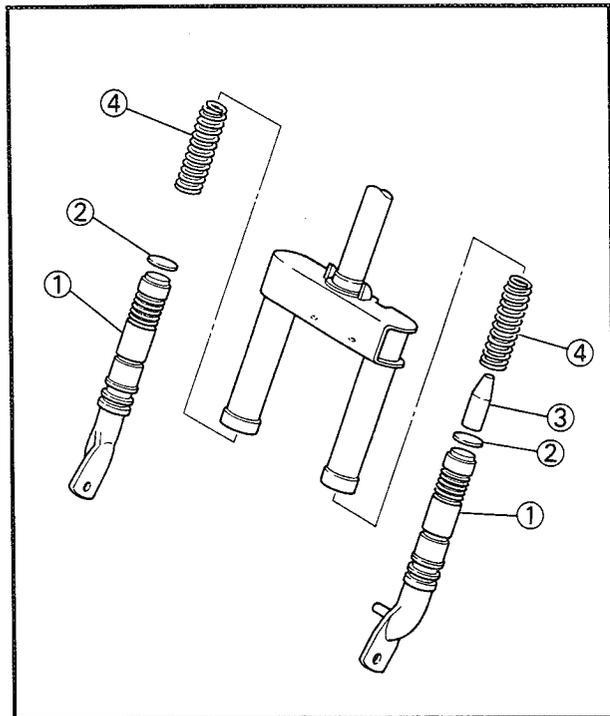
11. Remove:  
 •Washer ①  
 •Upper bearing race (Top) ②  
 Turn it counterclockwise.  
 •Steering column  
 •Bearings

**NOTE:** \_\_\_\_\_  
 Take care not to lose the bearings. (Upper: 26 pieces, Lower: 26 pieces)  
 \_\_\_\_\_

**DISASSEMBLY**

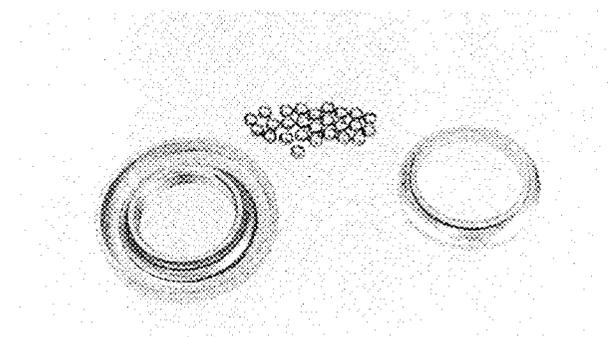
## 1. Remove:

- Dust seal ①
- Circlip ②



## 2. Remove:

- Inner tube (Left and right) ①
- Spring seat ②
- Rubber ③ (Left side only)
- Front fork spring ④

**INSPECTION**

1. Wash the bearings in solvent.
2. Inspect:
  - Bearing races
    - Pitting/Damage → Replace.
  - Bearings
    - Pitting/Damage → Replace.

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

Always replace the bearing and race as a set.

**Bearing Size:**

Upper: 5/32 in

Lower: 5/32 in

**Bearing Quantity:**

Upper: 26 pcs.

Lower: 26 pcs.

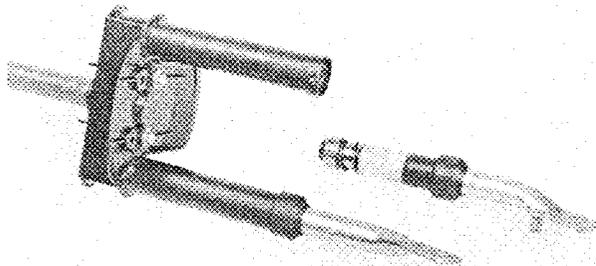


**Bearing race replacement steps:**

- Remove the bearing race by hitting it on several points.
- Set the bearing race.
- Drive in the bearing race evenly by hitting it on several points.

**CAUTION:**

- Unless the ball race is installed evenly, it will damage the frame or steering column.
- Do not hit the face of the ball race.

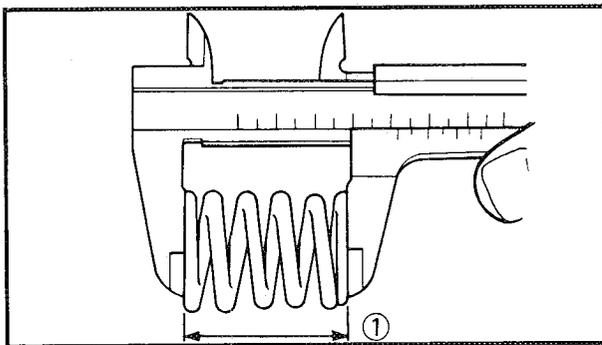


3. Inspect:

- Steering column
  - Inner fork tube
- Bends/Damage → Replace.

**WARNING:**

Do not attempt to straighten a bent fork tube.



4. Measure:

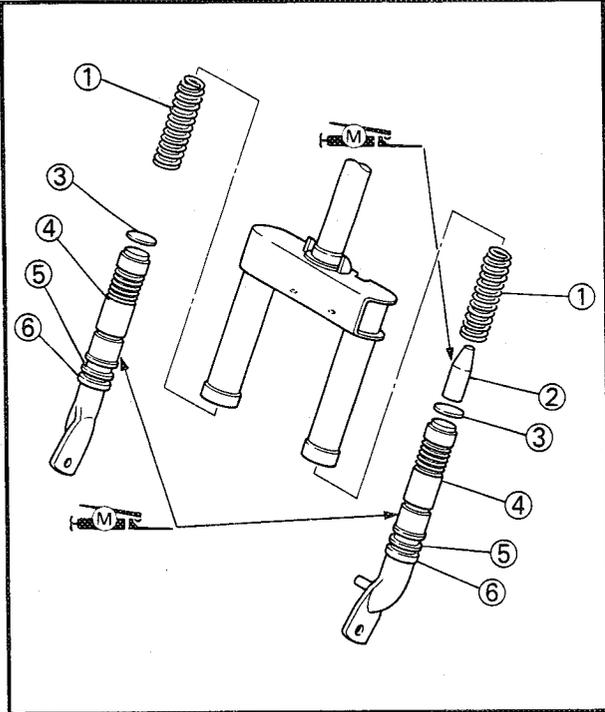
- Fork spring free length
- Out of specification → Replace.



**Fork Spring Free Length ①:**  
 Standard: 92 mm (3.62 in)  
 Limit: 87 mm (3.42 in)

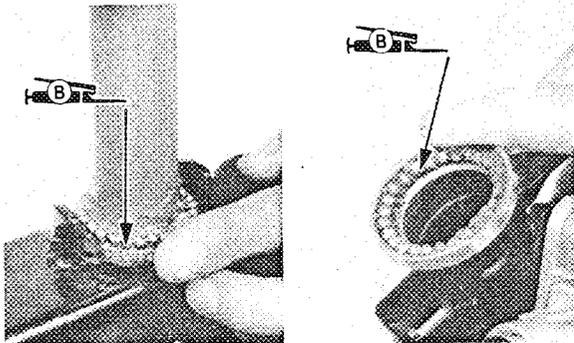
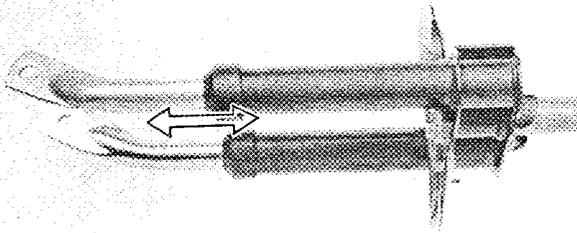
**ASSEMBLY AND INSTALLATION**

Reverse the disassembly and removal steps. Note the following points.



1. Apply:
  - Molybdenum disulfide grease  
To inner tube ③ and rubber ⑤.
2. Install:
  - Front fork spring ①
  - Rubber ② (Left side only)
  - Spring seat ③
  - Inner tube ④
  - Circlip ⑤
  - Oil seal ⑥

3. Check:
  - Front fork operation  
Unsmooth operation → Repair.



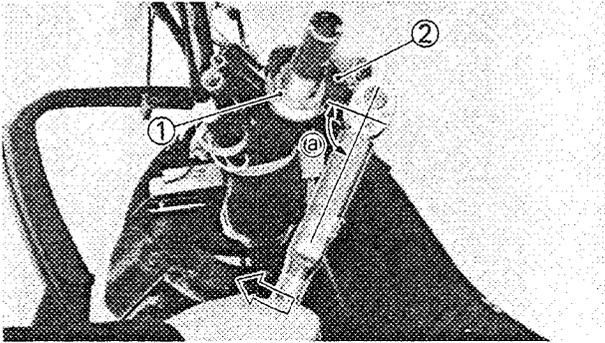
4. Apply:
  - Wheel bearing grease  
To upper bearings and lower bearings.



5. Install:
  - Steering column
  - Upper bearing race (Top) ①  
Turn it clockwise completely.
  - Washer ②
  - Ring nut

**CAUTION:**

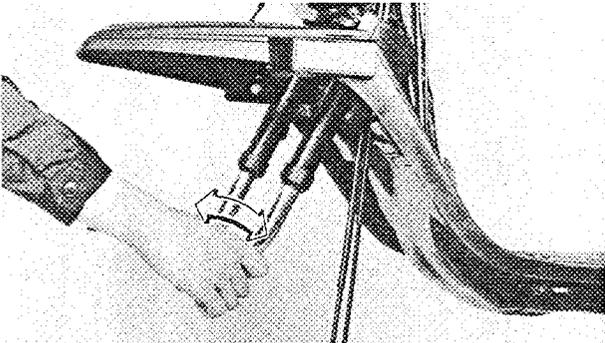
Hold the steering column until it is secured.



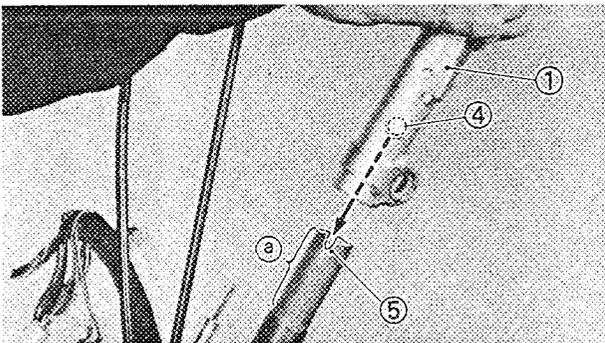
6. Tighten:
- Ring nut ①
  - Using the Ring Nut Wrench ② (YU-33975).

	<p>Ring Nut ①: 30 Nm (3.0 m•kg, 22 ft•lb)</p>
---	---

**NOTE:** \_\_\_\_\_  
Set the torque wrench to the Ring Nut Wrench so that they form a right angle (a).

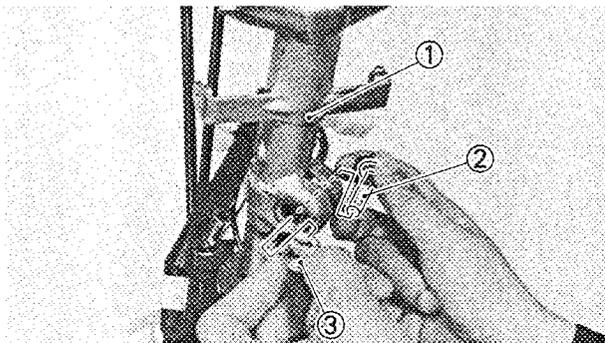


7. Check:
- Steering column for smooth action
  - Slack → Tighten the ring nut.
  - Sticky → Loosen the ring nut.



8. Install:
- Handlebar ①
  - Bolt ② (New)
  - Nut ③ (New)

**NOTE:** \_\_\_\_\_  
Fit the handlebar bridge ④ into the steering column notcher ⑤.



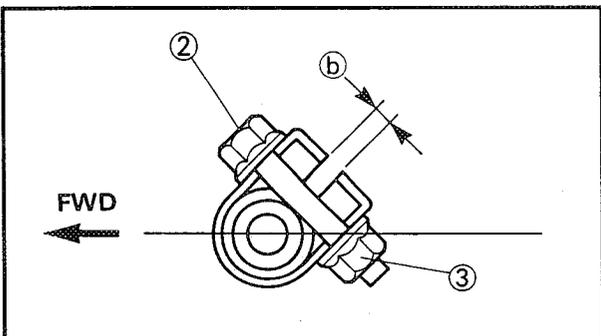
**CAUTION:** \_\_\_\_\_

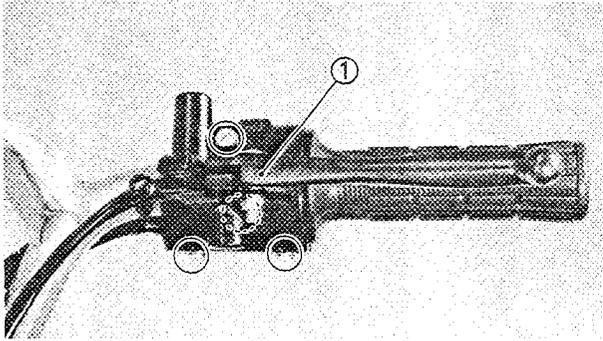
- Before installing the handlebar, wipe the oil off the insertion portion (a) using thinner, etc.
- Install the bolt ② from the right as shown.
- Make sure that the slit (b) has enough clearance after tightening the nut ③.

**WARNING:** \_\_\_\_\_  
Always use a new bolt ② and nut ③.

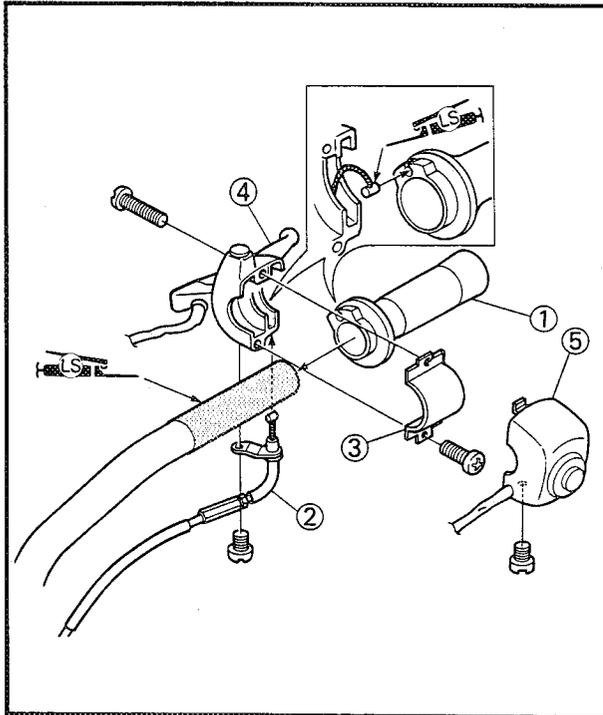
	<p>Bolt (Handlebar) ①: 60 Nm (6.0 m•kg, 43 ft•lb)</p>
---	---

9. Install:
- Inner fender with cable guide

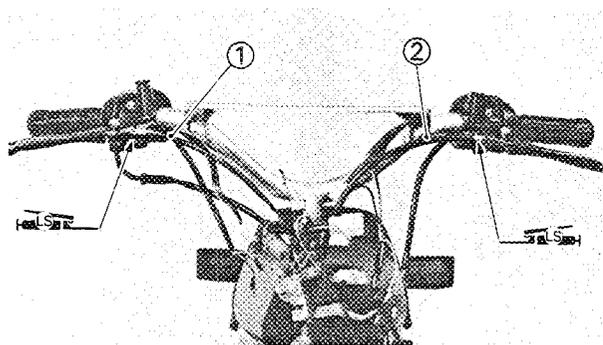




10. Install:
- Rear brake lever assembly ①



11. Apply:
- Lithium-soap base grease  
To throttle cable end and handlebar right end.
12. Install:
- Throttle grip ①
  - Throttle cable ②
  - Bracket ③
  - Front brake lever assembly ④
  - Handlebar switch (Right) ⑤



13. Install:
- Front brake cable ①
  - Rear brake cable ②

**NOTE:**

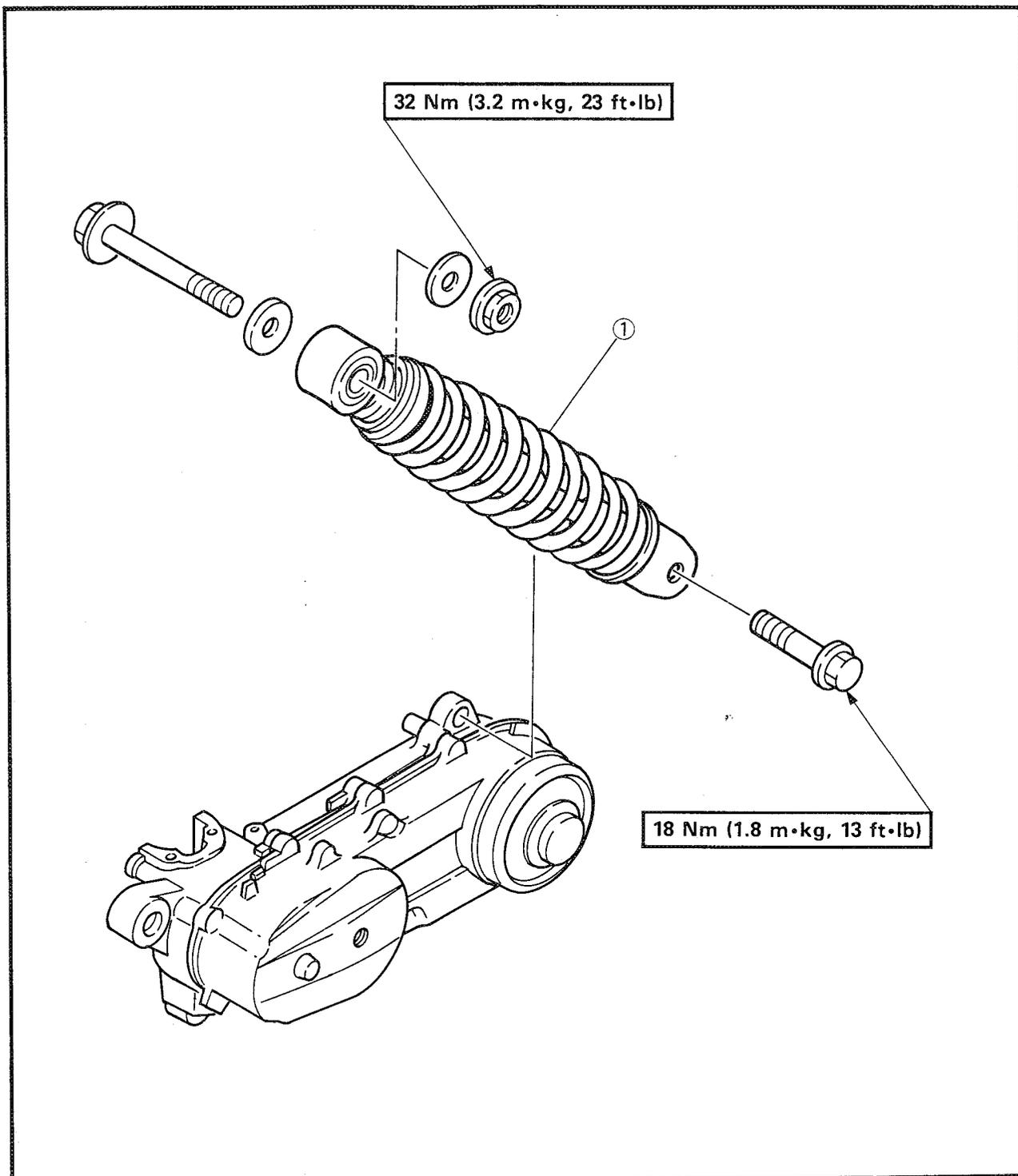
Apply lithium-soap base grease onto the cable end pivot.

14. Install:
- Handlebar covers (Front and rear)
  - Speedometer cable
  - Front panel
  - Front fender
- Refer to "CHAPTER 2 — FRONT FENDER, FRONT PANEL AND FOOTREST BOARD" and "HANDLEBAR COVERS" section.
15. Adjust:
- Front and rear brake lever free play
  - Throttle cable free play
- Refer to "CHAPTER 2" section.



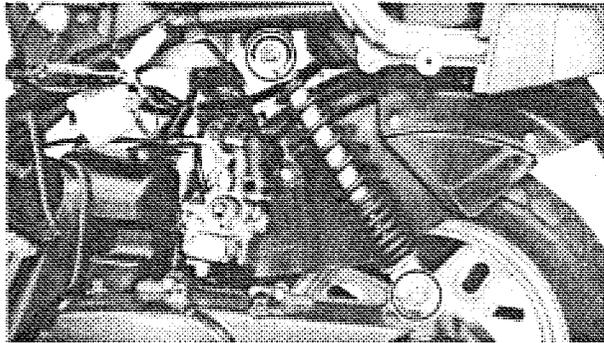
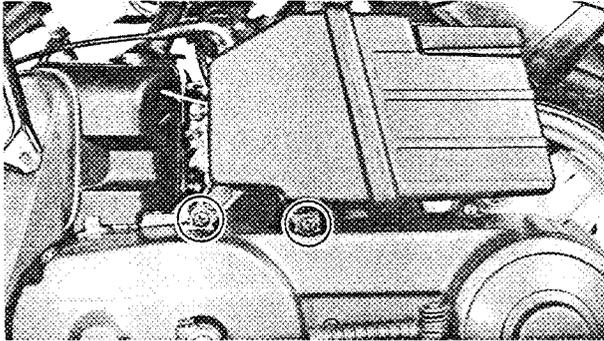
REAR SHOCK ABSORBER

① Rear shock absorber



**REMOVAL**

1. Place the scooter on its centerstand.
2. Remove:
  - Tail cover  
Refer to "CHAPTER 2—TAIL COVER" section.
3. Remove:
  - Air cleaner case
4. Remove:
  - Rear shock absorber

**INSPECTION**

1. Inspect:
  - Rear shock absorber  
Oil leaks/Damage → Replace.

**INSTALLATION**

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

1. Install:
  - Rear shock absorber



**Upper:**  
32 Nm (3.2 m•kg, 23 ft•lb)  
**Lower:**  
18 Nm (1.8 m•kg, 13 ft•lb)



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## CHAPTER 6 ELECTRICAL

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AUTO CHOKE UNIT TEST .....	I-10







- |  |  |
|--|--|
| ① C.D.I. magneto<br>(Lighting coil, charging coil) | ⑮ "TURN" switch                        |
| ② Rectifier/Regulator                              | ⑯ Left flasher light (Front and rear)  |
| ③ Starter motor                                    | ⑰ Right flasher light (Front and rear) |
| ④ Starter relay                                    | ⑱ "TURN" indicator light               |
| ⑤ "START" switch                                   | ⑲ Horn                                 |
| ⑥ Main switch                                      | ⑳ Horn ( ) switch                      |
| ⑦ Fuse   | ㉑ Oil level gauge                      |
| ⑧ Battery  | ㉒ "OIL" indicator light                |
| ⑨ "ENGINE STOP" switch                             | ㉓ Front brake switch                   |
| ⑩ C.D.I. magneto<br>(Source coil, pick-up coil)    | ㉔ Rear brake switch                    |
| ⑪ C.D.I. unit                                      | ㉕ Tail/Brake light                     |
| ⑫ Ignition coil                                    | ㉖ "LIGHTS" switch (Dimmer)             |
| ⑬ Spark plug                                       | ㉗ Headlight                            |
| ⑭ Flasher light relay                              | ㉘ "HIGH BEAM" indicator light          |
|  | ㉙ Meter light                          |
|  | ㉚ Auto choke unit                      |

#### COLOR CODE

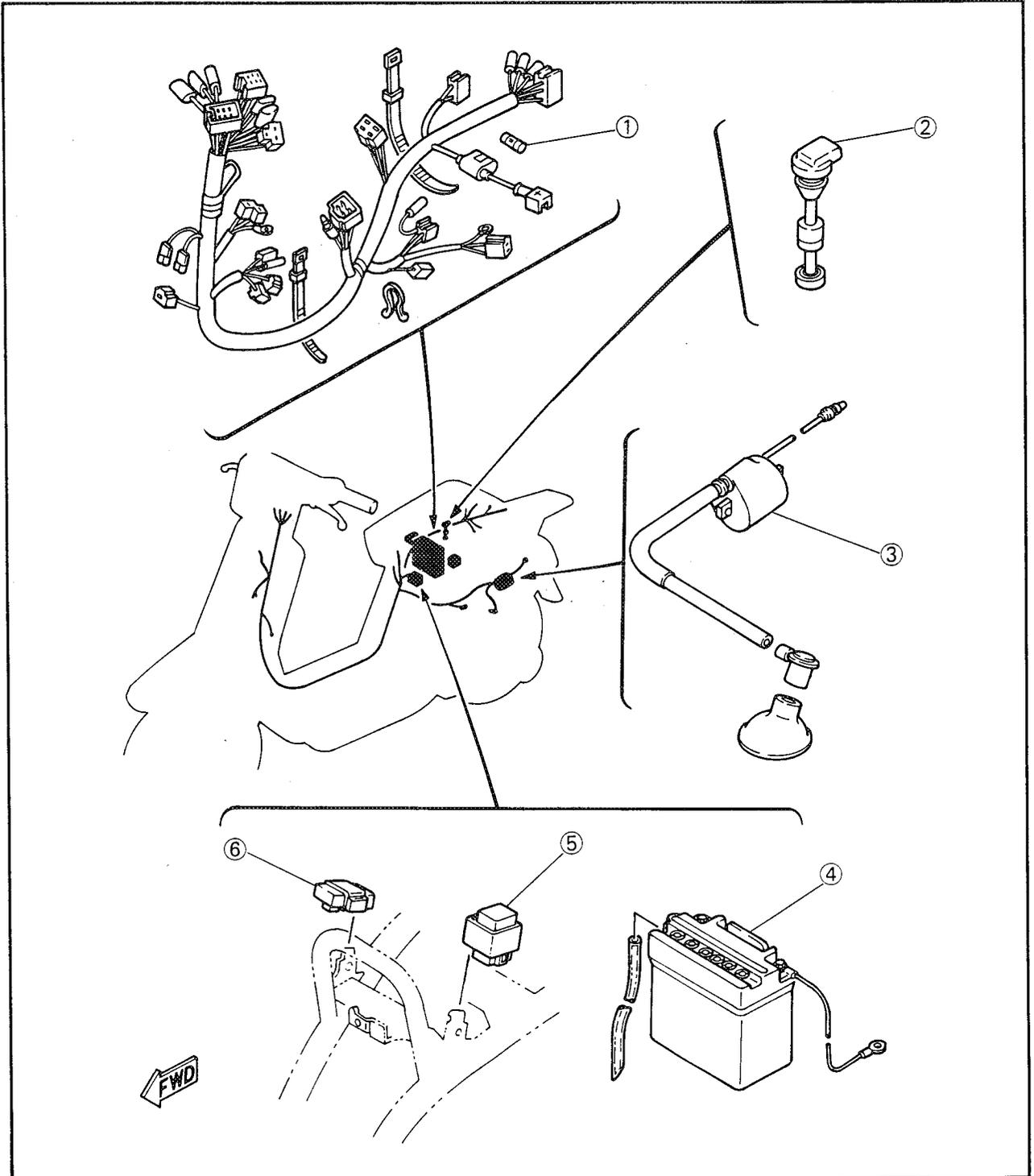
R	Red	P	Pink
B	Black	L	Blue
W	White	Y/R	Yellow/Red
Y	Yellow	L/W	Blue/White
Br	Brown	G/Y	Green/Yellow
Gy	Gray	B/W	Black/White
O	Orange	B/R	Black/Red
Ch	Chocolate	W/R	White/Red
Dg	Dark green	Br/W	Brown/White



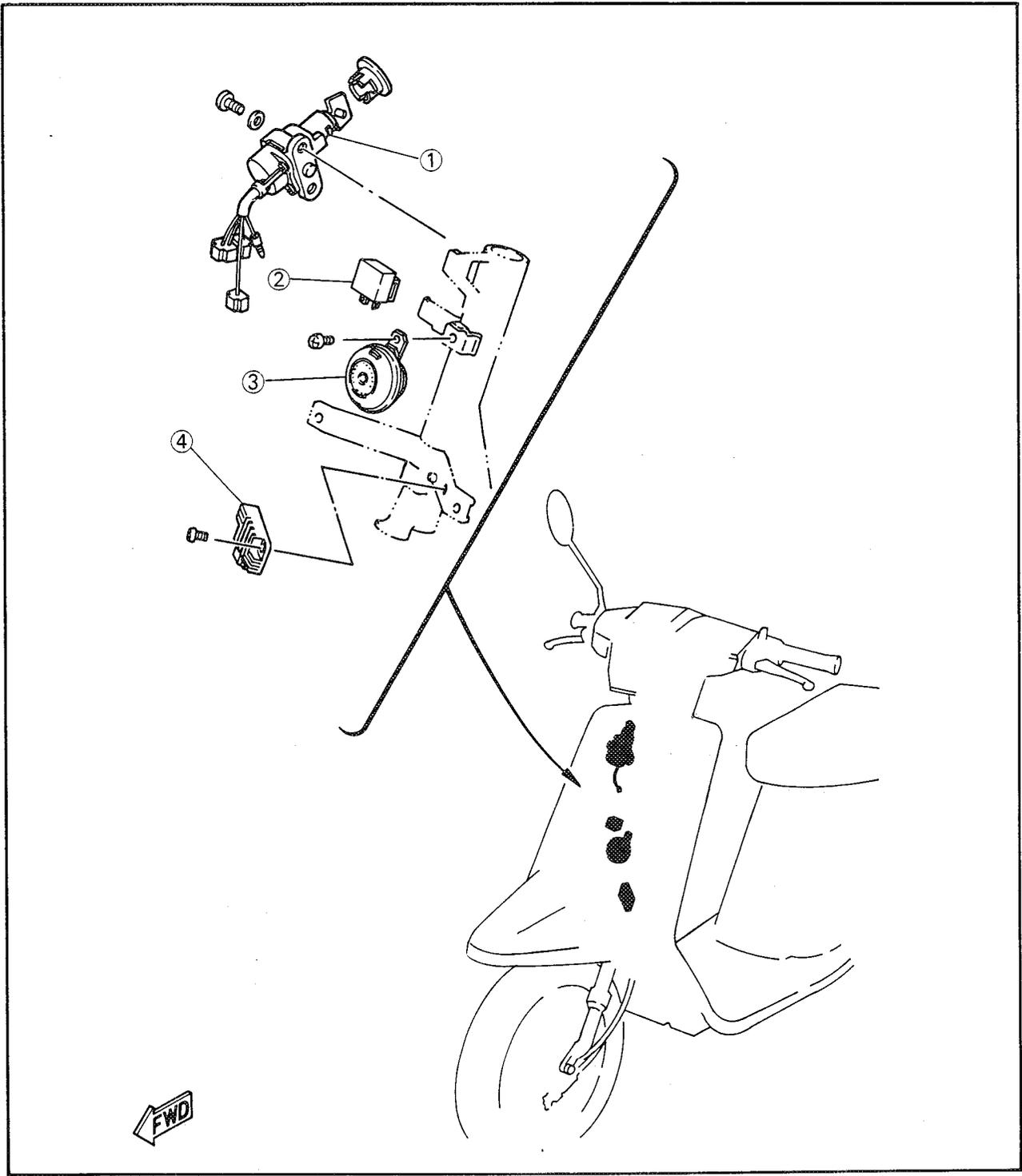
ELECTRICAL COMPONENTS

- ① Fuse
- ② Oil level gauge
- ③ Ignition coil
- ④ Battery
- ⑤ C.D.I. unit
- ⑥ Starter relay

A	BATTERY TYPE: GM4-3B SPECIFIC GRAVITY: 1.280
B	IGNITION COIL RESISTANCE PRIMARY: 0.21~0.25Ω at 20°C (68°F) SECONDARY: 4.5~6.7kΩ at 20°C (68°F)



- ① Main switch
- ② Flasher light relay
- ③ Horn
- ④ Rectifier/Regulator

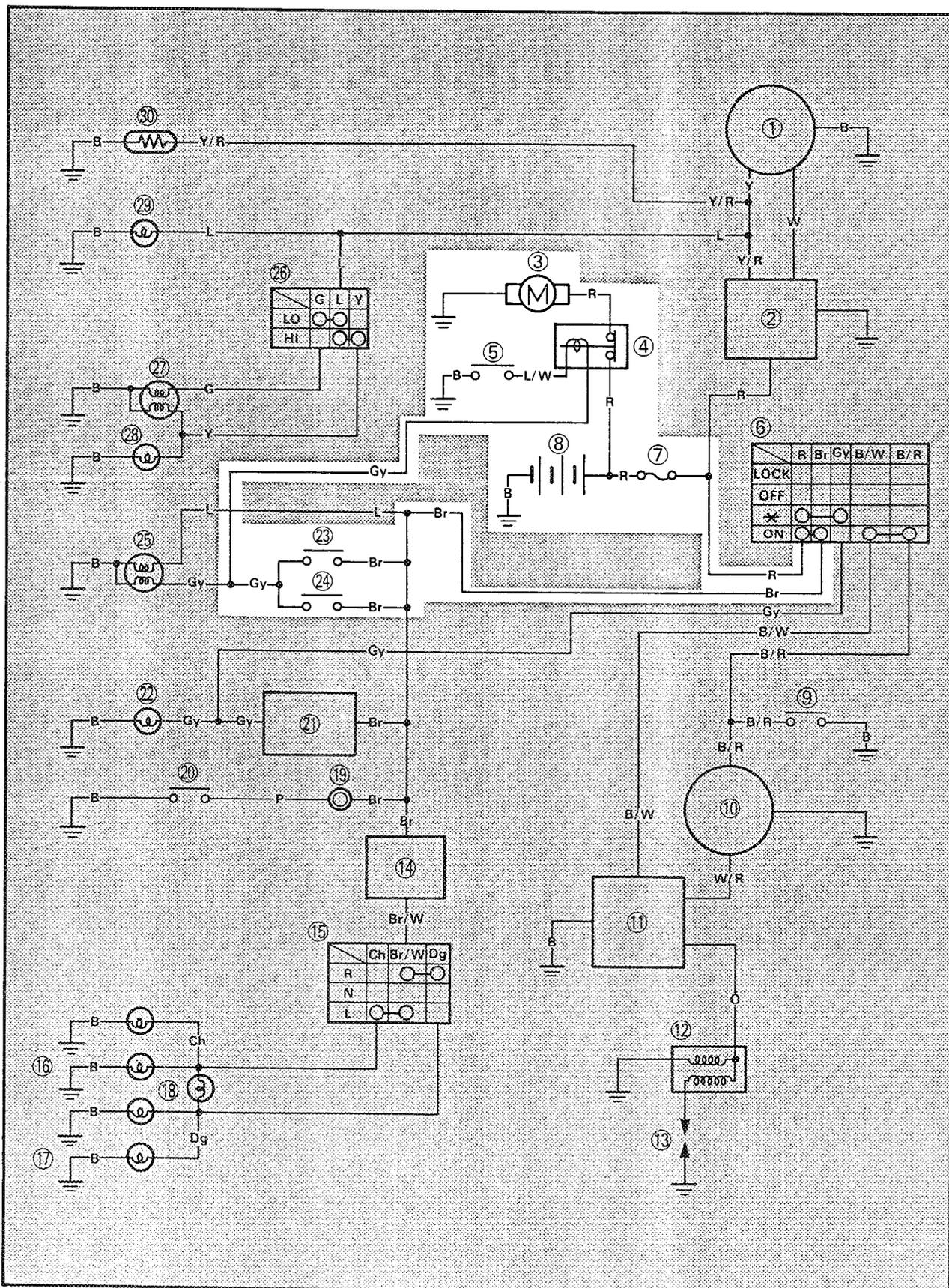




**ELECTRICAL STARTING SYSTEM**

**CIRCUIT DIAGRAM**

Below circuit diagram shows starter circuit.

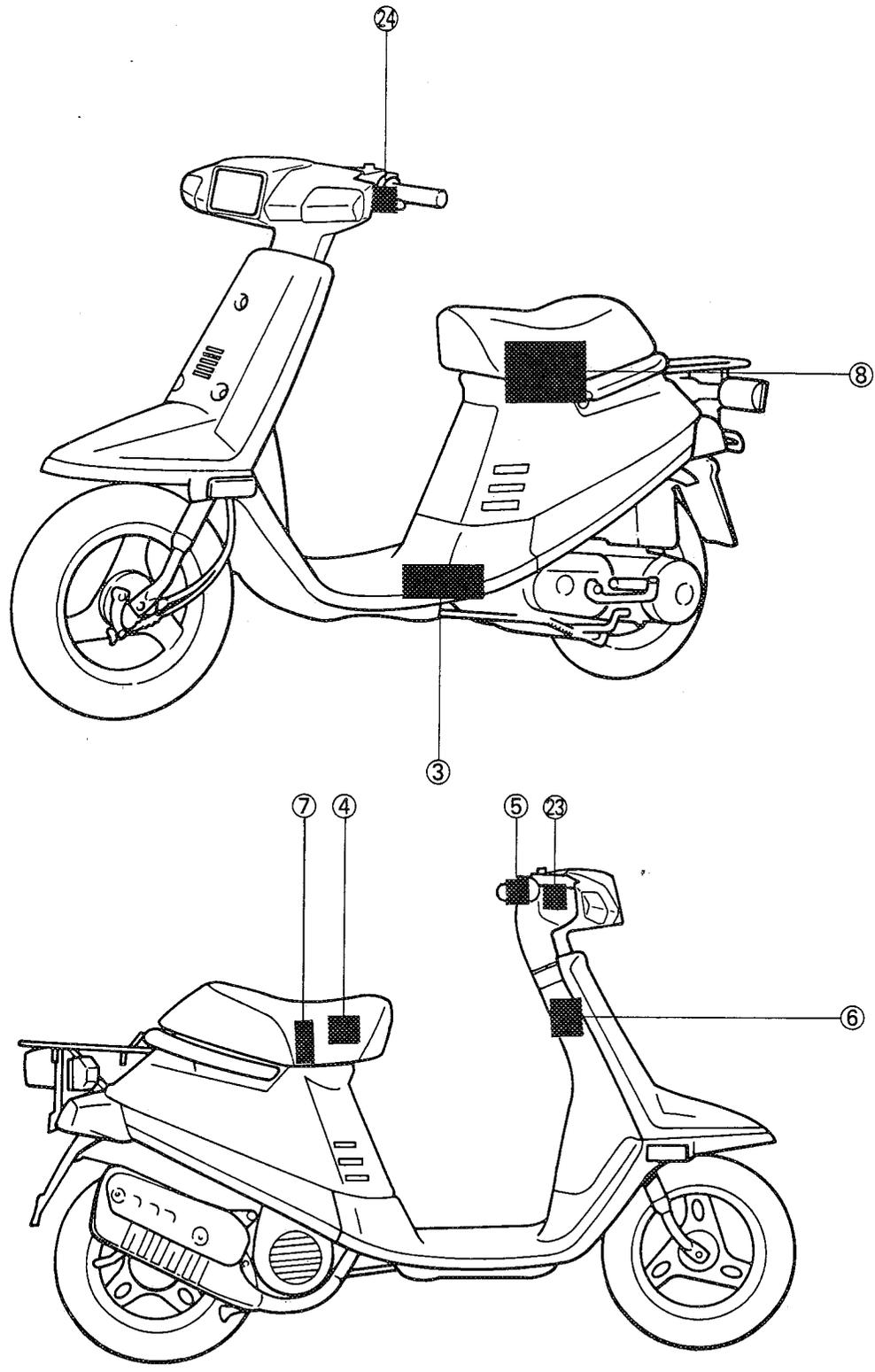




# ELECTRICAL STARTING SYSTEM

<b>ELEC</b>	
-------------	--

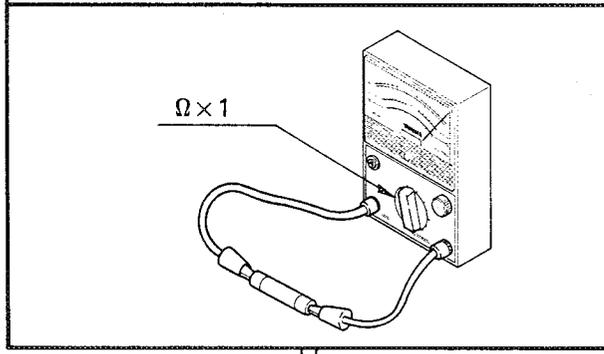
- ③ Starter motor
- ④ Starter relay
- ⑤ "START" switch
- ⑥ Main switch
- ⑦ Fuse
- ⑧ Battery
- ⑬ Front brake switch
- ⑭ Rear brake switch



**TROUBLESHOOTING CHART**

**STARTER MOTOR DOES NOT OPERATE**

**Fuse inspection:**  
 1. Remove fuse.  
 2. Inspect fuse using Pocket Tester (YU-03112).

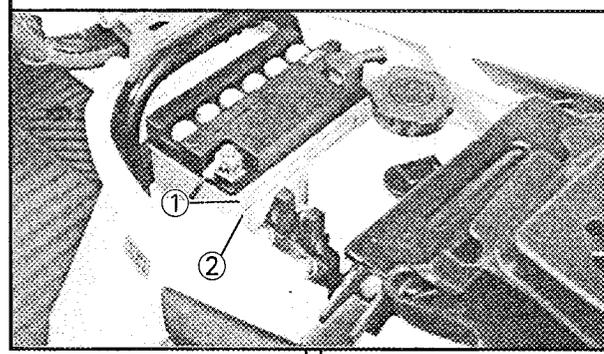


No Continuity

•Replace fuse.

Continuity

**Battery fluid level inspection:**  
 Fluid level should be between upper ① and lower ② level mark.



Incorrect

•Refill battery fluid.  
**CAUTION:** \_\_\_\_\_  
 Refill with distilled water only; tap water contains minerals harmful to a battery.  
 \_\_\_\_\_

Correct

Check battery terminals.

Dirty or poor connection

•Clean battery terminals using wire brush.  
**NOTE:** \_\_\_\_\_  
 After cleaning terminals, apply grease lightly to both terminals.  
 \_\_\_\_\_  
 •Connect battery leads correctly.

OK

**Battery fluid specific gravity inspection:**

1. Remove caps.
2. Inspect specific gravity of all cell using Battery Hydrometer.

**WARNING:**

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL-Flush with water. INTERNAL-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call a physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention. Batteries produce explosive gases. Keep sparks, flame, cigarettes etc., away. Ventilate when charging or using in an enclosed space. Always shield your eyes when working near batteries.

**KEEP OUT OF REACH OF CHILDREN.**

Low specific gravity (voltage)

•Recharge battery

**Charging Current:**  
0.4 amps/10 hrs

**NOTE:**

Replace the battery if:

- Batory voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of materiad exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate on cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.

**Specific Gravity:**  
1.280 ± 0.01 at 20°C (68°F)

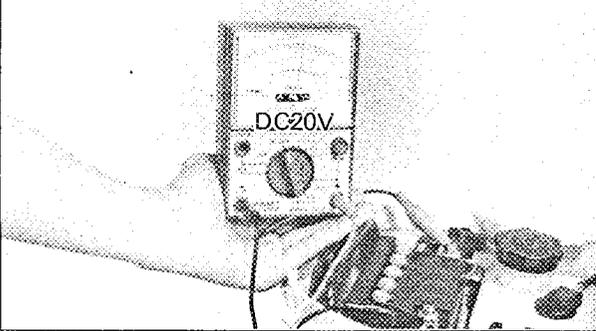
If there is not Battery Hydrometer, check battery voltage using Pocket Tester (YU-03112).

1. Remove battery.
2. Set the Tester selector to "DC20V" position.
3. Connect tester leads to battery terminals.

Tester (+) lead → (+) terminal  
Tester (-) lead → (-) terminal



**Battery Voltage:**  
12 V or more.



OK



**Main switch conduct check:**

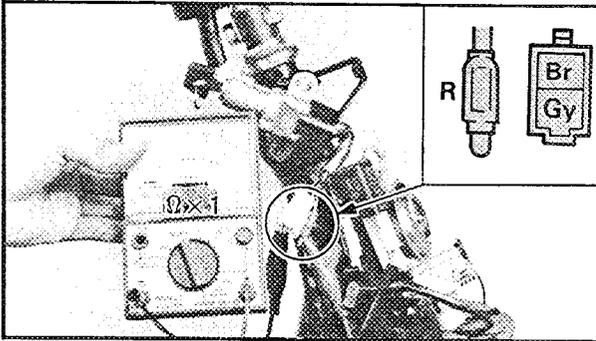
1. Disconnect main switch leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to main switch leads (Red lead, Brown lead).

No Continuity

Replace main switch.

Tester (+) lead → Red lead  
Tester (-) lead → Brown lead

4. Turn main switch to "ON" position.



Continuity

**"START" switch conduct check:**

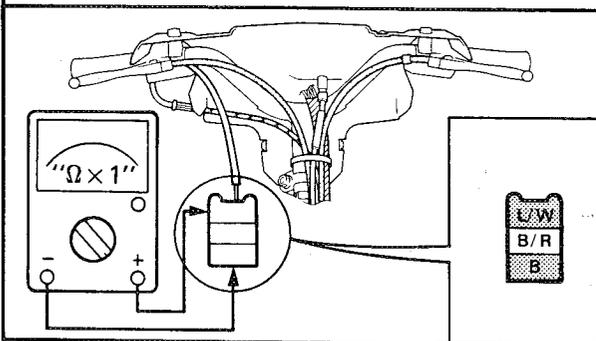
1. Disconnect handlebar switch (Right) leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to "START" switch leads (Black lead, Blue/White lead).

No Continuity

Replace handlebar switch (Right).

Tester (+) lead → Blue/White lead  
Tester (-) lead → Black lead

4. Push on "START" switch



Continuity



**Front and rear brake switches conduct check:**

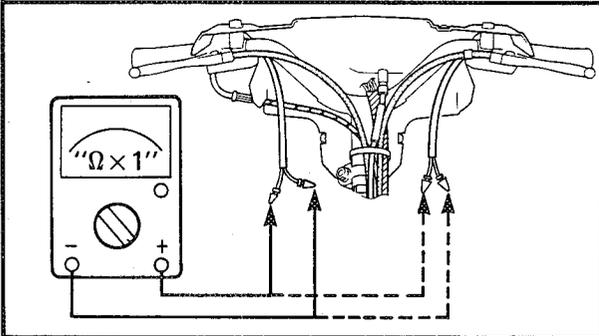
1. Disconnect brake switch leads.
2. Set pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to brake switch leads (Brown lead, Green/Yellow lead).

No Continuity

Replace front and/or rear brake switch.

Tester (+) lead  $\rightarrow$  Brown lead  
 Tester (-) lead  $\rightarrow$  Green/Yellow lead

4. Apply front or rear brake.



Continuity

**Starter relay conduct check:**

1. Remove starter relay.
2. Connect 12V battery to starter relay terminals as shows.

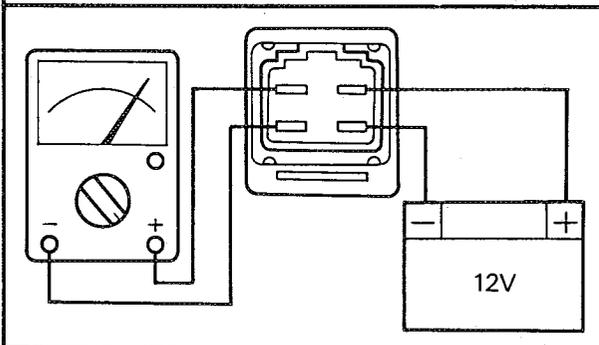
**NOTE:**

Use full charge battery.

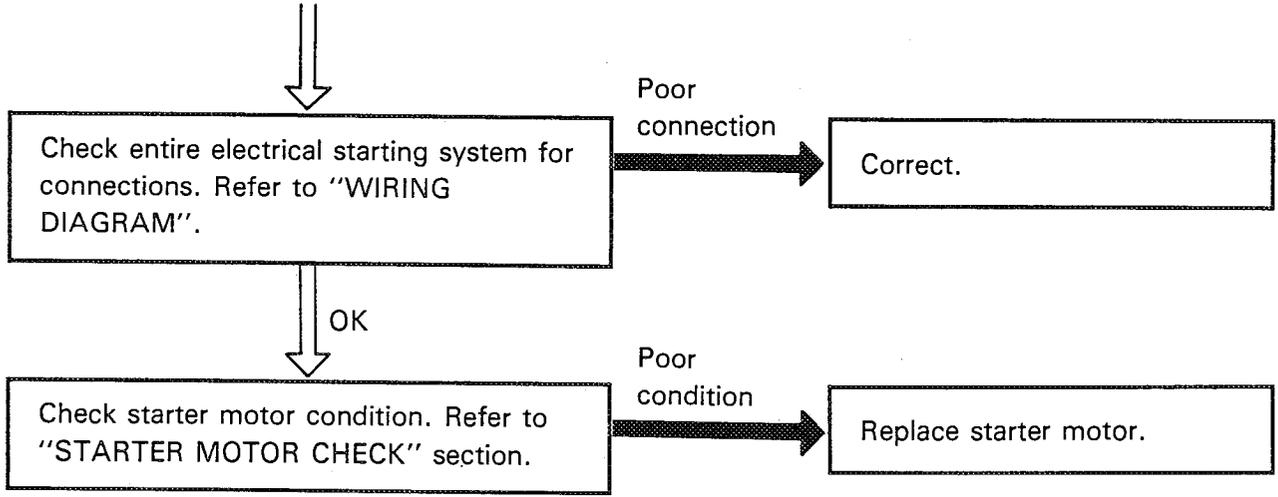
3. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
4. Connect tester leads to starter relay terminals as shows.

No Continuity

Replace starter relay.



Continuity



**STARTER MOTOR**

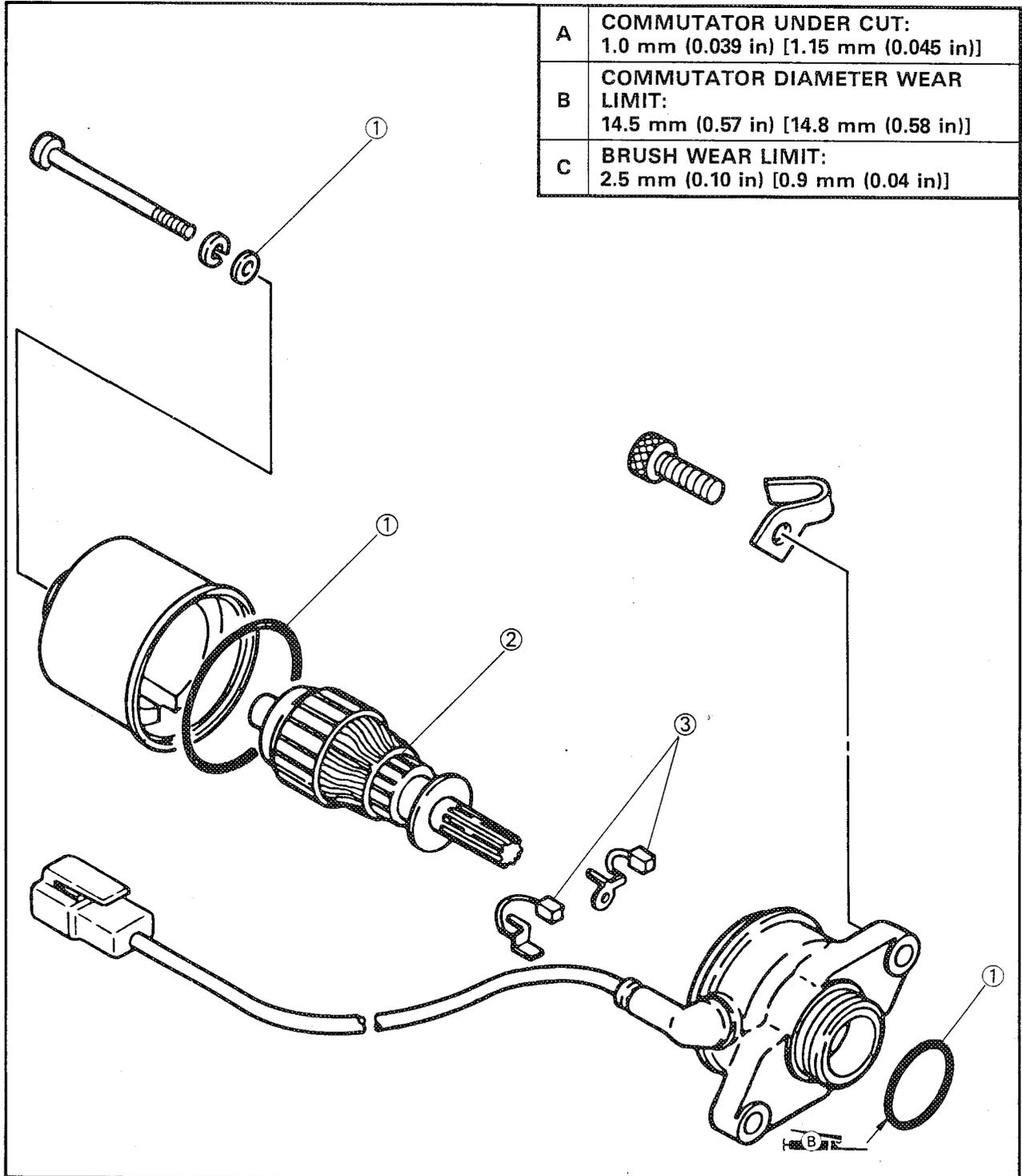
- ① O-ring
- ② Armature
- ③ Brush

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

The starter motor for this scooter comes in two types:

- DA5AG (2EX-81800-M0) (NIPPON DENSO)
- 2EX-81800-50 (YAMAHA)

So, check which type is fitted before maintenance. Data for YAMAHA's starter motor are shown in brackets ([ ]).

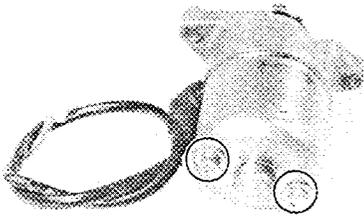




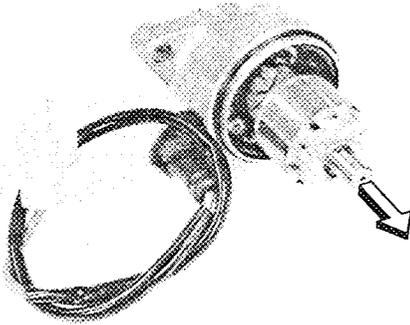
## STARTER MOTOR CHECK

## Removal

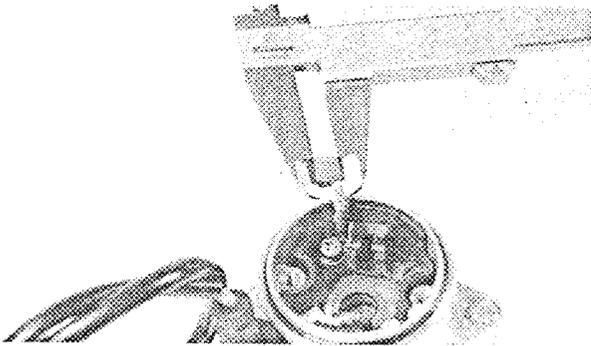
1. Remove:
  - Starter motor  
Refer to "CHAPTER 3 — ENGINE DISASSEMBLY" section.



2. Remove:
  - Yoke assembly



3. Remove:
  - Armature



## Inspection and Repair

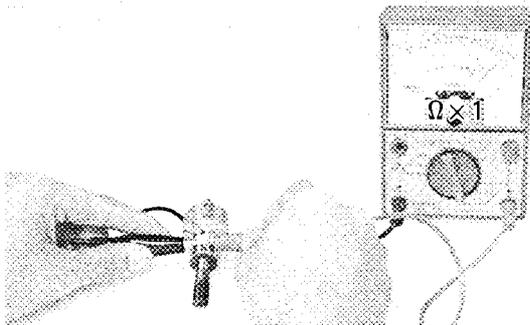
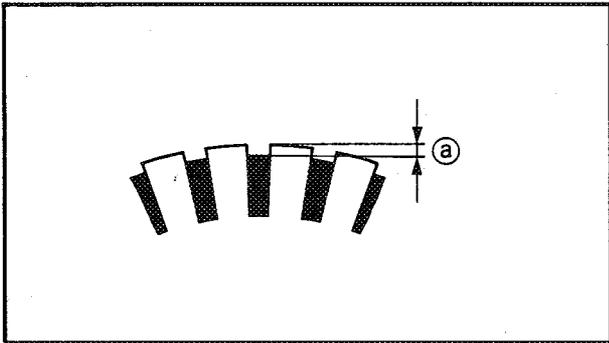
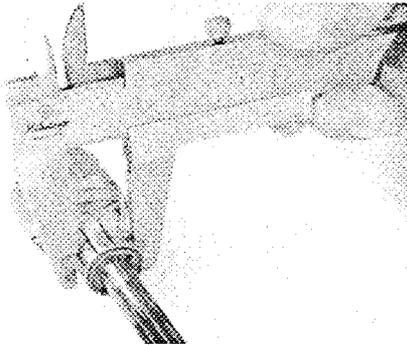
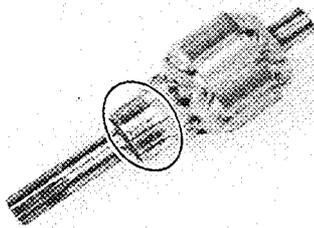
1. Measure:
  - Brush length (Each)  
Out of specification → Replace the starter motor assembly.



**Minimum Brush Length:**  
2.5 mm (0.10 in)  
[0.9 mm (0.04 in)]

2. Inspect:
  - Brush spring  
Wear/Damage → Replace the starter motor assembly.





- 3. Inspect:
  - Commutator (Outer surface)
  - Grooved wear/Burning/scratches→
  - Smooth out using a sandpaper (#500~600).

**NOTE:** \_\_\_\_\_  
Sand the commutator outer surface lightly and evenly.

- 4. Measure.
  - Commutator diameter
  - Out of specification→Replace the starter motor assembly.

 **Outside Diameter Limit:**  
14.5 mm (0.57 in)  
[14.8 mm (0.58 in)]

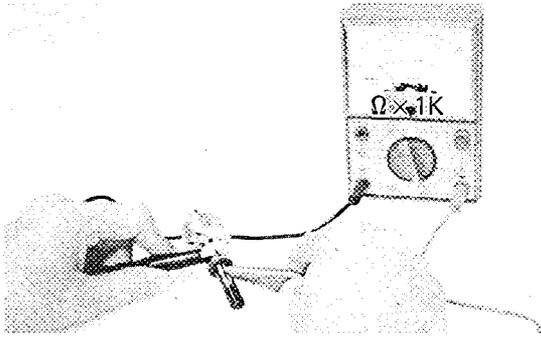
- 5. Measure:
  - Mica undercut (a)
  - Out of specification→Scrape mica using a hacksaw blade.

 **Mica Undercut (a):**  
1.0 mm (0.039 in)  
[1.15 mm (0.045 in)]

**NOTE:** \_\_\_\_\_  
The mica insulation of the commutator must be undercut to ensure proper operation of the commutator.

- 6. Measure:
  - Armature coil resistance
  - Out of specification→Replace the starter motor assembly.

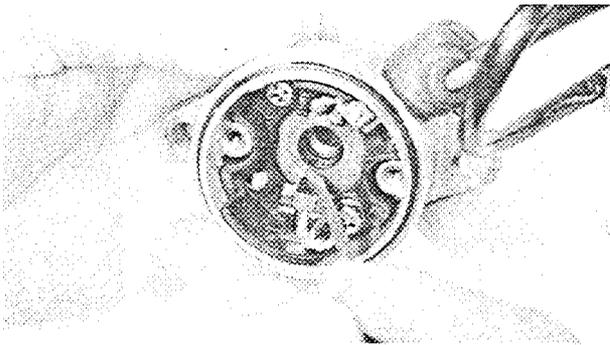
 **Armature Coil Resistance:**  
0.08 ~ 0.10Ω at 20°C (68°F)



7. Check:
- Armature coil insulation  
Set the pocket tester selector to "Ω × 1K" position.  
Continuity → Replace the starter motor assembly.

**Assembly**

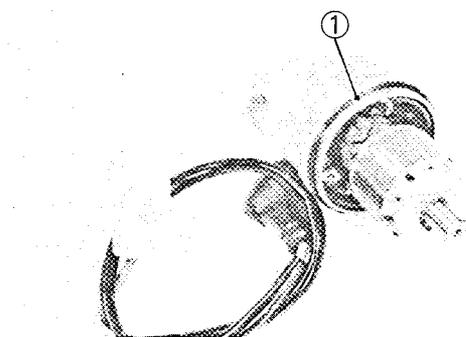
Reverse the removal procedure.  
Note the following points.



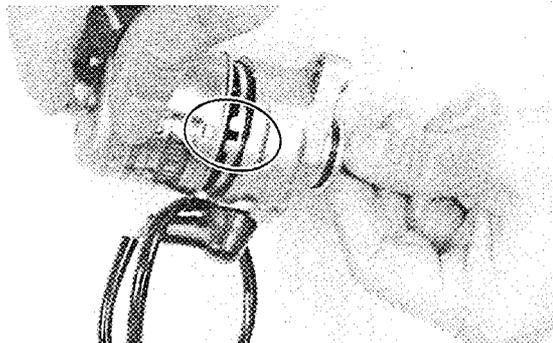
1. Install:
- Brush
  - Brush spring  
Using a thin screw driver.



2. Install:
- Armature coil assembly

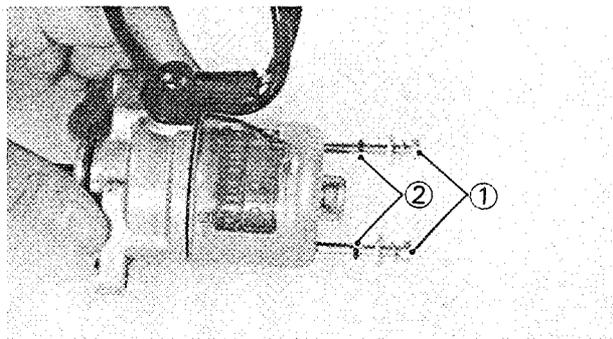


3. Install:
- O-ring (New) ①

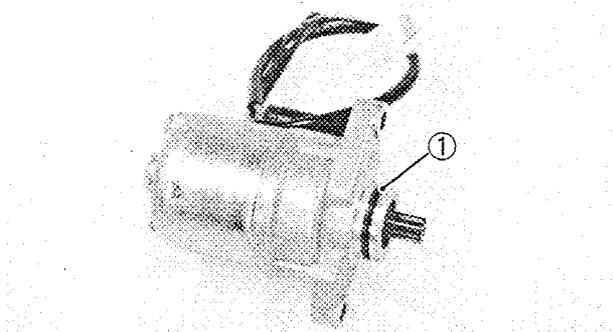


4. Install:
- Starter motor cover

**NOTE:** \_\_\_\_\_  
Align the projection on the cover with the groove on the housing.



5. Install:
- Bolts ①
  - O-rings (New) ②



6. Install:
- O-ring (New) ①

**NOTE:** \_\_\_\_\_  
Apply a grease lightly.

### Installation

1. Install:
- Starter motor

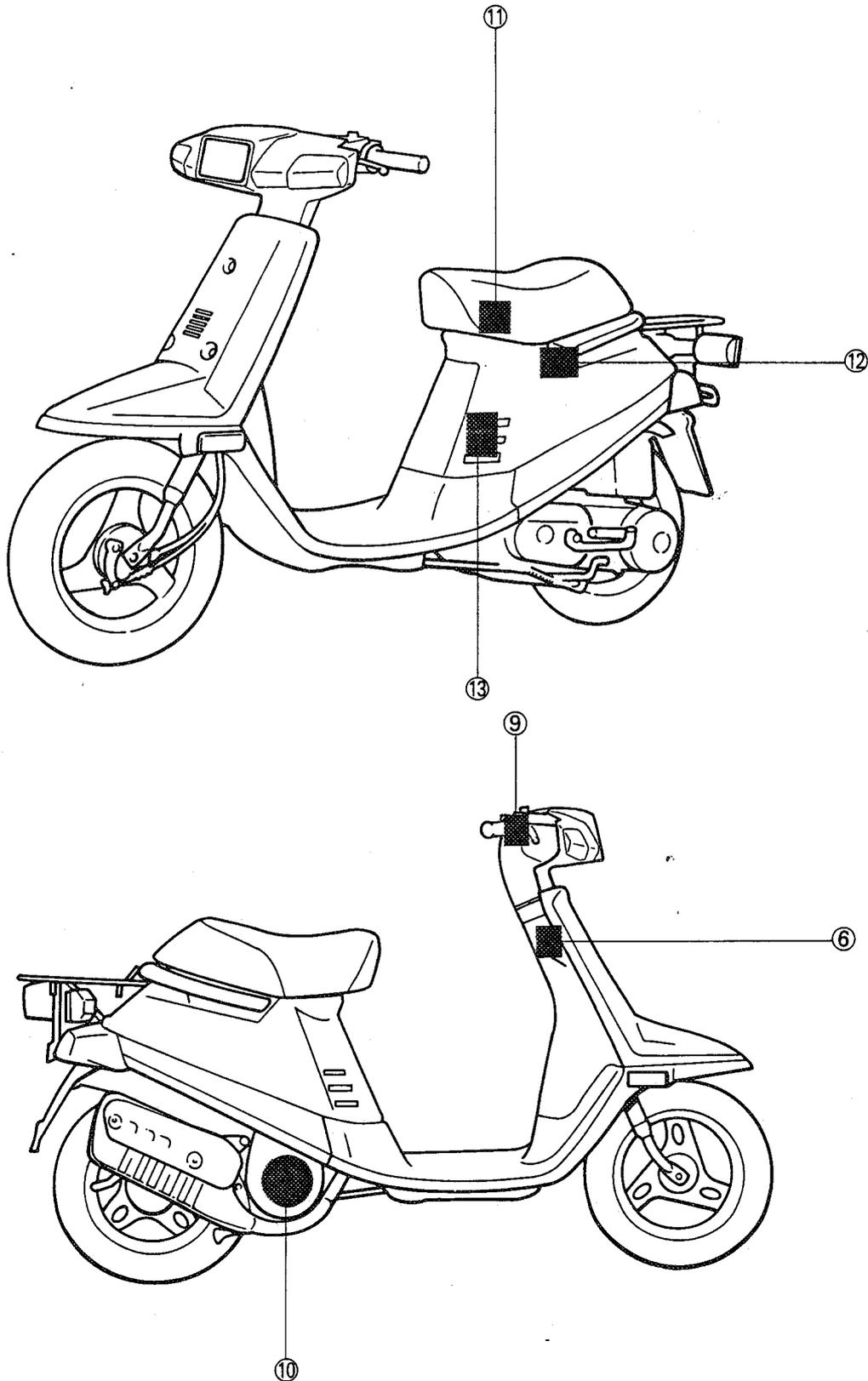


9 Nm (0.9 m·kg, 6.5 ft·lb)





- ⑥ Main switch
- ⑨ "ENGINE STOP" switch
- ⑩ C.D.I. magneto  
(Source coil, pick-up coil)
- ⑪ C.D.I. unit
- ⑫ Ignition coil
- ⑬ Spark plug





TROUBLESHOOTING CHART

IF IGNITION SYSTEM SHOULD BECOME IN-OPERATIVE (NO SPARK OR INTERMITTENT SPARK).

**Spark plug inspection:**

1. Remove spark plug.
2. Clean spark plug with spark plug cleaner if necessary.
3. Inspect:
  - Electrode
  - Insulator
  - Plug gap
 Refer to "CHAPTER 2 — SPARK PLUG INSPECTION" section.



**Plug Gap:**  
0.9 ~ 1.0 mm (0.035 ~ 0.039 in)

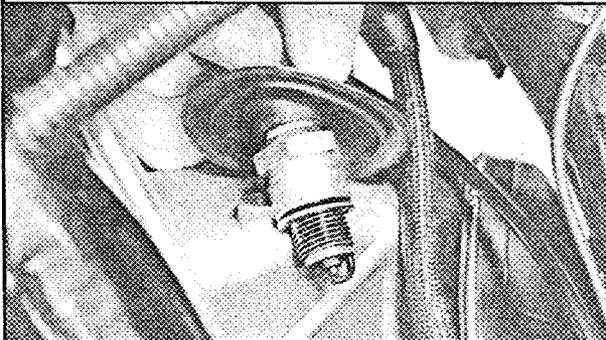
No good

Replace or regap spark plug.

OK

**Ignition spark test:**

1. Install spark plug to plug cap.
2. Ground spark plug to air shroud.
3. Start starter motor.



Spark

Ignition circuit is good.

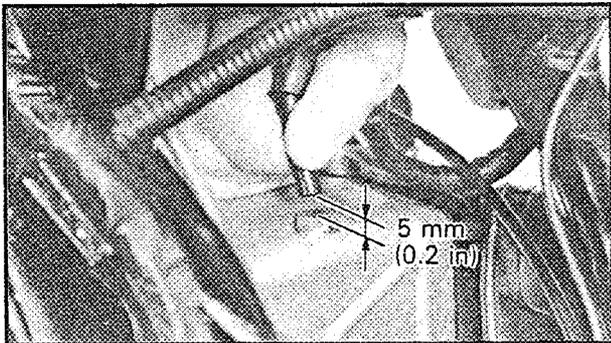
No spark

**Ignition spark gap test:**

1. Remove spark plug and plug cap.
2. Hold spark plug lead 5 mm (0.20 in) from air shroud.
3. Start starter motor.

Spark

Replace spark plug and/or plug cap.



No spark

**Main switch conduct check:**

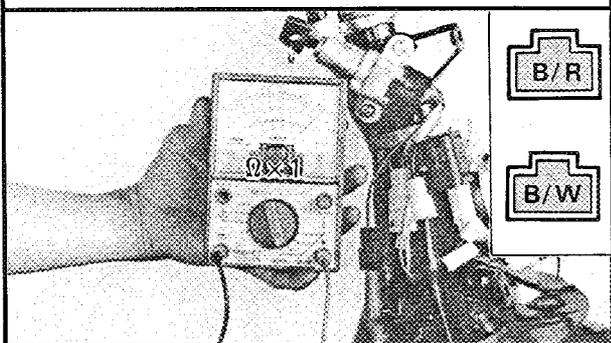
1. Disconnect main switch leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to main switch leads (Black/White, Black/Red).

Tester (+) lead  $\rightarrow$  Black/Red lead  
 Tester (-) lead  $\rightarrow$  Black/White lead

No continuity

Replace main switch.

4. Turn main switch to "ON" position.



Continuity

**"ENGINE STOP" switch conduct check:**

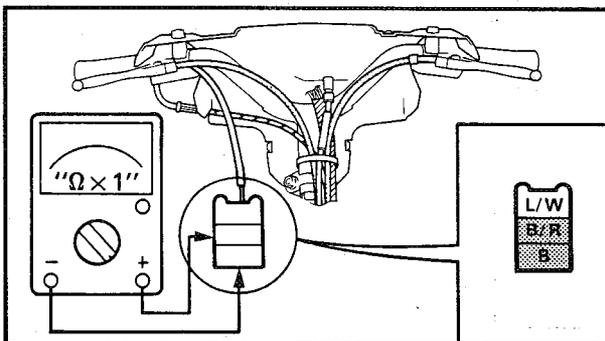
1. Disconnect handlebar switch (Right) leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to "ENGINE STOP" switch leads.

Tester (+) lead  $\rightarrow$  Black/Red lead  
 Tester (-) lead  $\rightarrow$  Black lead

Continuity

Replace handlebar switch (Right).

4. Turn "ENGINE STOP" switch to "RUN" position.



No continuity

#### Ignition coil resistance test:

1. Disconnect ignition coil lead (orange lead).
2. Measure:
  - Primary coil resistance **A**  
(Orange lead — Ignition coil base)  
Set Pocket Tester (YU-03112) selector to "Ω × 1" position.
  - Secondary coil resistance **B**  
(Orange lead — Spark plug lead)  
Set Pocket Tester selector to "Ω × 1K" position.



#### Primary Coil Resistance:

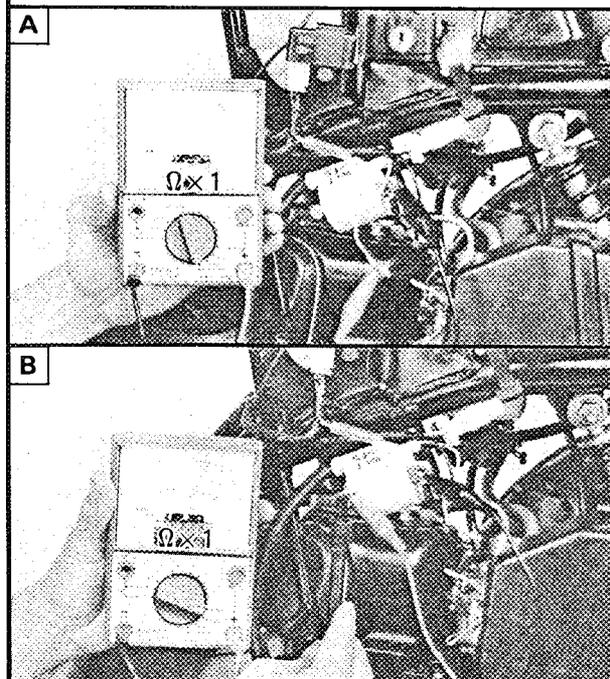
0.21 ~ 0.25Ω at 20°C (68°F)

#### Secondary Coil Resistance:

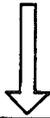
4.5 ~ 6.7kΩ at 20°C (68°F)

Out of  
specification

Replace ignition coil.



OK



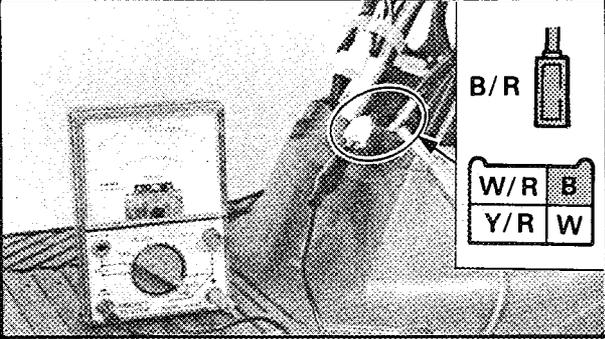
**Source coil resistance test:**

1. Disconnect C.D.I. magneto leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 100$ " position.
3. Connect tester leads to source coil leads.

Tester (+) lead → Black/Red lead  
 Tester (-) lead → Black lead

4. Measure:  
 • Source coil resistance

 216 ~ 264 $\Omega$  at 20°C (68°F)



OK

**Pick-up coil resistance test:**

1. Set Pocket Tester (YU-03112) selector to " $\Omega \times 10$ " position.
2. Connect tester leads to pick-up coil leads.

Tester (+) lead → White/Red lead  
 Tester (-) lead → Black lead

3. Measure:  
 • Pick-up coil resistance

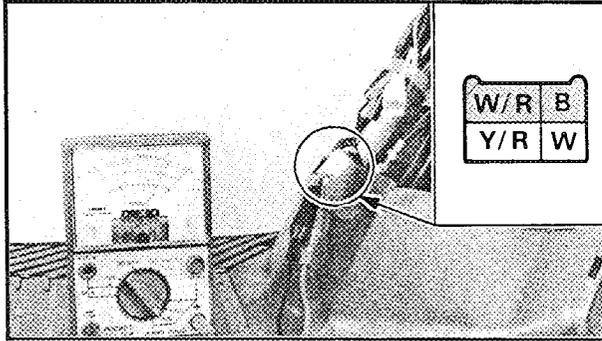
 27 ~ 33 $\Omega$  at 20°C (68°F)

Out of specification

Replace source coil.

Out of specification

Replace pick-up coil.



OK

Check entire ignition system for connections. Refer to "WIRING DIAGRAM".

Poor connection

Correct.

OK

C.D.I. unit is faulty, replace it.

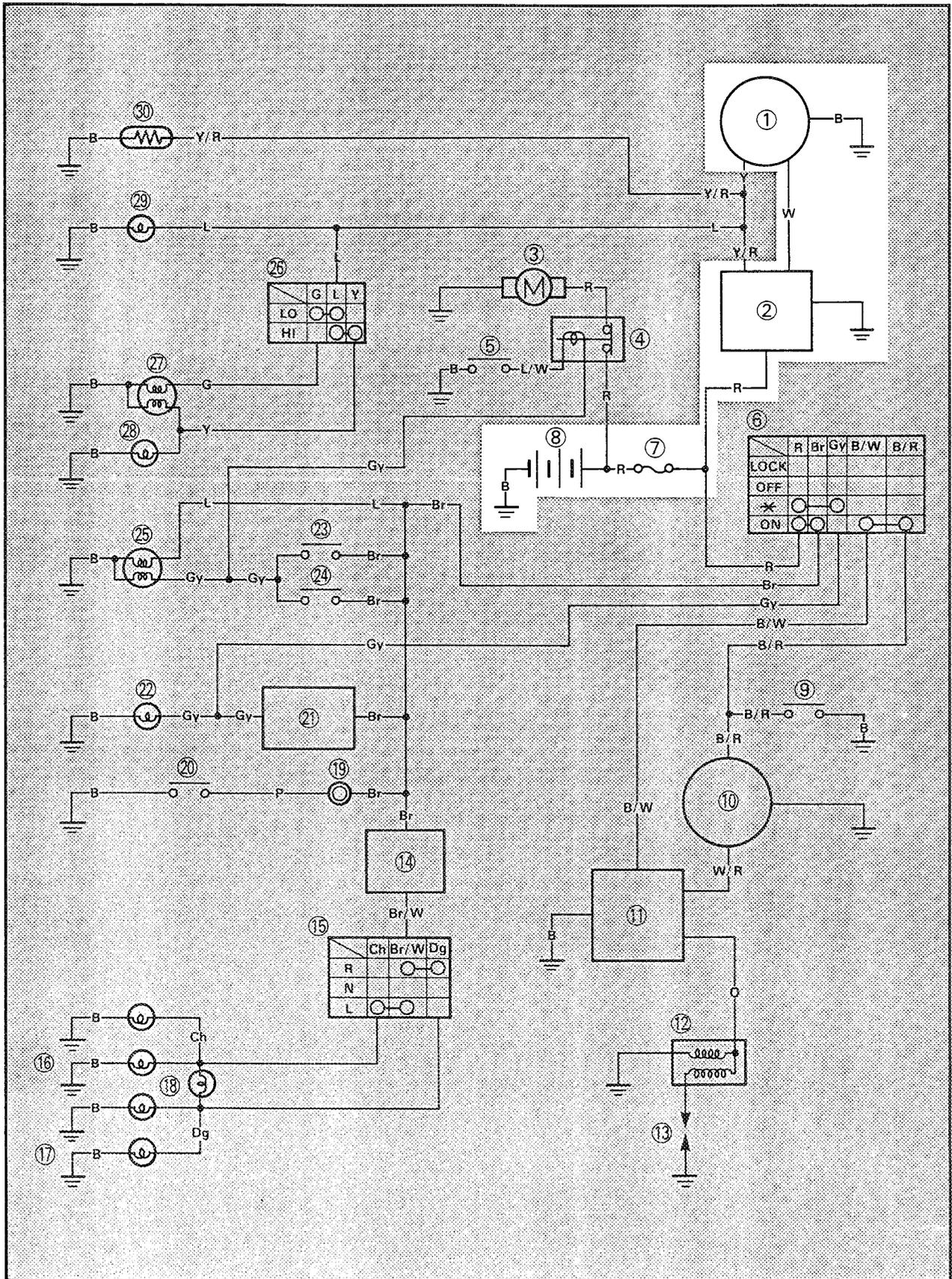




CHARGING SYSTEM

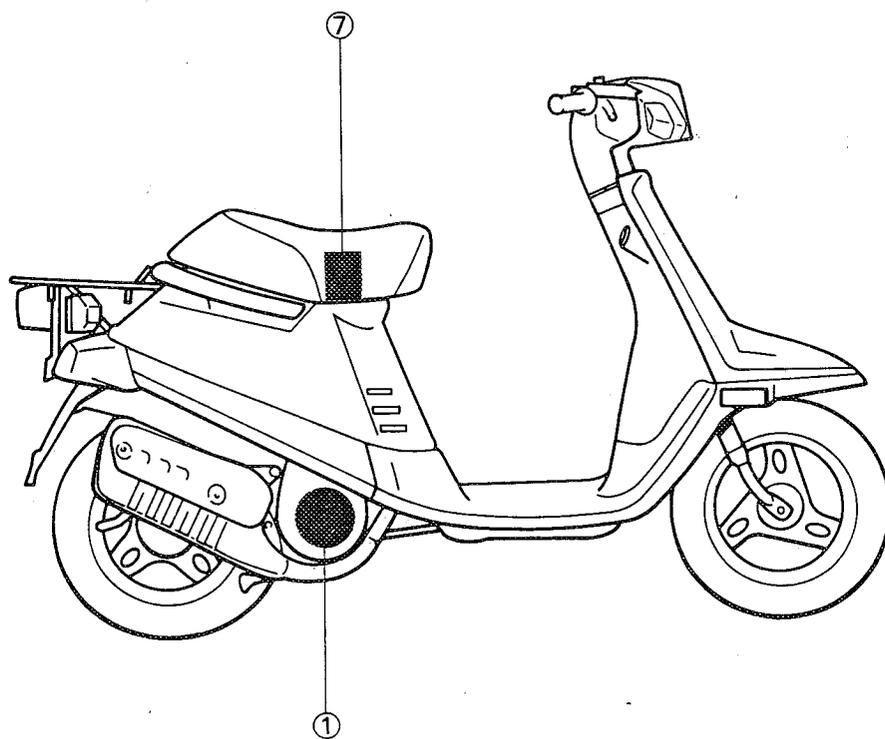
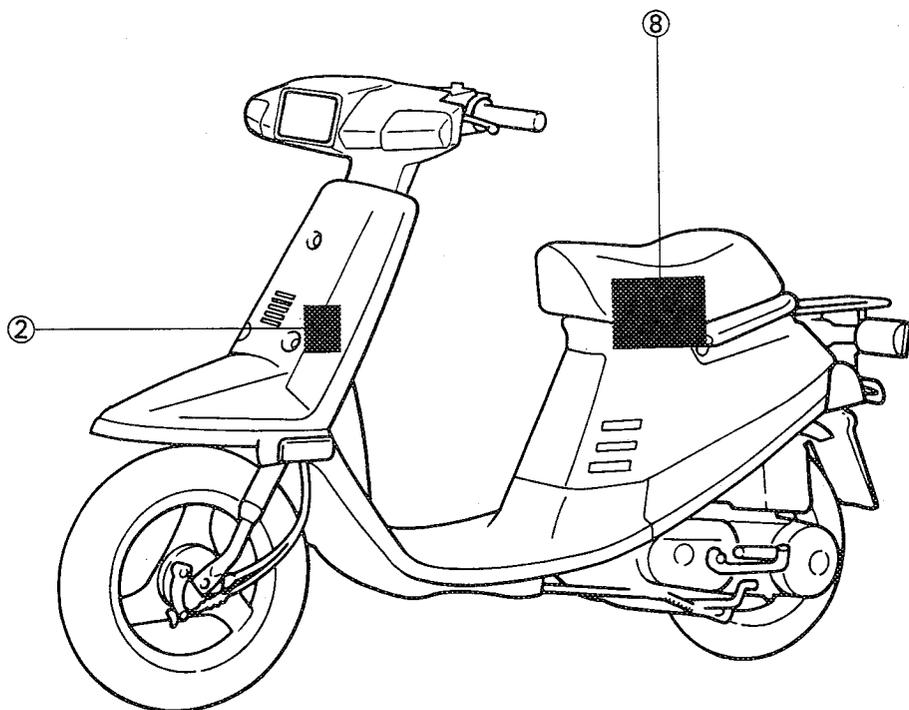
CIRCUIT DIAGRAM

Below circuit diagram shows charging circuit.





- ① C.D.I. magneto  
(Lighting coil, charging coil)
- ② Rectifier/Regulator
- ⑦ Fuse
- ⑧ Battery



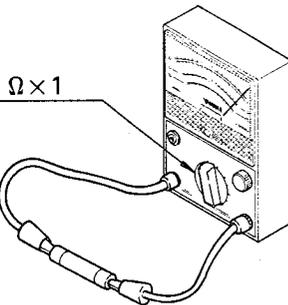


TROUBLESHOOTING CHART

THE BATTERY IS NOT CHARGED.

**Fuse inspection:**

1. Remove fuse.
2. Inspect fuse using Pocket Tester (YU-03112).



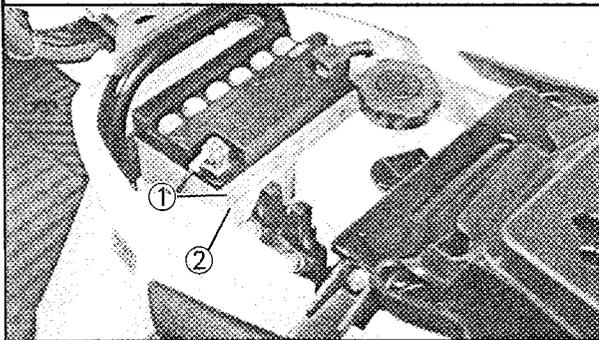
No continuity

• Replace fuse.

Continuity

**Battery fluid level inspection:**

Fluid level should be between upper ① and lower ② level mark.



Incorrect

• Refill battery fluid.

**CAUTION:**

Refill with distilled water only; tap water contains minerals harmful to a battery.

Correct

Check battery terminals.

Dirty or poor connection

• Clean battery terminals using wire brush.

**NOTE:**

After cleaning terminals, apply grease lightly to both terminals.

• Connect battery leads correctly.

OK

**Battery fluid specific gravity inspection:**

1. Remove caps.
2. Inspect specific gravity of all cell using Battery Hydrometer.

**WARNING:**

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote: EXTERNAL-Flush with water. INTERNAL-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call a physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention. Batteries produce explosive gases. Keep sparks, flame, cigarettes etc., away. Ventilate when charging or using in an enclosed space. Always shield your eyes when working near batteries.

**KEEP OUT OF REACH OF CHILDREN.**

Low specific gravity (voltage)

- Recharge battery

**Charging Current:**  
0.4 amps/10 hrs

**NOTE:**

Replace the battery if:

- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate on cell to be lower than the rest.
- Warp or buckling of plates or insulators is evident.

**Specific Gravity:**

1.280 ± 0.01 at 20°C (68°F)

If there is not Battery Hydrometer, check battery voltage using Pocket Tester (YU-03112).

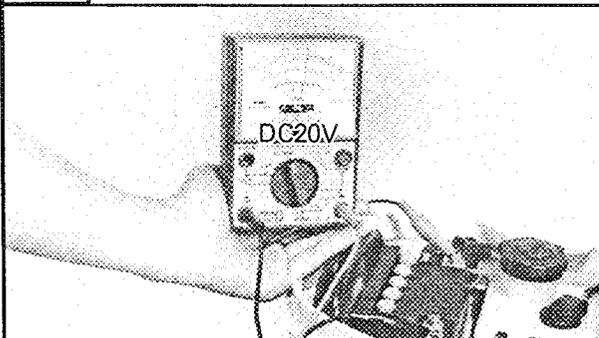
1. Remove battery.
2. Set the Tester selector to "DC20V" position.
3. Connect tester leads to battery terminals.

Tester (+) lead → (+) terminal

Tester (-) lead → (-) terminal



**Battery Voltage:**  
12V or more



↓ OK

**Charging voltage test:**

1. Connect Inductive Tachometer (YU-08036) to ignition lead.
2. Set Pocket Tester (YU-03112) selector to "DC20V" position.
3. Connect tester leads to battery terminals.

Tester (+) lead → (+) terminal  
 Tester (-) lead → (-) terminal

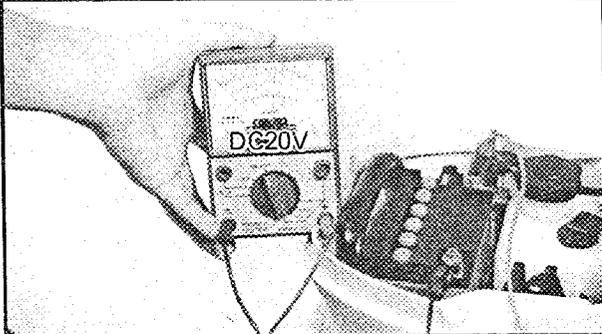
OK

Replace battery.

4. Start engine and accelerate to about 4,000 r/min.
5. Measure:
  - Charging voltage



12.5 ~ 17.5V at 4,000 r/min



Out of specification

**Charging coil resistance test:**

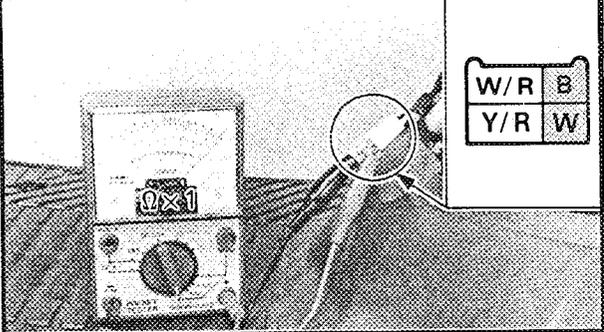
1. Disconnect C.D.I. magneto leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to charging coil leads.

Tester (+) lead → White lead

Tester (-) lead → Black lead

4. Measure:  
•Charging coil resistance

 0.63 ~ 0.77Ω at 20°C (68°F)



Out of specification

Replace charging coil .

OK

Check entire charging system for connections.  
Refer to "WIRING DIAGRAM".

Poor connection

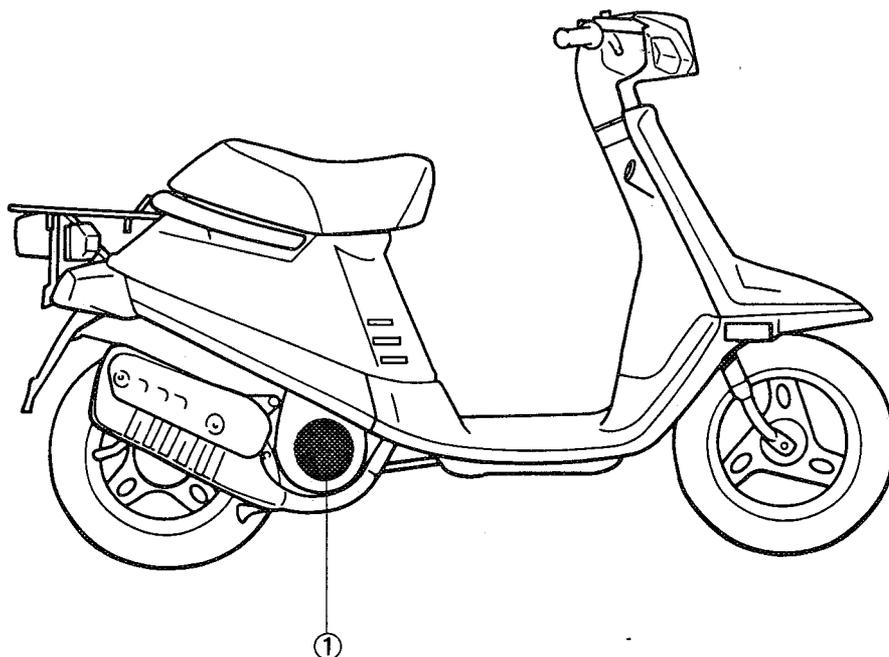
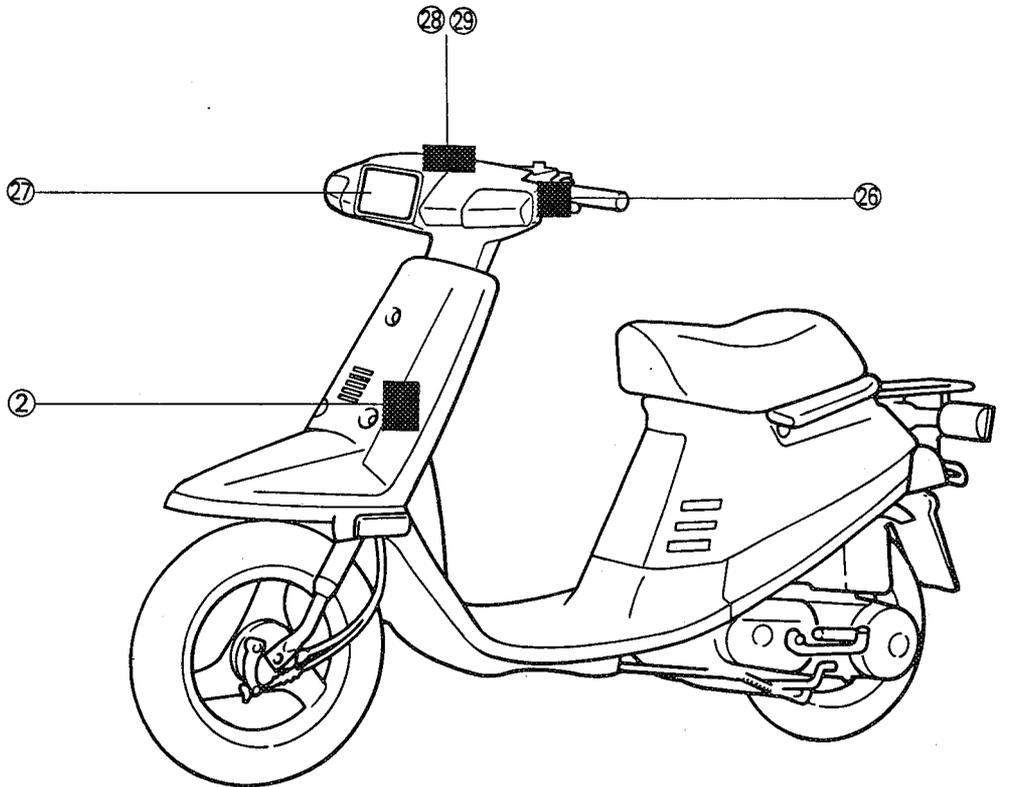
Correct.

OK

Replace rectifier/regulator.



- ① C.D.I. magneto  
(Lighting coil, charging coil)
- ② Rectifier/Regulator
- ②⑥ "LIGHTS" switch (Dimmer)
- ②⑦ Headlight
- ②⑧ "HIGH BEAM" indicator light
- ②⑨ Meter light





**TROUBLESHOOTING CHART**

**HEADLIGHT DOES NOT COME ON.**

**Headlight condition check:**

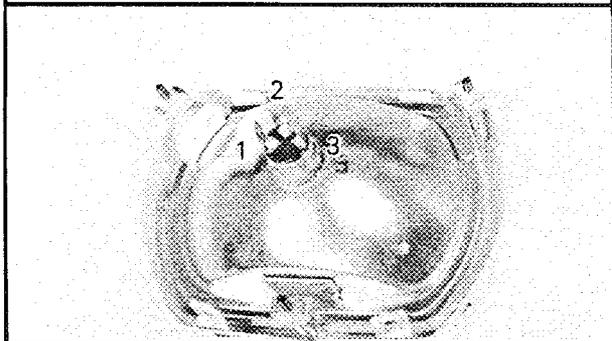
1. Remove headlight lens unit.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to headlight terminals and check it for continuity.

Continuity does not exist on one circuit.

**Replace headlight lens unit.**

**Tester (+) lead → Terminal 1**  
**Tester (-) lead → Terminal 3**

**Tester (+) lead → Terminal 2**  
**Tester (+) lead → Terminal 3**



Continuity exists on both circuit.

**Lighting voltage test:**

1. Set Pocket Tester (YU-03112) Selector to "AC20V" position.
2. Turn "LIGHTS" switch to "HI" position.
3. Connect tester leads to headlight leads.

**Tester (+) lead → Yellow lead**  
**Tester (-) lead → Black lead**

4. Connect Inductive Tachometer (YU-08036) to ignition lead.
5. Start engine and accelerate to about 4,000 r/min.
6. Measure:
  - Lighting voltage

OK

Lighting system is good.



11.5 ~ 13.5V at 4,000 r/min



Out of specification

**"LIGHTS" switch conduct check:**

1. Remove front fender and disconnect left handlebar switch lead.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to "LIGHTS" switch leads.

Continuity does not exist on one circuit.

Replace left handlebar switch.

If switch is turned to "LO" position.  
 Tester (+) lead → Blue lead  
 Tester (-) lead → Green lead

If switch is turned to "HI" position.  
 Tester (+) lead → Blue lead  
 Tester (-) lead → Yellow lead

Continuity exists on both circuits.



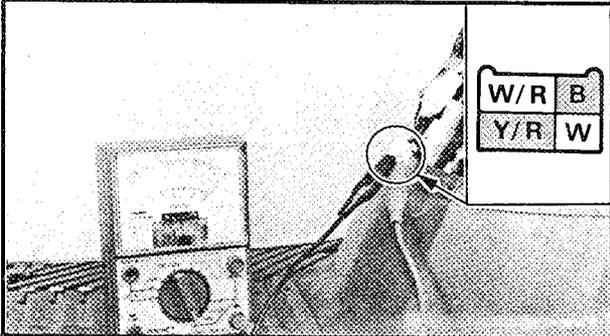
**Lighting coil resistance test:**  
 1. Disconnect C.D.I. magneto leads.  
 2. Set Pocket Tester (YU-03112) selector to "Ω×1" position.  
 3. Connect tester leads to lighting coil leads.

Tester (+) lead → Yellow/Red lead  
 Tester (-) lead → Black lead

4. Measure:  
 • Lighting coil resistance



0.27 ~ 0.33Ω at 20°C (68°F)



Out of specification

Replace lighting coil.

OK

Check entire lighting system for connections. Refer to "WIRING DIAGRAM".

Poor connection

Correct.

OK

Replace rectifier/regulator.



# LIGHTING SYSTEM

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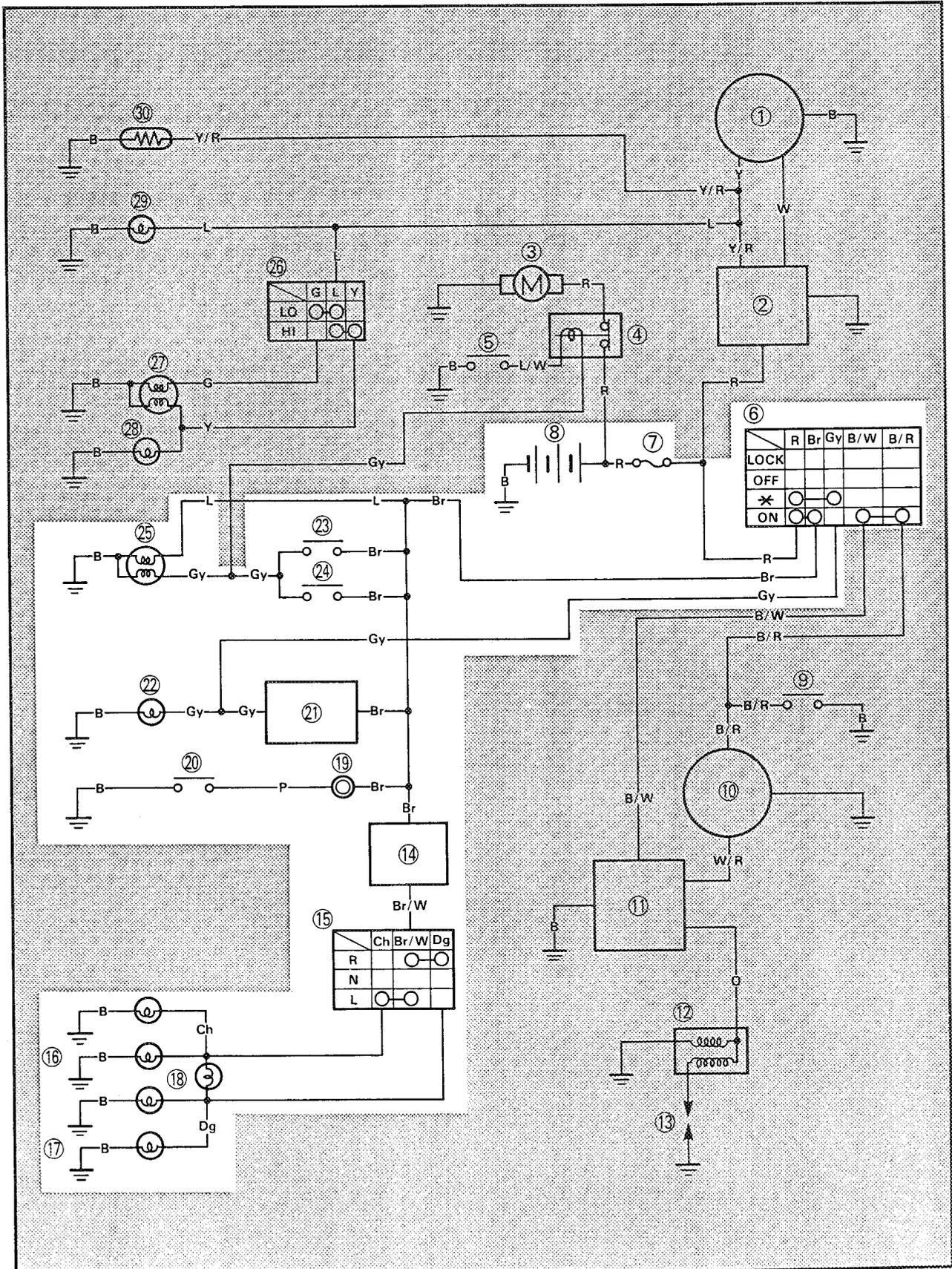
ELEC	
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**SIGNAL SYSTEM**

**CIRCUIT DIAGRAM**

Below circuit diagram shows signal circuit.

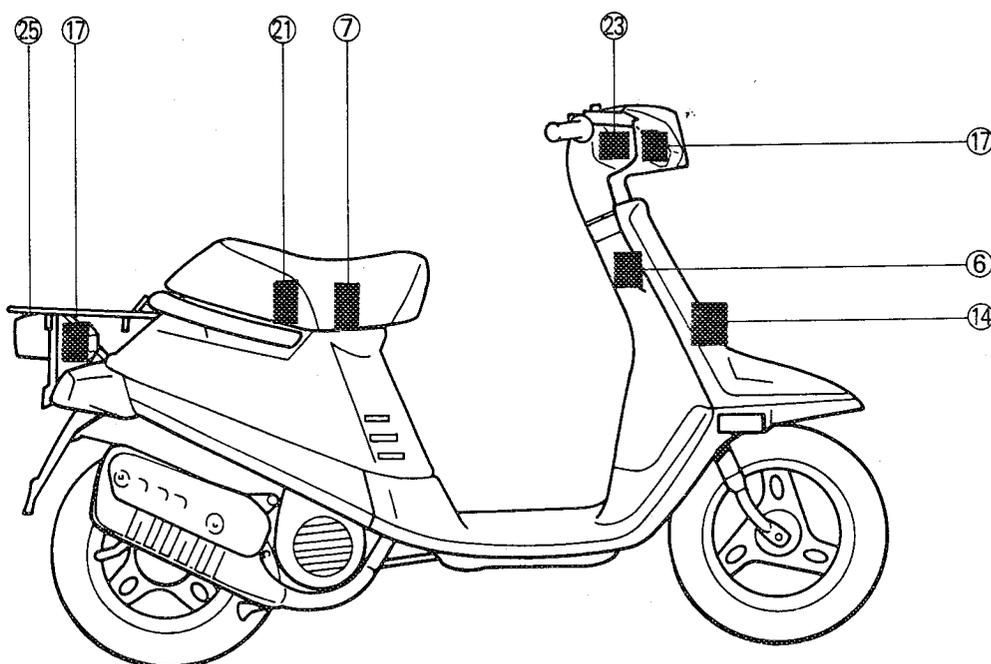
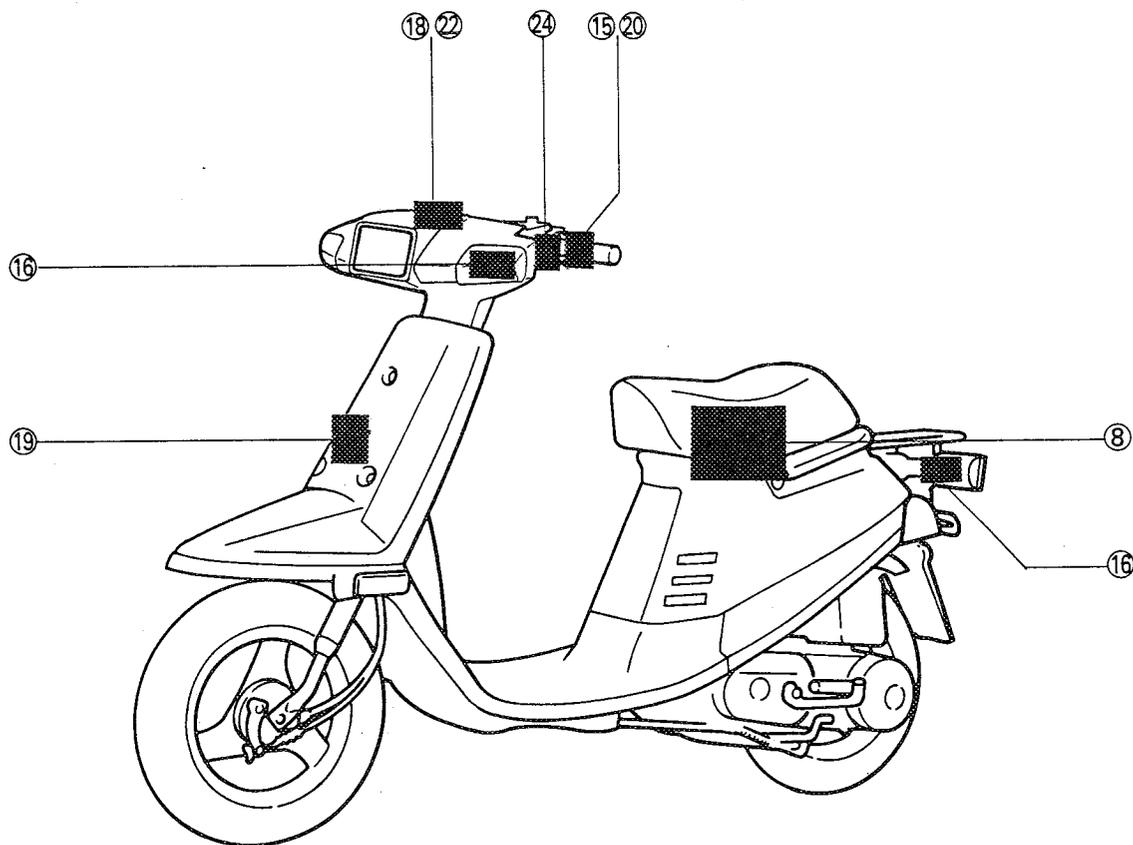


# SIGNAL SYSTEM

ELEC



- ⑥ Main switch
- ⑦ Fuse
- ⑧ Battery
- ⑭ Flasher light relay
- ⑮ "TURN" switch
- ⑯ Left flasher light (Front and rear)
- ⑰ Right flasher light (Front and rear)
- ⑱ "TURN" indicator light
- ⑲ Horn
- ⑳ "HORN" switch
- ㉑ Oil level gauge
- ㉒ "OIL" indicator light
- ㉓ Front brake switch
- ㉔ Rear brake switch
- ㉕ Tail/Brake light



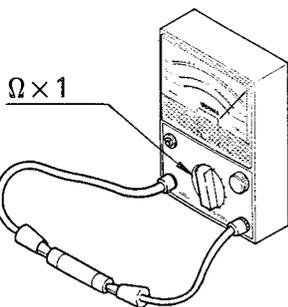


TROUBLESHOOTING CHART

SIGNAL SYSTEM SHOULD BECOME INOPERATIVE.

**Fuse inspection:**

1. Remove fuse.
2. Inspect fuse using Pocket Tester (YU-03112).



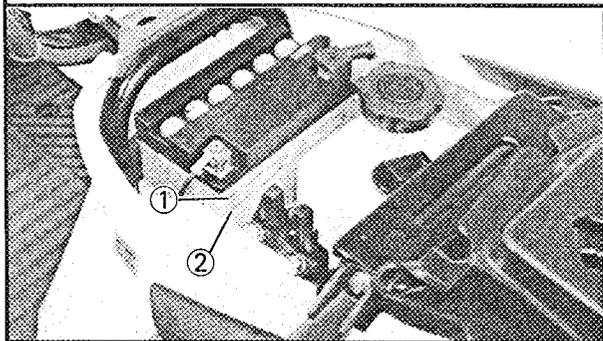
No continuity

• Replace fuse.

Continuity

**Battery fluid level inspection:**

Fluid level should be between upper ① and lower ② level mark.



Incorrect

• Refill battery fluid.

**CAUTION:**

Refill with distilled water only; tap water contains minerals harmful to a battery.

Correct

Dirty or poor connection

Check battery terminals.

• Clean battery terminals using wire brush.

**NOTE:**

After cleaning terminals, apply grease lightly to both terminals.

• Connect battery leads correctly.

OK

**Battery fluid specific gravity inspection:**

1. Remove caps.
2. Inspect specific gravity of all cell using Battery Hydrometer.

**WARNING:**

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote: **EXTERNAL**-Flush with water. **INTERNAL**-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call a physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention. Batteries produce explosive gases. Keep sparks, flame, cigarettes etc., away. Ventilate when charging or using in an enclosed space. Always shield your eyes when working near batteries.

**KEEP OUT OF REACH OF CHILDREN.**

Low specific gravity (voltage)



- Recharge battery.

**Charging Current:**  
0.4 amps/10 hrs

**NOTE:**

Replace the battery if:

- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate on cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.

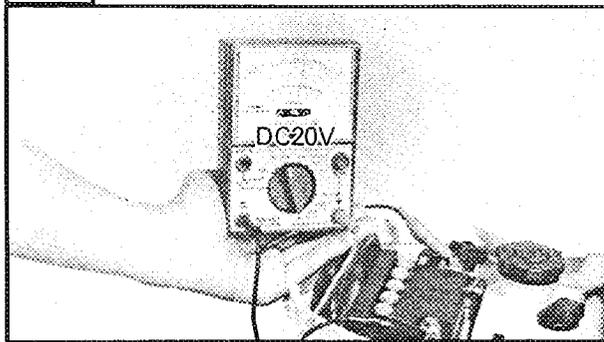
**Specific Gravity:**  
1.280 ± 0.01 at 20°C (68°F)

If there is not Battery Hydrometer, check battery voltage using Pocket Tester (YU-03112).

1. Remove battery.
2. Set the tester selector to "DC20V" position.
3. Connect tester leads to battery terminals.

Tester (+) lead → (+) terminal  
Tester (-) lead → (-) terminal

 **Battery Voltage:**  
12V or more



↓ OK

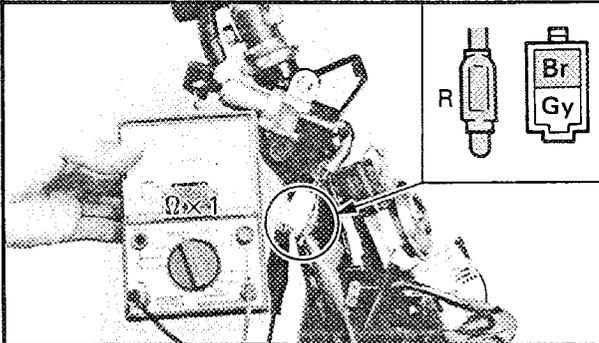


**Main switch conduct check:**

1. Disconnect main switch leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to main switch leads (Red lead, Brown lead).

Tester (+) lead → Red lead  
 Tester (-) lead → Brown lead

4. Turn main switch to "ON" position.



No continuity

Replace main switch.

Continuity

Check bulb conditions of flasher lights, indicator lights and tail/brake light.

Poor condition

Replace bulb(s)

OK

Check entire signal system for connections (Refer to "WIRING DIAGRAM" section.)

Poor connection

Correct.

OK

Check condition of each circuit for signal system (Refer to "SIGNAL SYSTEM TEST AND CHECKS" section.)

Poor condition

Replace poor condition electrical component(s).

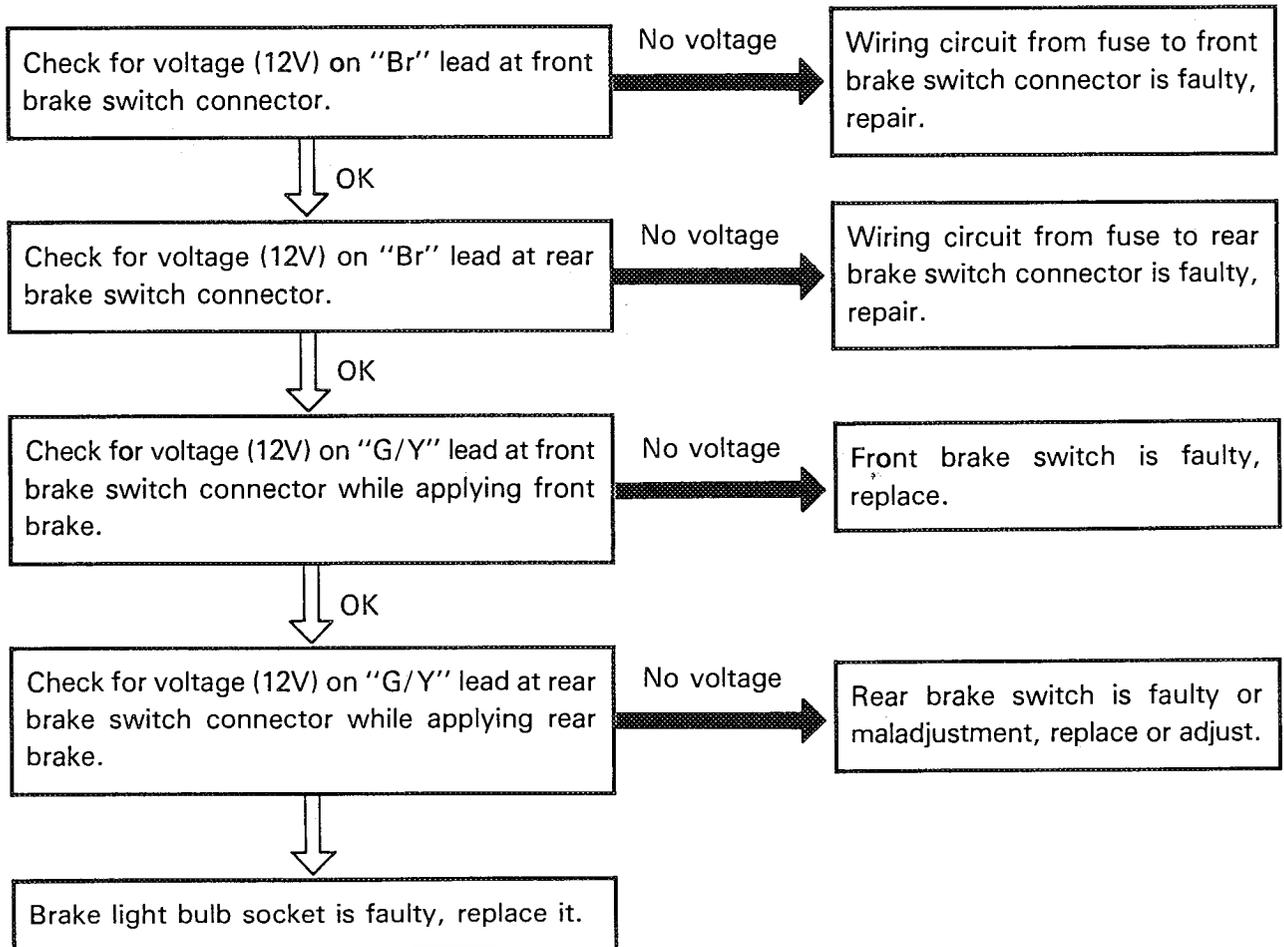


## SIGNAL SYSTEM TEST AND CHECKS

## NOTE:

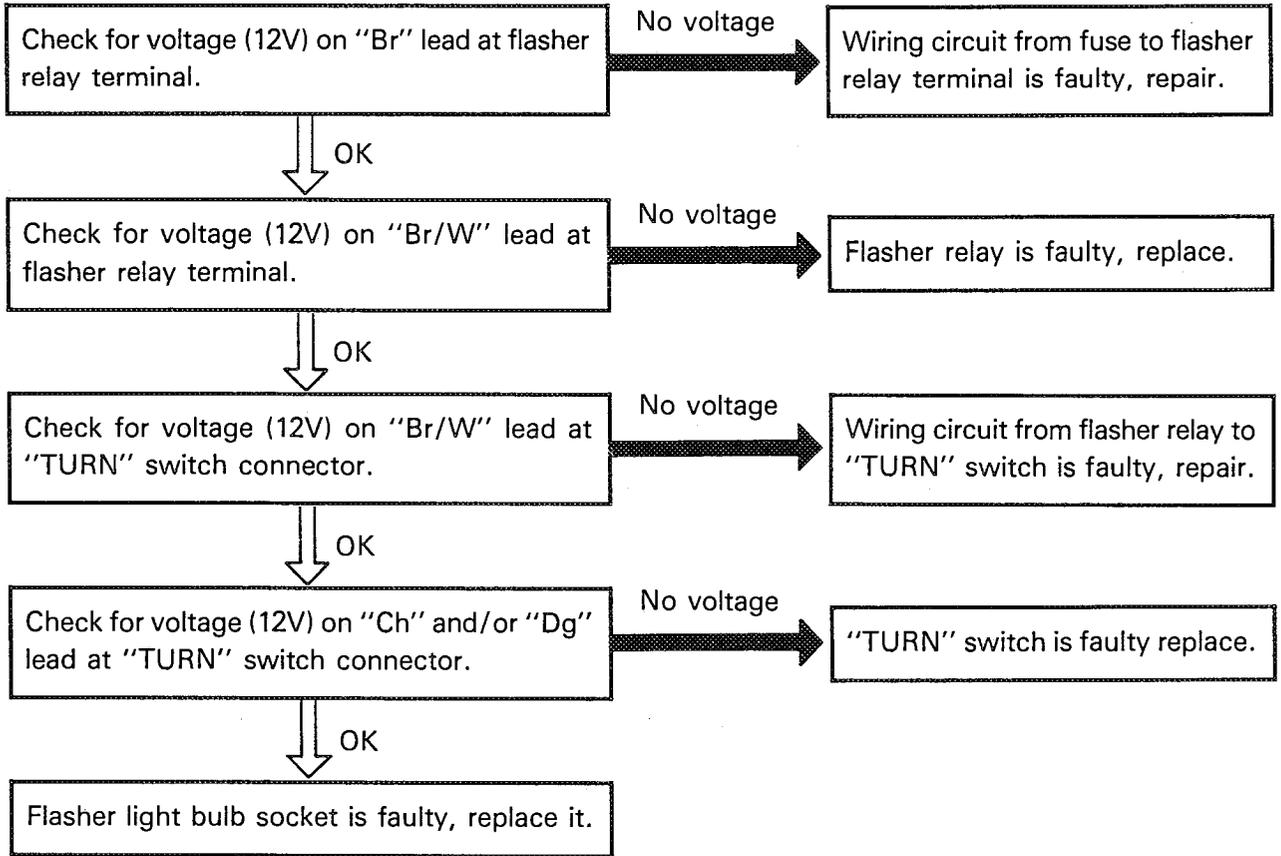
The battery provides power for operation of the horn, flasher lights, indicator light and brake light. If none of the above operates, always check the battery voltage before proceeding further. Low battery voltage indicates either a faulty battery, low battery electrolyte, or a defective charging system. See "CHARGING SYSTEM" for checks of the battery and charging system. Also, check the fuse condition. Replace the fuse if necessary.

## 1. Brake light does not work

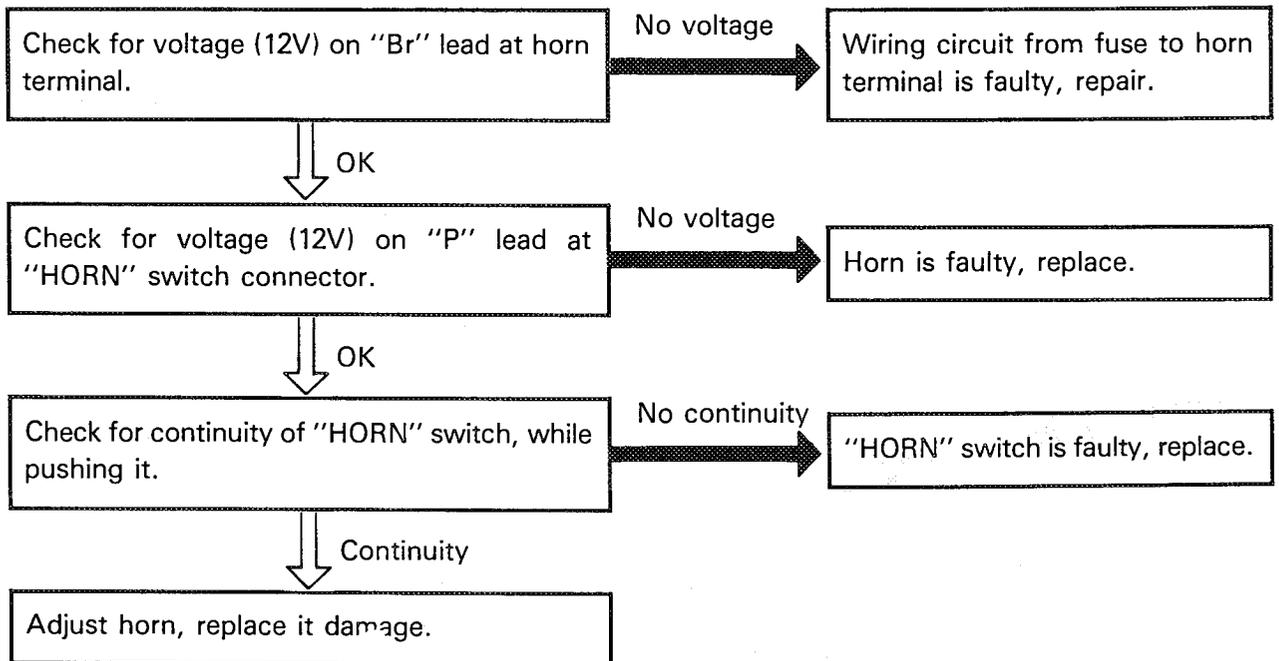




**2. Flasher lights (left and/or right) do not work**

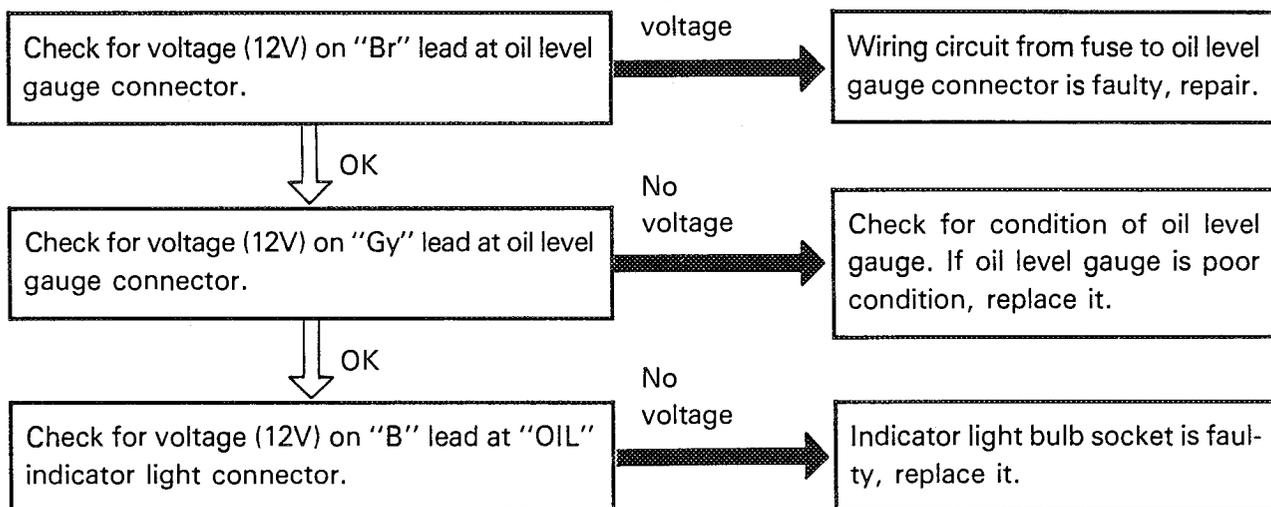


**3. Horn does not work**



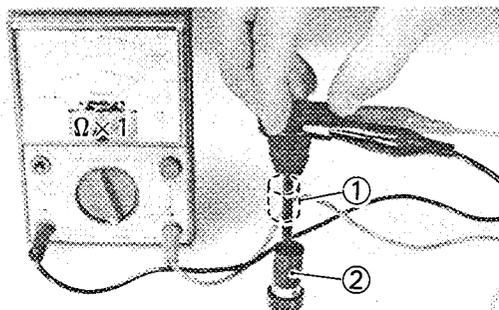


## 4. "OIL" indicator light does not work



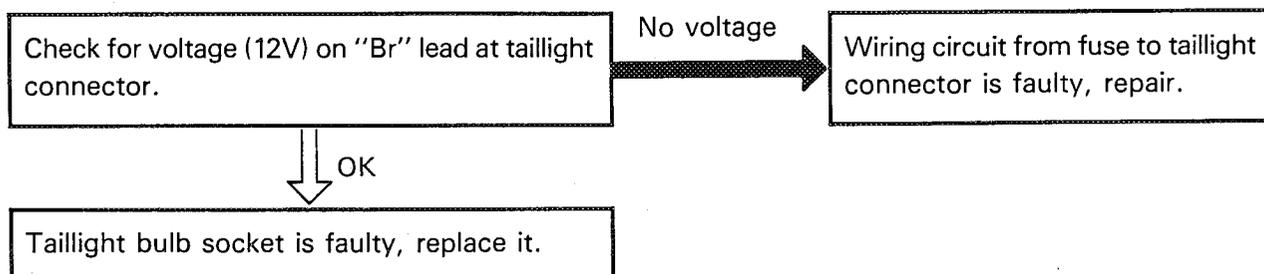
## [Oil level gauge check]

1. Disconnect:
  - Oil level gauge leads
2. Remove:
  - Oil level gauge
3. Connect:
  - Pocket Tester (YU-03112)
  - Set the tester selector to " $\Omega \times 1$ " position.
4. Check:
  - Oil level gauge conduct
  - Refer to following table
  - Not per result → Replace.



Float position	Good
Up ①	No continuity
Down ②	Continuity

## 5. Taillight does not work

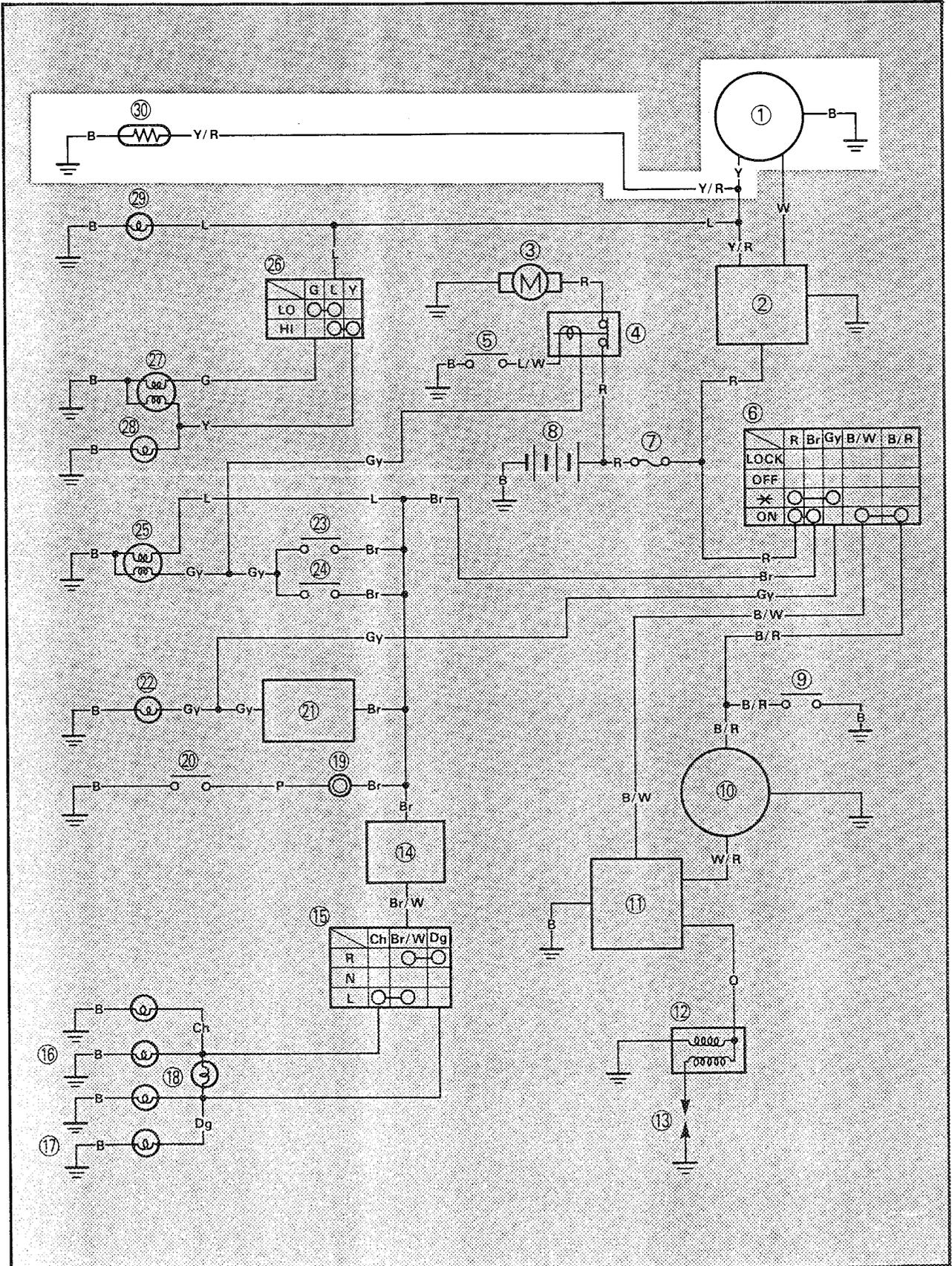




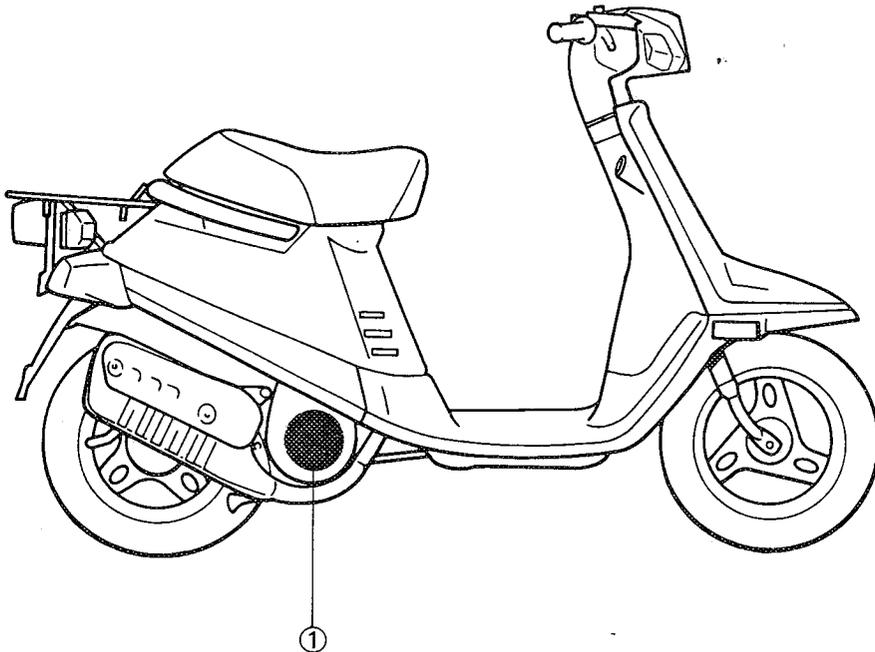
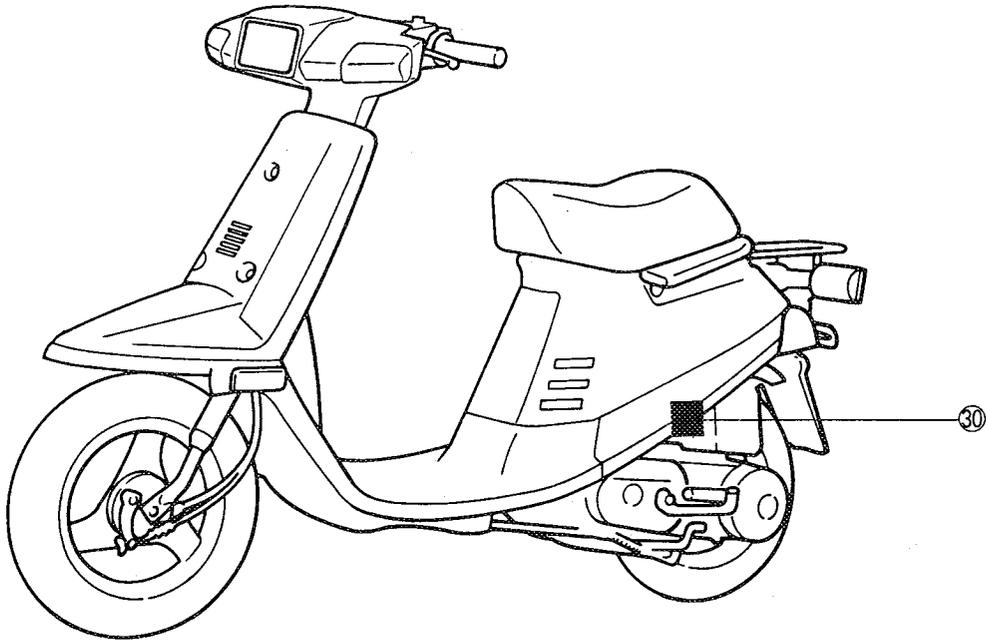
AUTO CHOKE SYSTEM

CIRCUIT DIAGRAM

Below circuit diagram shows auto choke circuit.



- ① C.D.I. magneto  
(Charging coil, lighting coil)
- ③① Auto choke unit





TROUBLESHOOTING CHART

AUTO CHOKE SYSTEM DOES NOT OPERATE.

**Lighting coil resistance test:**

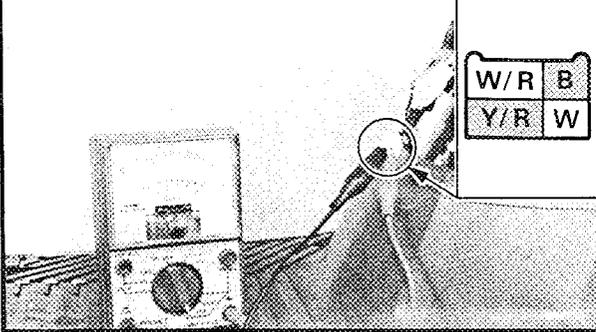
1. Disconnect C.D.I. magneto leads.
2. Set Pocket Tester (YU-03112) selector to " $\Omega \times 1$ " position.
3. Connect tester leads to lighting coil leads.

Tester (+) lead → Yellow/Red lead  
 Tester (-) lead → Black lead

4. Measure:

- Lighting coil resistance

 0.27 ~ 0.33 $\Omega$  at 20°C (68°F)



Out of specification

Replace lighting coil.

OK

Check entire auto choke system for connections.  
 Refer to "WIRING DIAGRAM".

Poor connection

Correct.

OK

Check auto choke condition.  
 Refer to "AUTO CHOKE UNIT TEST" section.

**AUTO CHOKE UNIT TEST**

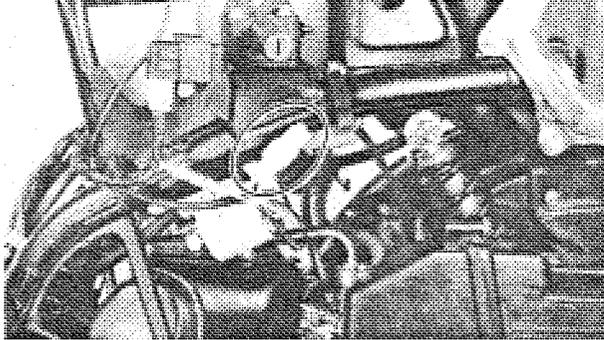
## 1. Remove:

- Tail cover

Refer to "CHAPTER 2 – TAIL COVER" section.

## 2. Remove:

- Air cleaner case



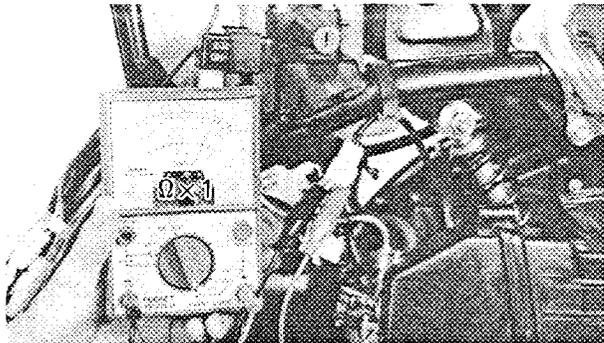
## 3. Disconnect:

- Auto choke unit leads

## 4. Connect:

- Pocket tester (YU-03112)

Set the tester selector to " $\Omega \times 1$ " position.



## 5. Measure:

- Auto choke unit resistance

Out of specification  $\rightarrow$  Replace.



$2 \sim 6 \Omega$  at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ )

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**CHAPTER 7  
APPENDICES**

**SPECIFICATIONS ..... J-3**  
    GENERAL SPECIFICATIONS ..... J-3  
    MAINTENANCE SPECIFICATIONS ..... J-4

**GENERAL TORQUE SPECIFICATIONS ..... J-8**

**DEFINITION OF UNITS ..... J-8**

**CABLE ROUTING ..... J-8**

**CE50S WIRING DIAGRAM**





**APPENDICES**

**SPECIFICATIONS**

**GENERAL SPECIFICATIONS**

Model	CE50T
Model Code Number	2UG
Vehicle Identification Number	JYA2UG00*HA720101
Engine Starting Number	14T-720101
Dimensions:	
Overall Length	1,560 mm (61.4 in)
Overall Width	620 mm (24.4 in)
Overall Height	972 mm (38.3 in)
Seat Height	690 mm (27.1 in)
Wheelbase	1,085 mm (42.7 in)
Minimum Ground Clearance	100 mm (3.9 in)
Basic Weight:	
With Oil and Full Fuel Tank	58.5 kg (129 lb)
Minimum Turning Radius	1600 mm (63 in)
Engine:	
Engine Type	Air cooled 2-stroke, gasoline torque induction
Cylinder Arrangement	Single cylinder, Forward inclined
Displacement	49 cm <sup>3</sup>
Bore x Stroke	40.0 x 39.2 mm (1.57 x 1.54 in)
Compression Ratio	7.2:1
Starting System	Electric and Kick Starter
Lubrication System	Separate lubrication (Yamaha Autolube)
Oil Type or Grade:	
Engine Oil	Yamalube 2-cycle oil or Air cooled 2-stroke engine oil
Transmission Oil	Yamalube 4-cycle oil or SAE 10W30 type SE motor oil or GL gear oil
Oil Capacity:	
Oil Tank (Engine Oil)	0.8 L (0.70 Imp qt, 0.84 US qt)
Transmission Oil	
Periodic Oil Change	0.10 L (0.09 Imp qt, 0.11 US qt)
Total Amount	0.11 L (0.10 Imp qt, 0.12 US qt)
Air Filter	Wet type element
Fuel:	
Type	Regular gasoline
Tank Capacity	2.9 L (0.64 Imp gal, 0.77 US gal)



Model	CE50T
Carburetor: Type/Manufacturer	Y12P/TEIKEI KIKAKI
Spark Plug: Type/Manufacturer Gap	BPR6HS/NGK 0.9 ~ 1.0 mm (0.036 ~ 0.039 in)
Clutch Type	Dry, Centrifugal Automatic
Transmission: Primary Reduction System Primary Reduction Ratio Secondary Reduction System Secondary Reduction Ratio Transmission Type Operation	Spur gear 52/14 (3.714) Spur gear 36/12 (3.000) V-belt Auto matic
Chassis: Frame Type Caster Angle Trail	Steel Tube Underbone 25° 62 mm (2.44 in)
Tire: Size (F) Size (R)	2.75-10-4PR 2.75-10-4PR
Tire Pressure (Cold tire): Front Rear	125 kPa (1.25 kg/cm <sup>2</sup> , 18 psi) 225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi)
Brake: Front Brake Type Operation Rear Brake Type Operation	Drum brake Right hand operation Drum brake Left hand operation
Suspension: Front Suspension Rear Suspension	Telescopic Fork Unit Swing
Shock Absorber: Rear Shock Absorber	Coil Spring/Oil Damper
Wheel Travel: Front Wheel Travel Rear Wheel Travel	44 mm (1.73 in) 49 mm (1.93 in)

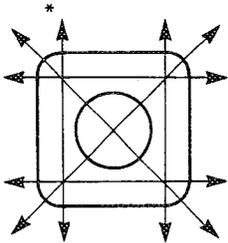
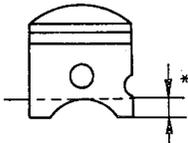
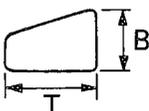
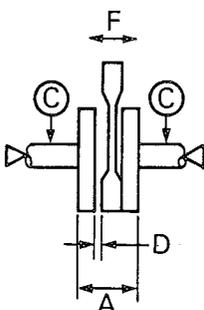


Model	CE50T
Electrical: Ignition System Generator System Battery Type or Model Battery Capacity	CDI Flywheel magneto GM4-3B 12V 4AH
Headlight Type:	Shealed Beam
Bulb Wattedge × Quantity: Headlight Tail/Brake light Flasher light Licence Light Meter light	12V 25W/25W × 1 12V 5W/21W × 1 12V 10W × 4 12V 5W × 1 12V 3.4W × 1
Indicator Light Wattage × Quantity: "TURN" "HIGH BEAM" "OIL"	12V 1.7W × 1 12V 1.7W × 1 12V 3.4W × 1

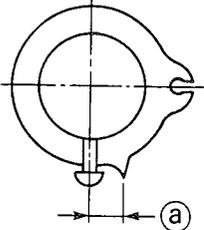


MAINTENANCE SPECIFICATIONS

Engine

Model	CE50T
<p>Cylinder Head: Warp Limit</p> 	<p>0.02 mm (0.0008 in) *Lines indicate straightedge measurement</p>
<p>Cylinder: Bore Size &lt; Limit &gt; Taper Limit Out of Round Limit</p>	<p>40.0 mm (1.575 in) 40.1 mm (1.579 in) 0.05 mm (0.002 in) 0.01 mm (0.0004 in)</p>
<p>Piston: Piston Size Measuring Point*</p>  <p>Piston Clearance Oversize 1st 2nd</p>	<p>40.0 mm (1.575 in) 5 mm (0.2 in)  0.034 ~ 0.047 mm (0.0013 ~ 0.0018 in) 40.25 mm (1.585 in) 40.50 mm (1.594 in)</p>
<p>Piston Ring: Sectional Sketch (B x T)</p>  <p>Top Ring 2nd Ring End Gap (Installed) Top Ring 2nd Ring Side Clearance (Installed) Top Ring 2nd Ring</p>	<p>1.2 x 1.6 mm (0.047 x 0.063 in) 1.2 x 1.6 mm (0.047 x 0.063 in)  0.15 ~ 0.30 mm (0.006 ~ 0.012 in) 0.15 ~ 0.30 mm (0.006 ~ 0.012 in)  0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in) 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)</p>
<p>Crankshaft:</p>  <p>Crank Width "A" Run Out Limit "C" Connecting Rod Big End Side Clearance "D" Small End Free Play "F"</p>	<p>37.90 ~ 37.95 mm (1.492 ~ 1.494 in) 0.03 mm (0.0012 in)  0.2 ~ 0.5 mm (0.008 ~ 0.020 in) 0.4 ~ 0.8 mm (0.015 ~ 0.031 in)</p>



Model	CE50T
Automatic Centrifugal Clutch: Shoe Thickness <Wear Limit> Clutch Spring Free Length <Limit> Clutch Housing Inside Diameter <Wear Limit> Clutch-In Revolution Clutch-Stall Revolution	4.0 mm (0.16 in) <2.5 mm (0.10 in)> 109.6 mm (4.31 in) <94.0 mm (3.70 in)> 105.0 mm (4.13 in) <105.4 mm (4.15 in)> 2,300 ~ 2,700 r/min 3,700 ~ 4,300 r/min
V-Belt: Width <Wear Limit>	15 mm (0.59 in) <13.5 mm (0.53 in)>
Transmission: Main Axle Runout Limit Drive Axle Runout Limit	0.08 mm (0.003 in) 0.08 mm (0.003 in)
Kick Starter: Type Kick Clip Tension	Ratchet Type 250 ~ 300 g (8.83 ~ 10.6 oz)
Carburetor: I.D. Mark Main jet (M.J.) Jet Needle-clip Position (J.N.) Main Air Jet (M.A.J.) Cutaway (C.A.) Pilot Jet (P.J.) Pilot Air Jet (P.A.J.) Valve Seat Size (V.S.) Starter Jet (G.S.) Float Height Engine Idling speed	1UV00 #82 3S30-4/5 2.0 3.0 #42 $\phi 1.04$ 1.5 #46 15.0 ~ 17.0 mm (0.59 ~ 0.67 in) 1,500 ~ 2,100 r/min
Reed Valve: Thickness Valve Stopper Height Reed Valve Clearance	0.15 mm (0.006 in) 3.0 ~ 3.4 mm (0.12 ~ 0.13 in) Less than 0.2 mm (0.008 in)
Lubrication System: Autolube Pump Minimum Stroke Maximum Stroke Pulley Adjusting Mark	 0.10 ~ 0.15 mm (0.004 ~ 0.006 in) 0.55 ~ 0.65 mm (0.022 ~ 0.026 in) At idle Ⓐ: 0.0 ~ 1.0 mm (0.0 ~ 0.039 in)/at idle

Tightening Torque						
Part to be tightened	Thread size	Q'ty	Tightening torque			Remarks
			Nm	m•kg	ft•lb	
Spark plug	M14×1.25	1	20	2.0	14	
Cylinder head	M 6×1.0	4	10	1.0	7.2	
Stud bolt	M 6×1.0	4	10	1.0	7.2	
Stator assembly	M 6×1.0	2	8	0.8	5.8	
C.D.I. magneto	M12×1.25	1	43	4.3	31	
Air shroud	M 6×1.0	3	8	0.8	5.8	
Fan cover	M 6×1.0	2	8	0.8	5.8	
Fan	M 6×1.0	2	8	0.8	5.8	
Autolube pump	M 5×0.8	2	4	0.4	2.9	
Reed valve (carburetor joint)	M 6×1.0	4	8	0.8	5.8	
Air cleaner Case	M 6×1.0	2	8	0.8	5.8	
Exhaust pipe	M 6×1.0	2	8	0.8	5.8	
Muffler	M 8×1.25	2	27	2.7	19	
Muffler protector	M 6×1.0	2	8	0.8	5.8	
Crankcase	M 6×1.0	6	8	0.8	5.8	
Transmission case cover	M 6×1.0	5	8	0.8	5.8	
Crankcase cover	M 6×1.0	10	8	0.8	5.8	
Transmission oil drain bolt	M 8×1.25	1	18	1.8	13	
Autolube pump cover	M 6×1.0	2	8	0.8	5.8	
Stay (starter clutch)	M 6×1.0	3	8	0.8	5.8	
Kick crank	M 6×1.0	1	10	1.0	7.2	
Clutch	M28×1.0	1	50	5.0	36	
Clutch housing	M10×1.0	1	40	4.0	29	
Primary sheave	M10×1.25	1	30	3.0	22	
Idle gear plate	M 6×1.0	2	8	0.8	5.8	
Oil seal stopper plate	M 6×1.0	1	13	1.3	9.4	





Tightening Torque						
Part to be tightened	Thread size	Q'ty	Tightening torque			Remarks
			Nm	m•kg	ft•lb	
Frame and Engine bracket	M10×1.25	2	42	4.2	30	
Engine bracket and Engine	M10×1.25	1	42	4.2	30	
Rear Suspension (Upper)	M10×1.25	1	32	3.2	23	
(Lower)	M 8×1.25	1	17	1.7	12	
Handlebar and Steering column	M 8×1.25	1	29	2.9	21	
Ring nut (Steering column)	M25	1	30	3.0	22	
Front wheel axle	M10×1.25	1	35	3.5	25	
Front brake cam lever	M 5×0.8	1	4	0.4	2.9	
Rear brake cable holder	M 6×1.0	1	7	0.7	5.1	
Rear brake cam lever	M 5×0.8	1	6	0.6	4.3	
Rear wheel axle	M14×1.5	1	93	9.3	67	
Rear brake shoe plate	M 8×1.25	3	18	1.8	13	
Rear stay	M 6×1.0	4	10	1.0	7.2	
Seat bracket and seat	M 6×1.0	2	7	0.7	5.1	
Rear Carrier	M 6×1.0	4	7	0.7	5.1	



## Electrical

Model	CE50T
Voltage:	12V
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	18°/5,000 r/min Electrical
<p style="text-align: center;">Ignition Timing (B.T.D.C.)</p> <p style="text-align: center;">Engine speed (<math>\times 10^3</math> r/min)</p>	
C.D.I.: C.D.I. Unit-Model/Manufacturer	24L—MO/YAMAHA
Ignition Coil: Model/Manufacturer Primary Winding Resistance Secondary Winding Resistance	2EX/YAMAHA 0.21 ~ 0.25 $\Omega$ at 20°C (68°F) 4.5 ~ 6.7k $\Omega$ at 20°C (68°F)
Charging System/Type:	Flywheel Magneto
C.D.I. Magneto: Model/Manufacturer Pickup Coil Resistance (Color) Charging Voltage Lighting Voltage Source Coil Resistance (Color) Charging Coil Resistance (Color) Lighting Coil Resistance (Color)	F 1HH/YAMAHA 27 ~ 33 $\Omega$ at 20°C (68°F) (White/Red—Black) 13.0 ~ 17.5V at 4,000 r/min 11.5 ~ 13.5V at 4,000 r/min 216 ~ 264 $\Omega$ at 20°C (68°F) (Black/Red—Black) 0.63 ~ 0.77 $\Omega$ at 20°C (68°F) (White—Black) 0.27 ~ 0.33 $\Omega$ at 20°C (68°F) (Yellow/Red—Black)

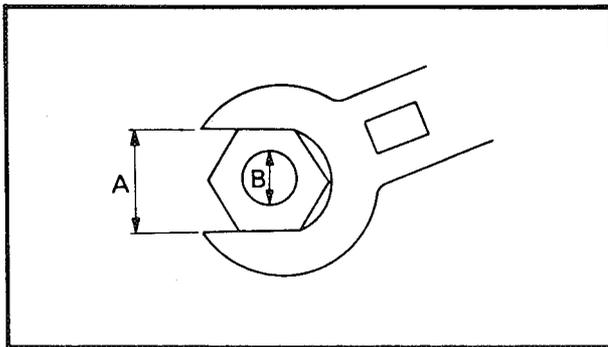


Model	CE50T	
Voltage Regulator: Type Model/Manufacturer No Load Regulated Voltage	Semi conductor short circuit type EHU-01TR05/MATSUSHITA 13.5 ~ 14.5V	
Rectifier: Model/Manufacturer Capacity Withstand Voltage	EHU-01TR15/MATSUSHITA 4A 240V	
Battery: Capacity Specific Gravity	12V, 4AH 1.280	
Starter Motor: Model Manufacturer Out Put Armature Coil Resistance Brush Length <Wear Limit> Commutator Diameter <Wear Limit> Mica Undercut	DA5AG NIPPON DENSO 0.15 kW 0.08 ~ 0.10Ω 5.5 mm (0.22 in) <2.5 mm 0.10 in> 15.5 mm (0.61 in) <14.5 mm (0.57 in)> 1.0 mm (0.039 in)	2EX-81800-M0 YAMAHA 0.14 kW 0.08 ~ 0.10Ω 3.9 mm (0.15 in) <0.9 mm (0.03 in)> 15.8 mm (0.62 in) <14.8 mm (0.58 in)> 1.15 mm (0.045 in)
Starter Relay: Model/Manufacturer Amperage Rating Coil Resistance	27V/TATEISHI 20A 54 ~ 66Ω	
Horn: Type/Quantity Model/Manufacturer Maximum Amperage	Plain type GF-12/NIKKO 1.5A	
Flasher Relay: Type Model/Manufacturer Self Cancelling Device Flasher Frequency Wattage	Condenser type FZ222SD/NIPPON DENSO No 60 ~ 120 cycle/min 10W × 2 + 3.4W	
Circuit Breaker: Type Amperage for Individual Circuit × Quantity Main	Fuse 7A × 1	

**GENERAL TORQUE SPECIFICATIONS**

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (Nut)	B (Bolt)	General torque specifications		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94



A: Distance cross flats  
B: Outside thread diameter

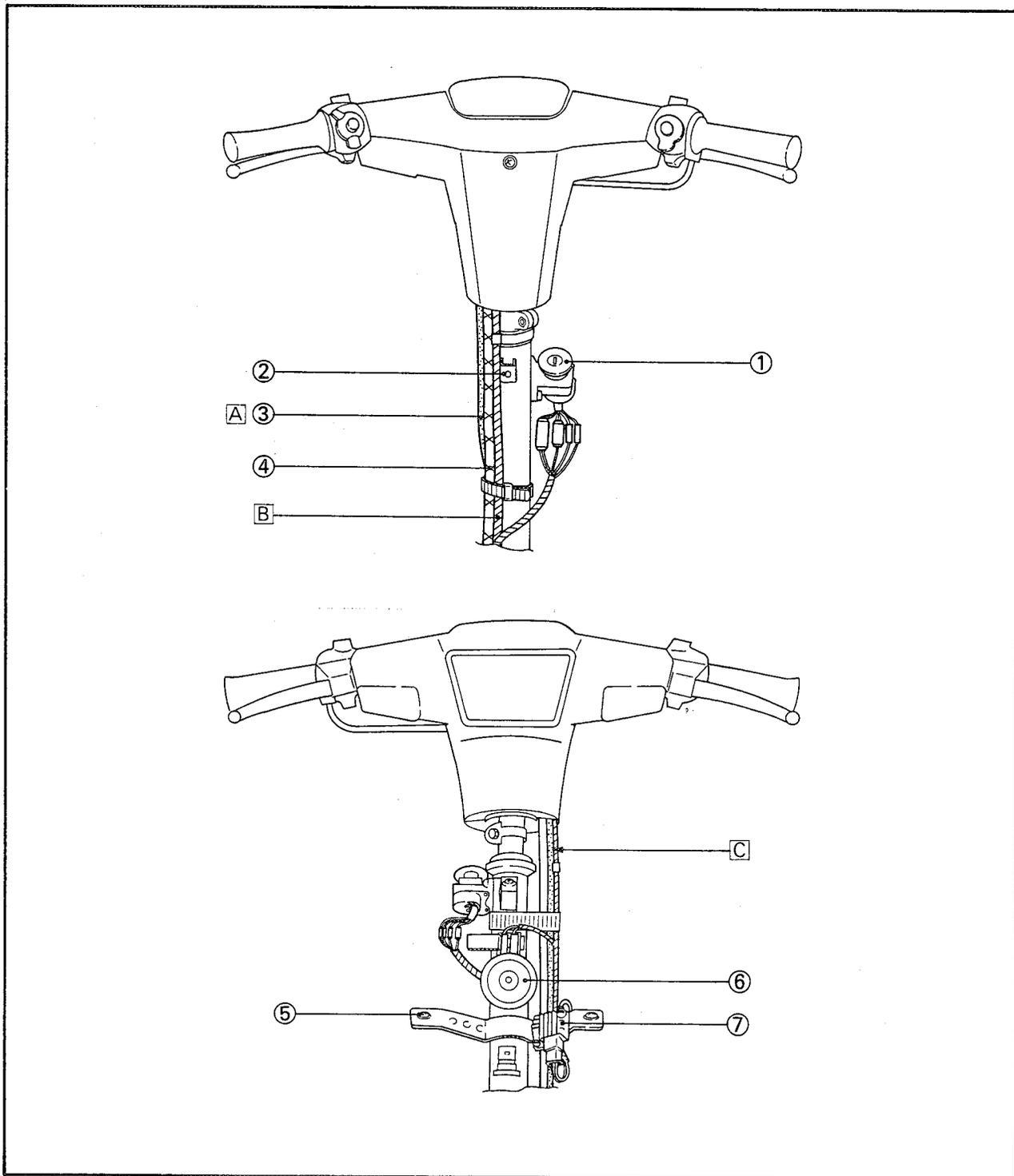
**DEFINITION OF UNITS**

Unit	Read	Definition	Measure
mm	millimeter	$10^{-3}$ meter	Length
cm	centimeter	$10^{-2}$ meter	Length
kg	kilogram	$10^3$ gram	Weight
N	Newton	$1 \text{ kg} \times \text{m}/\text{sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m·kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	$\text{N}/\text{m}^2$	Pressure
N/mm	Newton per millimeter	$\text{N}/\text{mm}$	Spring rate
L	Liter	—	Volume
$\text{cm}^3$	Cubic centimeter	—	or Capacity
r/min	Rotation per minute	—	Engine Speed

CABLE ROUTING

- ① Main switch
- ② Leg shield bracket
- ③ Rear brake cable
- ④ Throttle cable
- ⑤ Carrier stay 2
- ⑥ Horn
- ⑦ Rectifier/Regulator

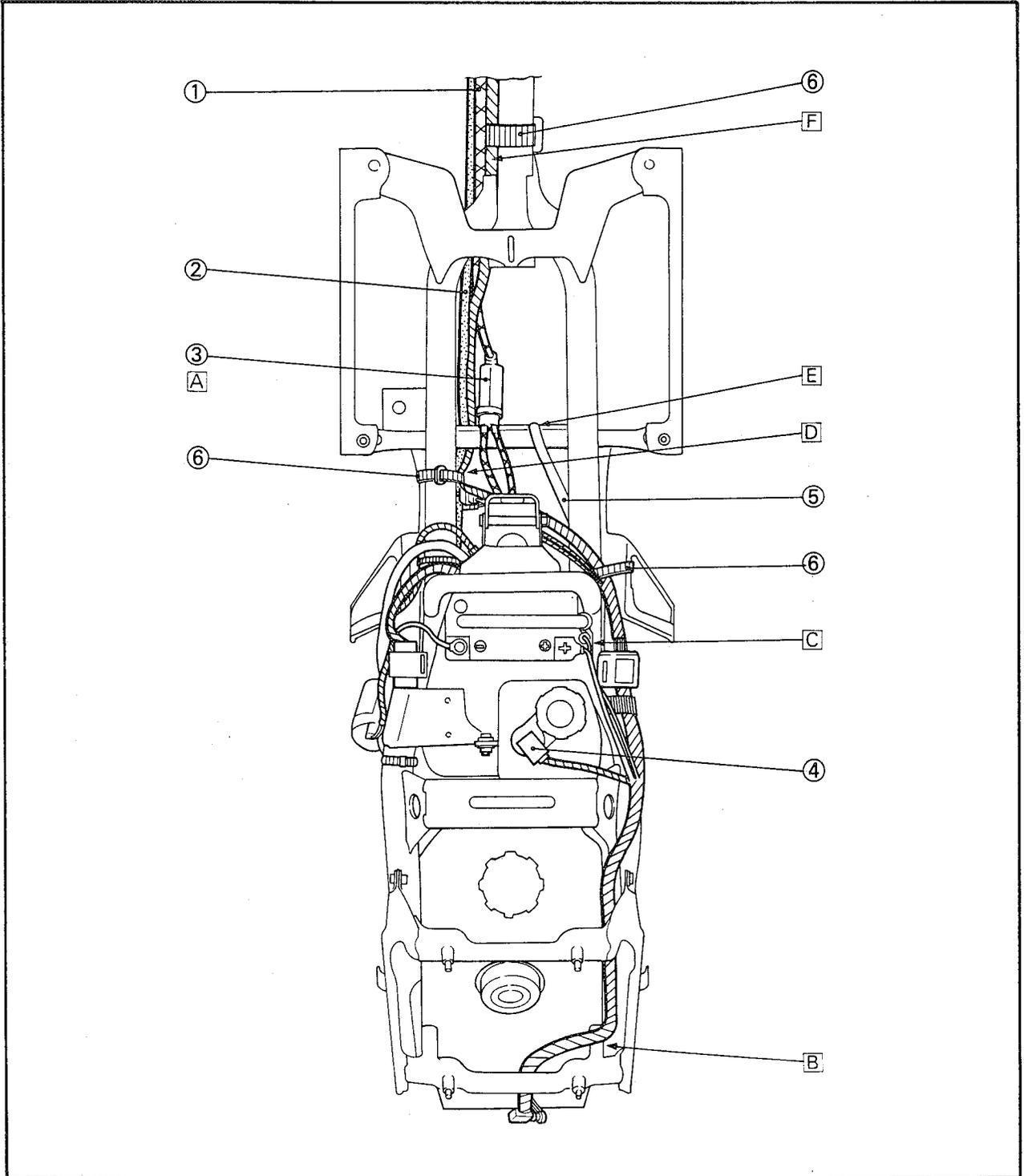
- A Route along left side of leg shield bracket and frame.
- B Route wire harness along left side of leg shield bracket and then, along left side of frame down-tube.
- C Wire harness should be on the left side.



## CABLE ROUTING

- ① Throttle cable
- ② Rear brake cable
- ③ Wire cylinder ass'y
- ④ Oil level gauge
- ⑤ Breather hose
- ⑥ Band

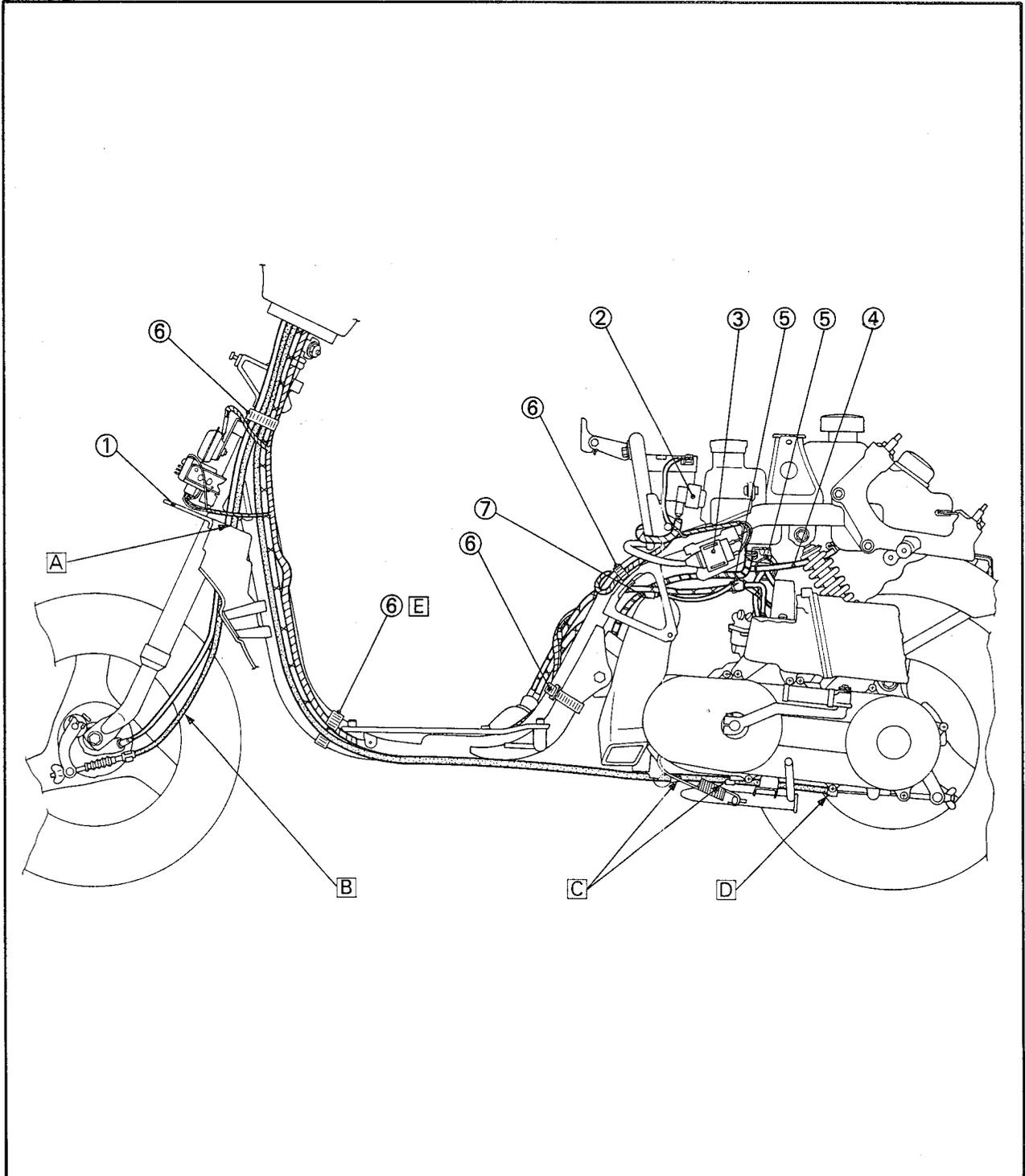
- A It should be firmly installed on the engine protector.
- B Route wire harness between rear stay and fuel tank.
- C Insert fuse case (wire harness assembly) into holder (integrated with battery case).
- D Route wire harness over frame.
- E Route breather hose along engine protector slit.
- F Route wire harness under back stay.





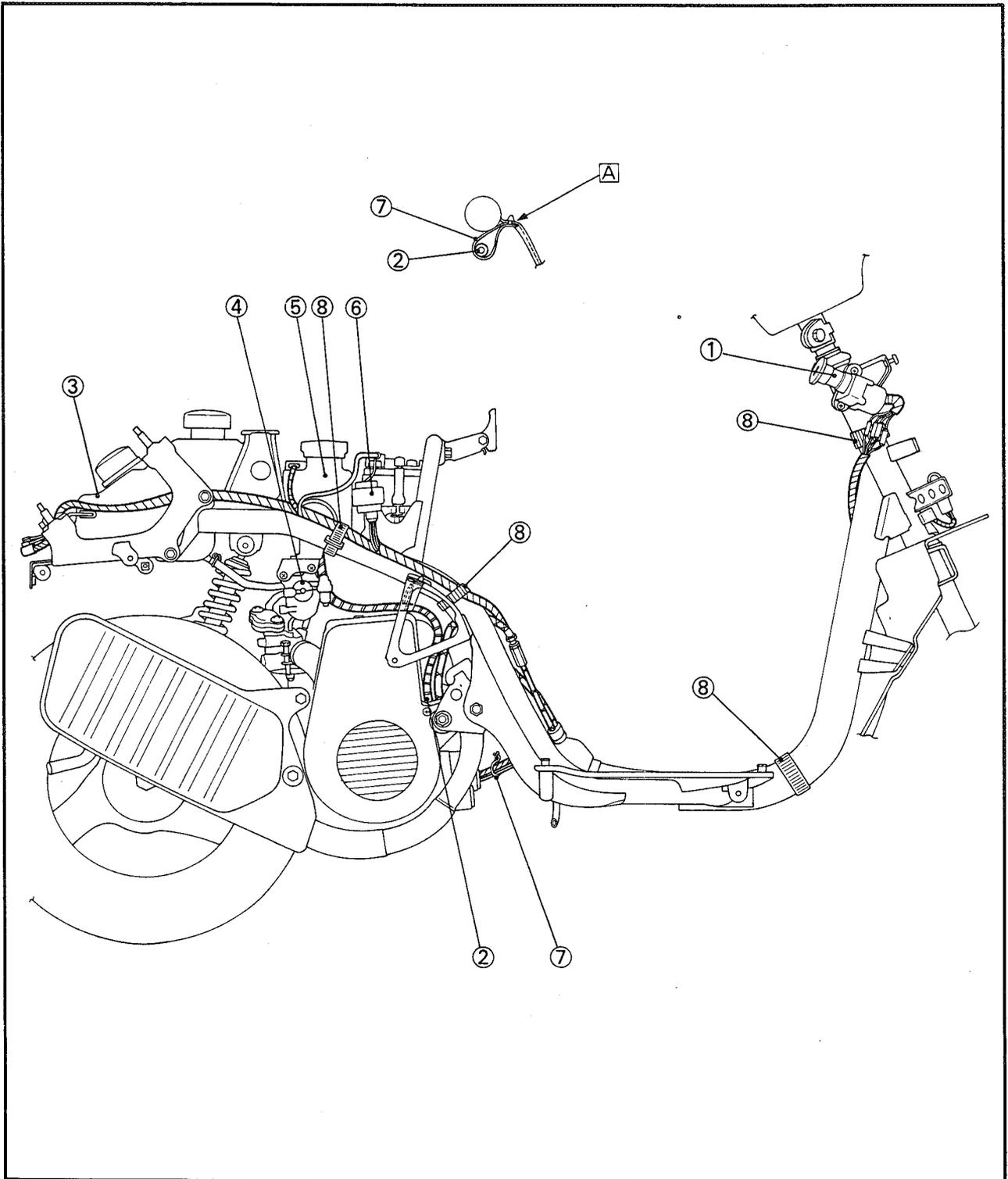
- ① Inner fender
- ② C.D.I. unit
- ③ Ignition coil
- ④ Fuel pipe (tank to cock)
- ⑤ Clamp
- ⑥ Band
- ⑦ Auto choke unit lead

- A Pass meter cable and brake cable through the window in inner fender.
- B Meter cable and front brake cable should be free of twists.
- C Clamp rear brake cable.
- D Be sure the casing cap of brake cable is completely in crankcase.
- E Clamp wire harness only.



- ① Main switch
- ② Oil pipe
- ③ Fuel tank
- ④ Fuel cock
- ⑤ Oil tank
- ⑥ Starter relay
- ⑦ Clamp
- ⑧ Band

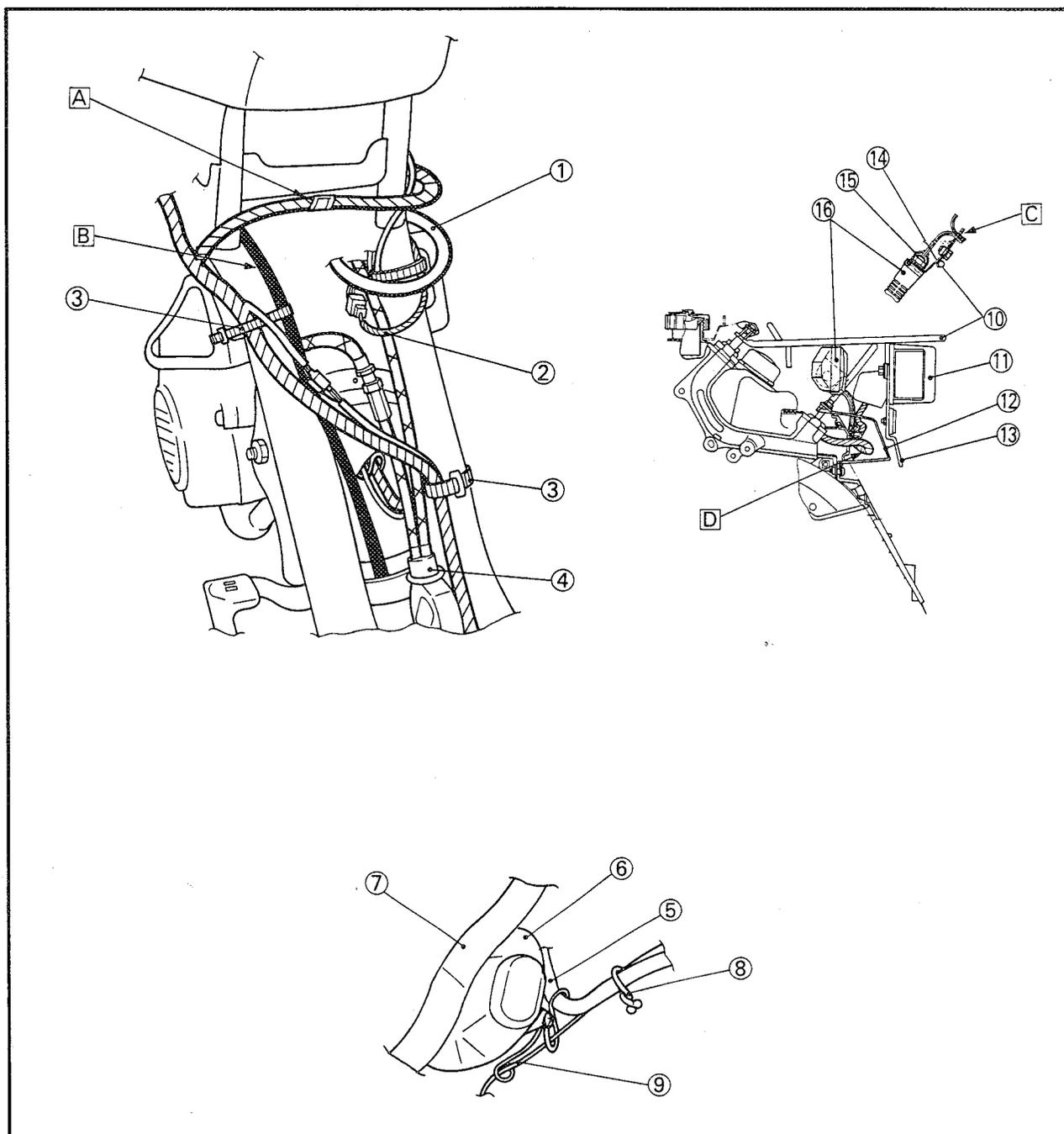
**A** Push the projecting portion of clamp into the mounting hole on the stay side.



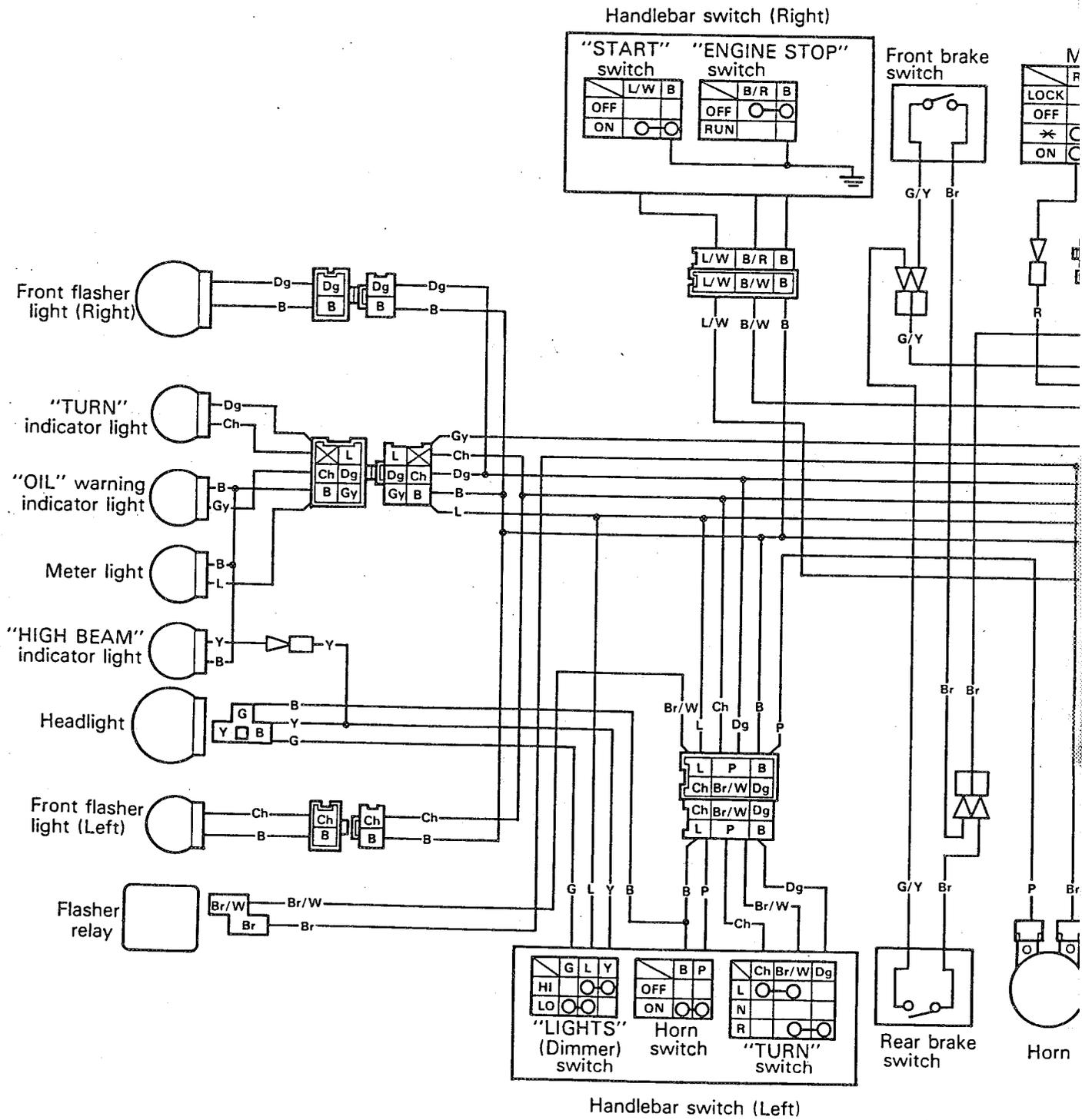


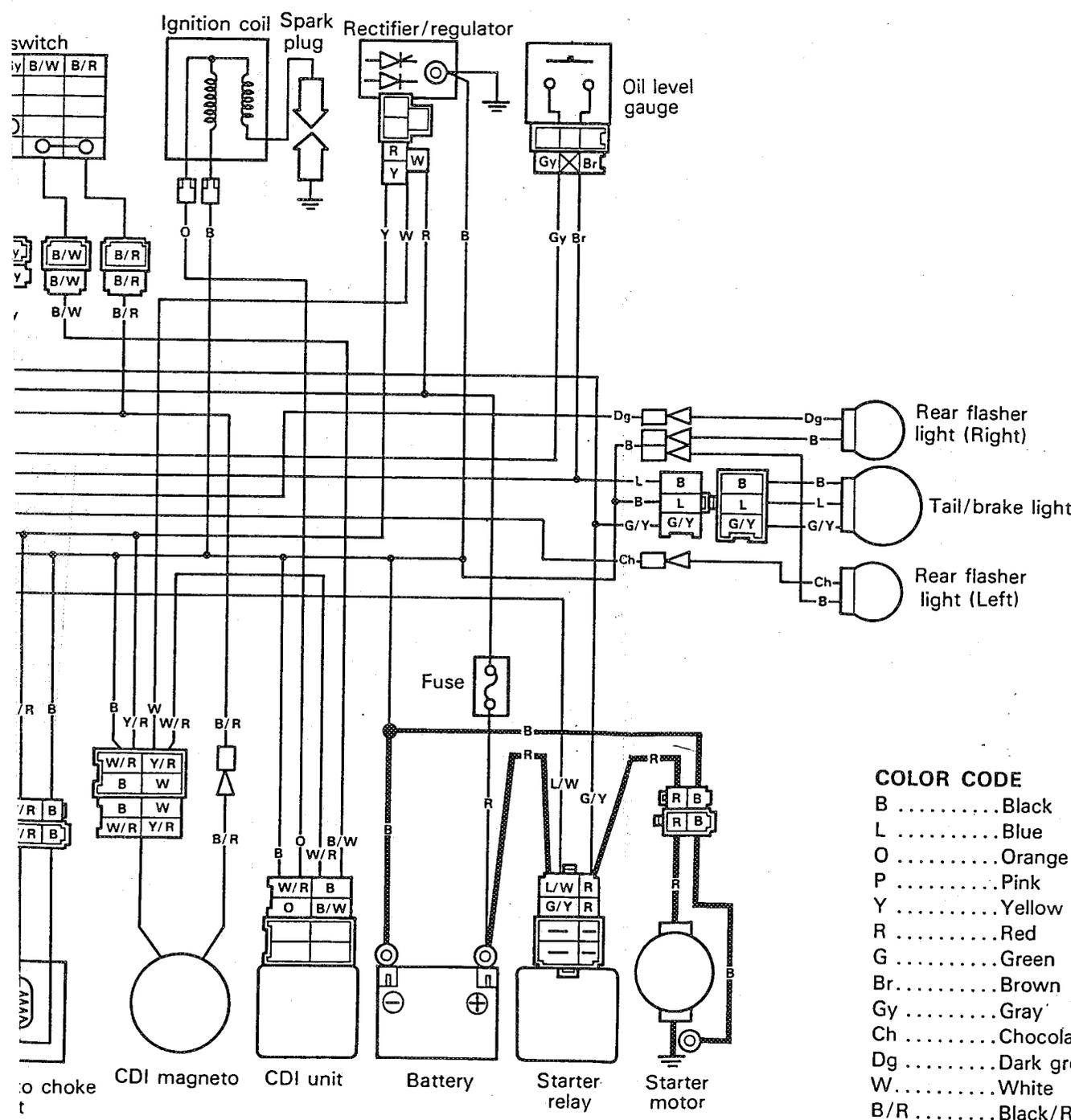
- ① High tension cord
- ② Auto choke unit lead
- ③ Band
- ④ Boot
- ⑤ C.D.I. magneto lead
- ⑥ Oil pump cover
- ⑦ Exhaust pipe
- ⑧ Clamp
- ⑨ Starter motor lead
- ⑩ Carrier 2
- ⑪ Taillight assembly
- ⑫ Tail cover assembly
- ⑬ License bracket
- ⑭ Flasher stay
- ⑮ Cap
- ⑯ Flasher light assembly

- A Clamp firmly.
- B Route battery breather hose inside the back stay and hold with clamp. When installing cover, use care so that pipe is not pinched.
- C Pass flasher lead through holes in flasher stay and carrier 2.
- D As shown, after connecting the taillight and flasher leads, push the connections completely into the tail cover. No coupler and connector are allowed to be outside the case.



# CE50T WIRING DIAGRAM





**COLOR CODE**

- B ..... Black
- L ..... Blue
- O ..... Orange
- P ..... Pink
- Y ..... Yellow
- R ..... Red
- G ..... Green
- Br..... Brown
- Gy ..... Gray
- Ch ..... Chocolate
- Dg ..... Dark green
- W..... White
- B/R ..... Black/Red
- L/W ..... Blue/White
- Y/R ..... Yellow/Red
- G/Y ..... Green/Yellow
- Br/W ..... Brown/White
- W/R ..... White/Red
- B/W ..... Black/White





**CG50U '88**  
2YT-AE1

**SUPPLEMENTARY  
SERVICE MANUAL**

---

## FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the CG50U. For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

**CE50T Service Manual: 2UG-ME1**

**TECHNICAL PUBLICATIONS  
SERVICE DIVISION  
MOTORCYCLE GROUP  
YAMAHA MOTOR CO., LTD.**

**CG50U  
SUPPLEMENTARY  
SERVICE MANUAL**

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**1st Edition, November 1987**

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## NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha scooters have a basic understanding of the mechanical concepts and procedures inherent in scooter repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

## HOW TO USE THIS MANUAL

### PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

**NOTE:** A **NOTE** provides key information to make procedures easier or clearer.

**CAUTION:** A **CAUTION** indicates special procedures that must be followed to avoid damage to the scooter.

**WARNING:** A **WARNING** indicates special procedures that must be followed to avoid injury to a scooter operator or person inspecting or repairing the scooter.

### MANUAL FORMAT

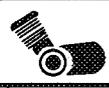
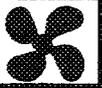
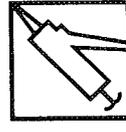
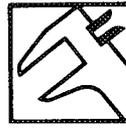
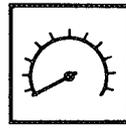
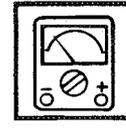
All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations.

In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings  
Pitting/Damage → Replace.

### EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.

<p>①</p> <p>GEN INFO</p> 	<p>②</p> <p>INSP ADJ</p> 	
<p>③</p> <p>ENG</p> 	<p>④</p> <p>COOL</p> 	
<p>⑤</p> <p>CARB</p> 	<p>⑥</p> <p>CHAS</p> 	
<p>⑦</p> <p>ELEC</p> 	<p>⑧</p> <p>APPX</p> 	
<p>⑨</p> 	<p>⑩</p> 	
<p>⑪</p> 	<p>⑫</p> 	
<p>⑬</p> 	<p>⑭</p> 	
<p>⑮</p> 	<p>⑯</p> 	<p>⑰</p> 
<p>⑱</p> 	<p>⑲</p> 	<p>⑳</p> 
<p>㉑</p> 		

## ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑧ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspection and adjustment
- ③ Engine
- ④ Cooling system
- ⑤ Carburetion
- ⑥ Chassis
- ⑦ Electrical
- ⑧ Appendices

Illustrated symbols ⑨ to ⑭ are used to identify the specifications appearing in the text.

- ⑨ Filling fluid
- ⑩ Lubricant
- ⑪ Tightening
- ⑫ Wear limit, clearance
- ⑬ Engine speed
- ⑭  $\Omega$ , V, A

Illustrated symbols ⑮ to ㉑ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑮ Apply engine oil
- ⑯ Apply gear oil
- ⑰ Apply molybdenum disulfide oil
- ⑱ Apply wheel bearing grease
- ⑲ Apply lightweight lithium-soap base grease
- ⑳ Apply molybdenum disulfide grease
- ㉑ Apply locking agent (LOCTITE®)

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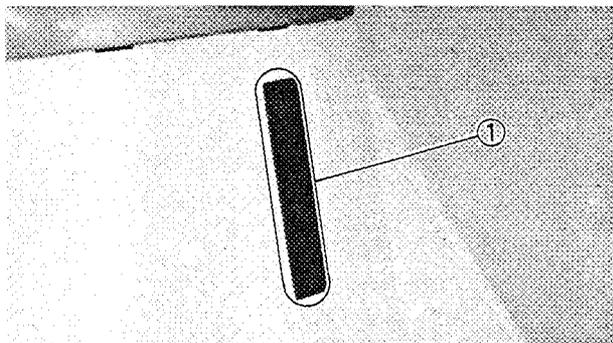
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## CG50U WIRING DIAGRAM



## GENERAL INFORMATION



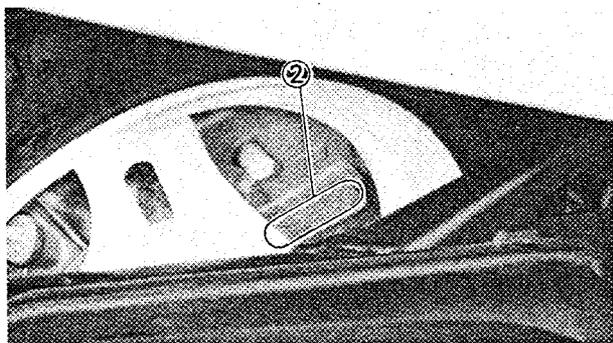
### SCOOTER IDENTIFICATION VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the frame.

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

The vehicle identification number is used to identify your scooter and may be used to register your scooter with the licensing authority in your state.

<p><b>Starting Serial Number:</b> JYA2YTN0*JA000101</p>
---



### ENGINE SERIAL NUMBER

The engine serial number ② is stamped into the crankcase.

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

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.

<p><b>Starting Serial Number:</b> 2YT-000101</p>
--

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

Designs and specifications are subject to change without notice.

## PERIODIC INSPECTION AND ADJUSTMENT

### INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

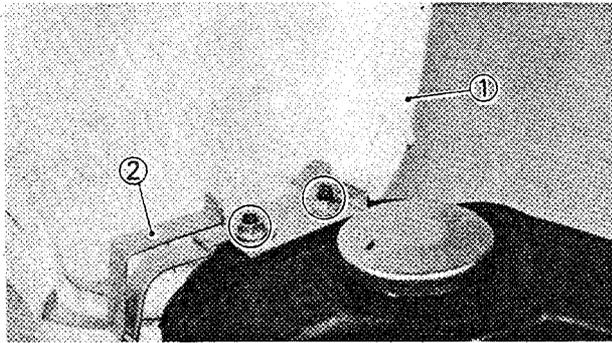
### PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 500 (300)	EVERY	
			3,000 (2,000) or 6 months	6,000 (4,000) or 12 months
Spark plug	Check condition. Clean or replace if necessary.	○	○	○
Air filter*	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/starter operation. Adjust if necessary.	○		○
Fuel line*	Check fuel hose for cracks or damage. Replace if necessary.		○	○
Transmission oil*	Check oil leakage. Correct if necessary. Replace every 12,000 (8,000) or 24 months. (Warm engine before draining.)	REPLACE	○	○
Autolube pump*	Check operation. Correct if necessary. Air bleeding.	○		○
Brake	Check operation. Adjust if necessary.		○	○
Wheels*	Check/damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearings assembly for looseness/ damage. Replace if damaged.		○	○
Steering bearing*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 12,000 (8,000) or 24 months.**	○	○	○
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		○	○
Fittings/Fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	○	○	○
Centerstand*	Check operation. Repair if necessary.	○	○	○
Battery*	Check specific gravity. Check breather pipe for proper operation. Correct if necessary.		○	○
V-belt	Check damage and wear. Replace if necessary.			○

\*: It is recommended that these items be serviced by a Yamaha dealer.

\*\* : Medium weight wheel bearing grease.



**COVERS**

**TAIL COVERS AND MOLES**

**Removal**

1. Open the seat lock.

2. Remove:

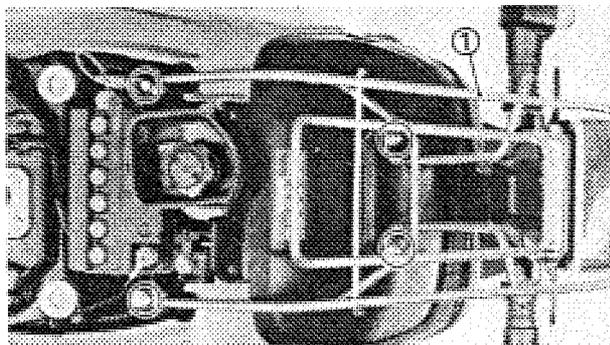
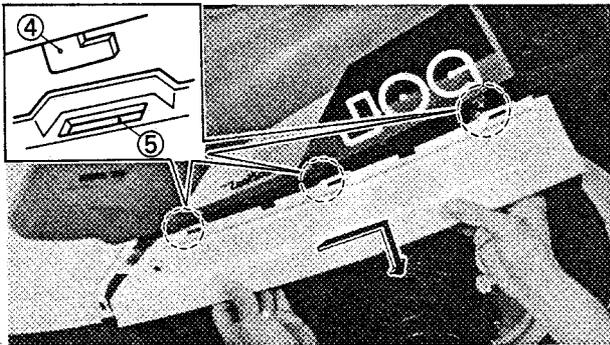
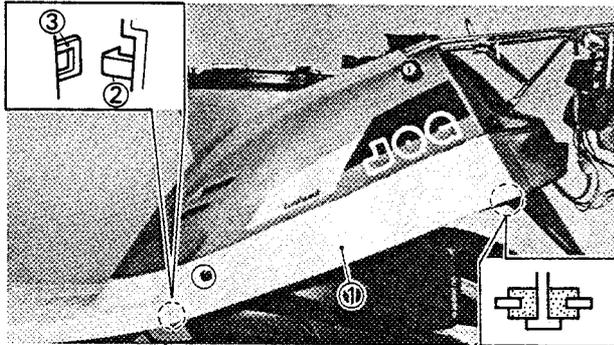
- Seat ①
- Helmet holder ②

3. Remove:

- Moles ① (Left and right)

**NOTE:**

- Unhook the pawl ② out of groove ③ of the footrest board.
- Slide the mole backward and unhook the pawl ④ out of groove ⑤ of the tail cover.

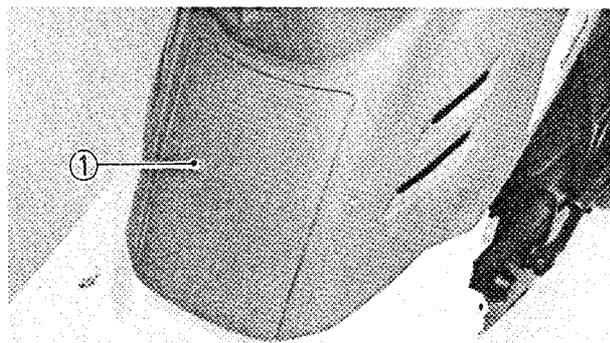


4. Disconnect:

- Taillight leads
- Rear flasher light leads

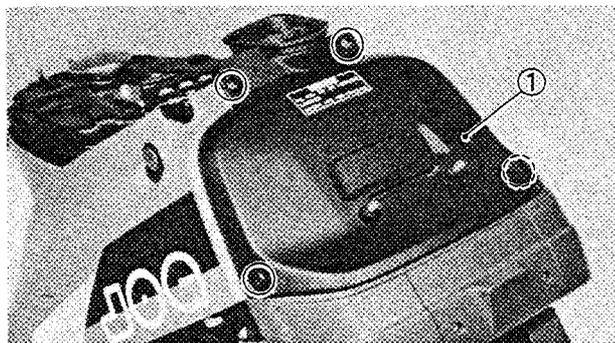
5. Remove:

- Carrier assembly ①

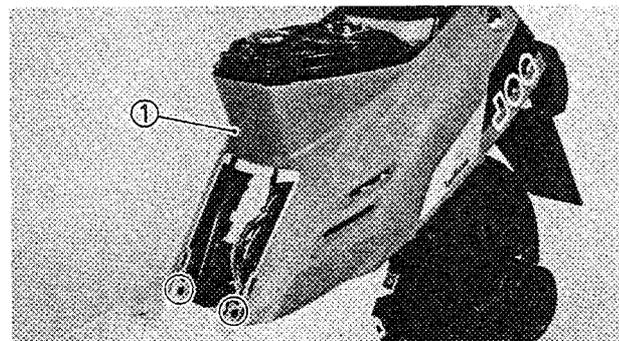


6. Remove:

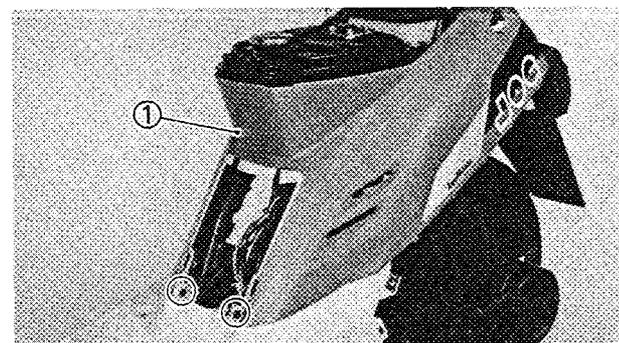
- Cover ①



7. Remove:  
•Cover ①

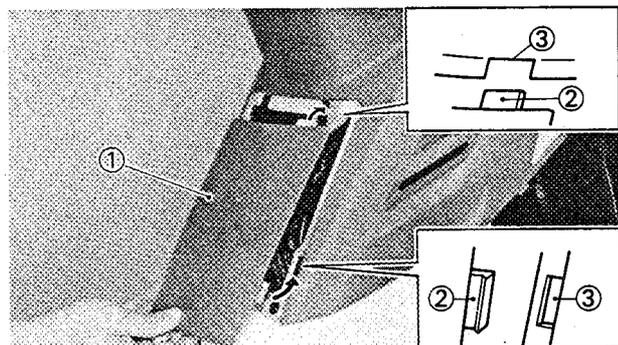


8. Remove:  
•Tail cover ①



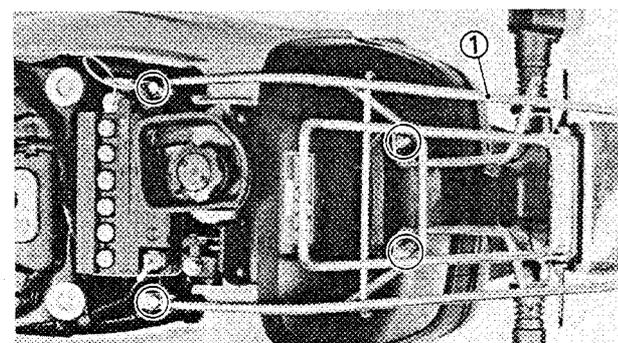
### Installation

1. Install:  
•Tail cover ①



2. Install:  
•Cover ①

**NOTE:** \_\_\_\_\_  
Install the projection ② into the opening ③.

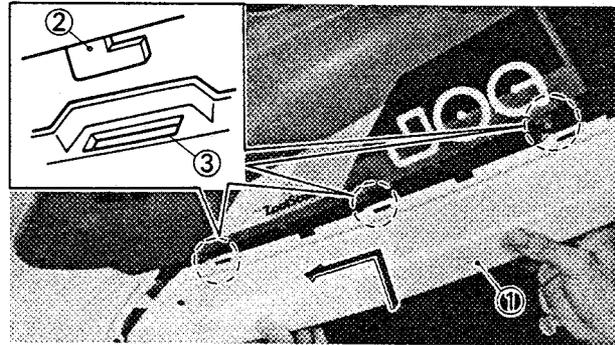


3. Install:  
•Carrier assembly ①

	<b>Nut (Carrier):</b> 7 Nm (0.7 m•kg, 5.1 ft•lb)
	<b>Bolt (Carrier):</b> 7 Nm (0.7 m•kg, 5.1 ft•lb)

4. Connect:  
•Taillight leads  
•Rear flasher light leads

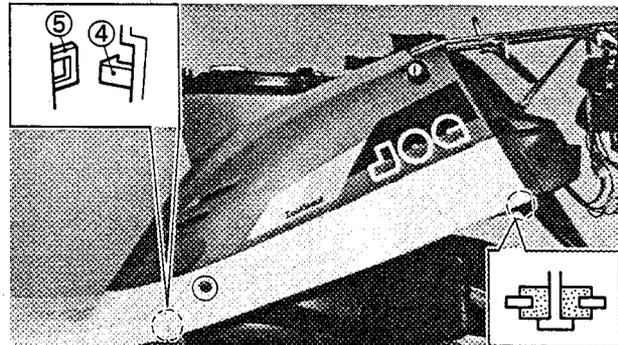
# FRONT PANEL, LEG SHIELD AND FOOTREST BOARD



5. Install:
- Mole (Left and right) ①

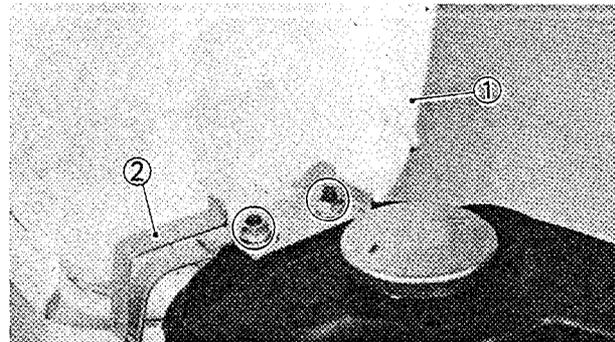
**NOTE:** \_\_\_\_\_

- Hook the pawl ② onto the opening ③, and slide the mole forward.
- Hook the pawl ④ onto the opening ⑤.



6. Install:
- Seat ①
  - Helmet holder ②

	<p><b>Nut (Seat):</b> 7 Nm (0.7 m•kg, 5.1 ft•lb)</p>
---	--



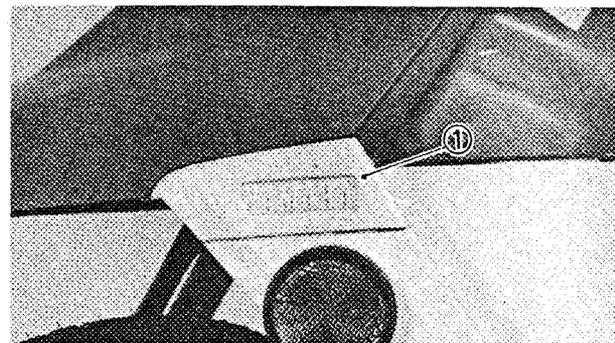
## FRONT PANEL, LEG SHIELD AND FOOTREST BOARD

### Removal

1. Remove:
- Covers ① (Left and right)

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

Unhook the projection by pulling up the cover.



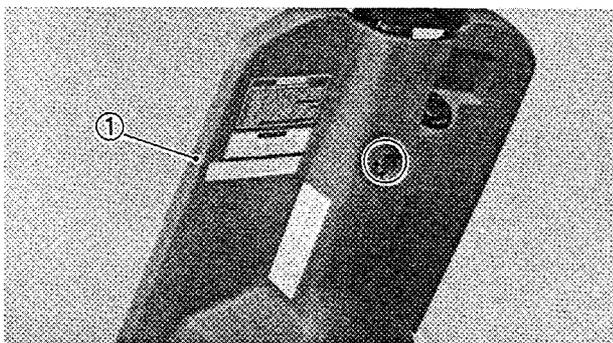
2. Remove:
- Front panel ①

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

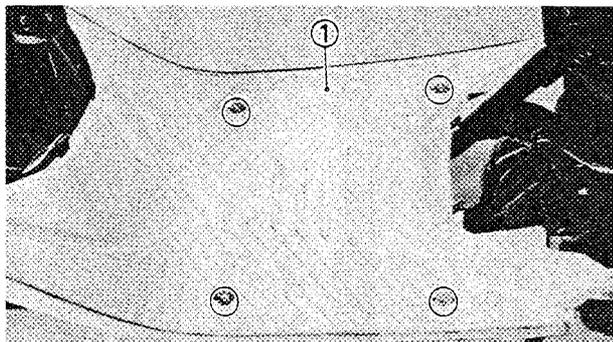
Unhook the projection by pulling up the front panel.



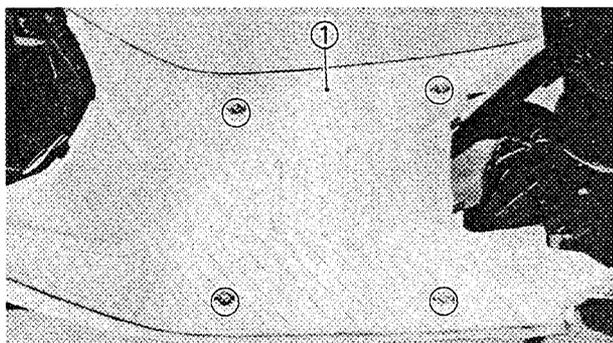
# FRONT PANEL, LEG SHIELD AND FOOTREST BOARD



3. Remove:
  - Leg shield ①

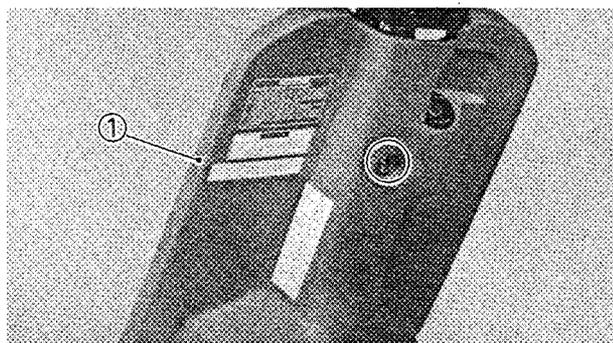


4. Remove:
  - Tail cover
 Refer to "TAIL COVERS AND MOLES" section.
5. Remove:
  - Footrest board ①



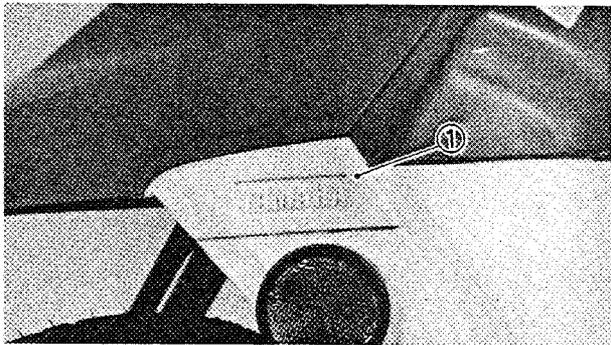
## Installation

1. Install:
  - Footrest board ①
2. Install:
  - Tail cover
 Refer to "TAIL COVER AND MOLES" section.
3. Install:
  - Leg shield ①



4. Install:
  - Front panel ①

**NOTE:** \_\_\_\_\_  
 Install the projection into the slot.  
 \_\_\_\_\_

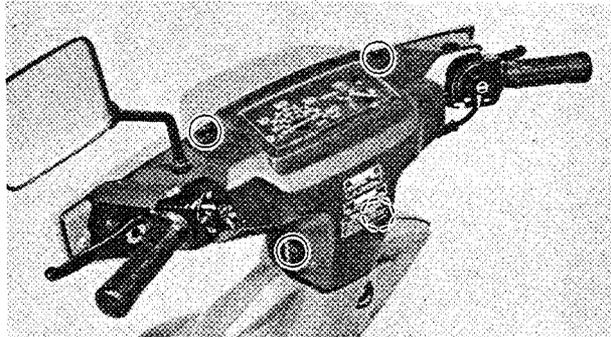


5. Install:
- Covers ① (Left and right)

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

Install the projection into the slot.

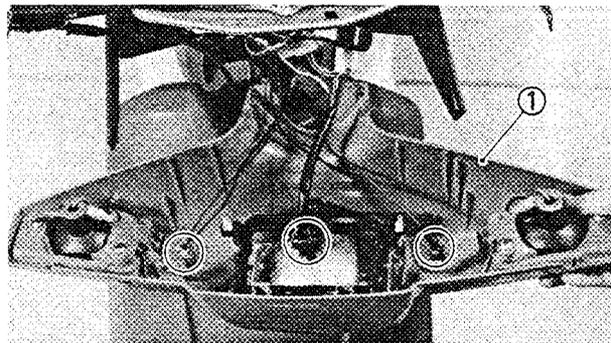
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## HANDLEBAR COVERS

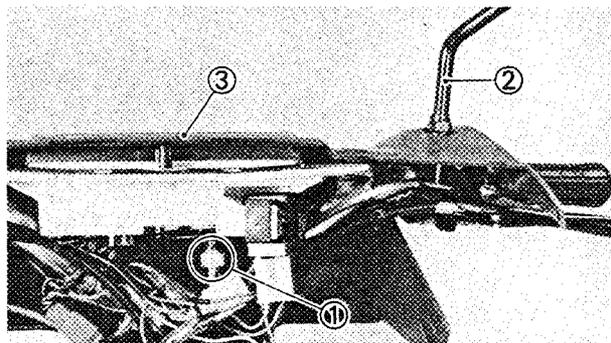
### Removal

1. Remove:
- Screws (Handlebar cover — Front)



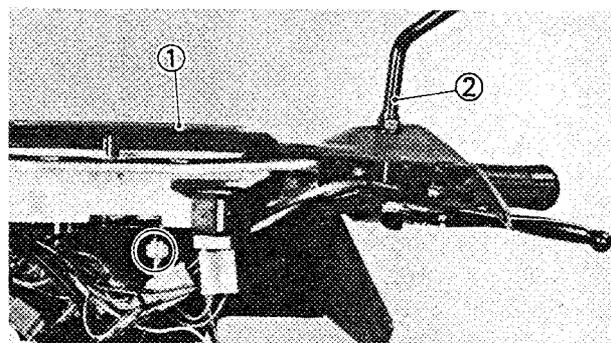
2. Disconnect:
- Headlight lead and flasher light leads

3. Remove:
- Handlebar cover ① (Front)



4. Disconnect:
- Leads
  - Speedometer cable ①

5. Remove:
- Rear view mirror ②
  - Handlebar cover ③ (Rear)



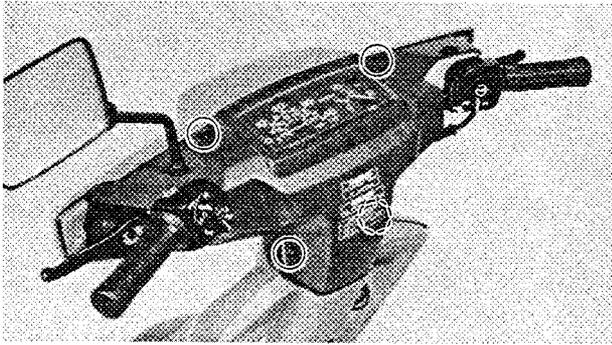
### Installation

1. Install:
- Handlebar cover ① (Rear)
  - Rear view mirror ②

2. Connect:
- Leads
  - Speedometer cable

**WARNING:** \_\_\_\_\_

Proper cable and lead routing is essential to insure safe scooter operation. Refer to "CABLE ROUTING" section.



3. Connect:
  - Headlight lead
  - Flasher light leads
4. Install:
  - Handlebar cover (Front)

## ENGINE

### ENGINE OIL LEVEL INSPECTION

1. Place the scooter on the level place.

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

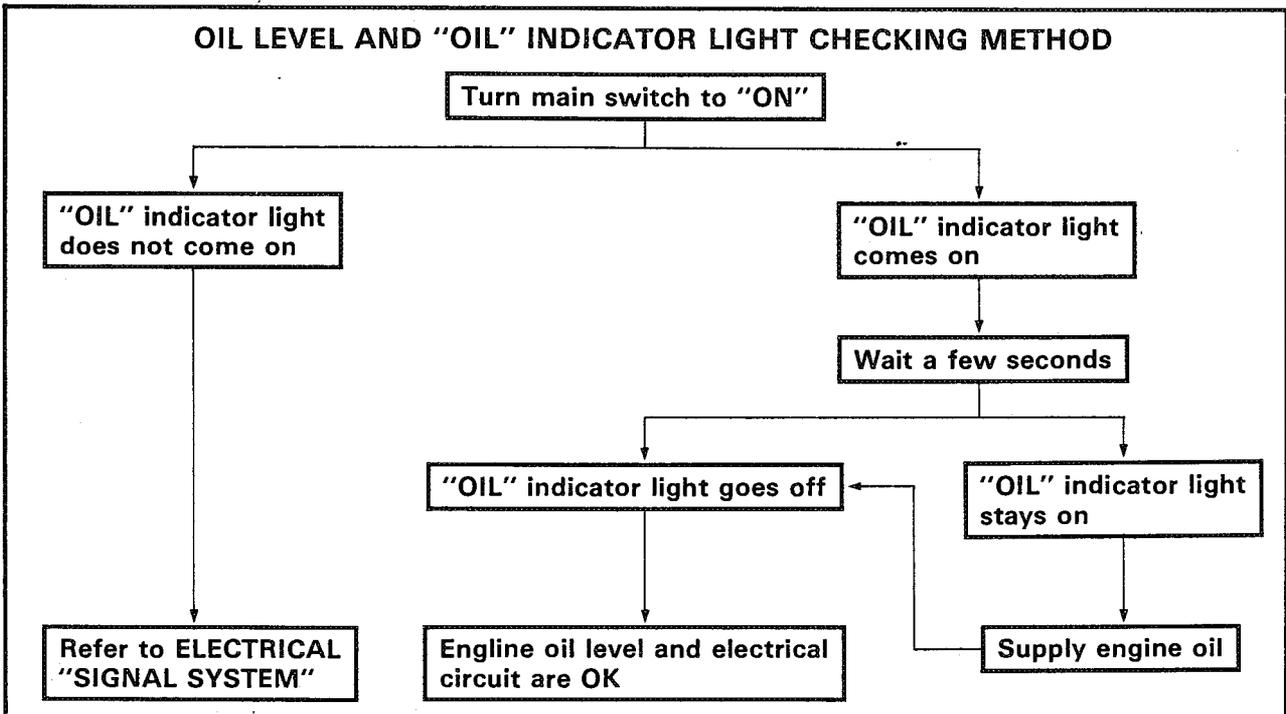
Be sure the scooter is positioned straight up and on both wheels when inspecting the oil level.

2. Check:
  - Oil level

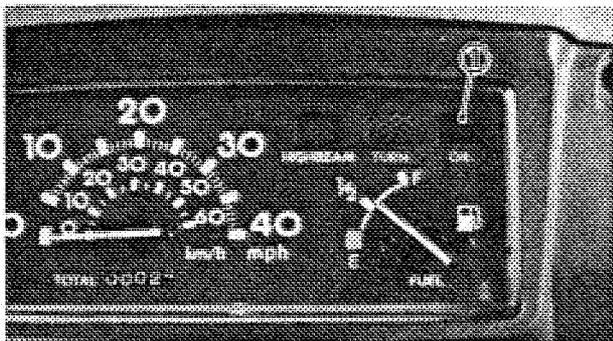
Oil level low → Add sufficient oil.



**Recommended Oil:**  
 Yamalube 2 or Air Cooled 2  
 Stroke Engine Oil  
**Oil Tank Capacity:**  
 0.8 L (0.70 Imp qt, 0.84 US qt)



## ENGINE OIL LEVEL INSPECTION



### NOTE: \_\_\_\_\_

If the main switch is turned off after the "OIL" light goes off and then immediately again the main switch is turned on, the "OIL" light may not come on. This is not because of failure.

① "OIL" indicator light

### CAUTION: \_\_\_\_\_

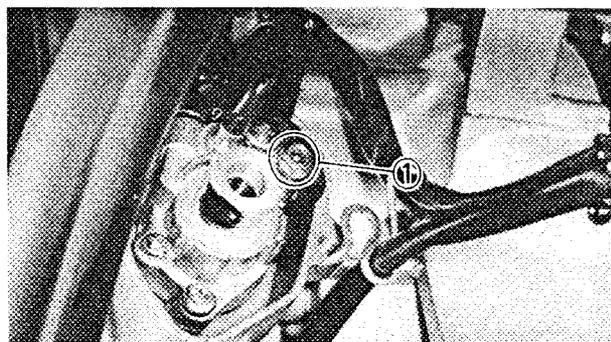
Always use the same type of engine oil; mixing oils may result in a harmful chemical reaction and lead to poor performance.

## AUTOLUBE PUMP AIR BLEEDING

### CAUTION: \_\_\_\_\_

The oil pump and delivery line must be bled on the following occasions:

- Any portion of the oil system has been disconnected.
- The scooter has been turned on its side.
- Whenever the oil tank has been run empty.
- During predelivery.



### 1. Remove:

- Tail cover

Refer to "TAIL COVERS AND MOLES" section.

- Pump cover ①

### 2. Fill:

- Oil tank



### Recommended Oil:

Yamalube "2" or Air-cooled 2 Stroke Engine Oil

- ### 3. Place a rag or oil pan under the oil pump to catch oil.

### 4. Remove:

- Bleed screw ①

### 5. Inspect:

- Gasket (Bleed screw)  
Damage → Replace.

6. Keep the oil running out until air bubbles disappear from the oil hose and bleed hole.

7. Install:

- Gasket (Bleed screw)
- Bleed screw



8. Disconnect:

- Oil delivery hose ①  
From the carburetor ②.

9. Feed the engine oil into the oil delivery hose using a oil can from complete air bleeding. Then, connect the oil delivery hose to the carburetor.

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

Thoroughly clean the engine exterior of oil.

---

10. Install:

- Tail cover  
Refer to "TAIL COVERS AND MOLES" section.

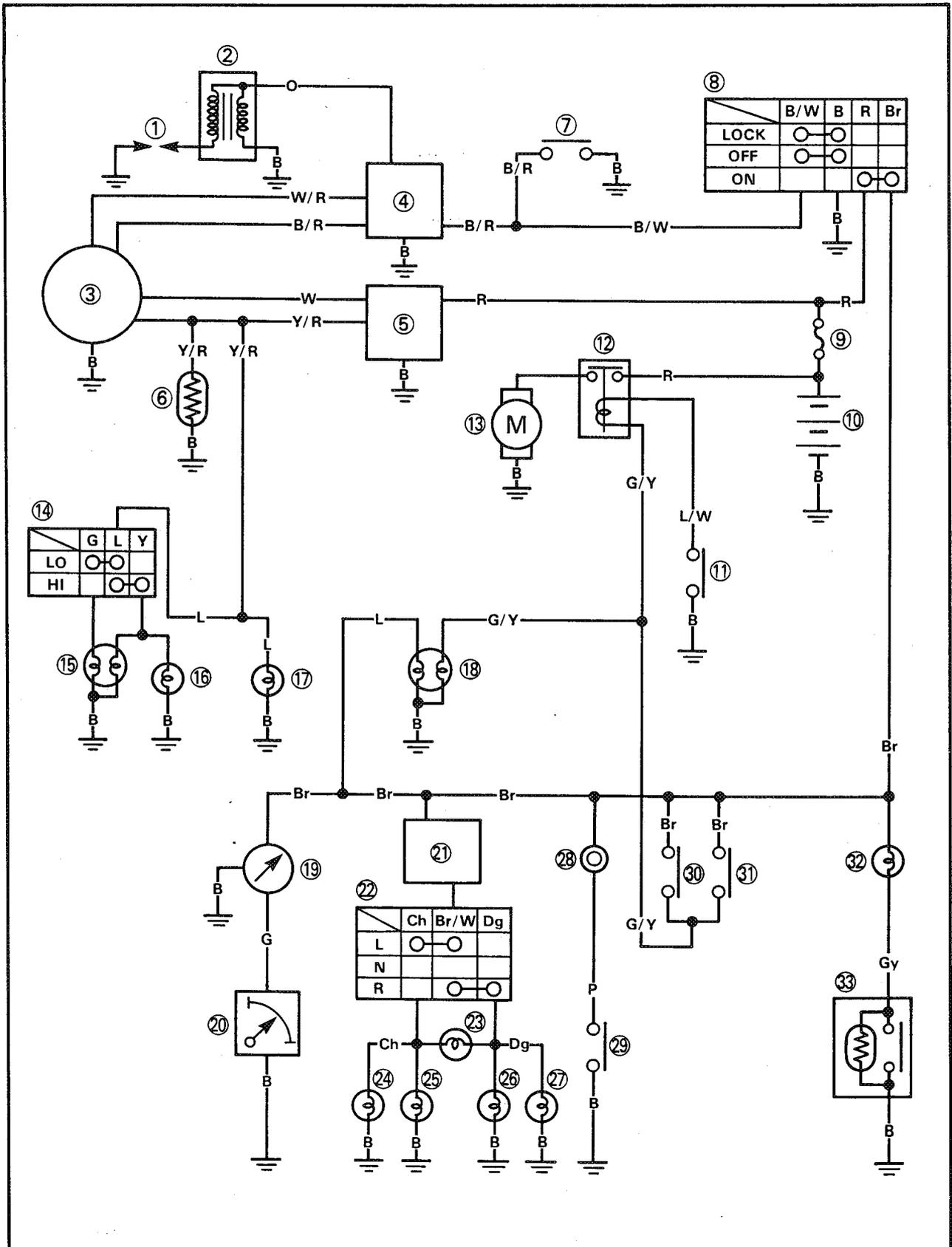
# CG50U CIRCUIT DIAGRAM

ELEC



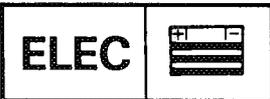
## ELECTRICAL

### CG50U CIRCUIT DIAGRAM





# CG50U CIRCUIT DIAGRAM



- |                               |                               |
|-------------------------------|-------------------------------|
| ① Spark plug                  | ⑱ Tail/Brake light            |
| ② Ignition coil               | ⑲ Fuel meter                  |
| ③ CDI magneto                 | ⑳ Fuel sender                 |
| ④ CDI unit                    | ㉑ Flasher relay               |
| ⑤ Rectifier/Regulator         | ㉒ "TURN" switch               |
| ⑥ Auto choke unit             | ㉓ "TURN" indicator light      |
| ⑦ "ENGINE STOP" switch        | ㉔ Left flasher light (Front)  |
| ⑧ Main switch                 | ㉕ Left flasher light (Rear)   |
| ⑨ Fuse                        | ㉖ Right flasher light (Front) |
| ⑩ Battery                     | ㉗ Right flasher light (Rear)  |
| ⑪ "START" switch              | ㉘ Horn                        |
| ⑫ Starter relay               | ㉙ "HORN" switch               |
| ⑬ Starter motor               | ⑳ Front brake switch          |
| ⑭ "LIGHTS" (Dimmer) switch    | ㉑ Rear brake switch           |
| ⑮ Headlight                   | ㉒ "OIL" indicator light       |
| ⑯ "HIGH BEAM" indicator light | ㉓ Oil level gauge             |
| ⑰ Meter light                 |                               |

## COLOR CODE

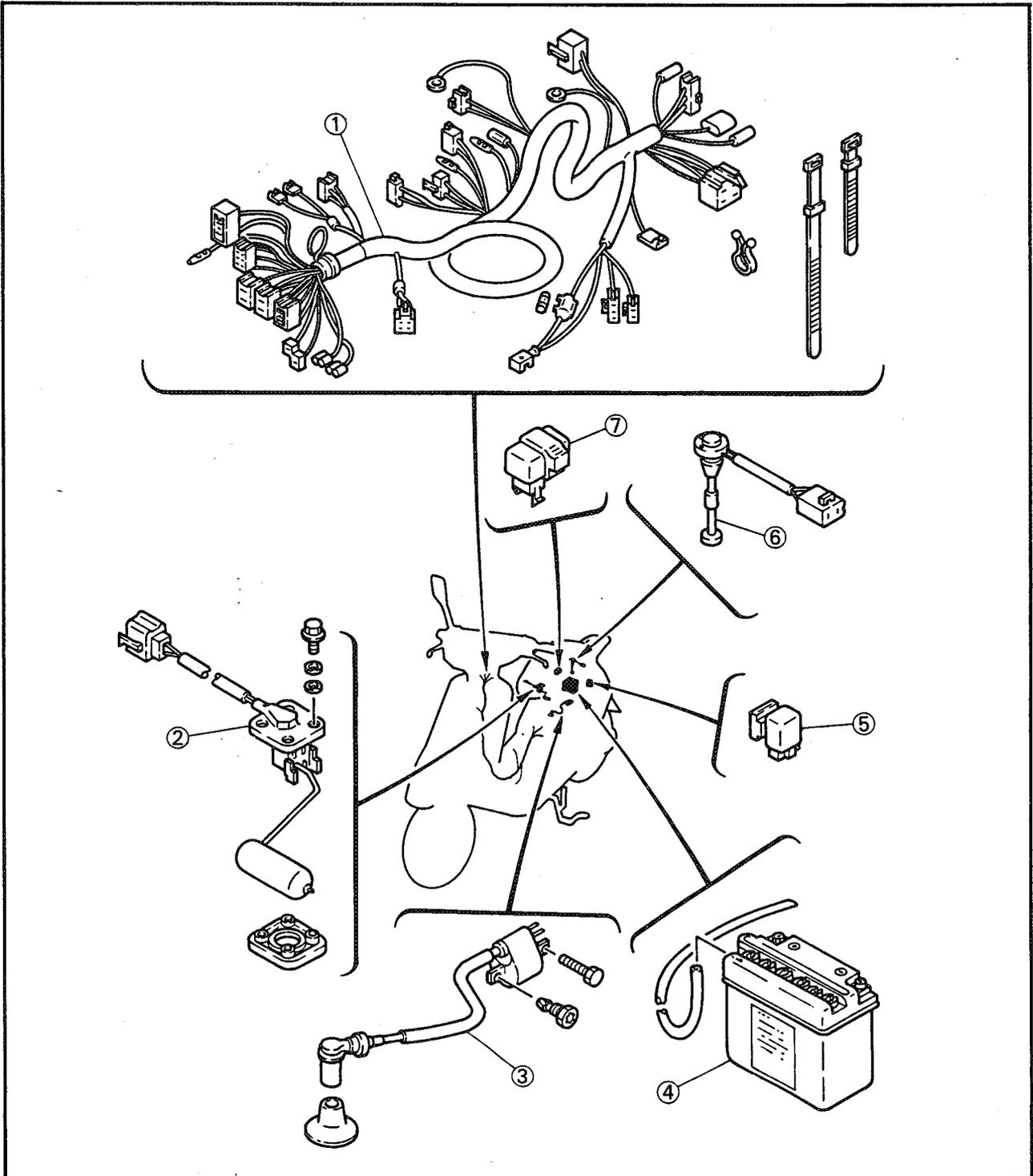
R	Red	P	Pink
B	Black	L	Blue
W	White	Y/R	Yellow/Red
Y	Yellow	L/W	Blue/White
Br	Brown	G/Y	Green/Yellow
Gy	Gray	B/W	Black/White
O	Orange	B/R	Black/Red
Ch	Chocolate	W/R	White/Red
Dg	Dark green	Br/W	Brown/White
G	Green		



**ELECTRICAL COMPONENTS**

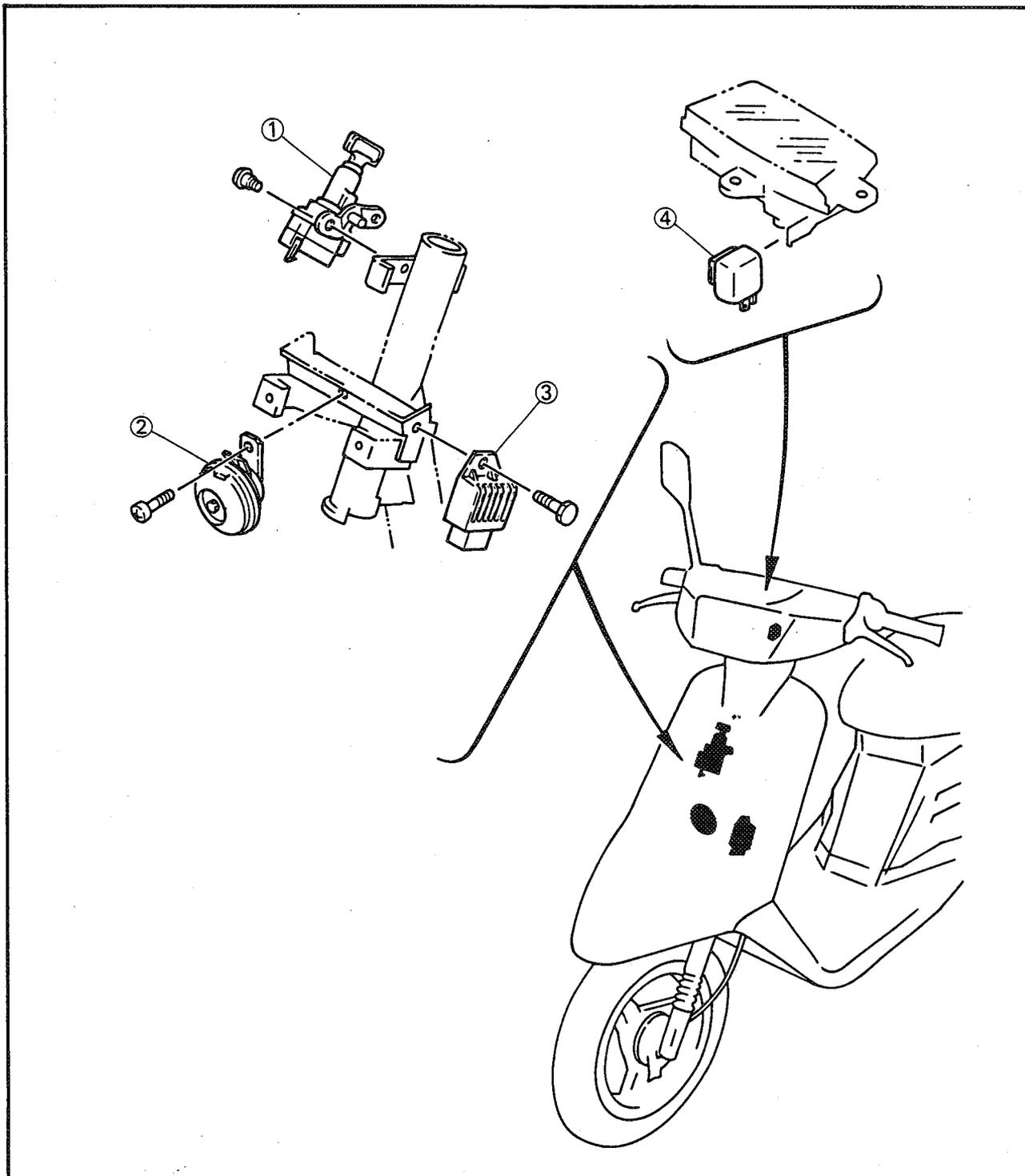
- ① Wireharness
- ② Fuel sender
- ③ Ignition coil
- ④ Battery
- ⑤ Starter relay
- ⑥ Oil level gauge
- ⑦ CDI unit

A	<b>BATTERY</b> TYPE: YB4L-B SPECIFIC GRAVITY: 1.280
B	<b>IGNITION COIL RESISTANCE</b> PRIMARY: 0.56~0.84Ω at 20°C (68°F) SECONDARY: 5.68~8.52kΩ at 20°C (68°F)





- ① Main switch
- ② Horn
- ③ Rectifier/Regulator
- ④ Flasher relay

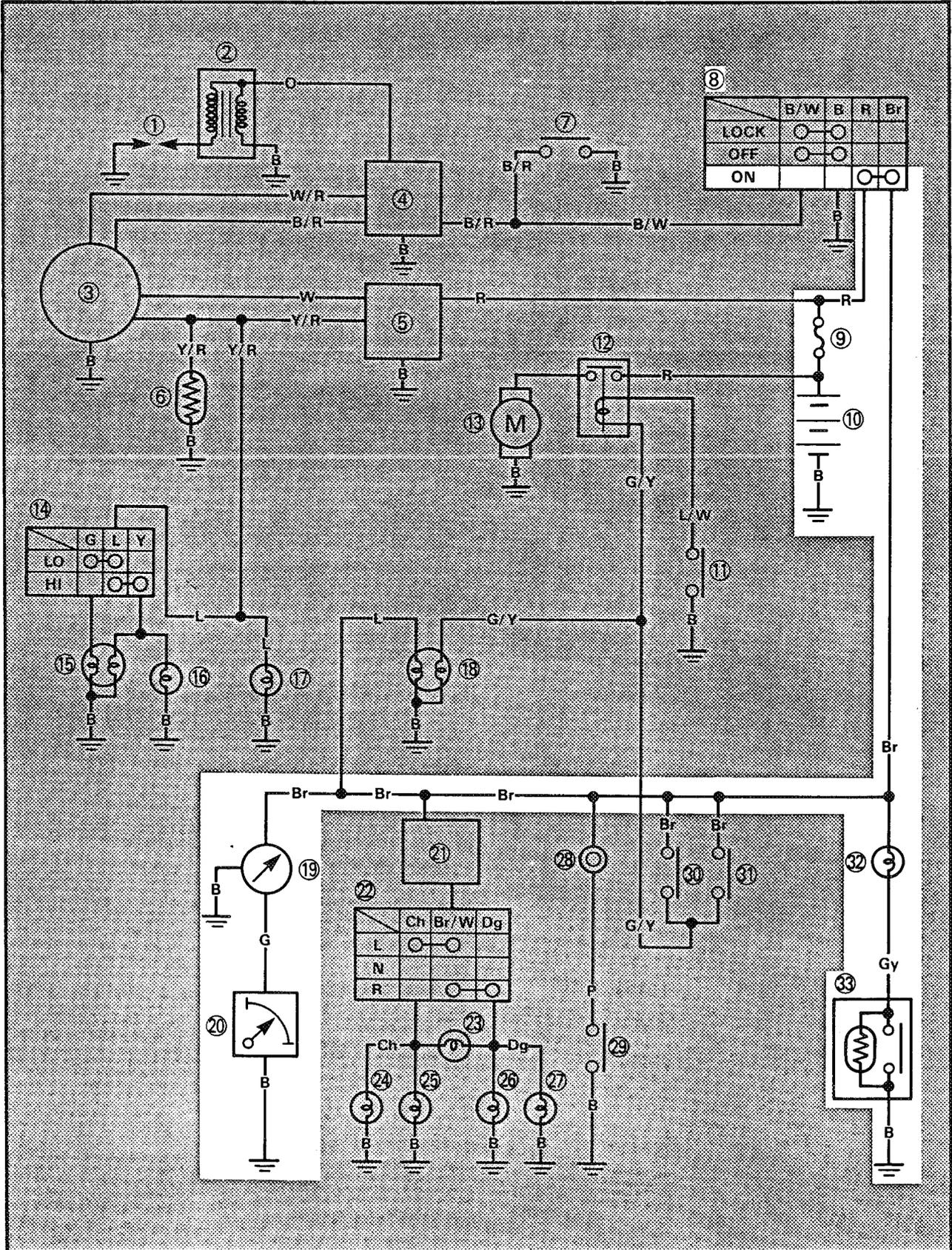




SIGNAL SYSTEM

CIRCUIT DIAGRAM

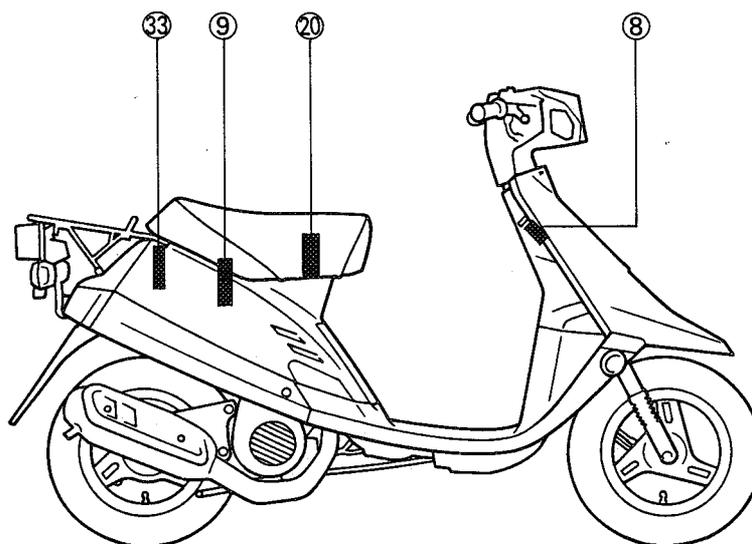
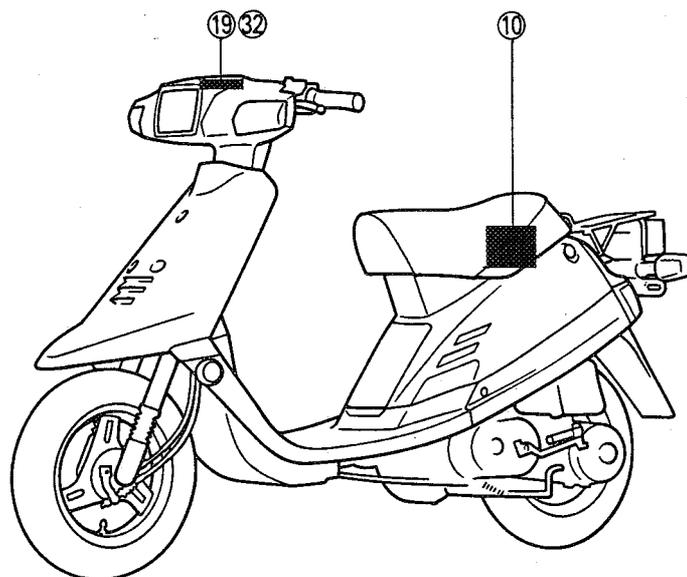
Below circuit diagram shows signal system.



**NOTE:**

- For color codes, see page 12.
- Unlike the previous CE50T, this model has a fuel meter and fuel sender added and the oil level gauge changed. This signal system explains the checking of only such addition and change.

- ⑧ Main switch
- ⑨ Fuse
- ⑩ Battery
- ⑰ Fuel meter
- ⑱ Fuel sender
- ⑳ "OIL" indicator light
- ㉓ Oil level gauge

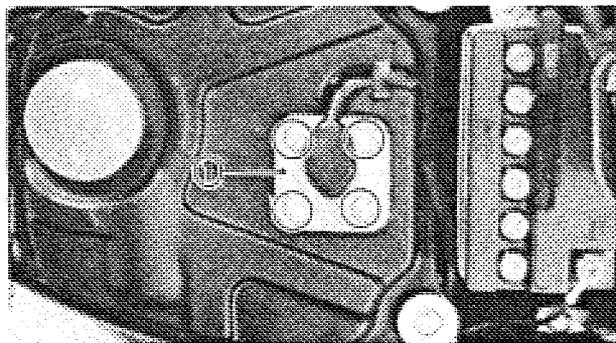
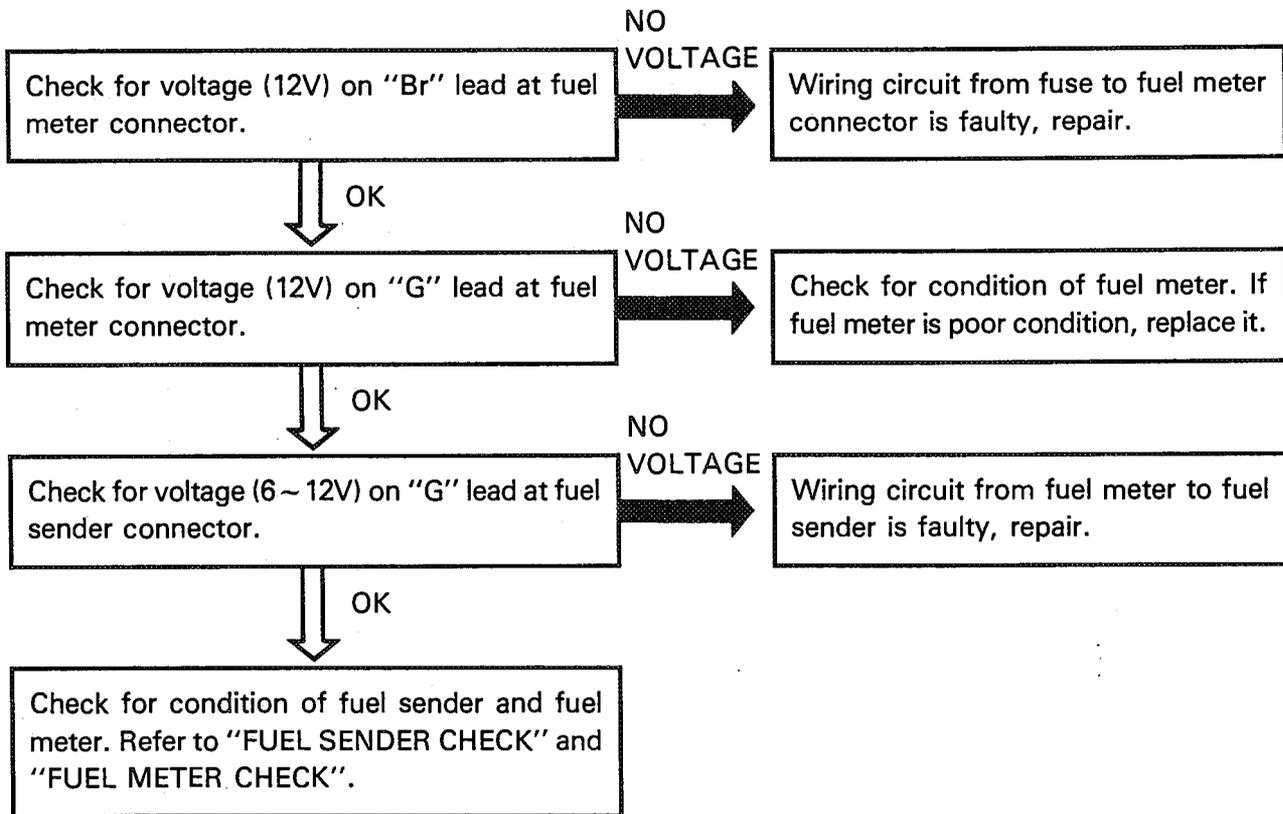


**TROUBLESHOOTING**

**NOTE:**

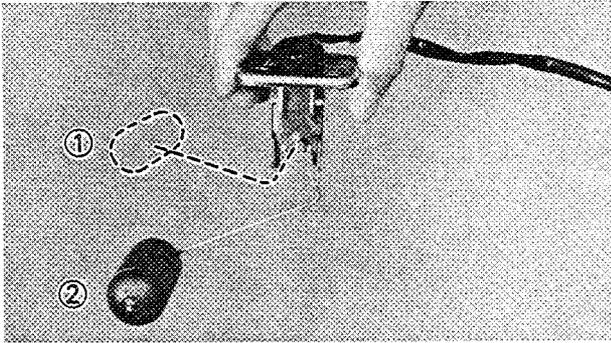
The battery provides power for operation of the fuel meter and "OIL" indicator light. If none of the above operates, always check the battery voltage before proceeding further. Low battery voltage indicates either a faulty battery, low battery electrolyte, or defective charging system. Also, check the fuse condition.

**1. Fuel meter does not work**



**Fuel Sender Check**

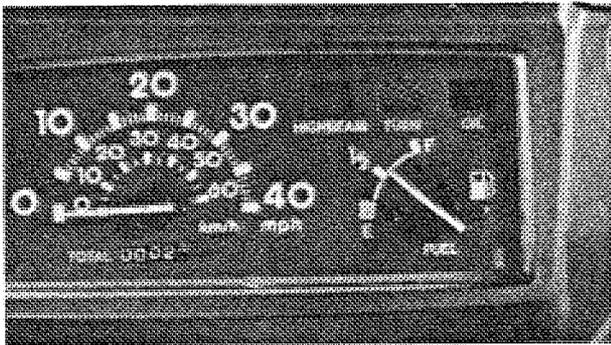
1. Remove:
  - Fuel sender ①



2. Connect:
  - Pocket Tester (YU-03112)  
Set the tester selector to " $\Omega \times 10$ " position.
3. Check:
  - Fuel sender conduct  
Refer to following table.  
Not per result  $\rightarrow$  Replace.

Float position	Fuel sender resistance
Up ①	4 ~ 10 $\Omega$
Down ②	90 ~ 100 $\Omega$

NOTE: \_\_\_\_\_  
Check from top to bottom.

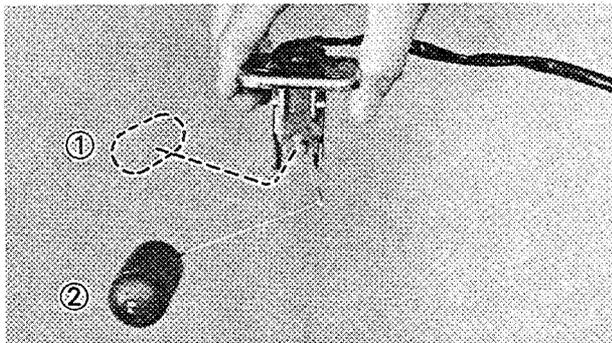


**Fuel Meter Check**

1. Connect:
  - Fuel sender lead
2. Turn the main switch to "ON".
3. Check:
  - Fuel meter  
Refer to following table.  
Not per result  $\rightarrow$  Replace.

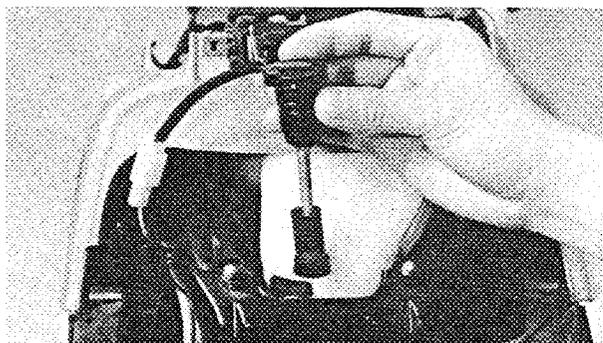
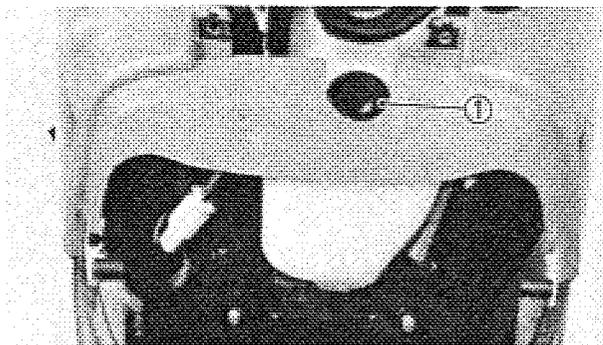
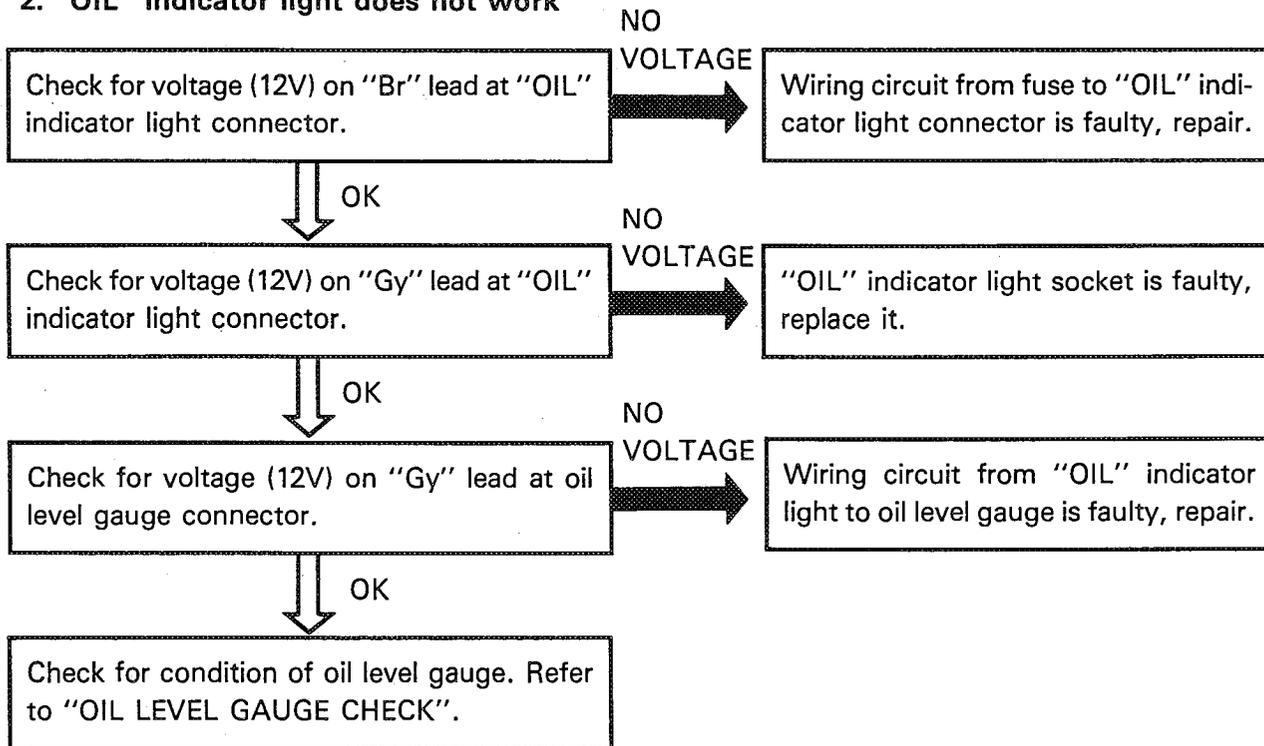
Float position	Fuel meter position
Up ①	"F"
Down ②	"E"

NOTE: \_\_\_\_\_  
Before reading the meter, stay put the float for more than three minutes respectively at ① and ②.





2. "OIL" indicator light does not work



Oil Level Gauge Check

1. Remove:
  - Oil level gauge ①

**NOTE:** \_\_\_\_\_  
 Do not disconnect the oil level gauge lead.

2. Turn the main switch to "ON".
3. Check
  - Oil level gauge
  - Refer to following table.
  - Not per result → Replace.

Oil level gauge position	"OIL" indicator light
Upright position	<ul style="list-style-type: none"> <li>• Light comes on</li> <li>• Wait a few second</li> <li>• Light goes out</li> </ul>
Up-side down position	<ul style="list-style-type: none"> <li>• Light comes on</li> <li>• Wait a few second</li> <li>• Light stays on</li> </ul>



## APPENDICES

## SPECIFICATIONS

## GENERAL SPECIFICATIONS

Model	CG50U
Model Code Number	2YT
Vehicle Identification Number	2YTN0*JA000101
Engine Starting Number	2YT-000101
Dimensions:	
Overall Length	1,610 mm (63.4 in)
Overall Width	625 mm (24.6 in)
Overall Height	985 mm (38.8 in)
Seat Height	700 mm (27.5 in)
Wheelbase	1,115 mm (43.9 in)
Minimum Ground Clearance	95 mm (3.7 in)
Basic Weight:	
With Oil and Full Fuel Tank	58 kg (128 lb)
Minimum Turning Radius	1,600 mm (63 in)
Engine:	
Engine Type	Air cooled 2-stroke, gasoline torque induction
Cylinder Arrangement	Single cylinder, Forward inclined
Displacement	49 cm <sup>3</sup>
Bore × Stroke	40.0 × 39.2 mm (1.575 × 1.543 in)
Compression Ratio	6.7 : 1
Starting System	Electric and kick starter
Lubrication System	Separate lubrication (Yamaha Autolube)
Oil Type or Grade:	
Engine Oil	Yamalube 2 or Air cooled 2-stroke engine oil
Transmission Oil	Yamalube 4 or SAE 10W30 type SE motor oil
Oil Capacity:	
Oil Tank (Engine Oil)	0.8 L (0.7 Imp qt, 0.84 US qt)
Transmission Oil:	
Periodic Oil Change	0.10 L (0.09 Imp qt, 0.11 US qt)
Total Amount	0.11 L (0.10 Imp qt, 0.12 US qt)
Air Filter	Wet type element
Fuel:	
Type	Regular gasoline
Tank Capacity	3.5 L (0.77 Imp gal, 0.92 US gal)

# SPECIFICATIONS

**APPX**



Model	CG50U
Carburetor: Type/Manufacturer	Y12P/TEIKEI KIKAKI
Spark Plug: Type/Manufacturer Gap	BPR7HS/NGK, W22FPR-U/N.D 0.6~0.7 mm (0.024~0.028 in)
Clutch Type	Dry, Centrifugal automatic
Transmission: Primary Reduction System Primary Reduction Ratio Secondary Reduction System Secondary Reduction Ratio Transmission Type Operation	Herical gear 52/14 (3.714) Spur gear 38/10 (3,800) V-belt Automatic
Chassis: Frame Type Caster Angle Trail	Steel tube underbone 26.5° 72 mm (2.83 in)
Tire: Size (F) Size (R)	3.00-10-4PR 3.00-10-4PR
Tire Pressure (Cold tire): Front Rear	125 kPa (1.25 kg/cm <sup>2</sup> , 18 psi) 200 kPa (2.00 kg/cm <sup>2</sup> , 28 psi)
Brake: Front Brake Type Operation Rear Brake Type Operation	Drum brake Right hand operation Drum brake Left hand operation
Suspension: Front Suspension Rear Suspension	Telescopic fork Unit swing
Shock Absorber: Front Rear	Coil spring Coil spring/Oil damper
Wheel Travel: Front Wheel Travel Rear Wheel Travel	48 mm (1.89 in) 58 mm (2.28 in)

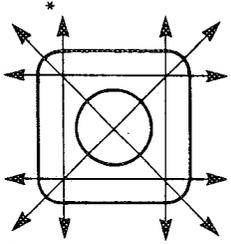
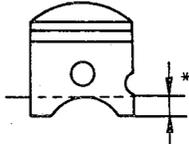
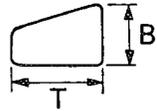
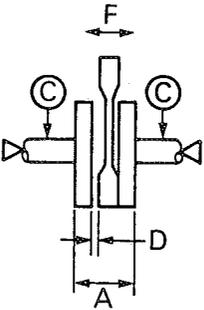


Model	CG50U
Electrical: Ignition System Generator System Battery Type or Model Battery Capacity	CDI Flywheel magneto YB4L-B 12V 4AH
Headlight Type:	Semi-sealed beam
Bulb Wattedge × Quantity: Headlight Tail/Brake light Flasher light Meter light	12V 25W/25W × 1 12V 5W/21W × 1 12V 10W × 4 12W 3.4W × 1
Indicator Light Wattage × Quantity: "TURN" "HIGH BEAM" "OIL"	12V 1.7W × 1 12V 1.7W × 1 12V 3.4W × 1



MAINTENANCE SPECIFICATIONS

Engine

Model	CG50U
<p>Cylinder Head: Warp Limit</p> 	<p>0.03 mm (0.0012 in) *Lines indicate straightedge measurement</p>
<p>Cylinder: Bore Size &lt; Limit &gt; Taper Limit Out of Round Limit</p>	<p>39.993 ~ 40.012 mm (1.575 in) 40.1 mm (1.579 in) 0.05 mm (0.002 in) 0.01 mm (0.0004 in)</p>
<p>Piston: Piston Size Measuring Point*</p>  <p>Piston Clearance Oversize: 2nd</p>	<p>39.952 ~ 39.972 mm (1.573 ~ 1.574 in) 5 mm (0.2 in) 0.034 ~ 0.047 mm (0.0013 ~ 0.0018 in) 40.50 mm (1.594 in)</p>
<p>Piston Ring: Sectional Sketch (B x T)/Type Top Ring 2nd Ring End Gap (Installed): Top Ring 2nd Ring Side Clearance (Installed): Top Ring 2nd Ring</p> 	<p>1.5 x 1.8 mm (0.059 x 0.071 in)/Keystone 1.5 x 1.8 mm (0.059 x 0.071 in)/Keystone 0.15 ~ 0.35 mm (0.006 ~ 0.014 in) 0.15 ~ 0.35 mm (0.006 ~ 0.014 in) 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in) 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)</p>
<p>Crankshaft:</p>  <p>Crank Width "A" Run Out Limit "C" Connecting Rod Big End Side Clearance "D" Small End Free Play "F"</p>	<p>37.90 ~ 37.95 mm (1.492 ~ 1.494 in) 0.03 mm (0.0012 in) 0.2 ~ 0.5 mm (0.008 ~ 0.020 in) 0.4 ~ 0.8 mm (0.015 ~ 0.031 in)</p>



Model	CG50U
Automatic Centrifugal Clutch:	
Shoe Thickness	4.0 mm (0.16 in)
<Wear Limit>	<2.5 mm (0.10 in)>
Clutch Spring Free Length	109.6 mm (4.31 in)
<Limit>	<94.0 mm (3.70 in)>
Clutch Housing Inside Diameter	105.0 mm (4.13 in)
<Wear Limit>	<105.4 mm (4.15 in)>
Clutch-In Revolution	3,150 ~ 3,650 r/min
Clutch-Stall Revolution	4,650 ~ 5,350 r/min
V-Belt:	
Width	15 mm (0.59 in)
<Wear Limit>	<13.5 mm (0.53 in)>
Transmission:	
Main Axle Runout Limit	0.08 mm (0.003 in)
Drive Axle Runout Limit	0.08 mm (0.003 in)
Kick Starter:	
Type	Ratchet type
Kick Clip Tension	150 ~ 250 g (5.3 ~ 8.8 oz)
Carburetor:	
I.D. Mark	2YR00
Main jet (M.J.)	#90
Jet Needle-clip Position (J.N.)	3P01-4/5
Main Air Jet (M.A.J.)	φ2.0
Cutaway (C.A.)	2.5
Pilot Jet (P.J.)	#42
Pilot Air Screw (A.S.)	1 and 3/4 turns out
Valve Seat Size (V.S.)	φ1.8
Starter Jet (G.S.)	#48
Float Height	15.0 ~ 17.0 mm (0.59 ~ 0.67 in)
Engine Idling speed	1,800 r/min
Reed Valve:	
Valve Stopper Height	4.0 ~ 4.4 mm (0.013 ~ 0.022 in)
Reed Valve Clearance	Less than 0.2 mm (0.008 in)
Lubrication System:	
Autolube Pump Stroke	0.34 ~ 0.55 mm (0.013 ~ 0.022 in)



Tightening Torque:						
Part to be tightened	Thread size	Q'ty	Tightening torque			Remarks
			Nm	m•kg	ft•lb	
Spark plug	M14×1.4	1	20	2.0	14	
Cylinder head	M 6×1.0	4	10	1.0	7.2	
Stud bolt	M 6×1.0	4	9	0.9	6.5	
Stator assembly	M 6×1.0	2	9	0.9	6.5	
C.D.I. magneto	M10×1.25	1	38	3.8	27	
Air shroud	M 6×1.0	2	9	0.9	6.5	
Fan cover	M 6×1.0	2	9	0.9	6.5	
Fan	M 6×1.0	3	7	0.7	5.1	
Autolube pump	M 5×0.8	2	4	0.4	2.9	
Reed valve (carburetor joint)	M 6×1.0	4	9	0.9	6.5	
Air cleaner Case	M 6×1.0	2	9	0.9	6.5	
Exhaust pipe	M 6×1.0	2	9	0.9	6.5	
Muffler	M 8×1.25	2	33	3.3	24	
Muffler protector	M 6×1.0	2	9	0.9	6.5	
Crankcase	M 6×1.0	6	9	0.9	6.5	
Transmission case cover	M 6×1.0	5	8	0.8	5.8	
Crankcase cover	M 6×1.0	10	9	0.9	6.5	
Transmission oil drain bolt	M 8×1.25	1	18	1.8	13	
Autolube pump cover	M 6×1.0	2	9	0.9	6.5	
Starter motor	M 6×1.0	2	13	1.3	9.4	
Kick crank	M 6×1.0	1	10	1.0	7.2	
Clutch	M28×1.0	1	50	5.0	36	
Clutch housing	M10×1.0	1	40	4.0	29	
Primary sheave	M10×1.25	1	33	3.3	24	
Idle gear plate	M 6×1.0	2	9	0.9	6.5	
Oil seal stopper plate	M 6×1.0	1	9	0.9	6.5	



# SPECIFICATIONS



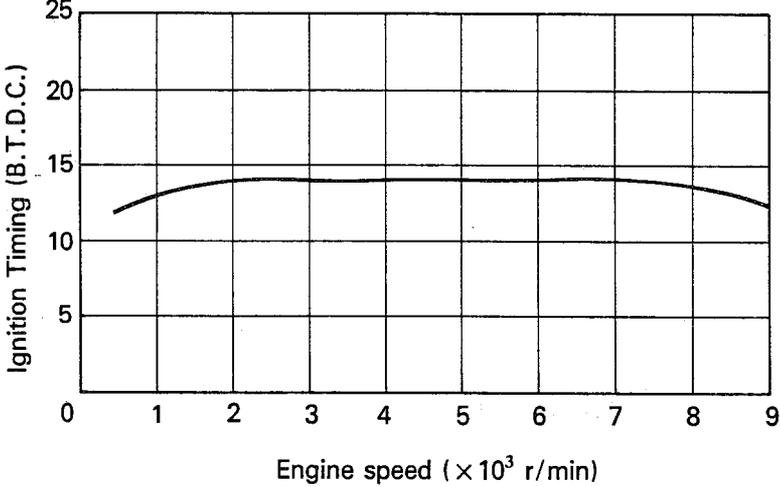
## Chassis

Model	CG50U
<b>Steering System:</b> Steering Bearing Type No./Size of Steel Balls Upper Lower	Ball bearing  5/32 in 26 pcs. 5/32 in 26 pcs.
<b>Front Suspension:</b> Front Fork Travel Fork spring Free Length < Limit > Spring Rate Stroke Optional Spring	48.6 mm (1.91 in) 91.5 mm (3.60 in) < 87 mm (3.42 in) > 11.28 N/mm (1.128 kg/mm, 62.1 lb/in) Zero ~ 48.6 mm (Zero ~ 1.91 in) No.
<b>Rear Suspension:</b> Shock absorber Travel Spring Free Length Spring Fitting Length Spring Rate: (K1) (K2) (K3) Stroke: (K1) (K2) (K3) Optional Spring	45 mm (1.77 in) 191.5 mm (7.54 in) 181.5 mm (7.15 in) 38.0 N/mm (3.8 kg/mm, 209.3 lb/in) 49.0 N/mm (4.9 kg/mm, 269.9 lb/in) 74.0 N/mm (7.4 kg/mm, 407.6 lb/in) Zero ~ 20 mm (Zero ~ 0.79 in) 20 ~ 35 mm (0.79 ~ 1.38 in) 35 ~ 45 mm (1.38 ~ 1.77 in) No.
<b>Wheel:</b> Front Wheel Type Rear Wheel Type Front Rim Size/Material Rear Rim Size/Material Rim Runout Limit: Vertical Lateral	Panel wheel Panel wheel 1.85 x 10 DC/Steel 1.85 x 10 DC/Steel  2.0 mm (0.08 in) 2.0 mm (0.08 in)
<b>Front Drum Brake:</b> Type Drum Inside Diameter < Wear Limit > Lining Thickness < Wear Limit >	Leading, Trailing 80.0 mm (3.15 in) < 80.5 mm (3.17 in) > 3.5 mm (0.14 in) < 2.0 mm (0.08 in) >
<b>Rear Drum Brake:</b> Type Drum Inside Diameter < Wear Limit > Lining Thickness < Wear Limit >	Leading, Trailing 95.0 mm (3.74 in) < 95.5 mm (3.76 in) > 3.0 mm (0.12 in) < 2.0 mm (0.08 in) >





Electrical

Model	CG50U
Voltage:	
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	14° at 5,000 r/min Electrical  
C.D.I.: Magneto Model/Manufacturer Pickup Coil Resistance (Color) Source Coil Resistance (Color) C.D.I. Unit-Model/Manufacturer	2JA/YAMAHA 400 ~ 600Ω at 20°C (68°F) (White/Red—Black) 640 ~ 960Ω at 20°C (68°F) (Black/Red—Black) 2JA/YAMAHA
Ignition Coil: Model/Manufacturer Primary Coil Resistance Secondary Coil Resistance	2JA/YAMAHA 0.56 ~ 0.84Ω at 20°C (68°F) 5.68 ~ 8.52kΩ at 20°C (68°F)
Charging System/Type:	Flywheel magneto
C.D.I. Magneto: Model/Manufacturer Charging Coil Resistance (Color) Charging Current Full Charged Battery (1.280) Half Charged Battery (1.180) Charging Voltage Lighting Coil Resistance (Color) Lighting Voltage	F2JA/YAMAHA 0.48 ~ 0.72Ω at 20°C (68°F) (White—Black)  0.5A or less at 3,000 r/min 1.0A or more at 3,000 r/min 13 ~ 14V at 4,000 r/min 0.4 ~ 0.6Ω at 20°C (68°F) (Yellow/Red—Black) 11.5 ~ 13.5V at 4,000 r/min
Voltage Regulator: Type Model/Manufacturer  No Load Regulated Voltage	Semi conductor short circuit type EHU-01TR05 or SU232Y/MATSUSHITA or STANLEY  13.5 ~ 14.5V

# SPECIFICATIONS

**APPX**

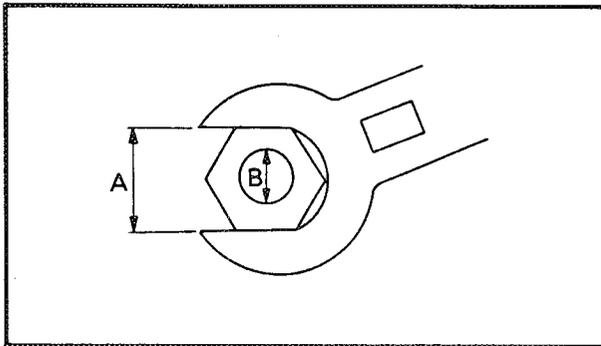


Model	CG50U	
<b>Rectifier:</b> Model/Manufacturer Capacity Withstand Voltage	EHU-01TR21/MATSUSHITA or SH592-12/ SHINDENGEN 5A 240V	
<b>Battery:</b> Capacity Specific Gravity	12V, 4AH 1.280	
<b>Starter Motor:</b> Model Manufacturer Out Put Armature Coil Resistance Brush Length <Wear Limit> Brush Spring Pressure Commutator Diameter <Wear Limit> Mica Undercut	DA5AG NIPPON DENSO 0.15 kW 0.08 ~ 0.10Ω at 20°C (68°F)	2EX YAMAHA 0.14 kW 0.07 ~ 0.09Ω at 20°C (68°F)
	5.5 mm (0.22 in) <2.5 mm (0.10 in)> 250 ~ 450 g (8.8 ~ 15.9 oz) 15.5 mm (0.61 in) <14.5 mm (0.57 in)> 0.9 ~ 1.2 mm (0.035 ~ 0.047 in)	3.9 mm (0.15 in) <0.9 mm (0.035 in)> 560 ~ 840 g (19.8 ~ 29.7 oz) 15.8 mm (0.62 in) <14.8 mm (0.58 in)> 1.15 mm (0.045 in)
<b>Starter Relay:</b> Model/Manufacturer Amperage Rating Coil Resistance	27V/OMRON 20A 54 ~ 66Ω at 20°C (68°F)	27V/MATSUSHITA 20A 72 ~ 88Ω at 20°C (68°F)
<b>Horn:</b> Type/Quantity Model/Manufacturer Maximum Amperage	Plain type/1 pc GF-12/NIKKO 1.5A	
<b>Flasher Relay:</b> Type Model/Manufacturer Self Cancelling Device Flasher Frequency Wattage	Condenser type FZ222SD/NIPPON DENSO No 60 ~ 120 cycle/min 10W × 2 + 3.4W	
<b>Oil Level Gauge:</b> Model/Manufacturer	2JA/TAIHEIYOU ASTI	
<b>Circuit Breaker:</b> Type Amperage for Individual Circuit × Quantity: Main	Fuse 7A × 1	

**GENERAL TORQUE SPECIFICATIONS**

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (Nut)	B (Bolt)	General torque specifications		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94



A: Distance cross flats  
B: Outside thread diameter

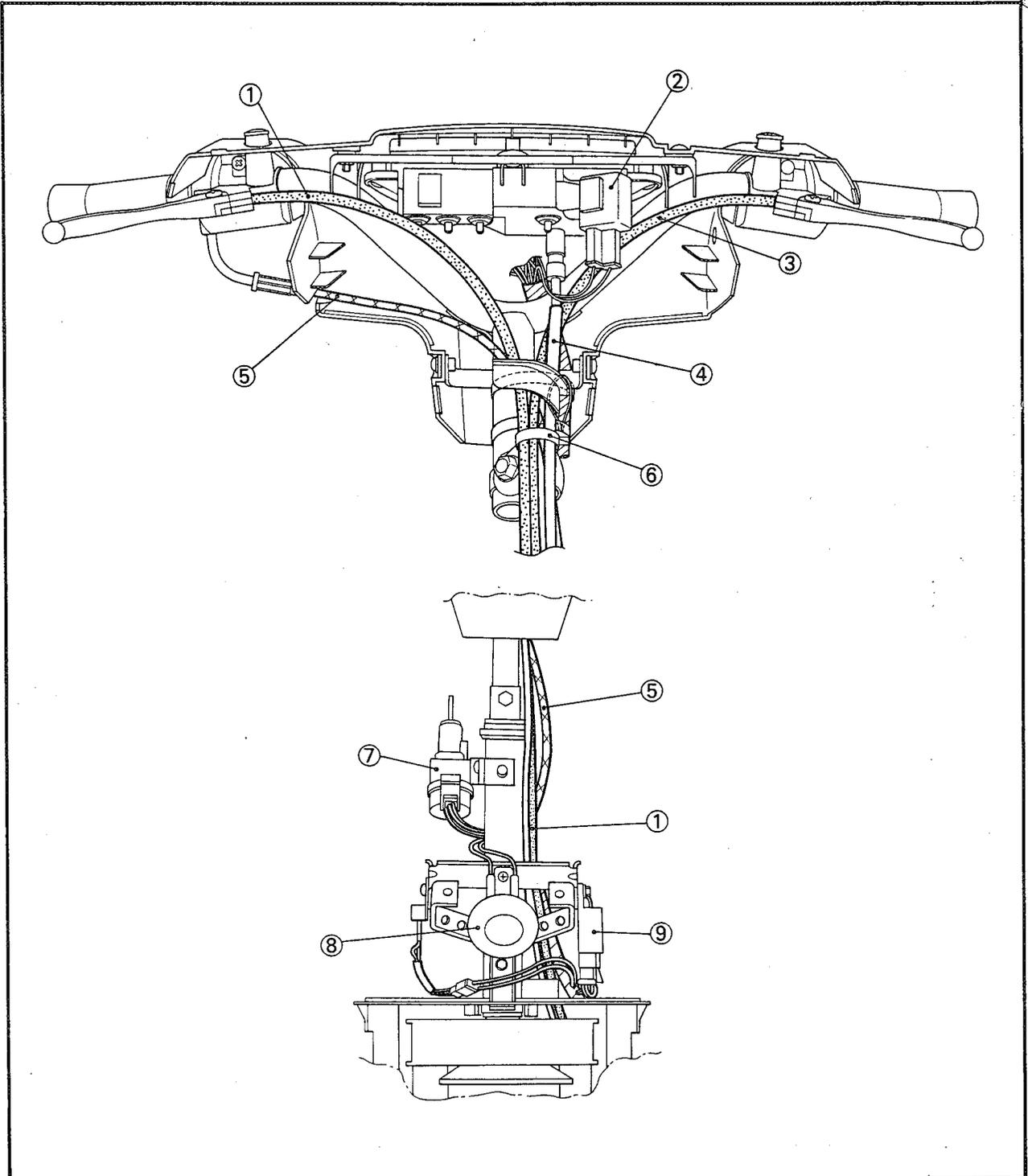
**DEFINITION OF UNITS**

Unit	Read	Definition	Measure
mm	millimeter	$10^{-3}$ meter	Length
cm	centimeter	$10^{-2}$ meter	Length
kg	kilogram	$10^3$ gram	Weight
N	Newton	$1 \text{ kg} \times \text{m}/\text{sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m·kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	$\text{N}/\text{m}^2$	Pressure
N/mm	Newton per millimeter	$\text{N}/\text{mm}$	Spring rate
L	Liter	—	Volume
$\text{cm}^3$	Cubic centimeter	—	or Capacity
r/min	Rotation per minute	—	Engine Speed



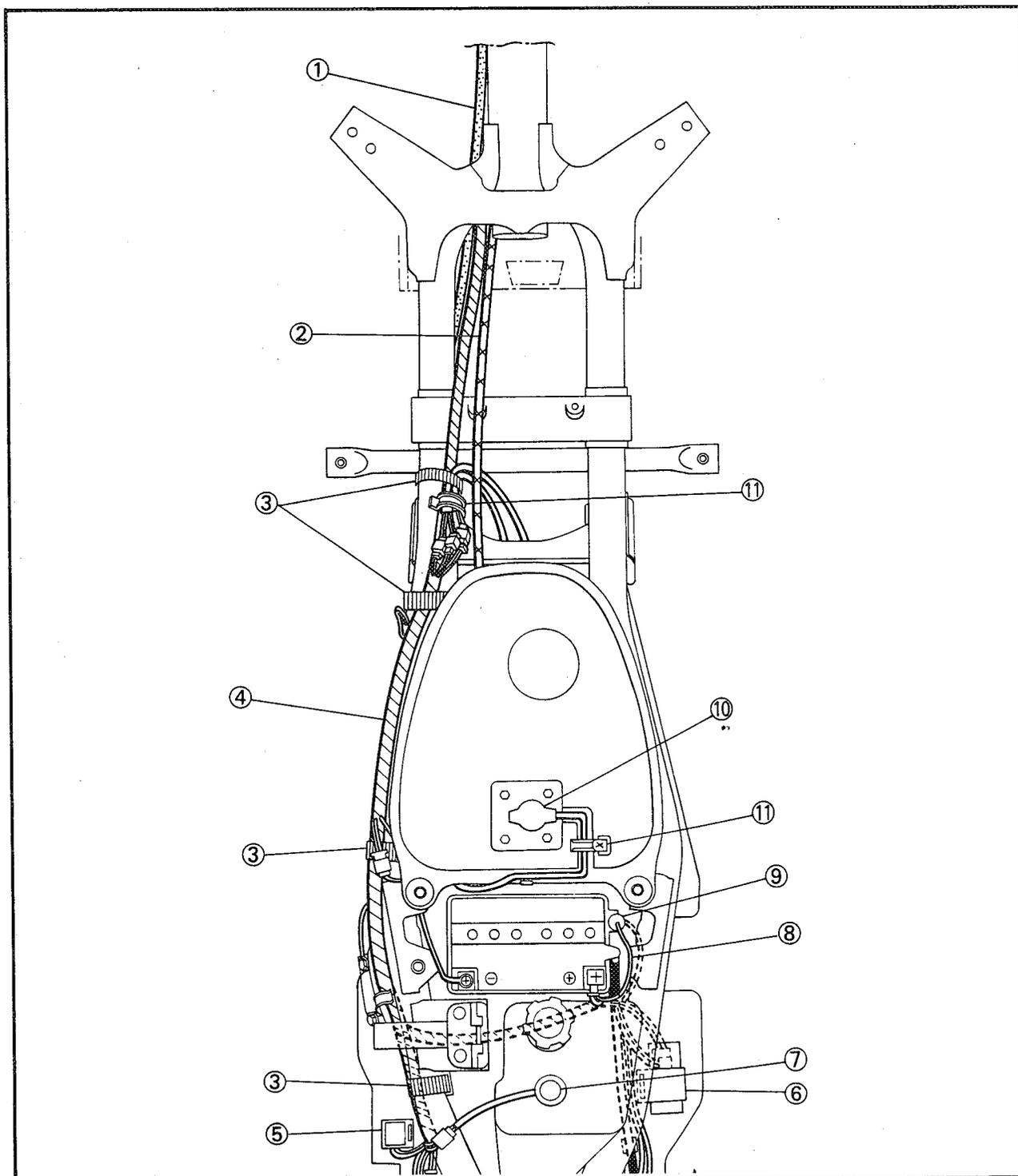
**CABLE ROUTING**

- ① Front brake cable
- ② Flasher relay
- ③ Rear brake cable
- ④ Speedometer cable
- ⑤ Throttle cable
- ⑥ Band
- ⑦ Main switch
- ⑧ Horn
- ⑨ Rectifier/Regulator





- ① Rear brake cable
- ② Throttle cable
- ③ Band
- ④ Wireharness
- ⑤ Starter relay
- ⑥ CDI unit
- ⑦ Oil level gauge
- ⑧ Battery positive lead
- ⑨ Fuse
- ⑩ Fuel sender
- ⑪ Clamp



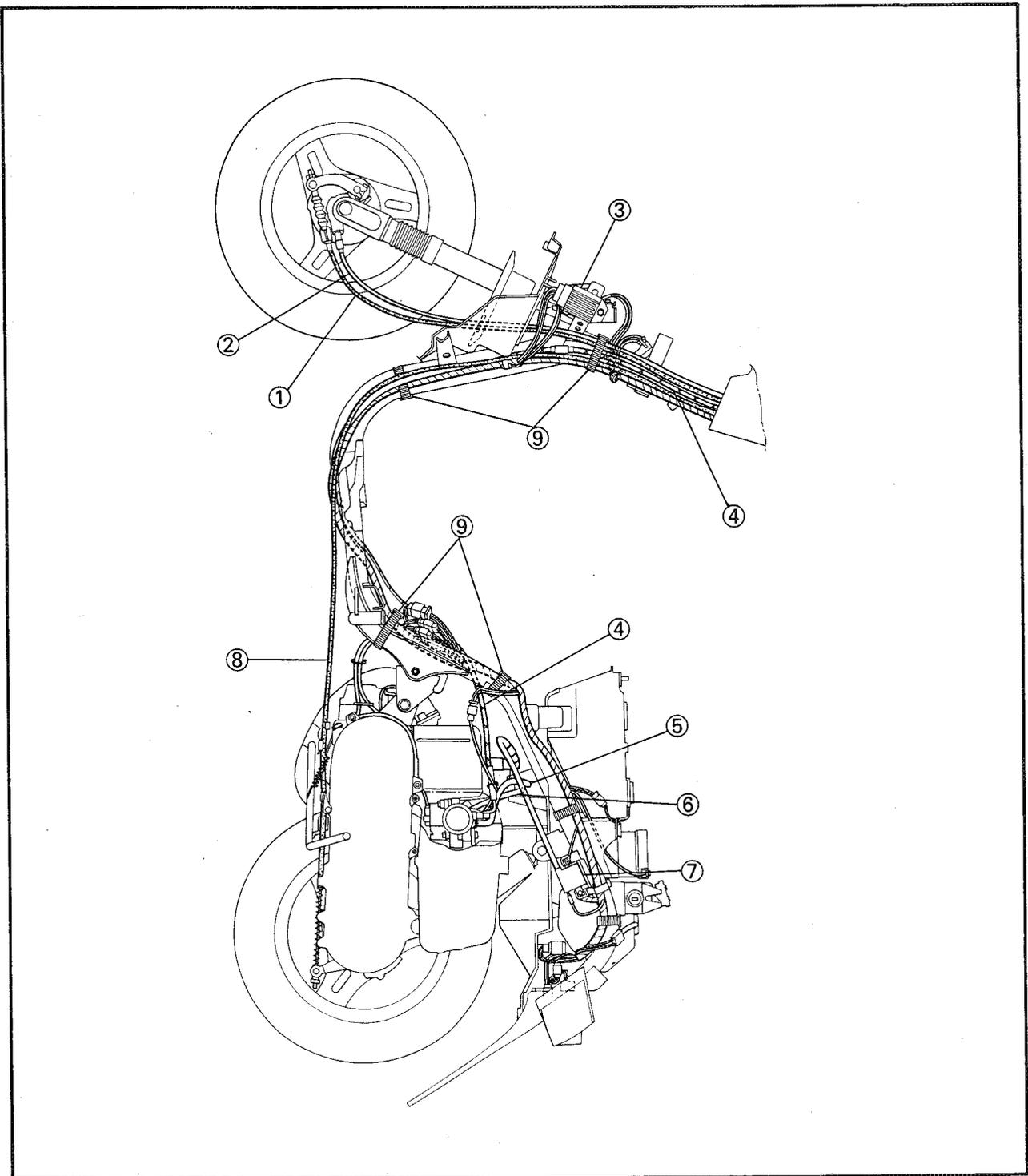
# CABLE ROUTING.

APPX



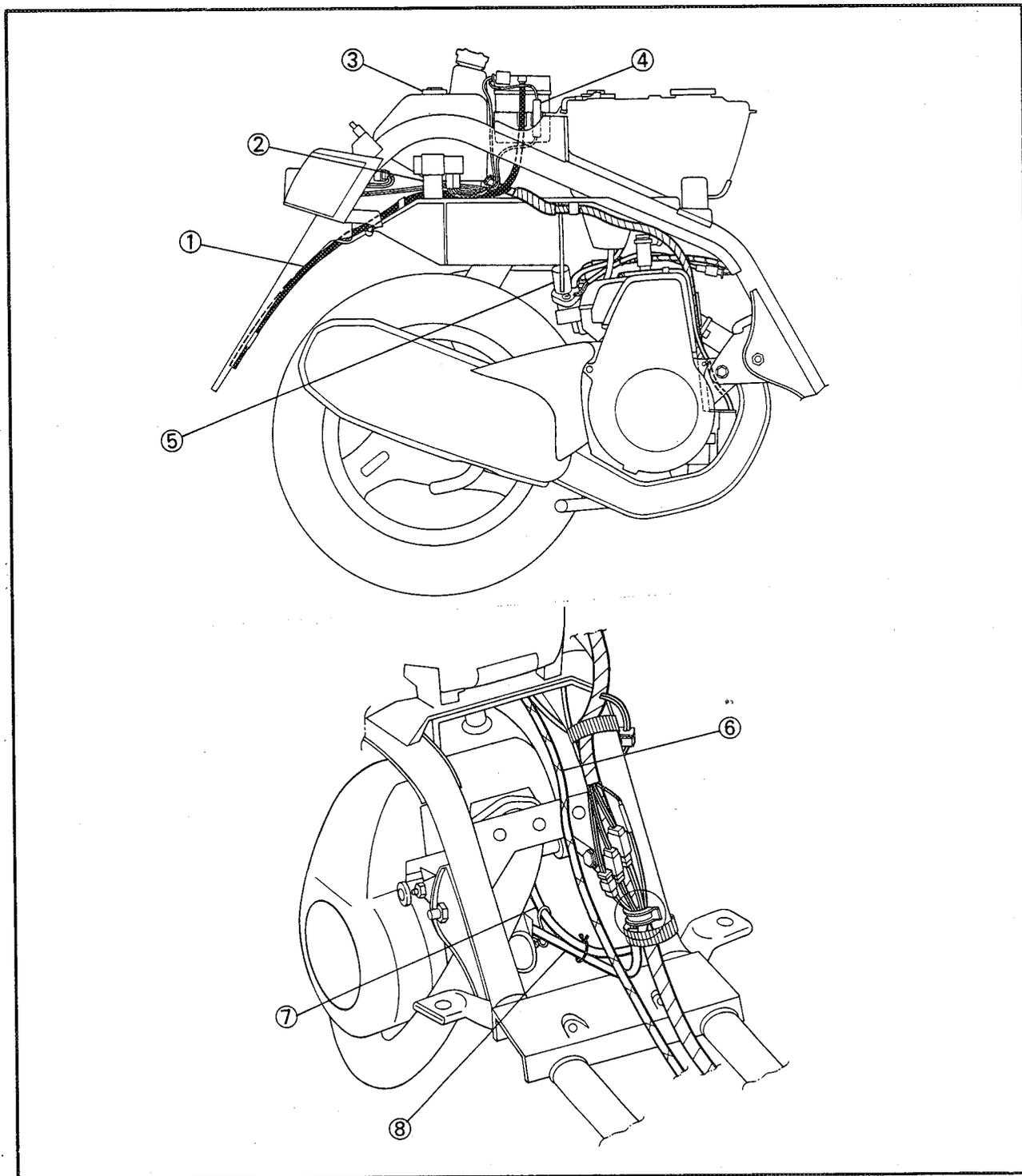
M

- ① Front brake cable
- ② Speedometer cable
- ③ Rectifier/Regulator
- ④ Throttle cable
- ⑤ Fuel hose
- ⑥ Vacuum hose
- ⑦ Ignition coil
- ⑧ Rear brake cable
- ⑨ Band



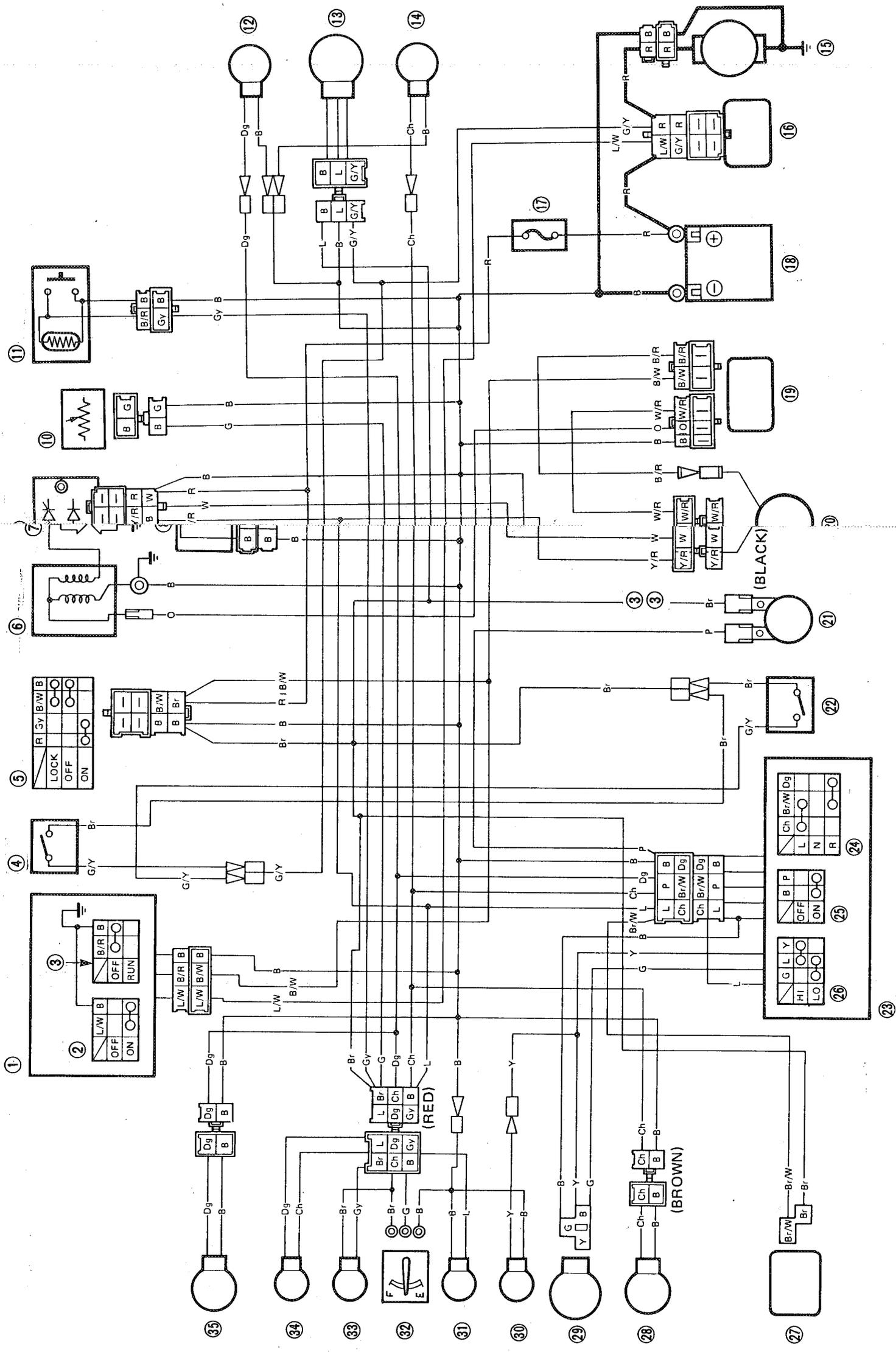


- ① Battery breather pipe
- ② CDI unit
- ③ Oil level gauge
- ④ Fuse
- ⑤ Auto choke unit
- ⑥ Throttle cable
- ⑦ Starter motor lead
- ⑧ CDI magneto lead



# CG50U WIRING DIAGRAM

- ① Handlebar switch (R)
- ② "START" switch
- ③ "ENGINE STOP" switch
- ④ Front brake switch
- ⑤ Main switch
- ⑥ Ignition coil
- ⑦ Spark plug
- ⑧ Auto choke
- ⑨ Rectifier/Regulator
- ⑩ Fuel sender
- ⑪ Oil level gauge
- ⑫ Rear flasher light (R)
- ⑬ Tail/brake light
- ⑭ Rear flasher light (L)
- ⑮ Starter motor
- ⑯ Starter switch
- ⑰ Fuse
- ⑱ Battery
- ⑲ CDI unit
- ⑳ CDI magneto
- ㉑ Horn
- ㉒ Rear brake switch
- ㉓ Handlebar switch (L)
- ㉔ "TURN" switch
- ㉕ "HORN" switch
- ㉖ "LIGHTS" (Dimmer) switch
- ㉗ Flasher relay
- ㉘ Front flasher light (L)
- ㉙ Headlight
- ㉚ "HIGH BEAM" indicator light
- ㉛ Meter light
- ㉜ Fuel meter
- ㉝ "OIL" warning light
- ㉞ "TURN" indicator light
- ㉟ Front flasher light (R)



**COLOR CODE**

B	.....	Black	O	.....	Orange	Dg	.....	Dark green	Y/R	.....	Yellow/Red
L	.....	Blue	P	.....	Pink	W	.....	White	G/Y	.....	Green/Yellow
Y	.....	Yellow	Ch	.....	Chocolate	B/R	.....	Black/Red	Br/W	.....	Brown/White
G	.....	Green	Br	.....	Brown	B/W	.....	Black/White	W/R	.....	White/Red
R	.....	Red	Gy	.....	Gray	L/W	.....	Blue/White			

Y/R	.....	Yellow/Red
G/Y	.....	Green/Yellow
Br/W	.....	Brown/White
W/R	.....	White/Red

Dg	.....	Dark green
W	.....	White
B/R	.....	Black/Red
B/W	.....	Black/White
L/W	.....	Blue/White



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