

**SUZUKI**

***TR50S***

**SERVICE MANUAL**



# FOREWORD

This manual contains an introductory description on SUZUKI TR50S and procedures for its inspection/service and overhaul of its main components. Other information considered as generally known is not included. Read GENERAL INFORMATION section to familiarize yourself with outline of the vehicle and MAINTENANCE and other sections to use as a guide for proper inspection and service. This manual will help you know the vehicle better so that you can assure your customers of your optimum and quick service.

- \* This manual has been prepared on the basis of the latest specification at the time of publication. If modification has been made since then, difference may exist between the content of this manual and the actual vehicle.
- \* Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual vehicle exactly in detail.
- \* This manual is intended for those who have enough knowledge and skills for servicing SUZUKI vehicles. Without such knowledge and skills, you should not attempt servicing by relying on this manual only. Instead, please contact your nearby authorized SUZUKI motorcycle dealer.

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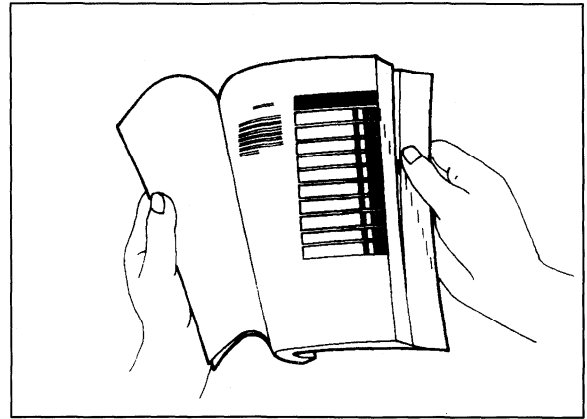
**SUZUKI MOTOR CORPORATION**

*Motorcycle Service Department*

# HOW TO USE THIS MANUAL

## TO LOCATE WHAT YOU ARE LOOKING FOR:

1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help you find the item and page you need.




## COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Front wheel









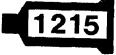




① Front axle  
 ② Spacer  
 ③ Bearing  
 ④ Spacer  
 ⑤ Front wheel  
 ⑥ Speedometer gearbox  
 ⑦ Brake disc



| ITEM | N·m | kg·m | lb·ft |
|------|-----|------|-------|
| Ⓐ    | 42  | 4.2  | 30.5  |
| Ⓑ    | 23  | 2.3  | 16.5  |

## SYMBOL

Listed in the table below are the symbols indicating instructions and other information necessary for servicing and meaning associated with them respectively.

| SYMBOL  | DEFINITION   | SYMBOL  | DEFINITION                                     |
|---|--|---|--|
|    | Torque control required.<br>Data beside it indicates specified torque. |    | Apply THREAD LOCK SUPER "1360".<br>99000-32130 |
|    | Apply oil. Use engine oil unless otherwise specified.                  |    | Apply or use brake fluid.                      |
|    | Apply SUZUKI SUPER GREASE "A".<br>99000-25010                          |    | Measure in voltage range.                      |
|    | Apply SUZUKI MOLY PASTE.<br>99000-25140                                |    | Measure in resistance range.                   |
|    | Apply SUZUKI BOND "1215".<br>99000-31110                               |    | Measure in current range.                      |
|  | Apply THREAD LOCK "1342".<br>99000-32050                               |  | Use special tool.                              |
|  | Apply THREAD LOCK SUPER "1322".<br>99000-32110                         |   |  |

# GENERAL INFORMATION

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## WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

### **▲ WARNING**

**Indicates a potential hazard that could result in death or injury.**

### **▲ CAUTION**

**Indicates a potential hazard that could result in motorcycle damage.**

### *NOTE:*

*Indicates special information to make maintenance easier or instructions clearer.*

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

## GENERAL PRECAUTIONS

### **▲ WARNING**

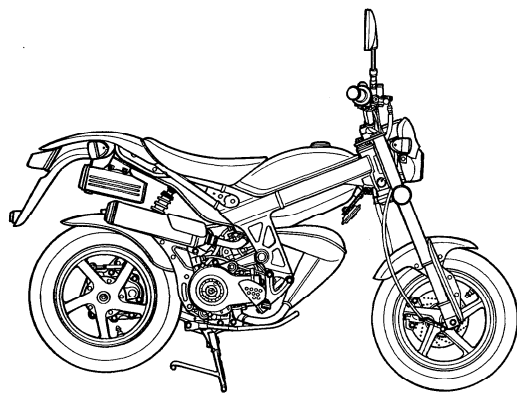
- \* **Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the vehicle.**
- \* **When 2 or more persons work together, pay attention to the safety of each other.**
- \* **When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.**
- \* **When working with toxic or flammable materials, make sure that the area you work in is well-ventilated and that you follow all of the material manufacturer's instructions.**
- \* **Never use gasoline as a cleaning solvent.**
- \* **To avoid getting burned, do not touch the engine or exhaust system during or for a while after engine operation.**
- \* **After servicing fuel, oil, exhaust or brake systems, check all lines and fittings related to the system for leaks.**

**▲ CAUTION**

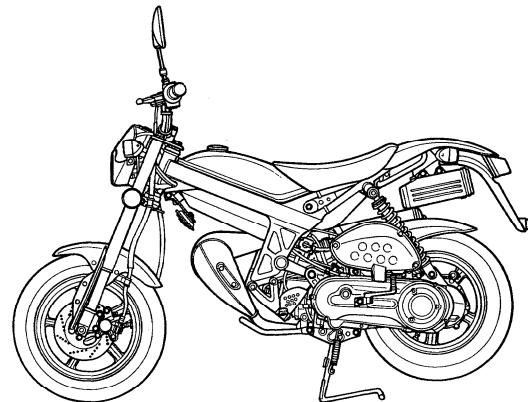
- \* If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.
- \* When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order and orientation.
- \* Be sure to use special tools when instructed.
- \* Make sure that all parts used in reassembly are clean, and also lubricated when specified.
- \* When use of a certain type of lubricant, bond, or sealant is specified, be sure to use the specified type.
- \* When removing the battery, disconnect the negative cable first and then the positive cable.
- \* When reconnecting the battery, connect the positive cable first and then the negative cable, and replace the terminal cover on the positive terminal.
- \* When performing service to electrical parts, if the service procedures not require use of battery power, disconnect the negative cable of the battery.
- \* Tighten cylinder head and case bolts and nuts, beginning with larger diameter and ending with smaller diameter, from inside to outside diagonally, to the specified tightening torque.
- \* Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.
- \* Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted.
- \* Do not use self-locking nuts a few times over.
- \* Use a torque wrench to tighten fastners to the torque values when specified. Wipe off grease or oil if a thread is smeared with them.
- \* After reassembly, check parts for tightness and operation.

- \* To protect environment, do not unlawfully dispose of used motor oil and other fluids: batteries, and tires.
- \* To protect Earth's natural resouces, properly dispose of used vehicles and parts.

## SUZUKI TR50SW ('98-MODEL)



**RIGHT SIDE**

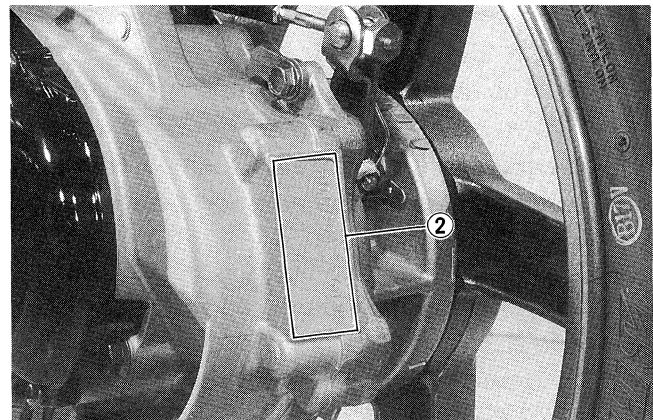
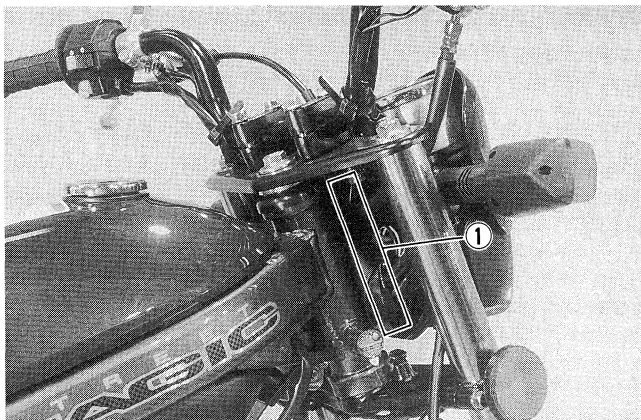


**LEFT SIDE**

\*Difference between illustrations and actual motorcycles depends on the markets.

### SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the steering head. The engine serial number ② is located on the end of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.



### FUEL AND OIL RECOMMENDATIONS

Be sure to use the specified fuel and oils. The followings are the specifications.

#### FUEL

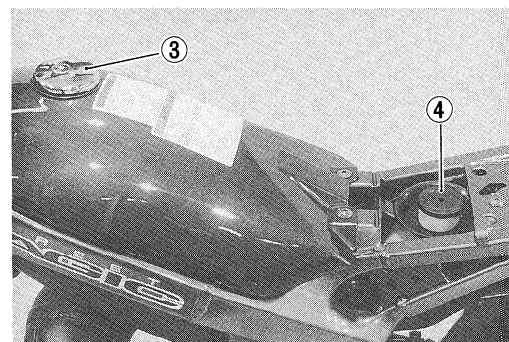
Gasoline used should be graded 85–95 octane or higher. An unleaded gasoline is recommended.

③ Fuel tank cap

#### ENGINE OIL

For the SUZUKI CCI system, use of SUZUKI CCI SUPER OIL is highly recommended, but if they are not available, a good quality two-stroke oil (non-diluent type) should be used.

④ Engine oil tank cap





## FINAL GEAR OIL

Use a good quality SAE 10W/40 multi-grade motor oil.

## BRAKE FLUID



Specification and Classification: DOT 4

### **▲ WARNING**

Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.

Do not use any brake fluid taken from old or used or unsealed containers.

Never re-use brake fluid left over from a previous servicing, which has been stored for a long period.

## BREAK-IN PROCEDURES

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to “BREAK-IN” before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows.

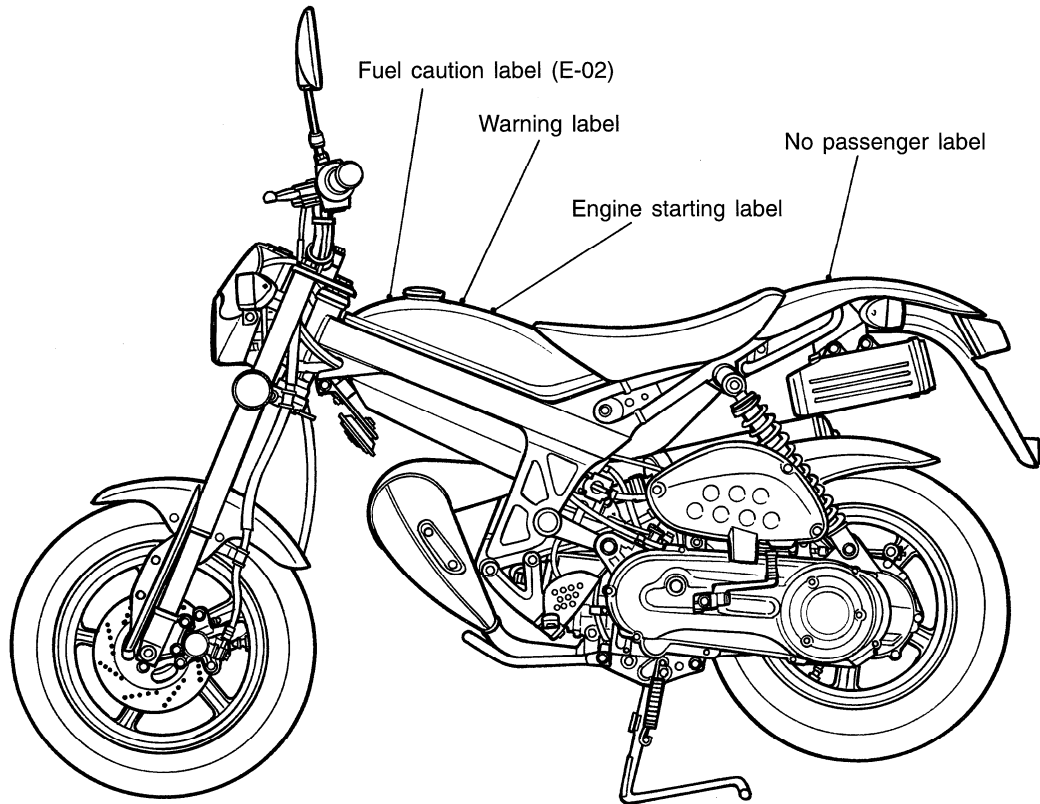
- Keep to these breaking-in throttle position:

**Initial 800 km : Less than  $\frac{1}{2}$  throttle**

**Up to 1 600 km: Less than  $\frac{3}{4}$  throttle**

- Upon reaching an odometer reading of 1 600 km you can subject the motorcycle to full throttle operation for short periods of time.

## INFORMATION LABELS



## SPECIFICATIONS

### DIMENSIONS AND DRY MASS

|                  |  |
|------------------|--|
| Overall length   | 1 640 mm (64.6 in)<br>... E-04, 34, 53 |
|                  | 1 665 mm (65.6 in)<br>... E-02, 22, 26 |
| Overall width    | 710 mm (28.0 in)                       |
| Overall height   | 960 mm (37.8 in)                       |
| Wheelbase        | 1 080 mm (42.5 in)                     |
| Ground clearance | 115 mm (4.5 in)                        |
| Dry mass         | 78 kg (171 lbs)                        |

### ENGINE

|                             |  |
|-----------------------------|--|
| Type                        | Two-stroke, forced air-cooled  |
| Intake system               | Reed valve   |
| Number of cylinder          | 1  |
| Bore                        | 41.0 mm (1.614 in)   |
| Stroke                      | 37.4 mm (1.472 in)   |
| Piston displacement         | 49 cm <sup>3</sup> (3.0 cu. in)  |
| Corrected compression ratio | 7.2 : 1  |
| Carburetor                  | KEIHIN PWS12, single<br>... E-34<br>KEIHIN PWS14, single<br>... The others |
| Air cleaner                 | Polyurethane foam element  |
| Starter system              | Electric and kick  |
| Lubrication system          | SUZUKI "CCI"   |

### TRANSMISSION

|                       |  |
|-----------------------|--|
| Clutch                | Dry shoe, automatic, centrifugal type  |
| Gearshifting          | Automatic, variable ratio  |
| Gear ratios, variable | Variable reduction ratio (2.864–0.794)   |
| Final reduction ratio | 14.960 (51/15 × 66/15)<br>... E-04, 26, 34, 53<br>16.271 (51/15 × 67/14)<br>... E-02, 22 |
| Drive system          | V-belt drive   |

### CHASSIS

|                         |  |
|-------------------------|--|
| Front suspension, right | Inverted telescopic, coil spring, oil damped |
| Front suspension, left  | Inverted telescopic, coil spring             |
| Rear suspension         | Swingarm type, coil spring, oil damped       |
| Steering angle          | 43° (right & left)                           |
| Caster                  | 25°  |
| Trail                   | 75 mm (3.0 in)                               |
| Turning radius          | 1.6 m (5.2 ft)                               |
| Front brake             | Disc brake                                   |
| Rear brake              | Drum brake                                   |
| Front tire size         | 120/70-12 44J, tubeless                      |
| Rear tire size          | 130/70-12 49J, tubeless                      |

### ELECTRICAL

|                   |  |
|-------------------|--|
| Ignition type     | Electronic ignition (CDI)                    |
| Ignition timing   | 14° B.T.D.C. at<br>1 500 r/min               |
| Spark plug        | NGK BPR6HS or<br>DENSO W20FPR                |
| Battery           | 12V 8.28 kC<br>(2.3Ah)/10HR                  |
| Generator         | Flywheel magneto                             |
| Fuse              | 10A  |
| Headlight         | 12V 25/25W ... E-02<br>12V 15W... The others |
| Tail/Brake light  | 12V 5/21W                                    |
| Turn signal light | 12V 21W                                      |

### CAPACITIES

|                              |                               |
|------------------------------|-------------------------------|
| Fuel tank, including reserve | 6.4 L<br>(1.7/1.4 US/Imp gal) |
| reserve                      | 1.5 L<br>(0.4/0.3 US/Imp gal) |
| Engine oil tank              | 1.2 L<br>(1.3/1.1 US/Imp qt)  |
| Final gear oil               | 120 ml<br>(4.1/4.2 US/Imp oz) |

\* These specifications are subject to change without notice.

## COUNTRY OR AREA

The series of symbols on the left stand for the countries or area on the right.

| SYMBOL | COUNTRY or AREA |
|--------|-----------------|
| E-02   | U.K.            |
| E-04   | France          |
| E-22   | Germany         |
| E-26   | Denmark         |
| E-34   | Italy           |
| E-53   | Spain           |

# PERIODIC MAINTENANCE

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## PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Mileages are expressed in terms of kilometers and time for your convenience.

**NOTE:**

*More frequent servicing may be performed on motorcycles that are used under severe conditions.*

### PERIODIC MAINTENANCE CHART

| INTERVAL: This interval should be judged by odometer reading or month which comes first. | km     | Initial 1 000         | Every 3 000 | Every 6 000 |
|--|--------|-----------------------|-------------|-------------|
|  | months | 2                     | 6           | 12          |
| Air cleaner element  |        | –                     | C           | C           |
| Cylinder head and cylinder   |        | –                     | C           | C           |
| Spark plug   |        | –                     | C           | R           |
| Engine idle speed  |        | I                     | I           | I           |
| Throttle cable play  |        | I                     | I           | I           |
| Final gear oil   |        | I                     | –           | I           |
| Fuel hose  |        | I                     | I           | I           |
|  |        | Replace every 4 years |             |             |
| Brakes   |        | I                     | I           | I           |
| Brake hose   |        | –                     | I           | I           |
|  |        | Replace every 4 years |             |             |
| Brake fluid  |        | –                     | I           | I           |
|  |        | Replace every 2 years |             |             |
| Steering   |        | I                     | I           | I           |
| Front fork   |        | –                     | –           | I           |
| Rear suspension  |        | –                     | –           | I           |
| Tires  |        | I                     | I           | I           |
| Cylinder head nuts and exhaust pipe bolt and nut   |        | T                     | T           | T           |
| Chassis bolts and nuts   |        | T                     | T           | T           |

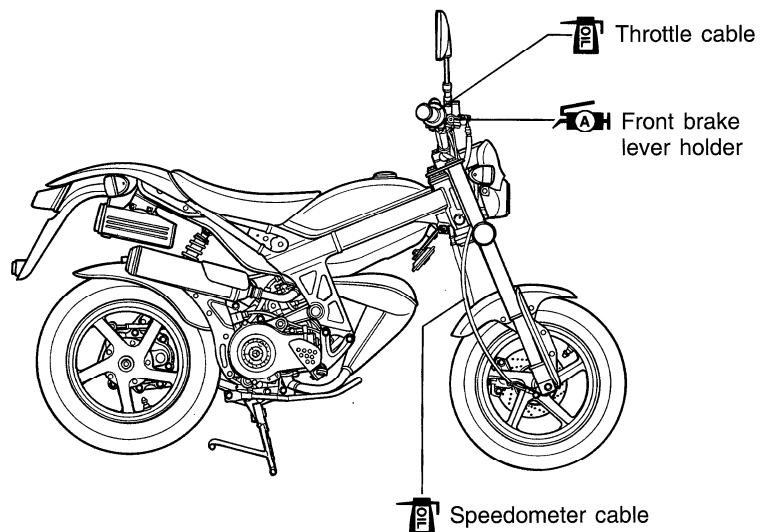
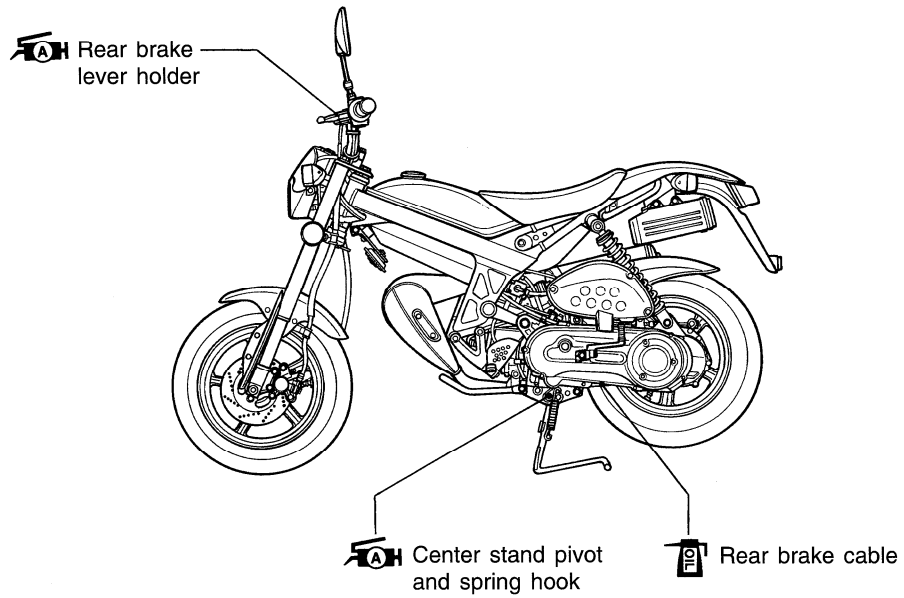
**NOTE:**

*I: Inspection and adjust, clean, lubricate or replace as necessary*

*C: Clean R: Replace T: Tighten*

## LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each working part of the motorcycle. Major lubrication points are indicated below.



**NOTE:**

- \* Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.
- \* Lubricate exposed parts which are subject to rust, with a rust preventative spray when ever the motorcycle has been operated under wet or rainy condition.

## MAINTENANCE AND TUNE-UP PROCEDURE

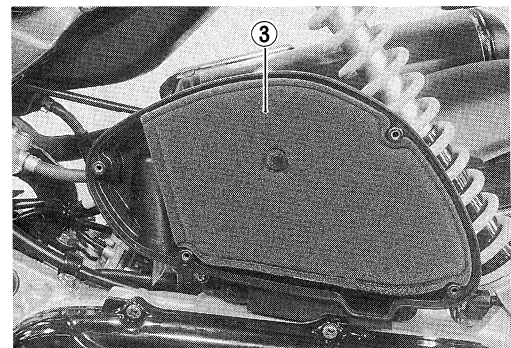
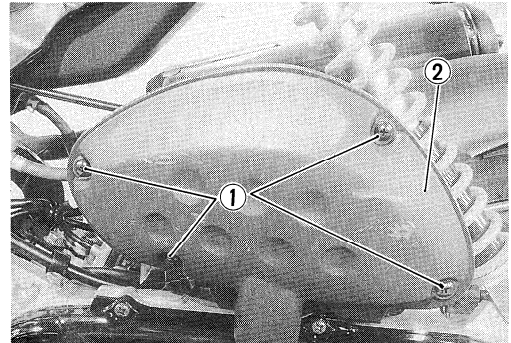
This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

### AIR CLEANER

**Clean every 3 000 km (6 months).**

If the air cleaner is clogged with dust, intake resistance will be increased with a resultant decrease in power output and an increase in fuel consumption. Check and clean the element in the following manner.

- Remove the screws ① and cover ②.
- Remove element ③.
- Fill a washing pan of a proper size with non-flammable cleaning solvent. Immerse the elements in the cleaning solvent and wash them clean.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands: do not twist or wring the element or it will develop tears.
- Immerse the element in motor oil, and squeeze the oil out of the element leaving it slightly wet with oil.

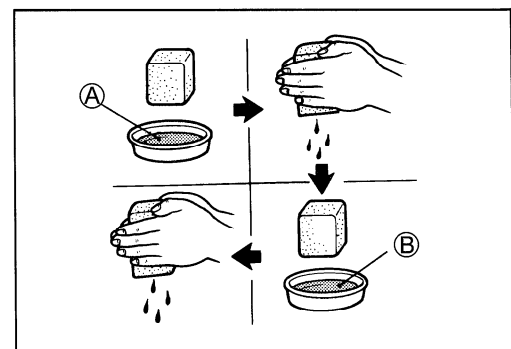


#### ▲ CAUTION

- \* Before and during the cleaning operation, inspect the element for tears. A torn element must be replaced.
- \* Be sure to position the element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of piston rings and cylinder bore is often caused by a defective or poorly fitted element.

- Ⓐ Non-flammable cleaning solvent
- Ⓑ Motor oil SAE #30 or SAE 10W/40

- Fit the elements to the cleaner case properly.

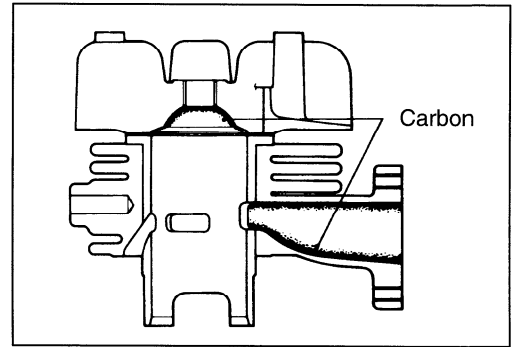




## CYLINDER HEAD AND CYLINDER

**Remove carbon every 3 000 km (6 months).**

Carbon deposits in the combustion chamber and the cylinder head will raise the compression ratio and may cause preignition or overheating. Carbon deposited at the exhaust port of the cylinder will prevent the flow of exhaust gases, reducing the output. Remove carbon deposits periodically.



## SPARK PLUG

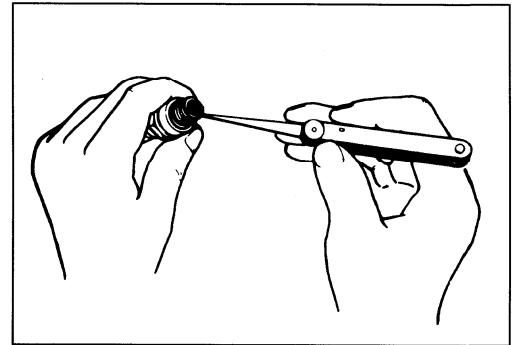
**Clean every 3 000 km (6 months).**

**Replace every 6 000 km (12 months).**

Neglecting the spark plug maintenance eventually leads to difficult starting and poor performance. If the spark plug is used for a long period, the electrode gradually burns away and carbon builds up along the inside part. In accordance with the Periodic Inspection Chart, the plug should be removed for inspection, cleaning and to reset the gap.

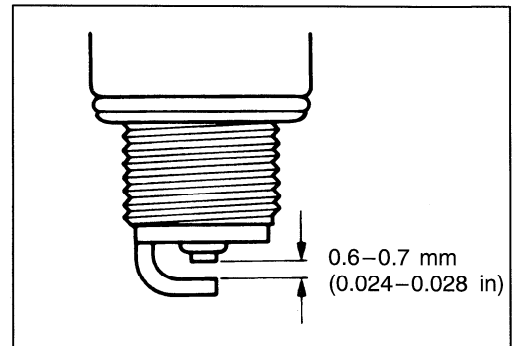
Carbon deposits on the spark plug will prevent good sparking and cause misfiring. Clean the deposits off periodically.

If the center electrode is fairly worn down, the plug should be replaced and the plug gap set to the specified gap using a thickness gauge.



**TOOL 09900-20804: Thickness gauge**

**Spark plug gap: 0.6–0.7 mm (0.024– 0.028 in)**



|     |        |          |
|-----|--------|----------|
|     | NGK    | DENSO    |
| STD | BPR6HS | W20FPR-U |

- Tighten the spark plug to the specified torque.

**Spark plug: 28 N·m (2.8 kg·m, 20.0 lb·ft)**

**NOTE:**

- \* To check the spark plug, first make sure that the fuel used is unleaded gasoline, and if plug is either sooty with carbon or burnt white, replace it.
- \* Confirm the thread size and reach when replacing the plug.

## CARBURETOR

Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months).

### THROTTLE CABLE PLAY

- Loosen the lock nut ① and adjust the cable play Ⓐ by turning adjuster ② in or out to obtain the following cable play.
- After adjusting play, tighten the lock nut.

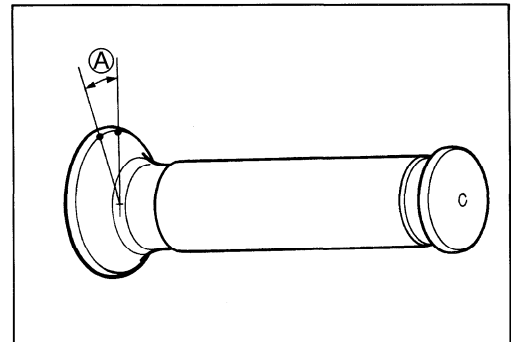
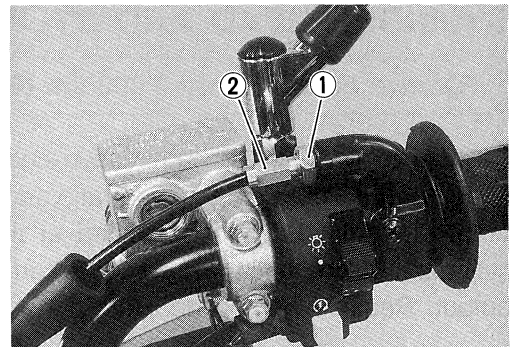
Cable play Ⓐ: 3–6 mm (0.12–0.24 in)

### ENGINE IDLE R/MIN

- Adjust the throttle stop screw ③.
- Warm up the engine.

#### NOTE:

Make this adjustment when the engine is hot.



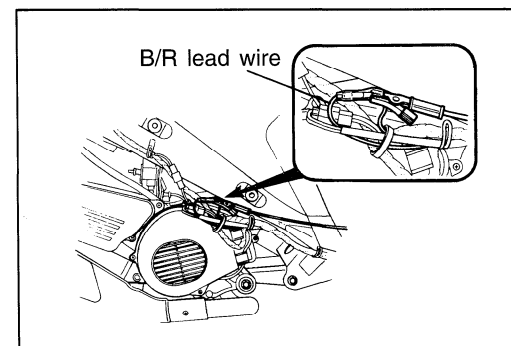
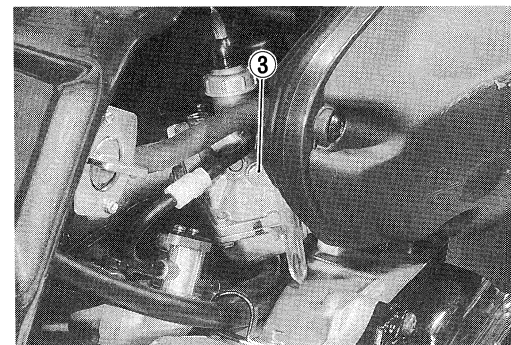
- Connect an electric tachometer to the connecting portion of the magneto lead wire as shown in the illustration. Use the selector key “C” position.

 09900-26006: Tachometer

- Adjust the throttle stop screw ③ to obtain the idle r/min as follows.

Idle r/min: 1 400–1 800 r/min

- Finally adjust the throttle cable play.



## FUEL HOSE

Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months). Replace every 4 years.

## BRAKES

### [BRAKE]

Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months).

### [BRAKE HOSE AND BRAKE FLUID]

Inspect every 3 000 km (6 months).  
Replace hoses every 4 years.  
Replace fluid every 2 years.

### FRONT BRAKE FLUID LEVEL

- Keep the motorcycle upright and place the handlebars straight.
- Check the brake fluid level by observing the lower limit line on the brake fluid reservoir.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.



**Specification and Classification: DOT 4**

### ⚠ WARNING

The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based. Do not use any brake fluid taken from old, used or unsealed containers. Never re-use brake fluid left over from the last servicing or stored for a long period.

### ⚠ WARNING

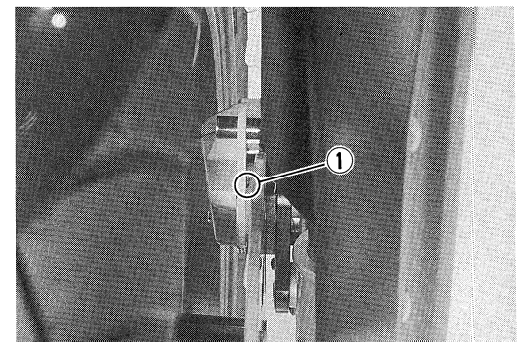
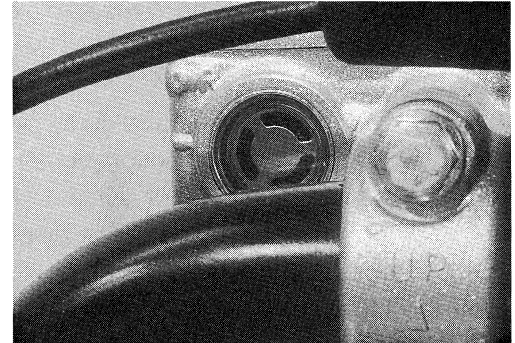
Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.

### FRONT BRAKE PADS

The extent of brake pad wear can be checked by observing the limit marks ① on the pad. When the wear exceeds the limit mark, replace the pads with new ones. (Refer to page 5-9.)

### ⚠ CAUTION

Replace the brake pad as a set, otherwise braking performance will be adversely affected.



### BLEEDING AIR FROM THE BRAKE FLUID CIRCUIT

Air trapped in the fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake caliper. The presence of air is indicated by “sponginess” of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

- Fill up the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent entry of dirt.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.
- Bleed air from the bleeder valve.
- Squeeze and release the brake lever several times in rapid succession, and squeeze the lever without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle: this will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles:

#### NOTE:

*Replenish the brake fluid reservoir as necessary while bleeding the brake system.*

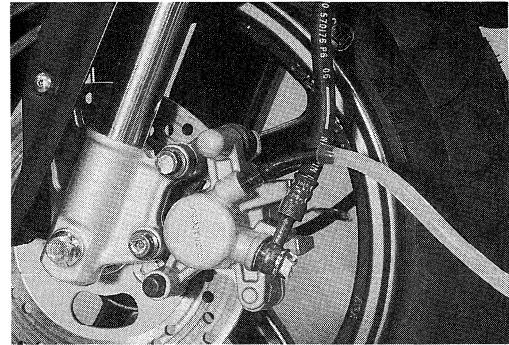
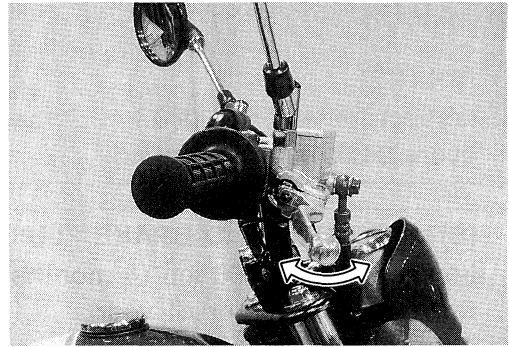
*Make sure that there is always some fluid visible in the reservoir.*

- Close the bleeder valve, and disconnect the pipe. Fill the reservoir to the upper end of the inspection window.

 **Air bleeder valve: 8 N·m (0.8 kg-m, 6.0 lb-ft)**

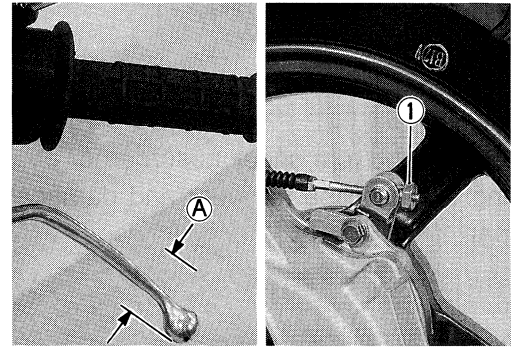
#### **CAUTION**

**Handle the brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials, etc.**



**REAR**

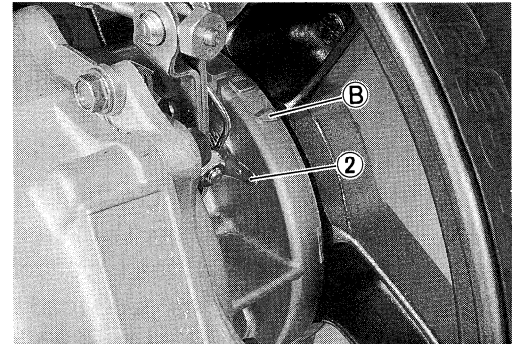
- Adjust by turning the adjusting nut ① so that the play ② is 15–25 mm (0.6–1.0 in) as shown in photo.

**BRAKE SHOE WEAR**

This motorcycle is equipped with the brake lining wear limit indicator ② on the rear.

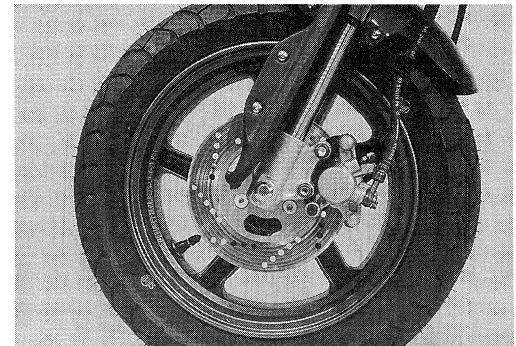
To check wear of the brake lining, perform the following steps.

- First check if the brake system is properly adjusted.
- While operating the brake, check to see that the extension line of the index mark is within the range ③ on the crankcase.
- If the index mark is beyond the range, the brake shoe assembly should be replaced with a new set of shoes.

**STEERING**

**Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months).**

Steering should be adjusted properly for smooth manipulation of handlebars and safe running. Too stiff steering prevents smooth manipulation of handlebars and too loose steering will cause the handlebars to vibrate. Check to see that there is no play in the front fork and handlebars fittings. If any play is found, perform steering bearing adjustment as described.

**FRONT FORK**

**Inspect every 6 000 km (12 months).**

Inspect the front fork for oil leakage, scoring or scratches on the outer surface of inner tube. Replace the any defective parts, if necessary.

## REAR SUSPENSION

**Inspect every 6 000 km (12 months).**

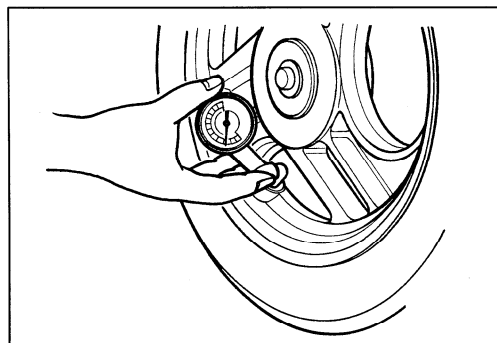
Inspect the rear shock absorber for oil leak and bushing including engine case for wear and damage. Replace the defective part if necessary.

## TIRES

**Inspect every 3 000 km (6 months).**

### TIRE PRESSURE

If the tire pressure is too high, the motorcycle will tend to ride stiffly and have poor traction. Conversely, if the tire pressure is too low, stability will be adversely affected. Therefore, maintain the correct tire pressure for good roadability and to prolong tire life.



| COLD INFLATION<br>TIRE PRESSURE | SOLO RIDING |                    |     |
|---------------------------------|-------------|--------------------|-----|
|                                 | kPa         | kg/cm <sup>2</sup> | kPa |
| FRONT                           | 125         | 1.25               | 18  |
| REAR                            | 175         | 1.75               | 25  |


**▲ CAUTION**

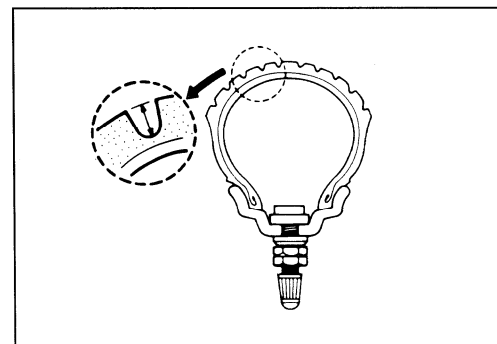
**The standard tire fitted on this motorcycle is 120/70-12 44J for front and 130/70-12 49J for rear. The use of a tire other than the standard may cause handling instability. It is highly recommended to use a SUZUKI Genuine Tire.**

### TIRE TREAD CONDITION

Operating the motorcycle with the excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace the tire when the remaining depth of tire tread reaches the following specification.

**Front and Rear: 1.6 mm (0.06 in)**

 **09900-20805: Tire depth gauge**



## CYLINDER HEAD NUTS AND EXHAUST PIPE BOLT AND NUT

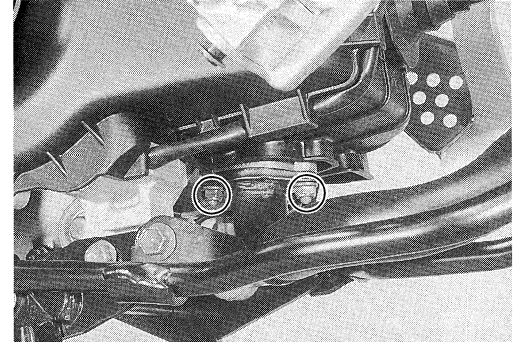
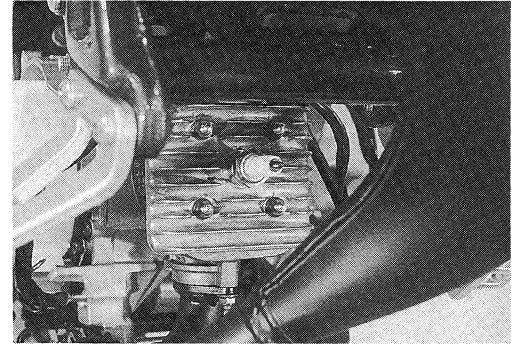
**Tighten initially at 1 000 km (2 months) and every 3 000 km (6 months).**

Cylinder head nuts, when they are not tightened to the specified torque, may result in leakage of the compressed mixture and reduce output. Tighten the cylinder head nuts in the following procedure.

- Remove the spark plug cap.
- Remove the cylinder head cover.

Tighten the nuts evenly one by one in stages until each one is tightened to the specified torque.

- 🔧 **Cylinder head nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)**
- Exhaust pipe bolt and nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)**



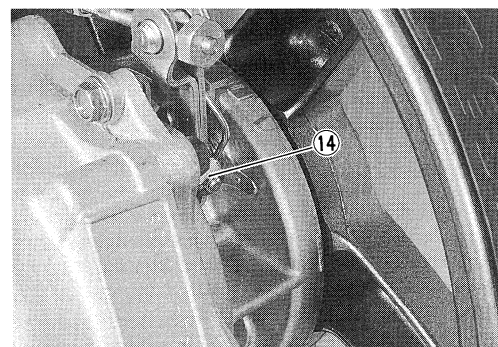
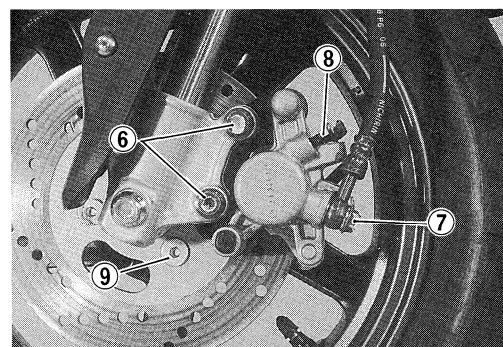
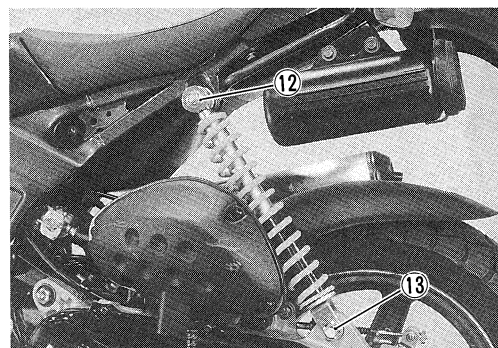
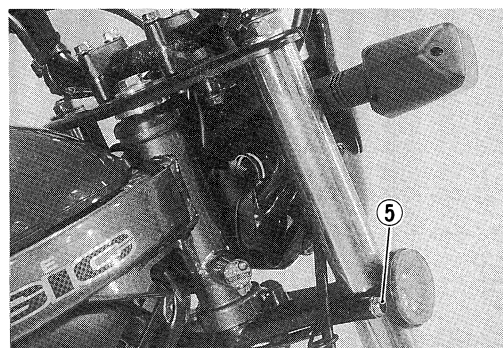
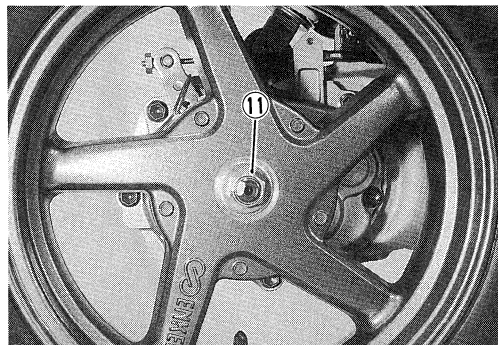
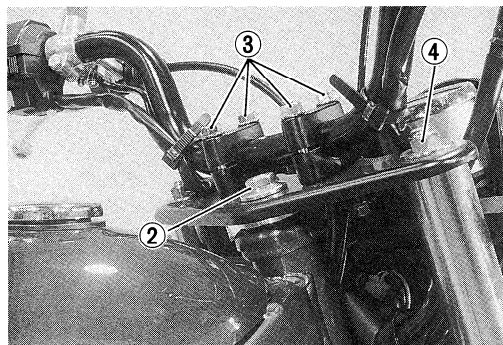
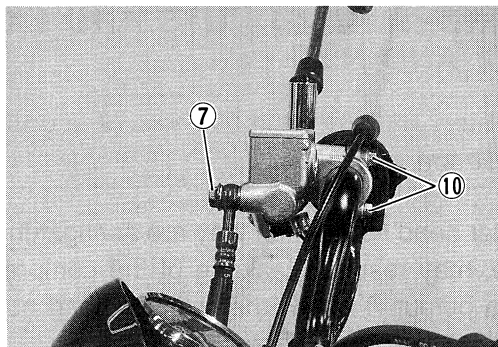
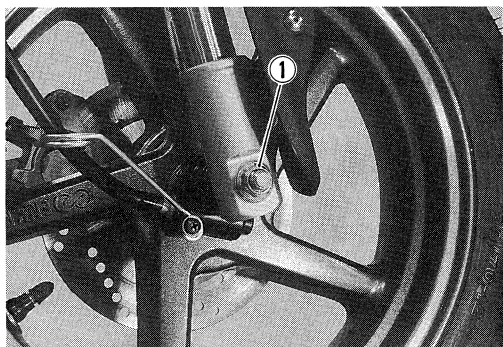
## CHASSIS BOLTS AND NUTS

**Tighten initially at 1 000 km (2 months) and every 3 000 km (6 months).**

Check that all chassis bolts and nuts are tightened to their specified torque.

| Item                                    | N·m | kg-m | lb-ft |
|---|-----|------|-------|
| ① Front axle nut                        | 42  | 4.2  | 30.5  |
| ② Steering stem head bolt               | 45  | 4.5  | 32.5  |
| ③ Handlebars clamp bolt                 | 16  | 1.6  | 11.5  |
| ④ Front fork upper bracket nut          | 26  | 2.6  | 19.0  |
| ⑤ Front fork lower bracket bolt         | 23  | 2.3  | 16.5  |
| ⑥ Front brake caliper mounting bolt     | 26  | 2.6  | 19.0  |
| ⑦ Front brake hose union bolt           | 23  | 2.3  | 16.5  |
| ⑧ Front brake caliper air bleeder valve | 8   | 0.8  | 6.0   |
| ⑨ Front brake disc bolt                 | 23  | 2.3  | 16.5  |
| ⑩ Front brake master cylinder bolt      | 10  | 1.0  | 7.0   |
| ⑪ Rear axle nut                         | 75  | 7.5  | 54.0  |
| ⑫ Rear shock absorber bolt (upper)      | 45  | 4.5  | 32.5  |
| ⑬ Rear shock absorber nut (lower)       | 32  | 3.2  | 23.0  |
| ⑭ Rear brake cam lever nut              | 10  | 1.0  | 7.0   |

## 2-11 PERIODIC MAINTENANCE





## AUTOMATIC CLUTCH INSPECTION

This motorcycle is equipped with an automatic clutch and variable ratio belt drive transmission. The engagement of the clutch is governed by engine RPMs and centrifugal mechanism located in the clutch.

To insure proper performance and longevity of the clutch assembly it is essential that the clutch engages smoothly and gradually. Two inspection checks must be performed to thoroughly check the operation of the drivetrain. Follow the procedures listed.

### 1. INITIAL ENGAGEMENT INSPECTION

Warm up the motorcycle to normal operating temperature.

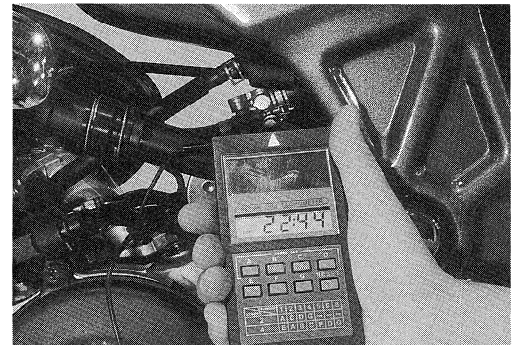
Connect an electric tachometer to the connecting portion of the magneto lead wire (Brown).

Seated on the motorcycle with the motorcycle on level ground, increase the engine RPMs slowly and note the PRM at which the motorcycle begins to move forward.

 **09900-26006: Tachometer**

**ENGAGEMENT R/MIN**

**STD: 3 600 ± 300 r/min**



### 2. CLUTCH “LOCK-UP” INSPECTION

Perform this inspection to determine if the clutch is engaging fully and not slipping.

Warm the engine to normal operating temperatures.

Connect an electric tachometer to the magneto lead wire.

Apply the rear brake as firm as possible.

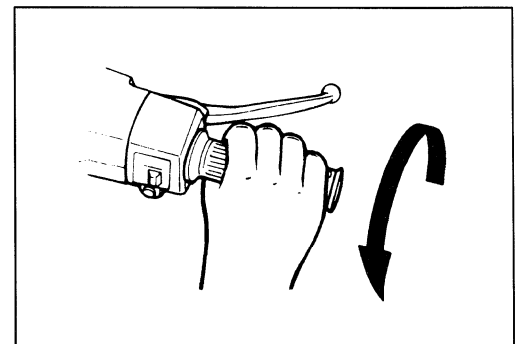
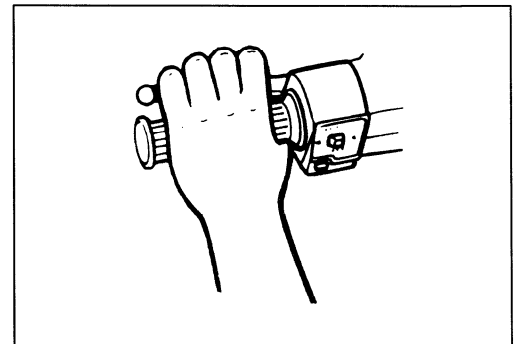
Briefly open the throttle fully and note the maximum engine RPMs sustained during the test cycle.

 **CAUTION**

**Do not apply full power for more than 10 seconds or damage to the clutch or engine may occur.**

**LOCK-UP R/MIN**

**STD: 6 000 ± 500 r/min**



# ENGINE

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| <b>DRIVE BELT .....</b>   | <b>3-30</b> |
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| <b>MAGNETO .....</b>  | <b>3-35</b> |

## ENGINE COMPONENTS REMOVABLE WITH ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the page listed in this section for removal instruction.

### ENGINE LEFT SIDE

|                           |      |
|---------------------------|------|
| Kick lever .....          | 3- 8 |
| Clutch cover .....        | 3- 8 |
| Kick starter .....        | 3- 9 |
| Fixed drive fan .....     | 3- 9 |
| Fixed drive face .....    | 3- 9 |
| V-belt .....              | 3- 9 |
| Movable drive face .....  | 3- 9 |
| Starter driven gear ..... | 3- 9 |
| Starter pinion .....      | 3- 9 |
| Clutch housing .....      | 3- 9 |
| Gear box cover .....      | 3-10 |
| Transmission gear .....   | 3-10 |
| Clutch shoe .....         | 3-16 |

### ENGINE CENTER

|                            |      |
|----------------------------|------|
| Oil pump .....             | 3- 6 |
| Oil pump driven gear ..... | 3- 6 |
| Intake pipe .....          | 3- 7 |
| Reed valve .....           | 3- 7 |
| Cylinder head .....        | 3- 8 |
| Cylinder .....             | 3- 8 |
| Piston .....               | 3- 8 |

### ENGINE RIGHT SIDE

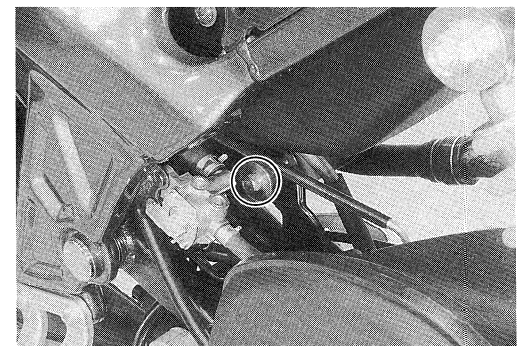
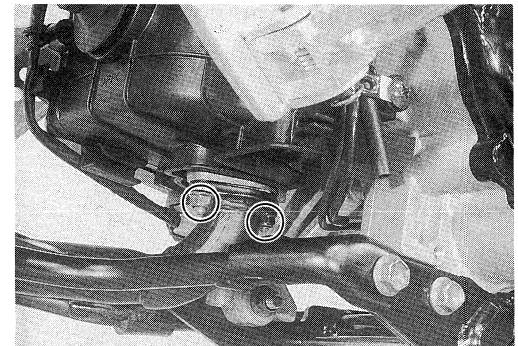
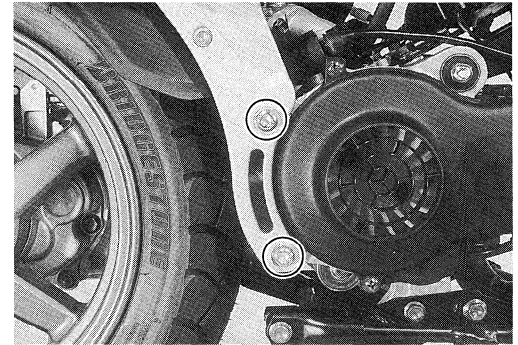
|                     |      |
|---------------------|------|
| Muffler .....       | 3- 2 |
| Air cleaner .....   | 3- 6 |
| Starter motor ..... | 3- 6 |
| Magneto .....       | 3- 7 |

## ENGINE REMOVAL AND REMOUNTING

### ENGINE REMOVAL

Before taking the engine out of the frame, thoroughly clean the engine with a suitable cleaner. The procedure of engine removal is sequentially explained as follows.

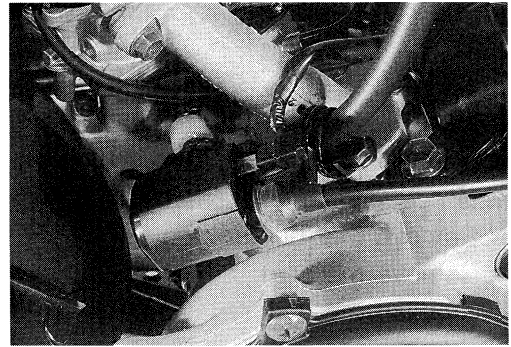
- Remove the fuel tank cover.
- Remove the seat.
- Remove the battery lead wires.
- Remove the bolts and muffler.
- Remove the bolts and exhaust pipe.
- Disconnect the magneto lead wire couplers.



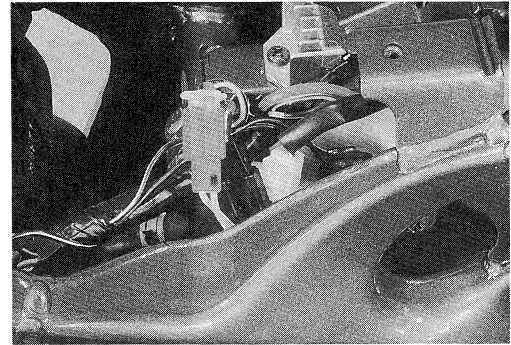
### 3-3 ENGINE

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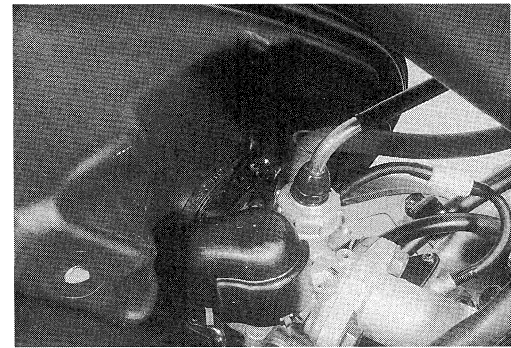
- Disconnect ignition coil lead wires.



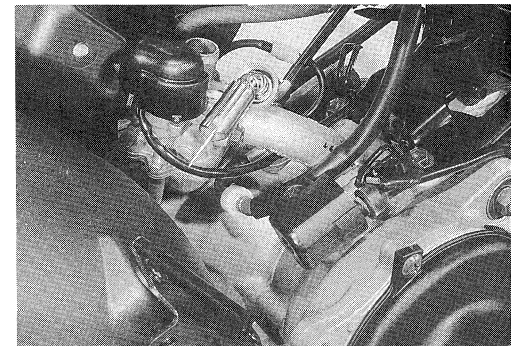
- Remove the engine ground lead wire coupler, PTC heater lead wire coupler and starter motor lead wire coupler.



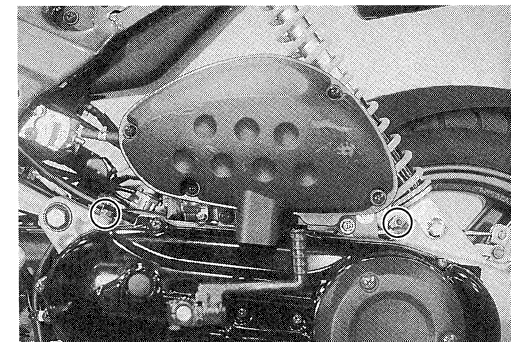
- Disconnect the fuel hose.
- Remove the carburetor top cap.

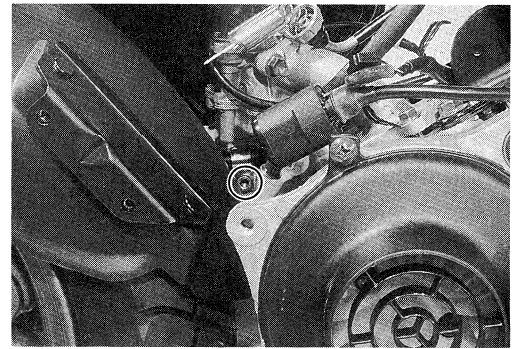


- Disconnect the oil hose.

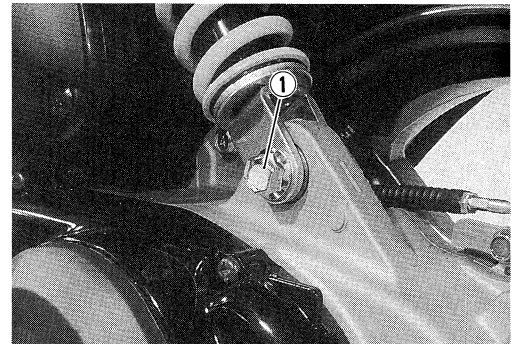


- Remove the rear brake cable clamps.

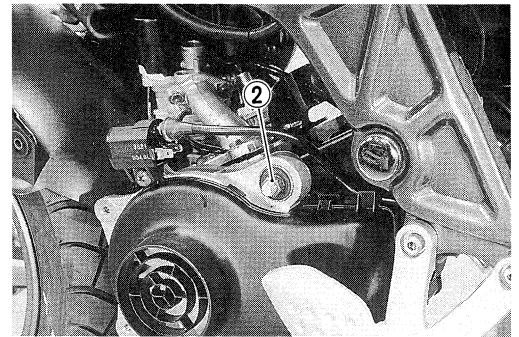




- Remove the rear shock absorber bolt ①.



- Remove the engine mounting nut. Draw out the engine mounting shaft ②.

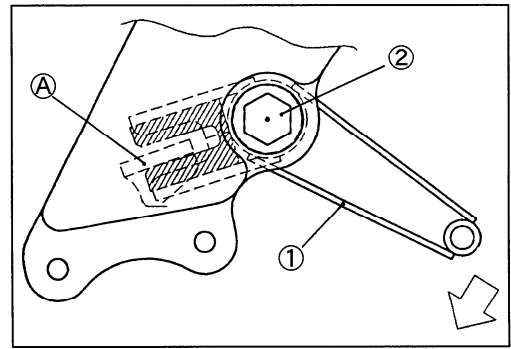


## ENGINE REMOUNTING


The engine can be mounted in the reverse order of removal.

- Install the crankcase bracket ① to the frame and insert the shaft ②.
- Lift the rear part of crankcase bracket and touch the damper to the stopper A as shown in the illustration and while holding it, tighten the nut to the specified torque.

 **Engine mounting bracket nut: 60 N·m (6.0 kg-m, 43.5 lb-ft)**

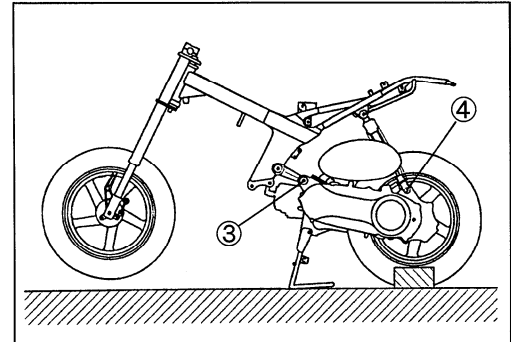


- Install the engine and tighten the engine mounting nut ③ to the specified torque.


 **Engine mounting nut: 60 N·m (6.0 kg-m, 43.5 lb-ft)**

**NOTE:**

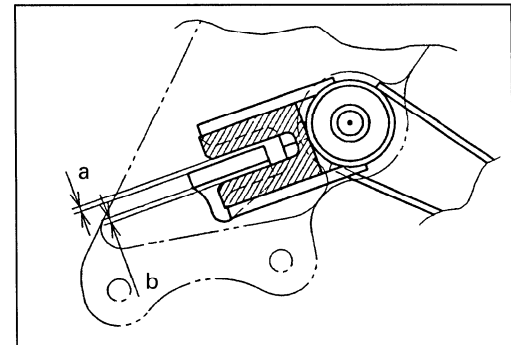
*When tightening the engine mounting nut, keep the front wheel off the ground by supporting the machine.*



- Tighten the rear shock absorber nut ④ to the specified torque.

 **Rear shock absorber nut: 32 N·m (3.2 kg-m, 23.0 lb-ft)**

- Place 65 kg (143 lbs) weight on the seat after remounting the engine.
- Check the clearances a and b (in illustration) are equal. If the clearances a and b are not equal, repeat the engine remounting as above procedures.

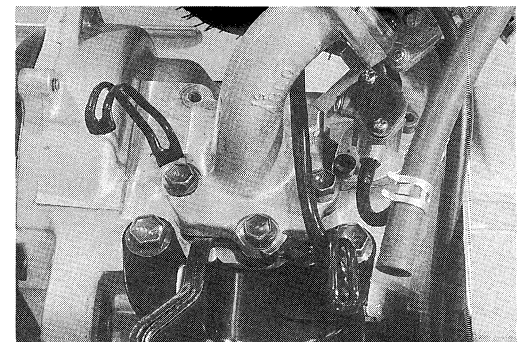
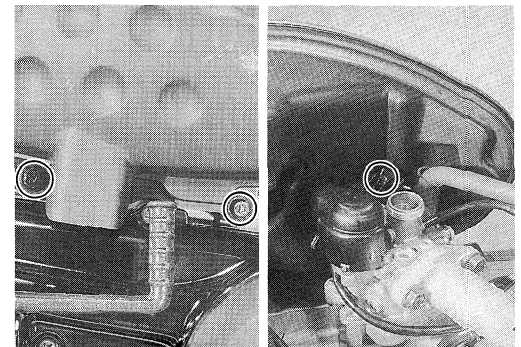
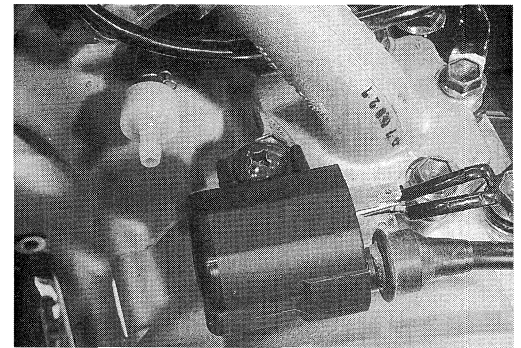
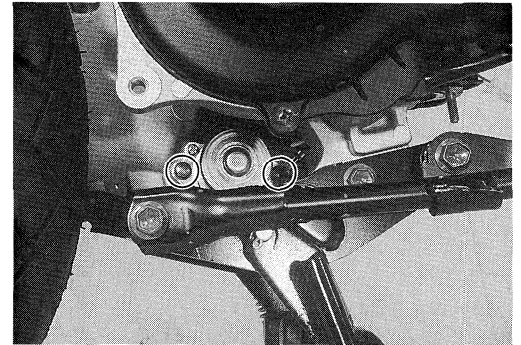
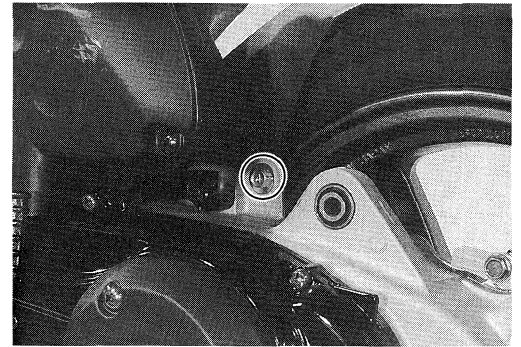


- After remounting the engine, route the wiring harness and cable properly by referring to the sections, wire routing and cable routing.
- Adjust the following items to the specification.

|                                     | Page |
|-------------------------------------|------|
| * Throttle cable play .....         | 2- 5 |
| * Idling adjustment .....           | 2- 5 |
| * Rear brake cable adjustment ..... | 2- 8 |
| * Air bleeding at oil pump .....    | 4- 7 |

## ENGINE DISASSEMBLY

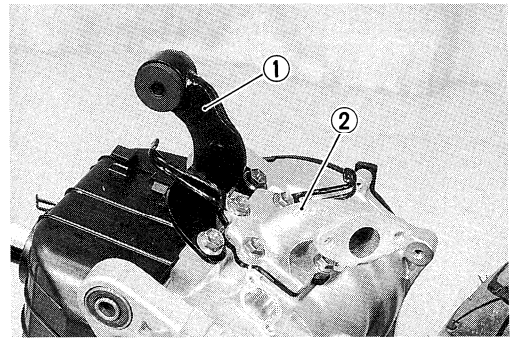
- Remove the rear fender.
- Remove the starter motor.
- Remove the ignition coil.
- Remove the air cleaner.
- Remove the carburetor.
- Remove the oil pump. Remove the oil pump driven gear.



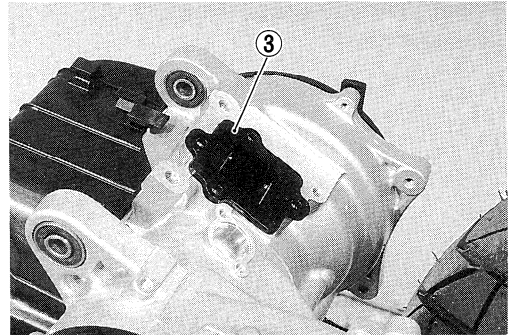


### 3-7 ENGINE

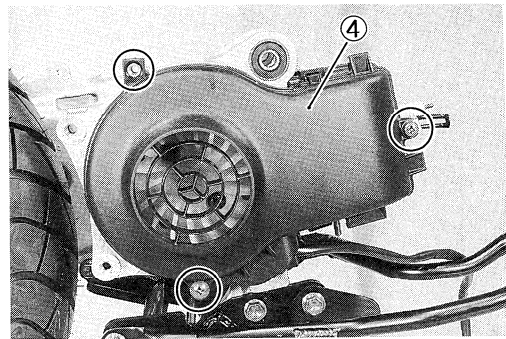
- Remove the exhaust pipe bracket ①.
- Remove the intake pipe ②.



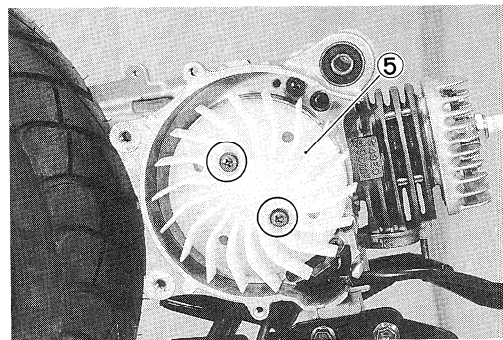
- Remove the reed valve ③.



- Remove the cooling fan cover ④.
- Remove the cylinder cover.

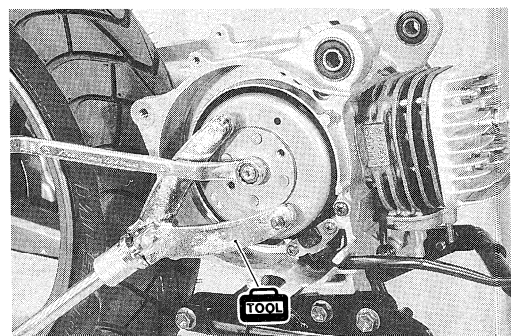


- Remove the cooling fan ⑤.



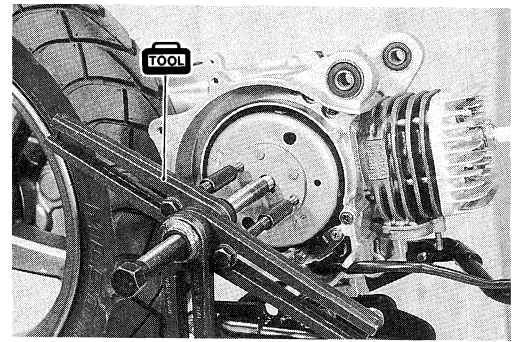
- Remove the magneto rotor nut with the special tool.

**TOOL** 09930-40113: Rotor holder

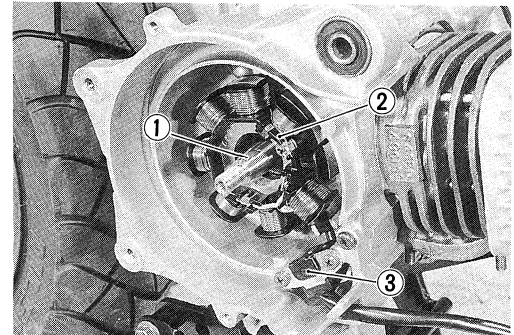


- Remove the rotor with the special tool.

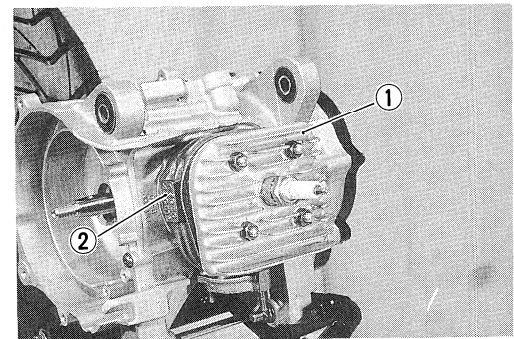
**TOOL** 09920-13120: Rotor remover  
(Crankcase separating tool)



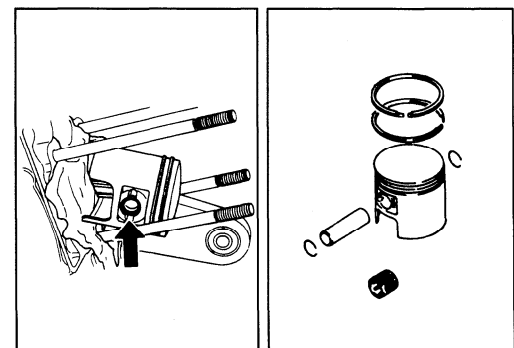
- Remove the stator and key ①.
- Remove the stator coil ② and pick up coil ③.



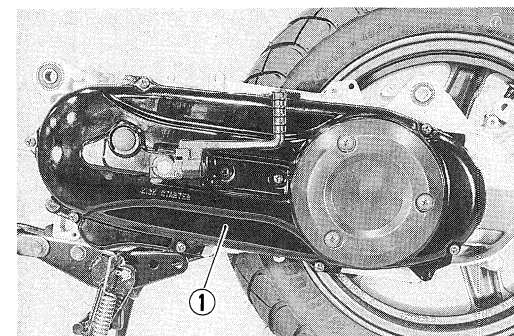
- Remove the four nuts.
- Remove the cylinder head ①.
- Remove the cylinder ②.



- Place a cloth beneath the piston and remove the circlip with a long-nose pliers.
- Remove the piston pin and piston.

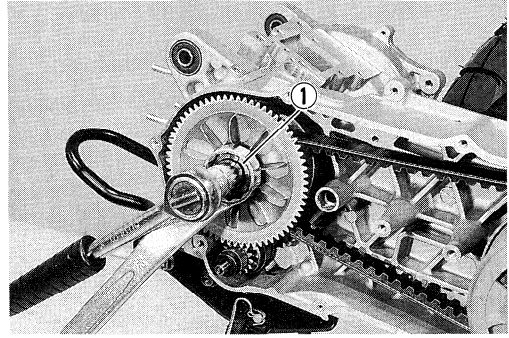


- Remove the clutch cover ①.

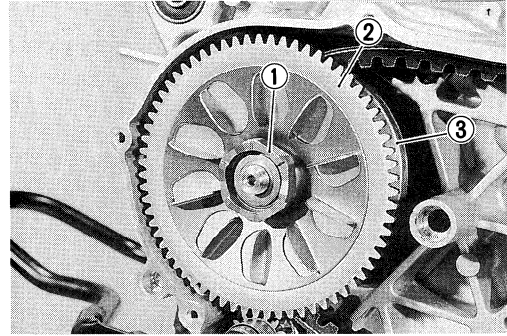


### 3-9 ENGINE

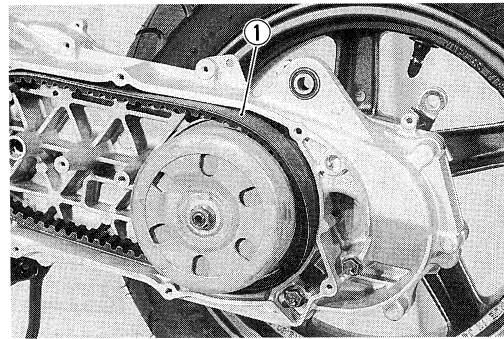
- Hold the kick starter ① with 32 mm wrench and loosen the kick starter nut.



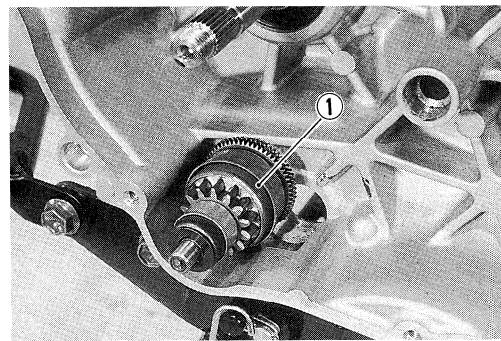
- Remove the kick starter ①.
- Remove the fixed drive face ②.
- Remove the movable drive face ③.



- Remove the V-belt ①.



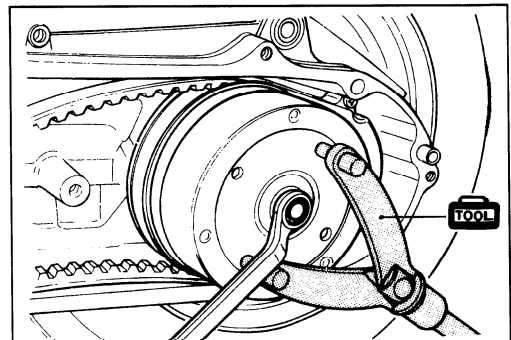
- Remove the starter pinion gear ①.



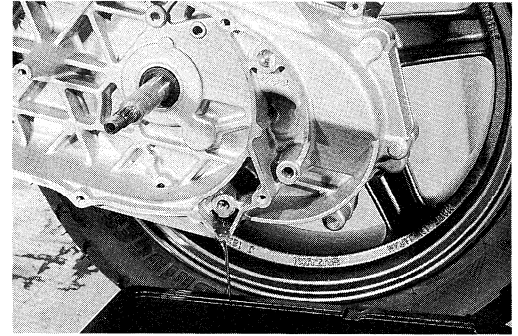
- Remove the clutch housing with the special tool.

**TOOL** 09930-40113: Rotor holder

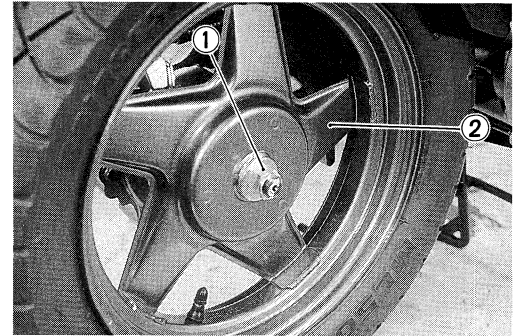
- Remove the clutch shoe assembly and drive belt.
- Disassemble the clutch shoe. (Refer to page 3-16.)



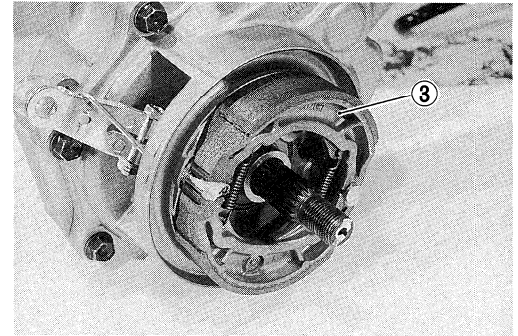
- Drain gear oil.



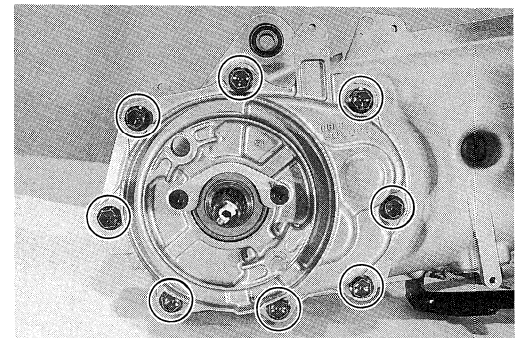
- Remove the axle nut ①.
- Remove the rear wheel ②.



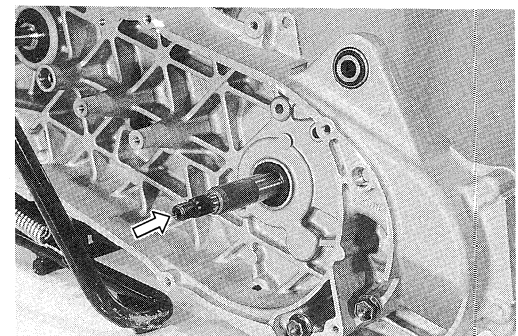
- Remove the brake shoes ③.



- Remove the gear box cover.



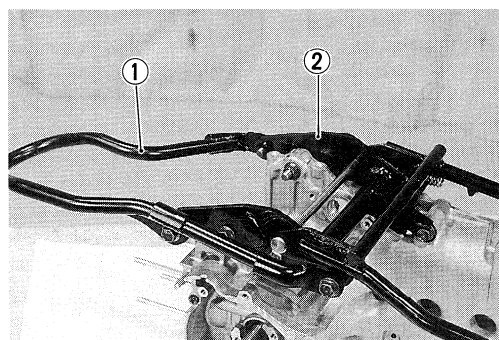
- Remove the drive shaft.



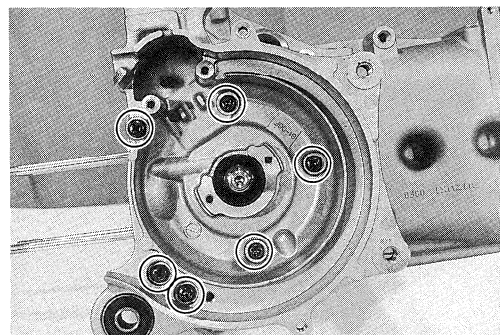
## 3-11 ENGINE

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- Remove the exhaust pipe guard ①.
- Remove the center stand ②.

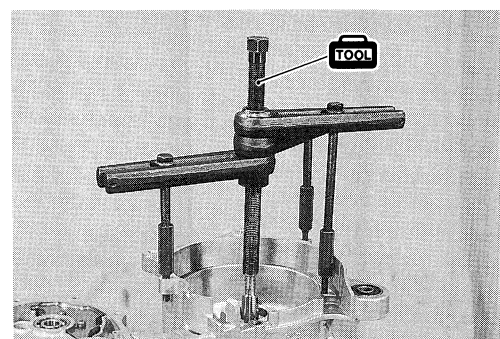


- Remove the crankcase securing screws.



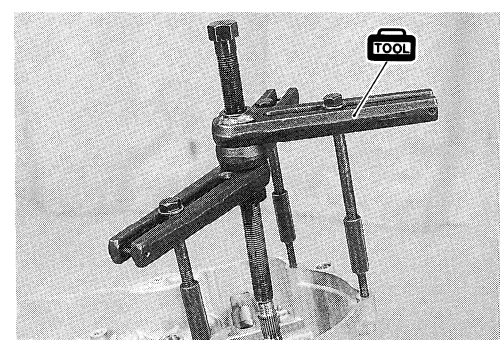
- Separate the crankcase with the special tool.

 **09920-13120: Crankcase separating tool**



- Remove the crankshaft with the special tool.

 **09920-13120: Crankshaft remover  
(Crankcase separating tool)**



## ENGINE COMPONENTS INSPECTION AND SERVICING

### BEARINGS

Inspect the play of bearing inner ring by hand while mounted in the crankcase and gear box cover.

Rotate the inner ring by hand to inspect if any abnormal noise occurs or rotates smoothly.

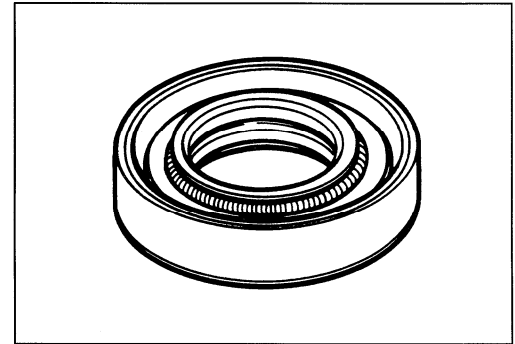
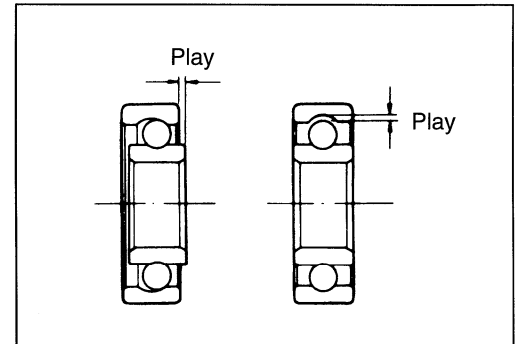
Replace the bearing if there is anything unusual.

*NOTE:*

*Wash the bearing with cleaning solvent and lubricate with motor oil before inspecting.*

### OIL SEALS

Damage to the lip of the oil seal may result in leakage of the fuel-air mixture or oil. Inspect for damage and be sure to replace the damaged seal if found.

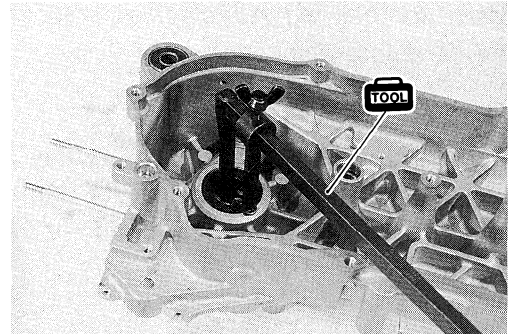
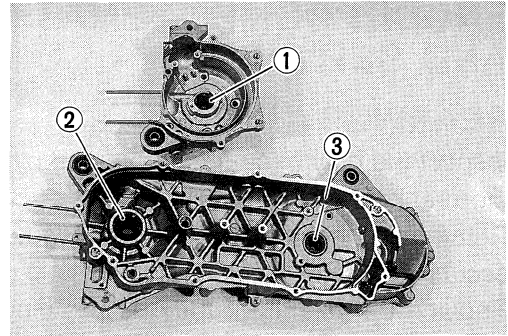


- Remove the oil seal with the special tool.

**TOOL** 09913-50121: Oil seal remover

**CAUTION**

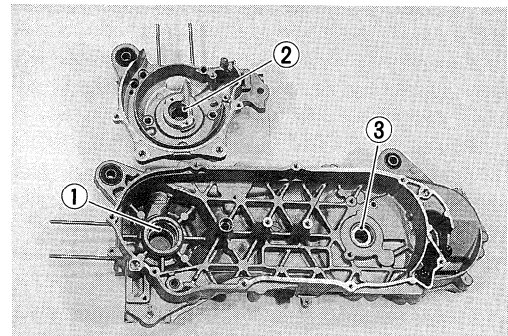
The removed oil seal should be replaced with a new one.



- Remove the rear axle shaft bearing with the special tool.

**TOOL** 09913-80112: Bearing remover ①  
(Bearing installer)

09925-98221: Bearing remover ② ③  
(Bearing installer)

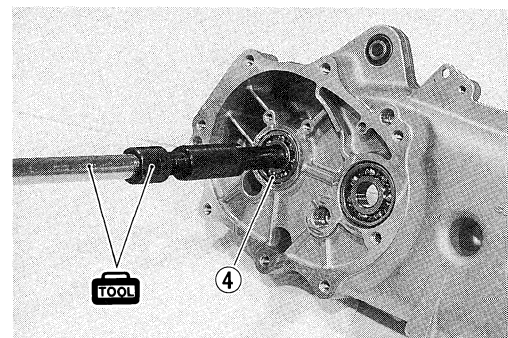


- Remove the driveshaft bearing and idle shaft bearing with the special tools.

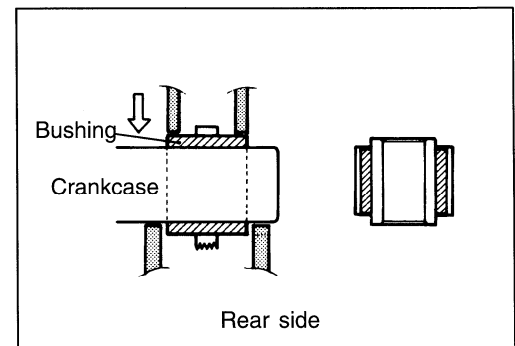
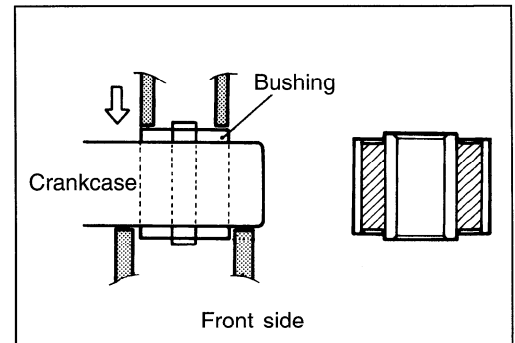
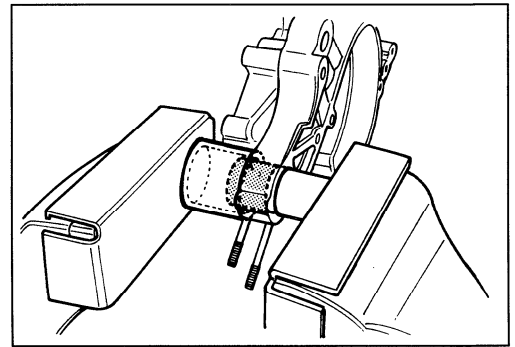
**TOOL** 09923-73210: Bearing remover  
09930-30102: Sliding shaft

**CAUTION**

The removed bearings should be replaced with new ones.



- Using two steel tubes of appropriate size, press out the engine mounting bushings on a vise as shown in the illustration.





## CRANKSHAFT

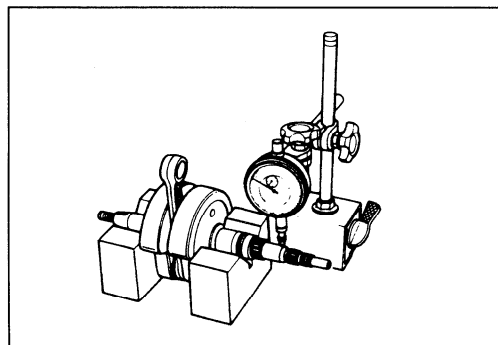
### CRANKSHAFT RUNOUT

Support crankshaft by V-blocks, with the dial gauge rigged to read the runout as shown.

**Service Limit: 0.05 mm (0.002 in)**

Excessive crankshaft runout is often responsible for abnormal engine vibration. Such vibration shortens engine life.

- TOOL** 09900-21304: V-block (100 mm)  
 09900-20701: Magnetic stand  
 09900-20606: Dial gauge (1/100 mm)



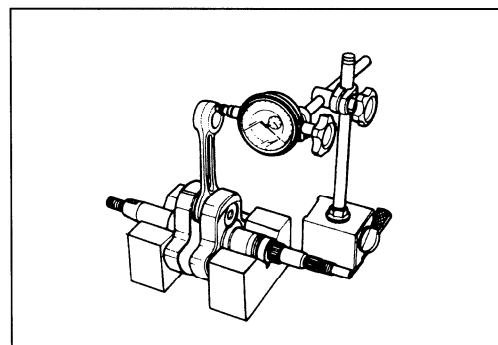
### CONDITION OF BIG END BEARING

Turn the crankshaft with the conrod to feel the smoothness of rotary motion in the big end. Move the rod up and down while holding the crankshaft rigidly to be sure that there is no rattle in the big end.

Wear on the big end of the conrod can be estimated by checking the movement of the small end of the rod. This method can also check the extent of wear on the parts of the conrod's big end.

If wear exceeds the limit, conrod, crank pin and crank pin bearing should all be replaced.

**Service Limit: 3.0 mm (0.12 in)**

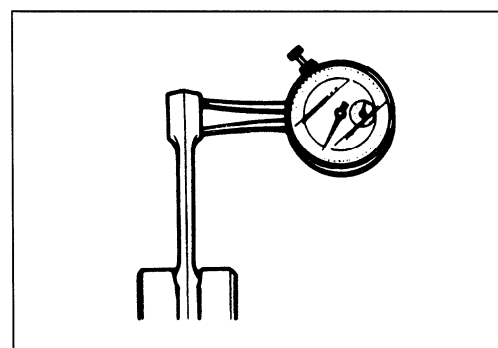


### CONROD SMALL END I.D.

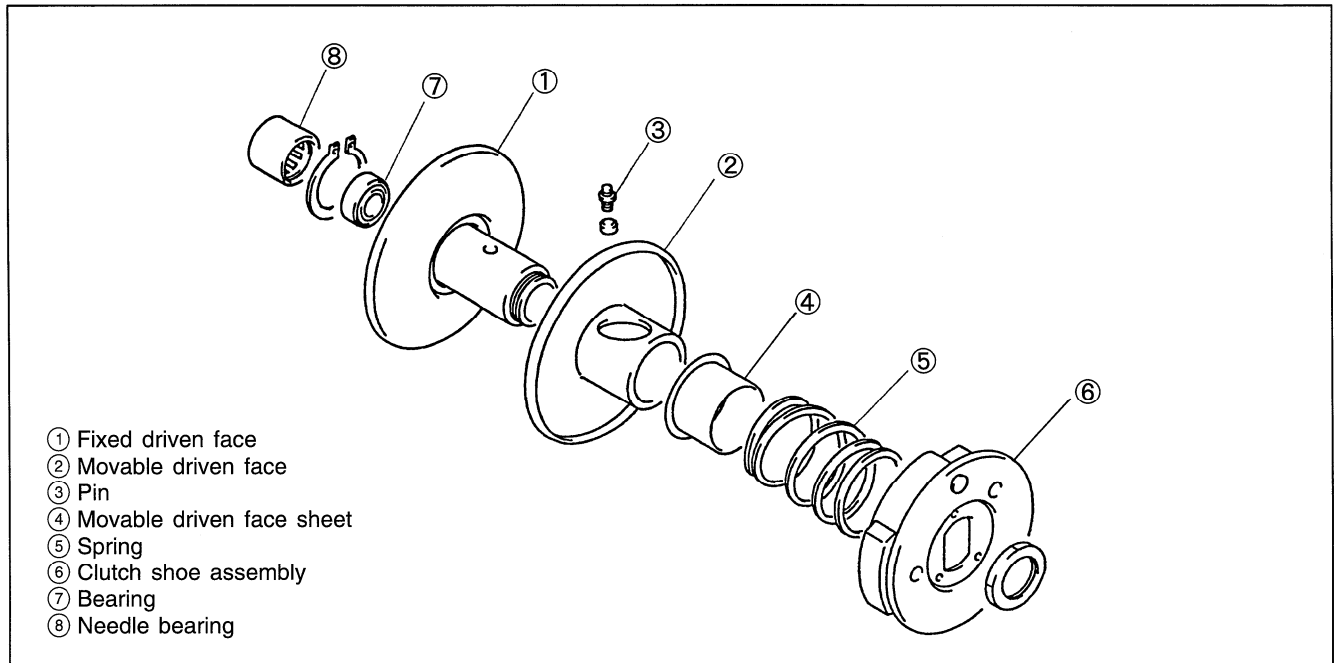
Measure the conrod small end diameter with a caliper gauge.

**Service Limit 14.040 mm (0.5528 in)**

- TOOL** 09900-20605: Dial calipers



## CLUTCH AND MOVABLE DRIVEN

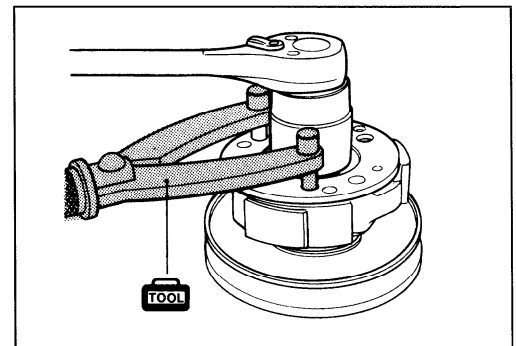


### DISASSEMBLY

If the engine rpm does not coincide with the specified rpm range, then disassemble the clutch and movable driven as follows.

- Loosen the clutch shoe nut with the special tool.

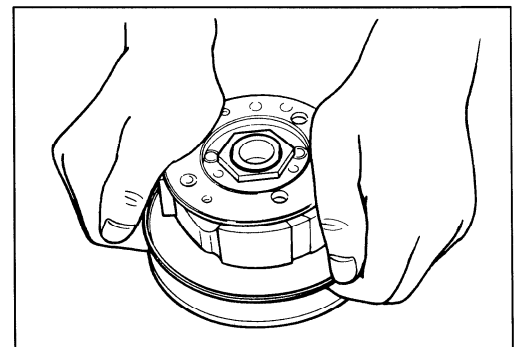
**TOOL** 09930-40113: Rotor holder



- Remove the nut while holding down the clutch shoe assembly by hand as shown in the illustration.

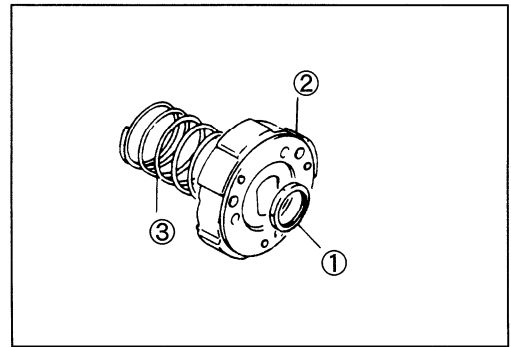
### ⚠ WARNING

**Gradually back off the clutch shoe assembly pressed down by hand to counter the clutch spring load. Releasing the hand suddenly may cause the parts to fly apart.**

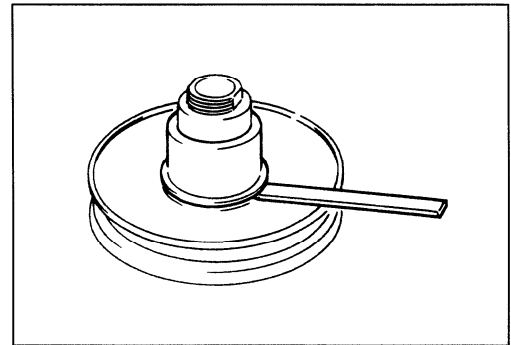


### 3-17 ENGINE

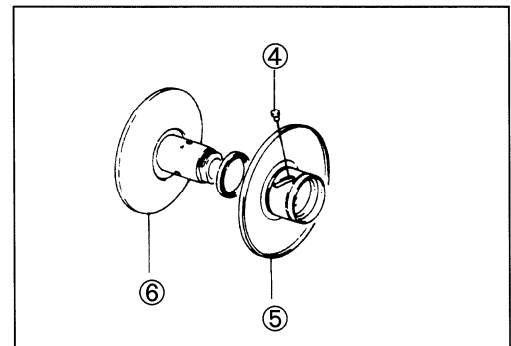
- ① Nut
- ② Clutch shoe assembly
- ③ Spring



- Using a thin blade screwdriver or the like, pry up the movable driven face spring guide.



- Remove the pins ④, movable driven face ⑤ and fixed driven face ⑥.

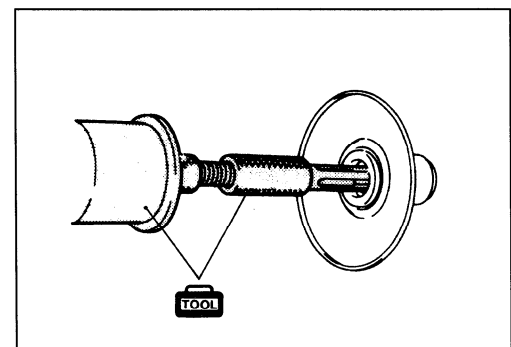


- Remove the bearing with the special tools.

**TOOL** 09923-73210: Bearing remover  
09930-30102: Sliding shaft

**CAUTION**

The removed bearing should be replaced with a new one.

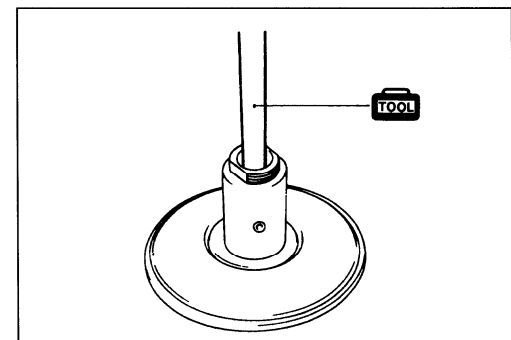


- Remove the bearing with the special tool.

**TOOL** 09941-50111: Bearing remover

**CAUTION**

The removed bearing should be replaced with a new one.



**CLUTCH SHOE**

Clutch shoe—inspect the shoes visually for chips, cracking, uneven wear and burning, and check the thickness of the shoes with vernier calipers. If the thickness is less than the following service limit, replace them as a set.

**Service Limit: 2.0 mm (0.08 in)**

Clutch springs—visually inspect the clutch springs for stretched coils or broken coils.

**▲ CAUTION**

**Clutch shoes or springs must be replaced as a set and never individually.**

Clutch wheel—inspect visually the condition of the inner clutch wheel surface for scrolling, cracks, or uneven wear. Measure inside diameter of the clutch wheel with inside calipers. Measure the diameter at several points to check for an out-of-round condition as well as wear.

**Service Limit: 110.50 mm (4.350 in)**

**DRIVEN FACE SPRING**

Measure the free length of the driven face spring. If the length is shorter than the service limit, replace the spring with a new one.

**Service Limit: 104.5 mm (4.11 in)**

**DRIVEN FACE PIN AND OIL SEAL**

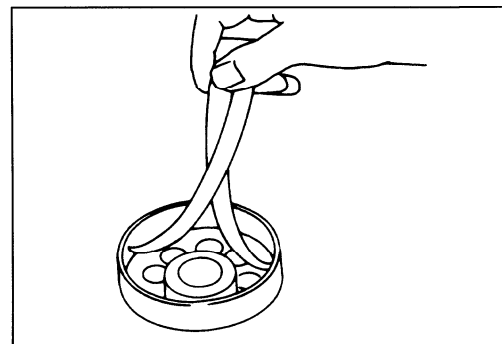
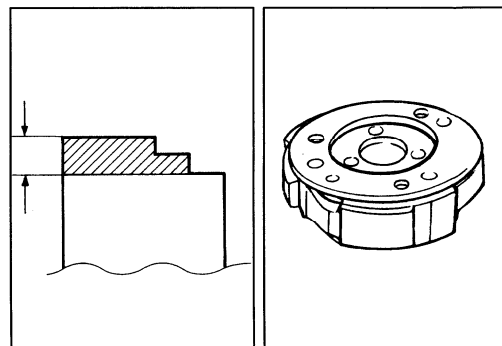
Turn the driven faces and check to see that the driven faces turn smoothly.

If any stickiness or hitches are found, visually inspect the lip of oil seal, driven face sliding surface and sliding pins for wear or damage.

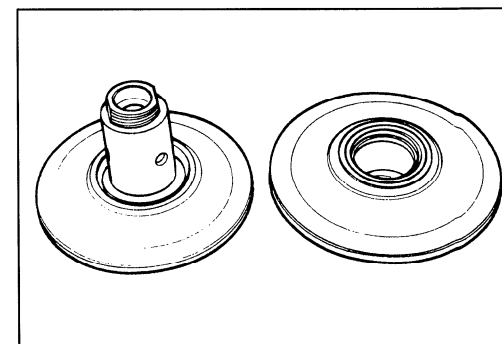
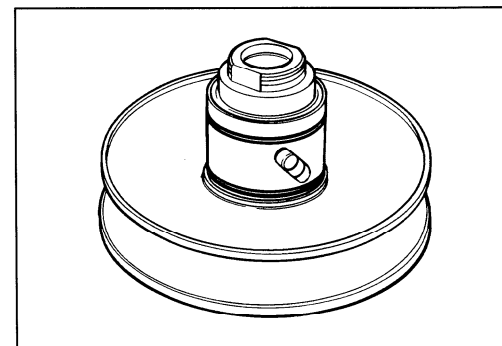
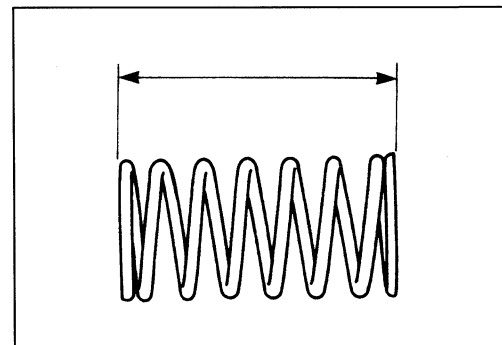
**DRIVEN FACE**

Inspect the belt contacting surface of both driven faces for any scratches, wear and damage.

Replace driven face with new one if there are any abnormality.



Measuring clutch wheel I.D.

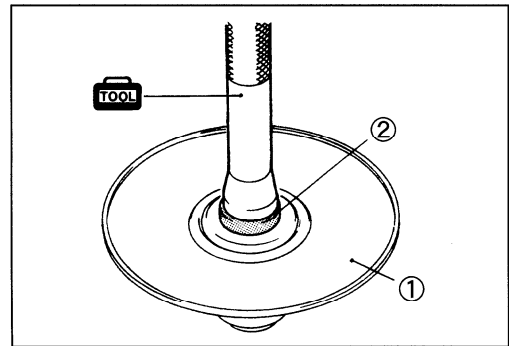


**REASSEMBLY**


Reassemble the clutch and movable driven in the reverse order of disassembly, and also carry out the following steps.

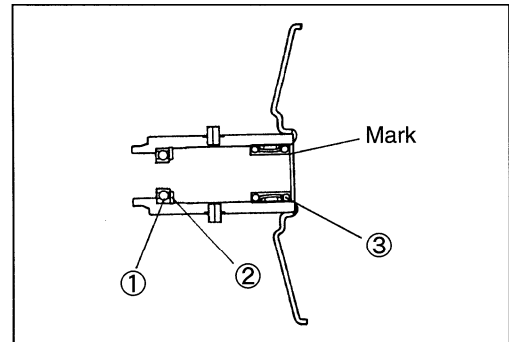
- Install the bearing ② in the fixed driven face ① with the special tool.

 **09943-88211: Bearing installer**




- Refit the circlip ②.
- Refit the needle bearing with the special tool.

 **09925-98221: Bearing installer**

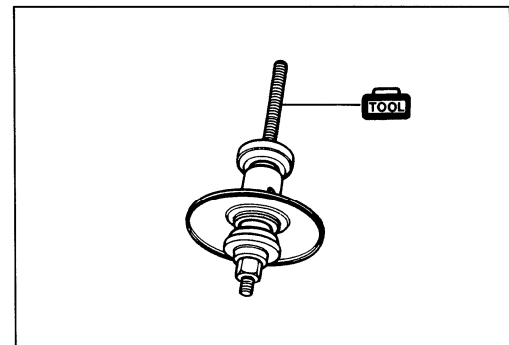


- Install the needle roller bearing with the special tool.


 **09924-84521: Bearing installer**

*NOTE:*

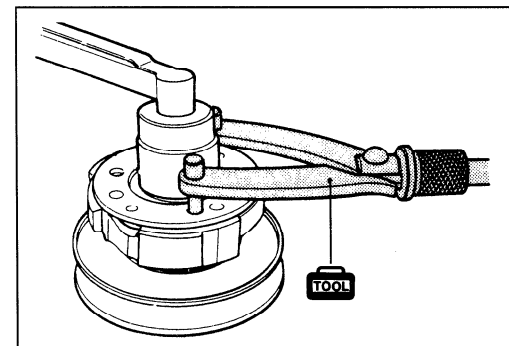
*Face the stamped side of the bearing to the outside.*



- Tighten the nut to the specified torque with the special tool.

 **09930-40113: Rotor holder**

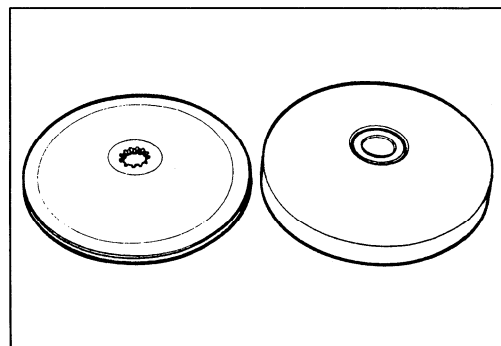
 **Clutch shoe nut: 50 N·m (5.0 kg-m, 36.0 lb-ft)**



## MOVABLE DRIVE

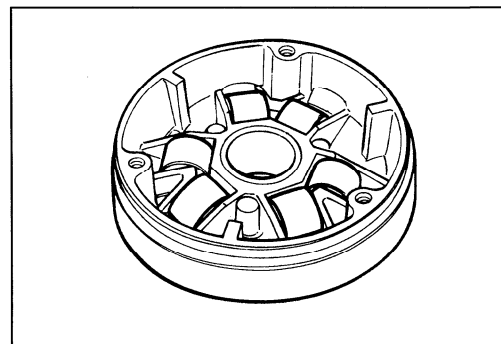
### DRIVE FACE

Inspect the belt contact surface of the drive faces for wear, scratches or any abnormality. If there is something unusual, replace the drive face with a new one.



### ROLLER AND SLIDING SURFACE

Inspect each roller and sliding surface for wear or damage.



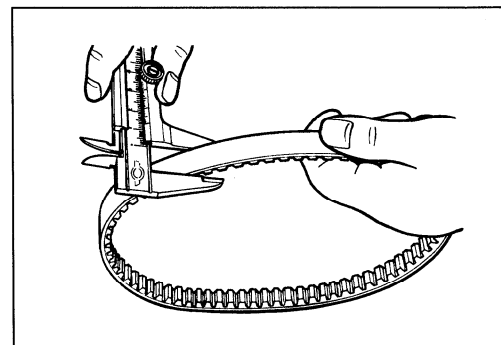
## DRIVE BELT

Remove the drive belt and check for cracks, wear and separation. Measure the drive belt width with a vernier calipers. Replace it if the belt width is less than the service limit or any defect has been found.

**Service Limit: 16.0 mm (0.63 in)**

### ▲ CAUTION

Always keep the drive belt away from any greasy matter.



## CYLINDER HEAD

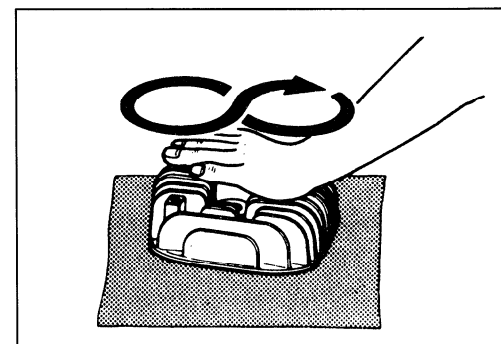
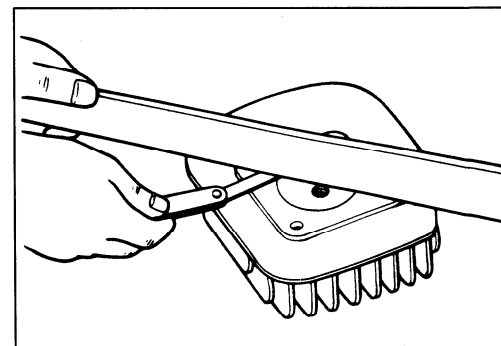
Decarbon the combustion chamber.

Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places.

**TOOL 09900-20803: Thickness gauge**

**Service Limit: 0.05 mm (0.002 in)**

If the largest reading at any portion of the straightedge exceeds the limit, rework the surface by rubbing it against emery paper (of about #400) laid flat on the surface plate in a lapping manner. The gasketed surface must be smooth and perfectly flat in order to secure a tight joint: a leaky joint can be the cause of reduced power output and increased fuel consumption.



## CYLINDER

Decarbon exhaust port and upper part of the cylinder, taking care not to damage the cylinder wall surface.

The wear of the cylinder wall is determined from diameter reading taken at 20 mm from the top of the cylinder with a cylinder gauge. If the wear thus determined exceeds the limit indicated below, rework the bore to the next oversize by using a boring machine or replace the cylinder with a new one. 0.5 mm oversize piston is available.

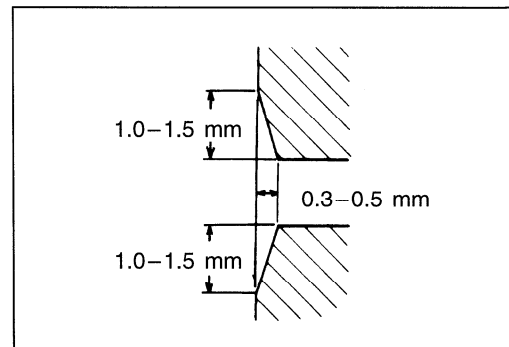
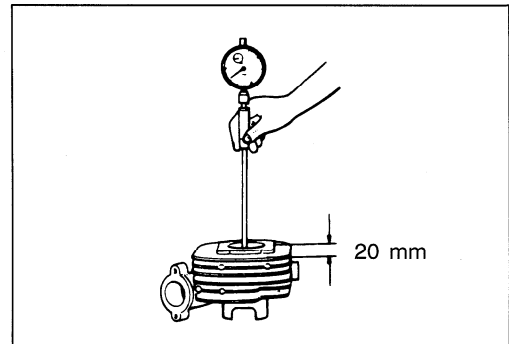
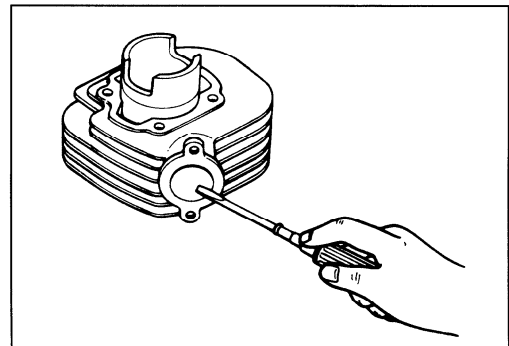
**TOOL** 09900-20508: Cylinder gauge set

**Service Limit: 41.075 mm (1.6171 in)**

After reworking the bore to an oversize, be sure to chamfer the edges of ports and smooth the chamfered edges with emery paper. To chamfer, use a scraper, taking care not to nick the wall surface.

**NOTE:**

Minor surface flaws on the cylinder wall due to seizure or similar abnormalities can be corrected by grinding the flaws off with fine-grain emery paper. If the flaws are deep grooves of otherwise persist, the cylinder must be reworked with a boring machine to the next oversize.



## PISTON

### CYLINDER TO PISTON CLEARANCE

Cylinder-to-piston clearance is the difference between piston diameter and cylinder bore diameter. Be sure to take the maked diameter at right angles to the piston pin. The value of elevation  $\text{\textcircled{A}}$  is prescribed to be 15 mm from the skirt end.

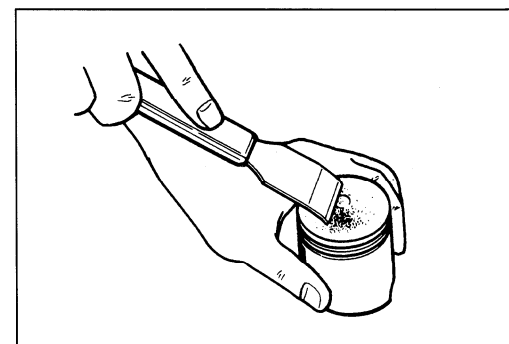
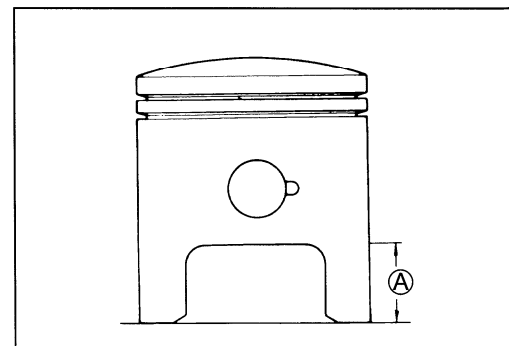
**TOOL** 09900-20202: Micrometer (25–50 mm)

**Service Limit: 40.885 mm (1.6096 in)**

As a result of the above measurement, if the piston-to-cylinder clearance exceeds the following limit, overhaul the cylinder and use an oversize piston, or replace both cylinder and piston. The measurement for the bore diameter should be taken in the intake-to-exhaust port direction and at 20 mm from the cylinder top surface.

Unit: mm

|                    | STD           | Service Limit |
|--------------------|---------------|---------------|
| Cylinder           | 41.005–41.020 | 41.075        |
| Piston             | 40.940–40.955 | 40.885        |
| Cylinder to piston | 0.06–0.07     | 0.120         |

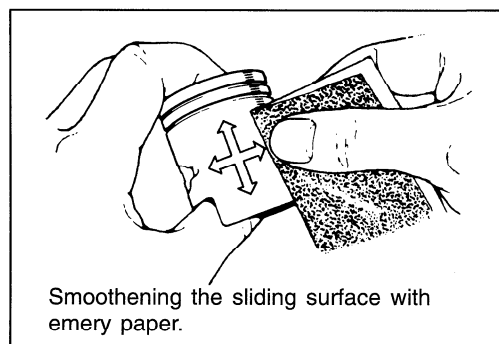
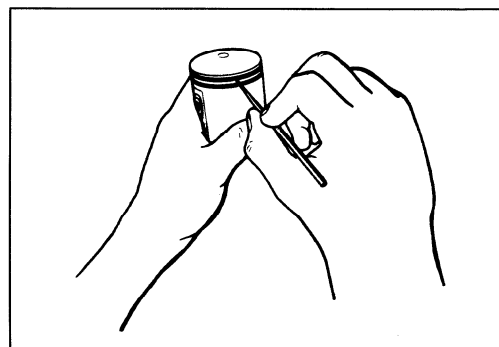


**DE-CARBONING**

De-carbon the piston and piston ring grooves, as illustrated. After cleaning the grooves, fit the rings and rotate them in their respective grooves to be sure that they move smoothly.

Carbon in groove is liable to cause the piston ring to get stuck in the groove, and this condition will lead to reduced engine power output.

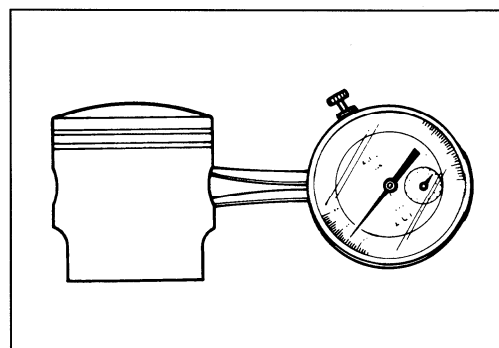
A piston whose sliding surface is badly grooved or scuffed due to overheating must be replaced. Shallow grooves or minor scuff can be removed by grinding with emery paper of about #400.

**PISTON PIN BORE**

Using a caliper gauge, measure the piston pin bore inside diameter. If reading exceeds the following service limit, replace it with a new one.

**TOOL** 09900-20605: Dial calipers

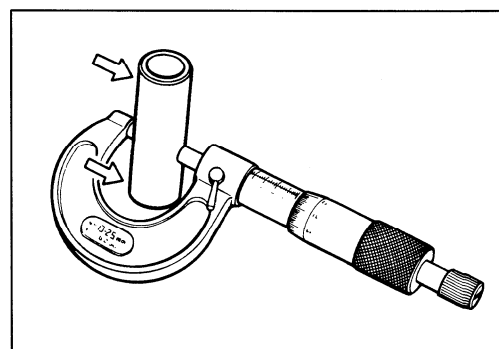
**Service Limit: 10.030 mm (0.3949 in)**

**PISTON PIN O.D.**

Using a micrometer, measure the piston outside diameter at three positions.

**TOOL** 09900-20205: Micrometer (0–25 mm)


**Service Limit: 9.980 mm (0.3929 in)**





**PISTON RINGS**

Check each ring for end gap, reading the gap with a thickness gauge shown in the illustration. If the end gap is found to exceed the limit, indicated below, replace it with a new one. The end gap of each ring is to be measured with the ring fitted squarely into the cylinder bore and held at the least worn part near the cylinder bottom, as shown in the illustration.

 **09900-20803: Thickness gauge**

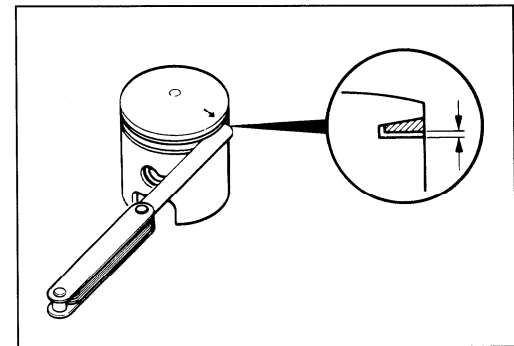
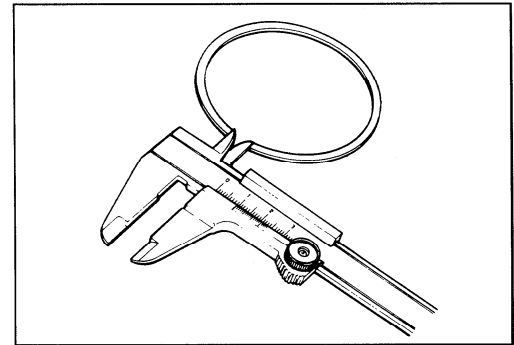
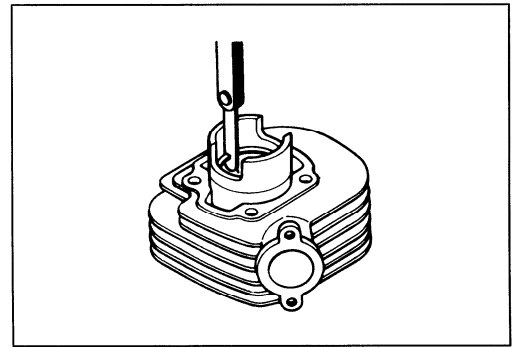
**Service Limit: 0.80 mm (0.031 in)**

As the piston ring wears, its end gap increase reducing engine power output because of the resultant blow by through the enlarged gap. Here lies the importance of using piston rings with end gaps within the limit. Measure the piston ring free end gap to check the spring tension.

**Service Limit: 3.2 mm (0.126 in) ... 1st**  
**3.4 mm (0.134 in) ... 2nd**

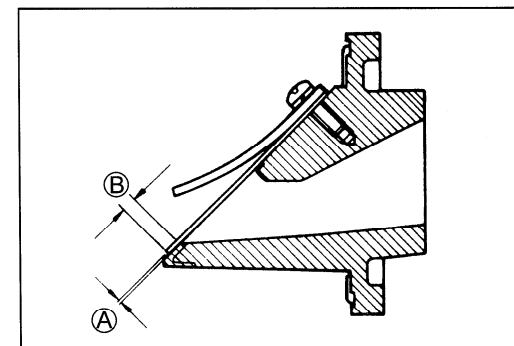
Fix the piston ring in the piston ring groove, measure the ring side clearance with the thickness gauge while matching the sliding surfaces of piston and ring.

**STD Clearance: 0.020–0.060 mm (0.0008–0.0024 in)**  
**(1st and 2nd)**



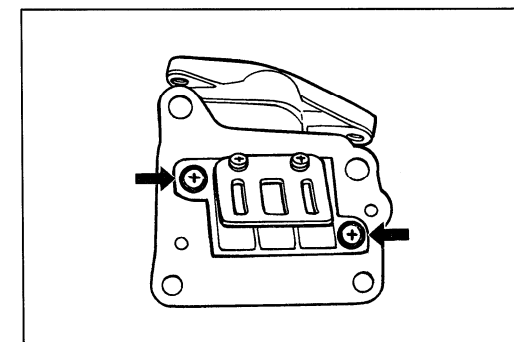
**REED VALVE**

Check the clearance (A) between reed valve and its seat and the dimension (B). If the clearance (A) is noted to exceed 0.2 mm, replace the reed valve assembly. The dimension (B) is at least 1 mm.



Apply THREAD LOCK “1342” to the reed valve mounting screws.

 **99000-32050: THREAD LOCK “1342”**



## ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order of disassembly, but there are a number of reassembling steps that demand or deserve detailed explanation or emphasis. These steps will be taken up for respective parts and components.

### OIL SEALS

Fit the oil seals to the crankcase following the procedure below.

**NOTE:**

Replace removed oil seals with new ones.

- Apply grease to the lip of the oil seals.

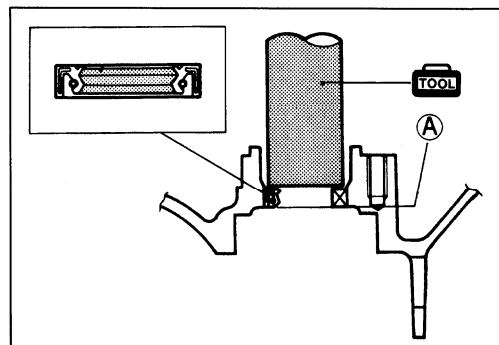
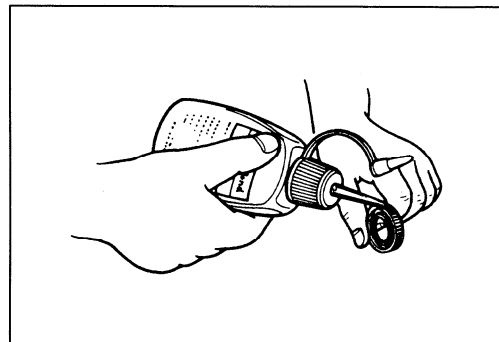
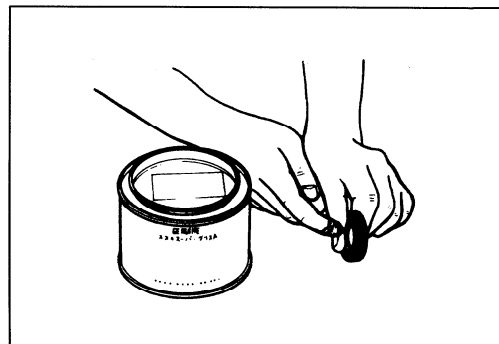
 **99000-25010: SUZUKI SUPER GREASE "A"**

- Be sure to apply THREAD LOCK "1342" to outer surfaces of right and left crankshaft oil seals to prevent them from moving.

 **99000-32050: THREAD LOCK "1342"**


**NOTE:**

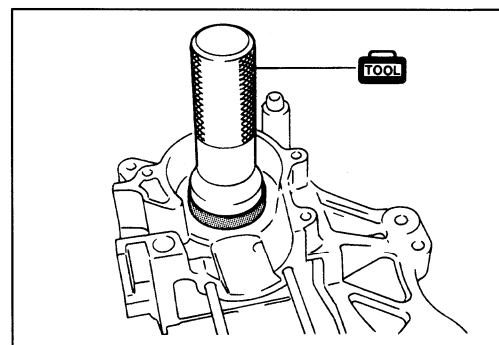
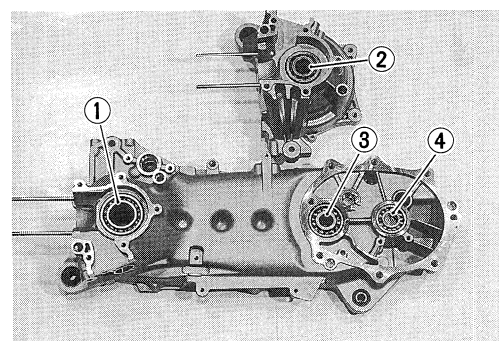
Align the oil seal with edge **A** of the crankcase as shown in the illustration.



### BEARINGS

Install new bearings with the special tools.

-  ① **09913-75520: Bearing installer**  
 ②, ③ **09913-76010: Bearing installer**  
 ④ **09913-79610: Bearing installer**

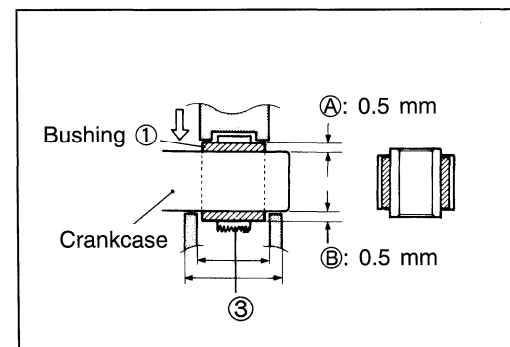
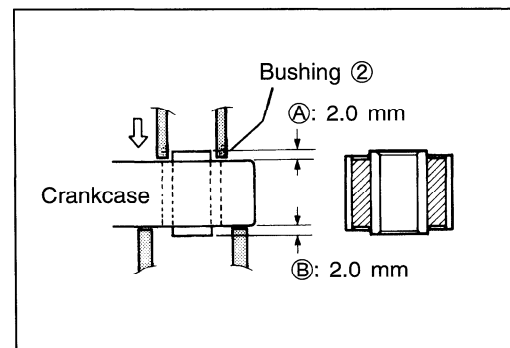
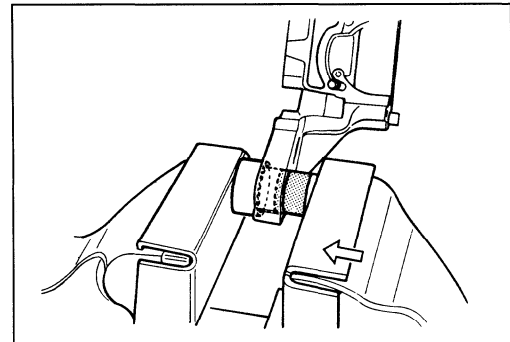
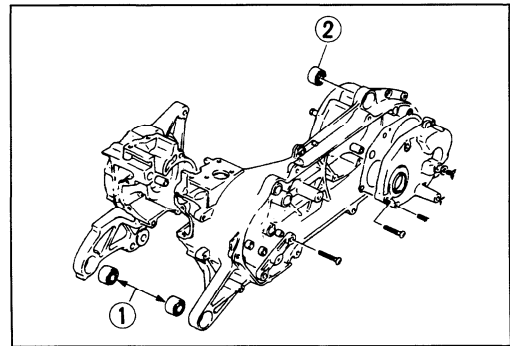


## BUSHINGS

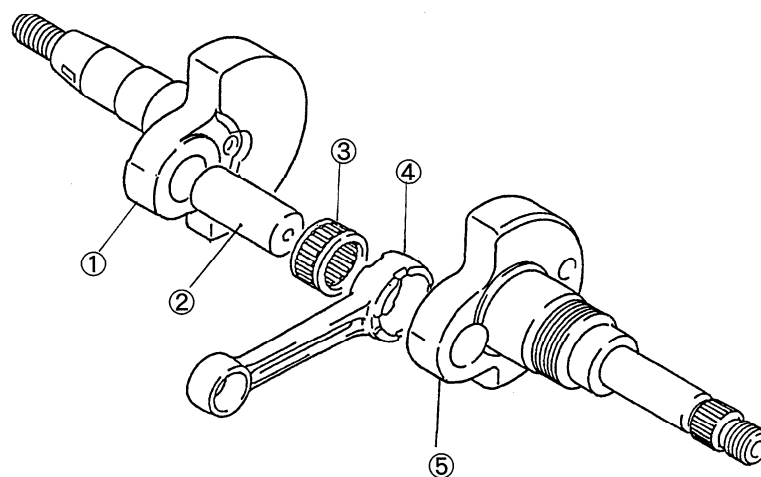
Using two steel tubes of appropriate size and a vise, press the mounting bushings ① and ② into the crankcase holes as shown in the illustration.

**NOTE:**

Knurled end ③ should face inside. Protrusion ④ and ⑤ should be in the same dimension.



## CRANKSHAFT



- ① Crankshaft, R
- ② Crank pin
- ③ Crank pin bearing
- ④ Conrod
- ⑤ Crankshaft, L

- Decide the length between the webs referring to the figure at right when rebuilding the crankshaft.

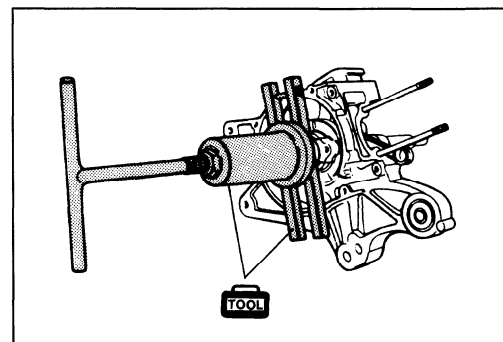
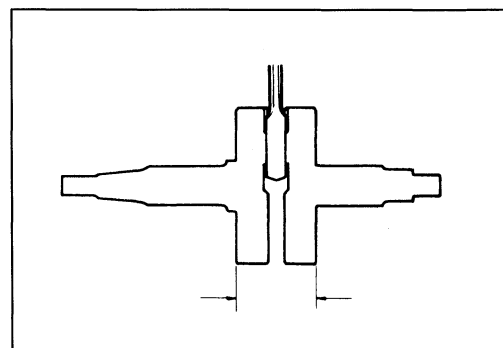
**Standard width between webs:  $35.0 \pm 0.1$  mm**  
**( $1.378 \pm 0.004$  in)**

- When mounting the crankshaft into the right crankcase, it is necessary to pull its right end into the crankcase with the special tools.

**TOOL** 09910-32812: Crankshaft installer  
 09910-20116: Conrod holder

**▲ CAUTION**

Never fit the crankshaft into the crankcase by driving it with a plastic hammer. Always use the special tool, otherwise crankshaft alignment accuracy will be affected.

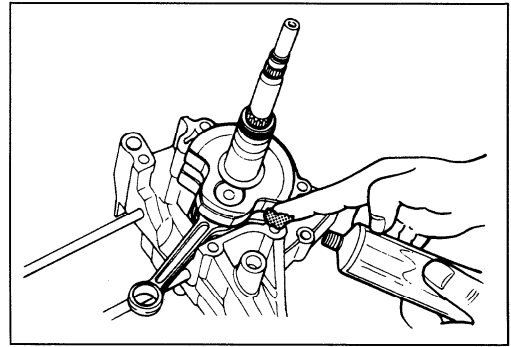


## CRANKCASE

- Apply SUZUKI BOND “1215” uniformly to the fitting surface of the right half of the crankcase.

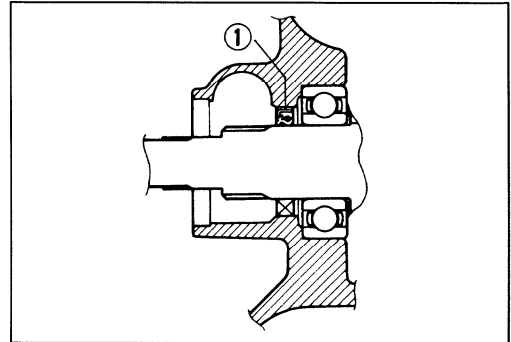
**1215** 99000-31110: SUZUKI BOND “1215”

- Install the two dowel pins.
- Fit the left half on the right half after waiting a few minutes.



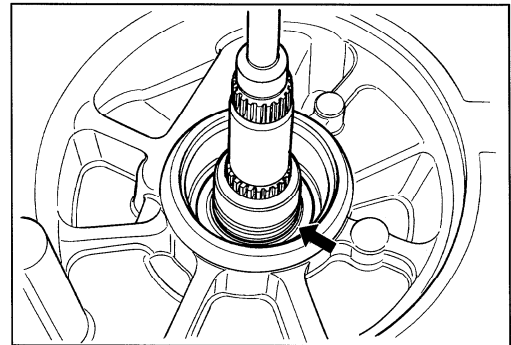
- Tighten the crankcase bolts.
- Install the new oil seal ① with the special tool as shown in the illustration.

**TOOL** 09941-74910: Oil seal installer



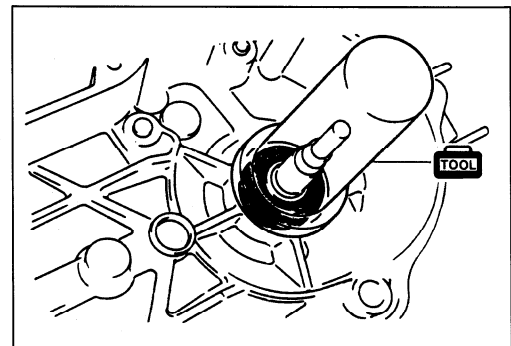
- Apply SUZUKI SUPER GREASE “A” to the oil pump drive gear on the crankshaft surface approximately 10 g of grease.

**A** 99000-25010: SUZUKI SUPER GREASE “A”

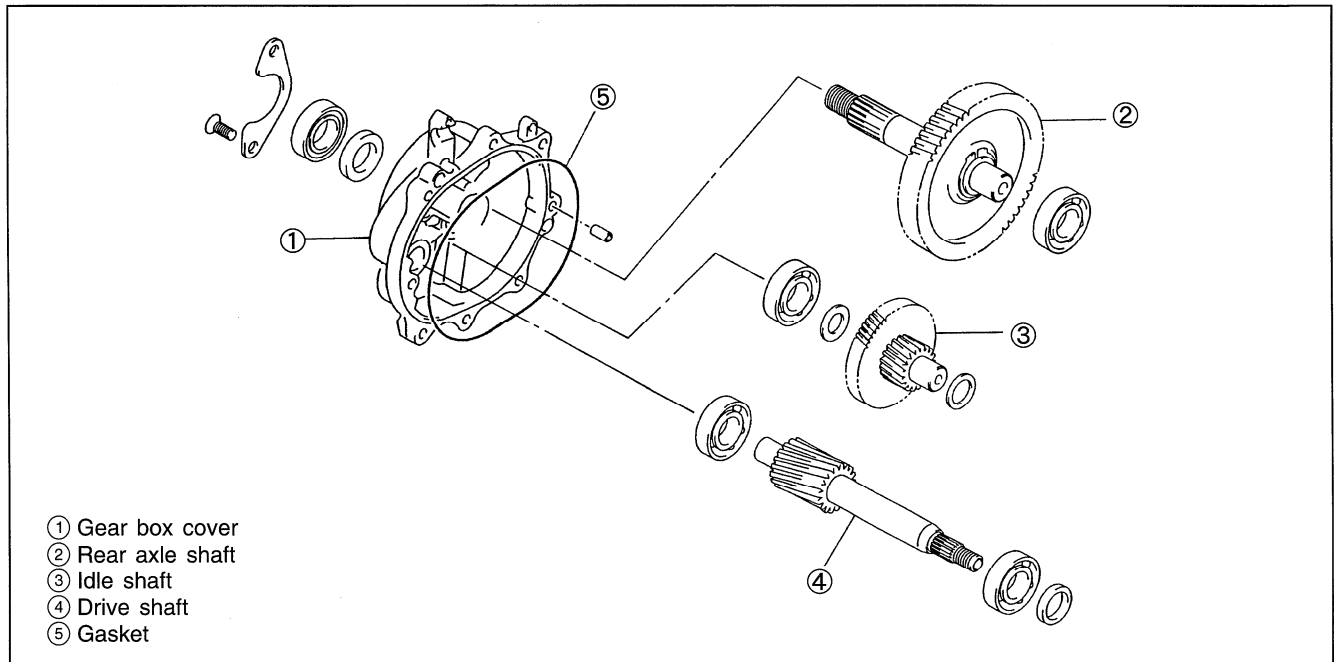


- Install the new oil seal with the special tool.

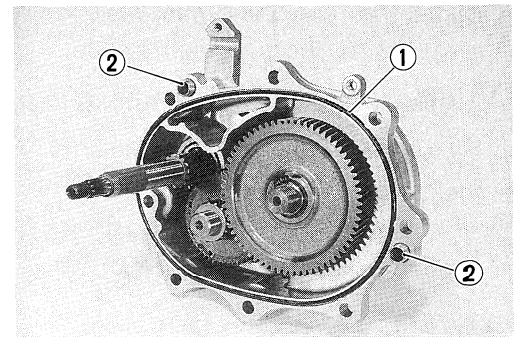
**TOOL** 09913-85210: Oil seal installer



## REAR AXLE SHAFT

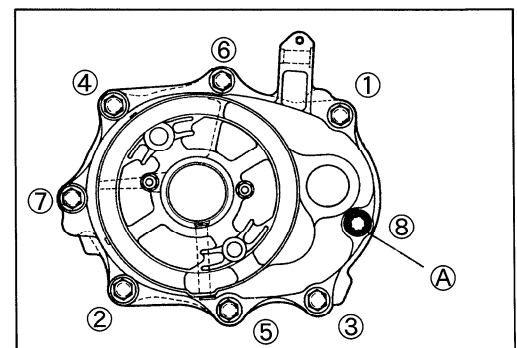


- Refit the gasket ① and dowel pin ②.
- Apply oil to gears.
- Reassemble the gearbox cover to the crankcase.

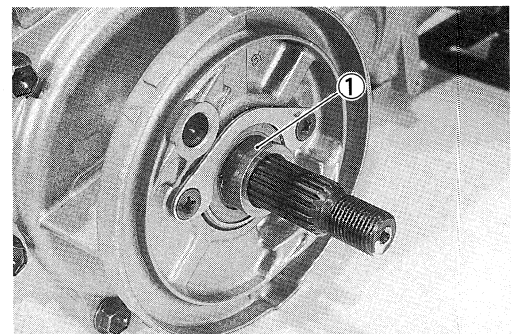


- Tighten the bolts in numeral order as shown.
- Apply SUZUKI BOND "1215" to the bolt (A) and tighten it.

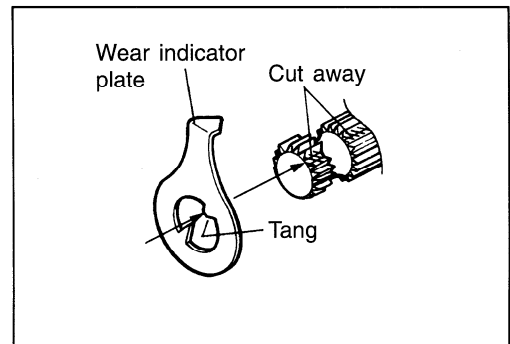
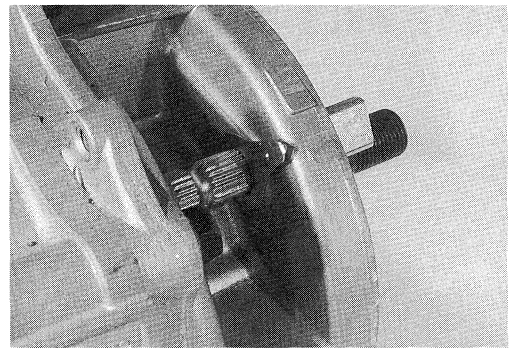
**1215** 99000-31110: SUZUKI BOND "1215"



- Refit the rear axle spacer ①.



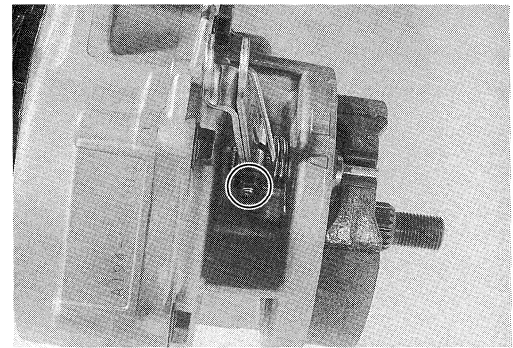
- Aligning the tang on the wear indicator plate with a cutaway on the rear brake cam serrated end, slide the indicator plate over the cam serration.



- Install the rear brake cam lever on the cam and tighten the lever nut to the specified torque.

 **Rear brake cam lever nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)**

- Install the brake shoes.
- Install the rear wheel.

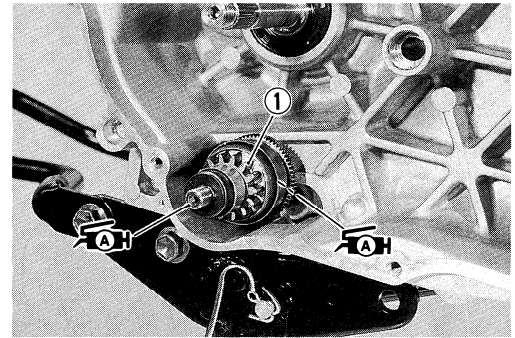


## STARTER PINION AND STARTER GEAR

- Apply grease on the pinion shaft and install the starter pinion subassembly.
- Assemble the starter pinion subassembly ①.

 **99000-25010: SUZUKI SUPER GREASE "A"**

- Insert the two dowel pins ②.

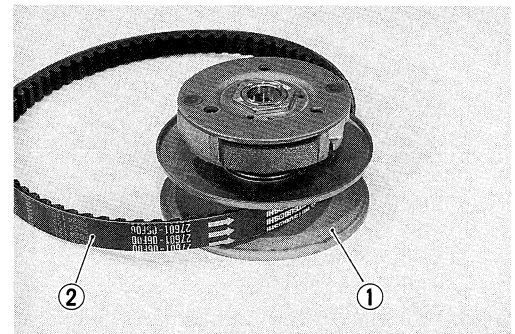


## DRIVE BELT


- Insert the drive belt ② between the driven faces ① as deep inside as possible while pulling the movable driven face all the way outside to provide the maximum belt clearance.

### CAUTION

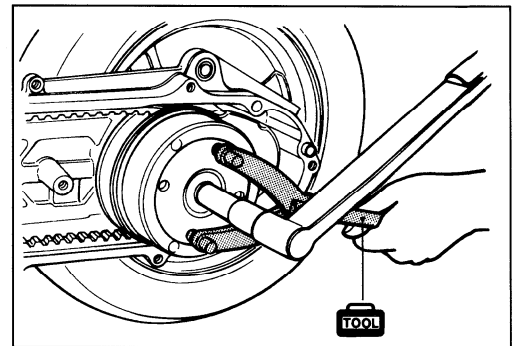
The belt contact face on the driven faces should be thoroughly cleaned to be free from oil.



- Thoroughly clean the clutch housing to be free from oil and position it over the clutch shoe assembly.
- Tighten the clutch housing nut to the specified torque with the special tool.

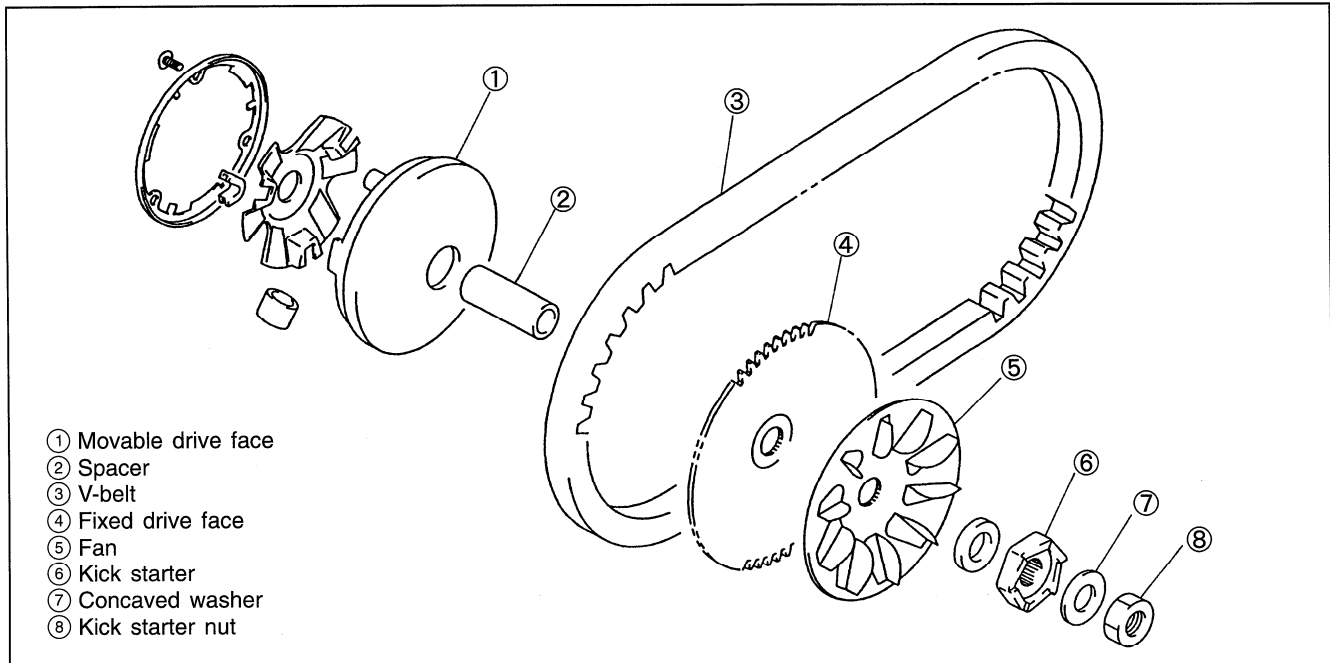
 **09930-40113: Rotor holder**

 **Clutch housing nut: 50 N·m (5.0 kg-m, 36.0 lb-ft)**

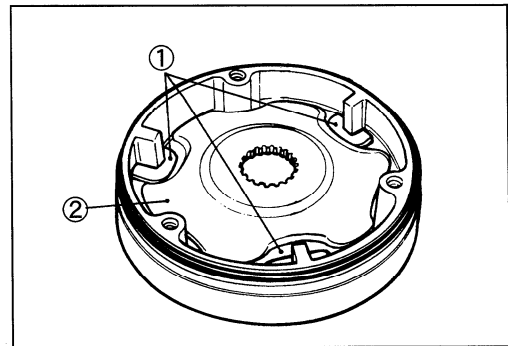




## MOVABLE DRIVE



- Mount the three dampers ① on the movable drive plate ② and install it on the movable drive face.

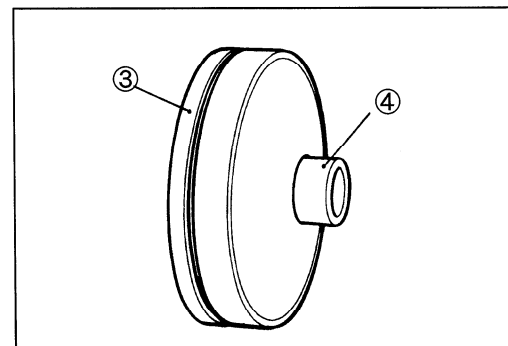


- Install the movable drive face cover ③.

**NOTE:**

*Make sure that the movable drive plate is fully positioned inside, or the weight roller may come off.*

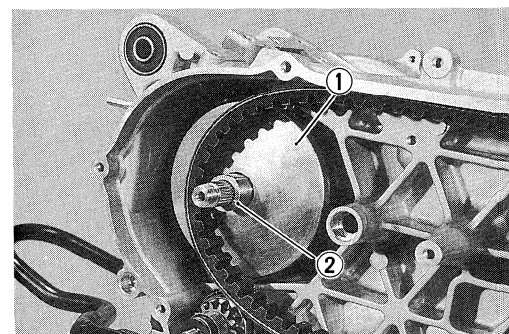
- Insert the spacer ④.



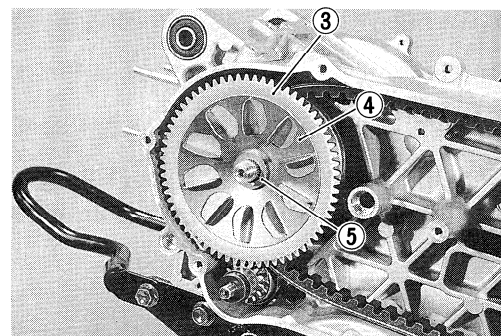
- Position the movable drive face ① and spacer ②.

**NOTE:**

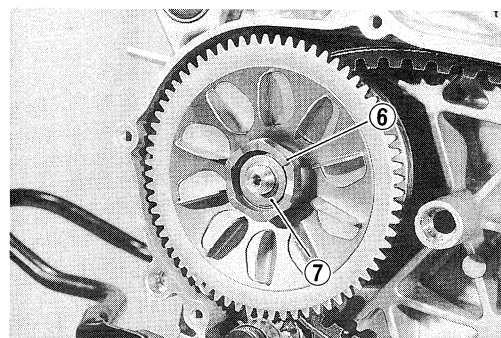
*Thoroughly clean the belt contact part to be free from oil.*



- Refit the fixed drive face ③, fan ④ and washer ⑤.

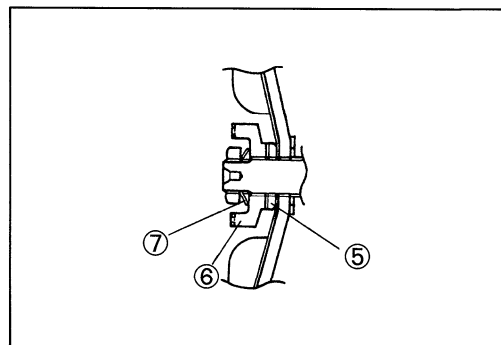


- Refit the kick starter ⑥.
- Refit the concaved washer ⑦.



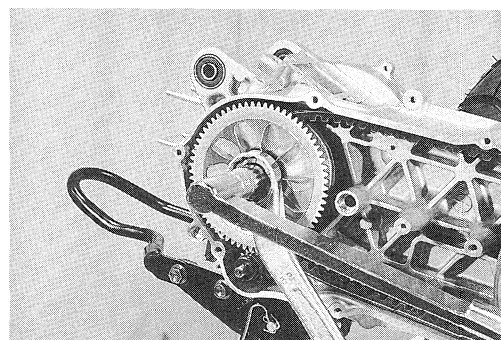
**NOTE:**

Place the concaved washer ⑦ as shown in the illustration.

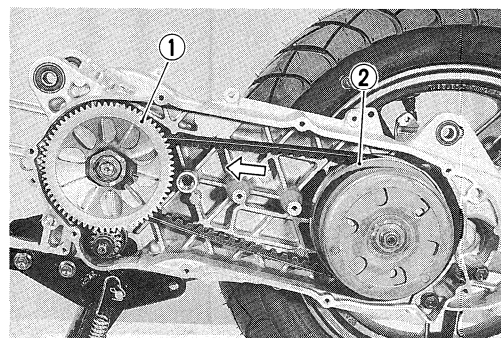


- Hold the kick starter nut with 32 mm wrench and tighten the nut to the specified torque.

 **Kick starter nut: 50 N·m (5.0 kg-m, 36.0 lb-ft)**



- Continue turning the fixed drive face ① by hand until the belt is seated in and both the drive and driven faces ② will move together smoothly without slip.

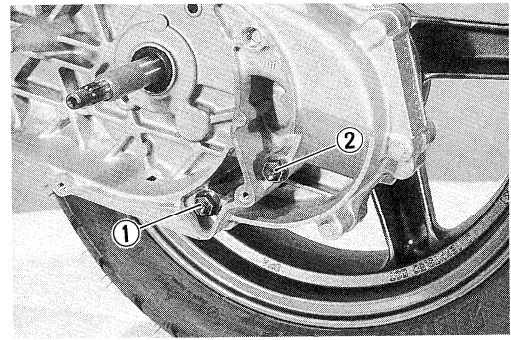


- Fill the final gear box with engine oil up to the level hole.

**Oil Capacity: 130 ml (3.2/3.4 US/Imp oz)**

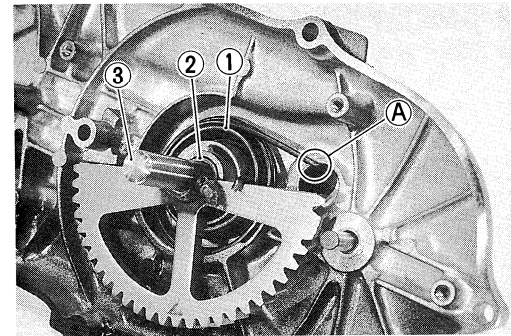
- Tighten the oil level bolt to the specified torque.

**Oil level bolt ②: 12 N·m (1.2 kg-m, 8.5 lb-ft)**  
**Drain bolt ①: 12 N·m (1.2 kg-m, 8.5 lb-ft)**

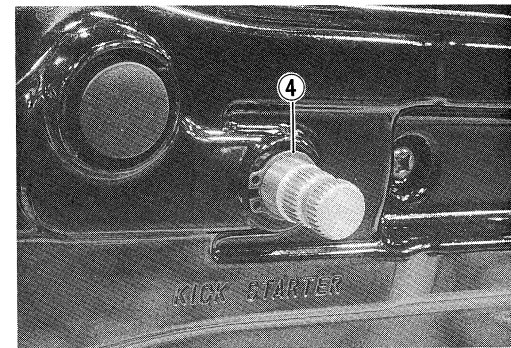


## KICK STARTER

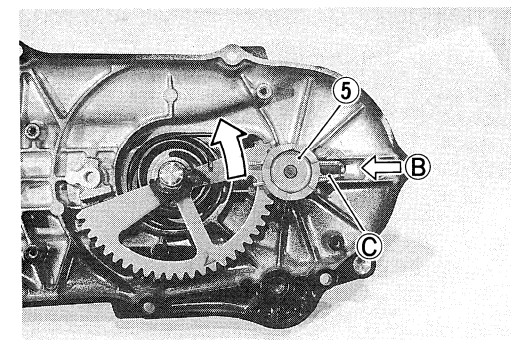
- Refit the kick starter spring ①, bush ② and kick starter shaft ③.
- Refit the circlip.
- Hook the spring to the hole ④.



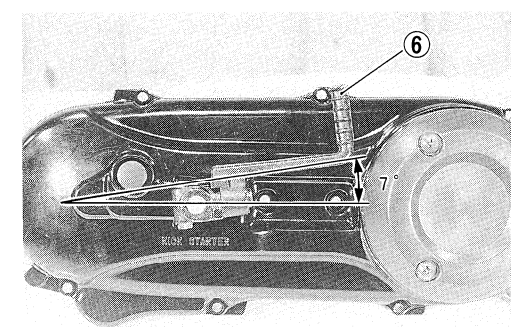
- Refit the circlip ④.



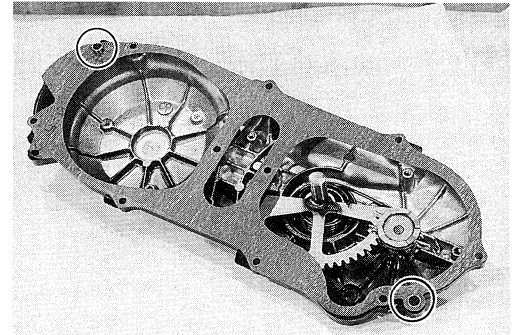
- Turn the kick starter shaft counterclockwise and refit the kick starter driven gear ⑤.
- Fit the hook ③ to the groove ⑥.



- Reassemble the kick starter lever ⑥.



- Install the two dowel pins and new gasket.



## PISTON

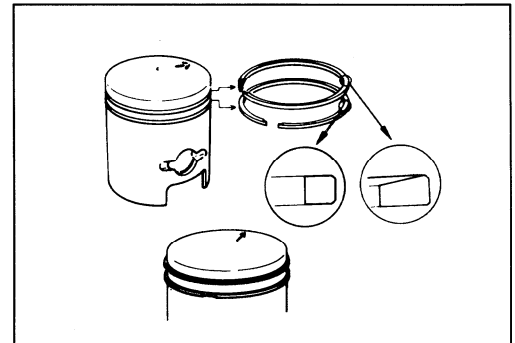
- Install the piston rings on the piston.

**1st ring : Keystone ring**

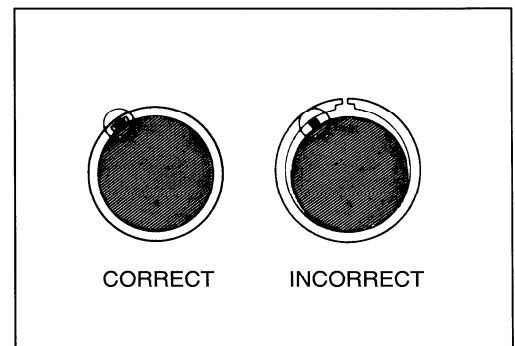
**2nd ring : Rectangular ring and expander ring**

*NOTE:*

*Position the ring so that the marking is on upside.*



- It is extremely important that, when the piston is fed into the cylinder, each ring in place should be so positioned as to hug the locating pin as shown in the illustration.

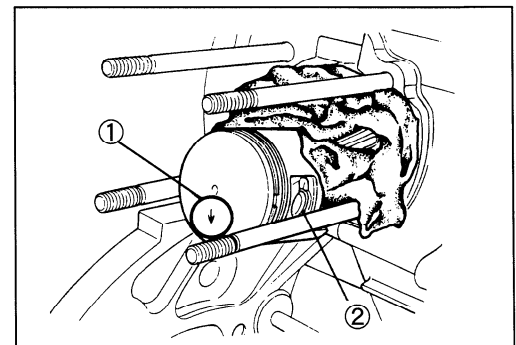


- Fit the circlip ② securely.

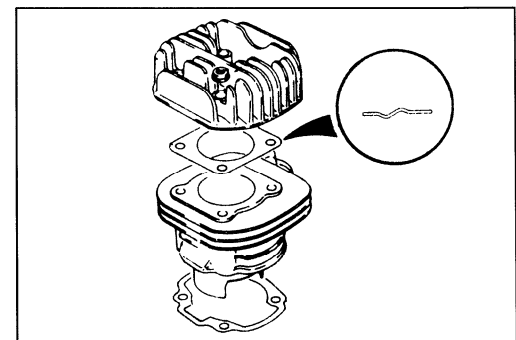
*NOTE:*

*The arrow mark ① on the piston head should point the exhaust side.*

- Apply CCI SUPER oil on the piston pin and install the piston to the conrod.



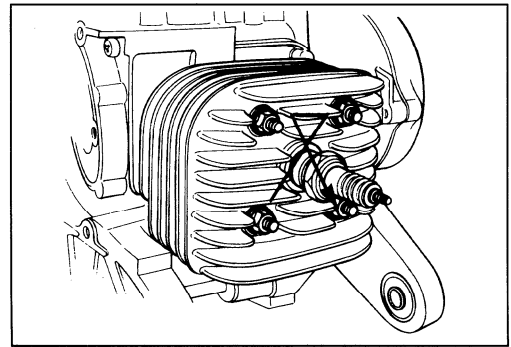
- Position the cylinder base gasket.
- Apply CCI SUPER oil on the piston and cylinder wall surfaces and install the cylinder over the piston carefully.



## 3-35 ENGINE

- Tighten the cylinder head nut to the specified torque.

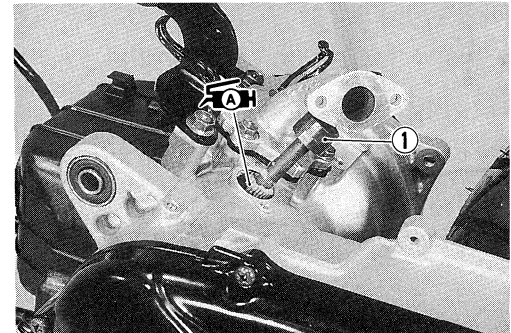
 **Cylinder head nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)**



## OIL PUMP DRIVEN GEAR

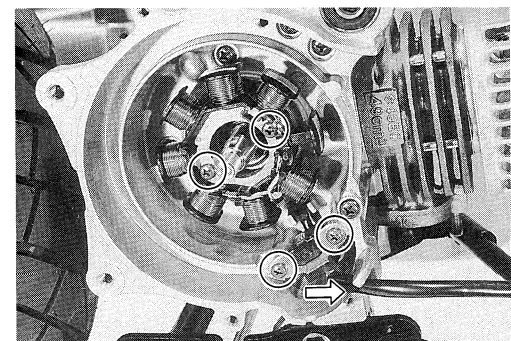
- Apply grease to the oil pump driven gear ① and install it to the crankcase.

 **99000-25010: SUZUKI SUPER GREASE "A"**

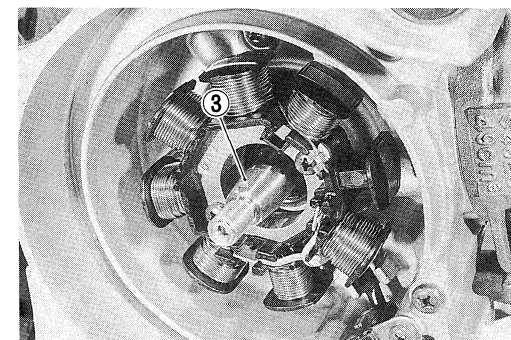


## MAGNETO

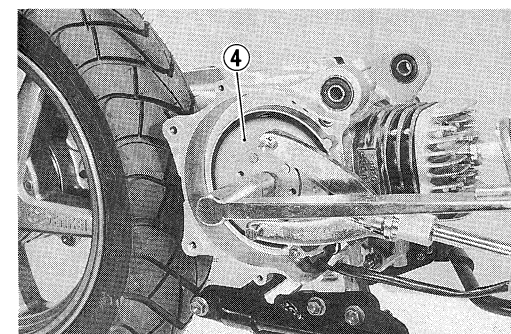
- Refit the stator and pick up coil.
- Route the stator coil lead wires.



- Degrease crankshaft.
- Refit the key ③.



- Refit the fly wheel ④.
- Tighten the nut to the specified torque with the special tool.



# **FUEL AND LUBRICATION SYSTEM**

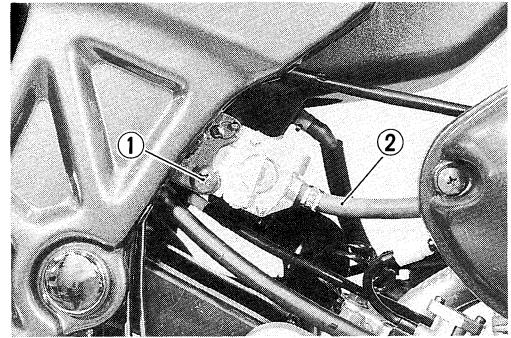
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| <b>FUEL TANK AND FUEL VALVE .....</b> | <b>4- 1</b> |
| <b>CARBURETOR .....</b>               | <b>4- 2</b> |
| <b>OIL PUMP .....</b>                 | <b>4- 7</b> |

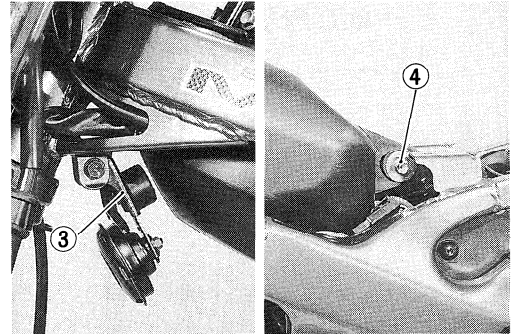
## FUEL TANK AND FUEL VALVE

### FUEL TANK REMOVAL

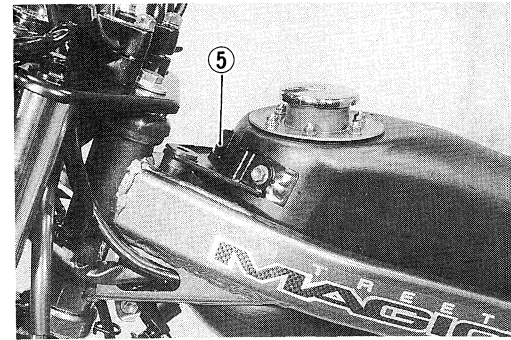
- Remove the seat and fuel tank cover.
- Remove the exhaust pipe.
- Remove the fuel valve screw ① and fuel hose ②.



- Remove the horn bracket ③.
- Remove the fuel tank bolt ④.

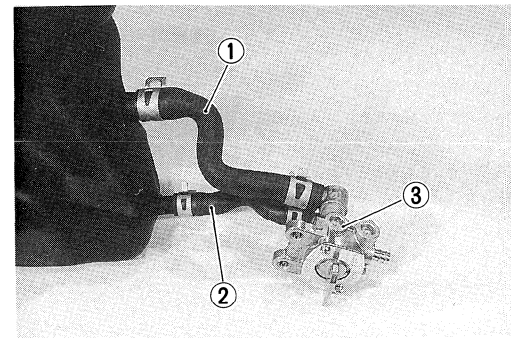


- Remove the fuel tank bracket ⑤.
- Remove the fuel tank.



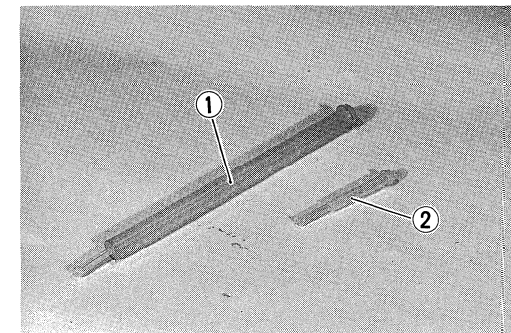
### FUEL VALVE

- Remove the fuel hoses, ON ① and RES ②.
- Remove the fuel valve ③.

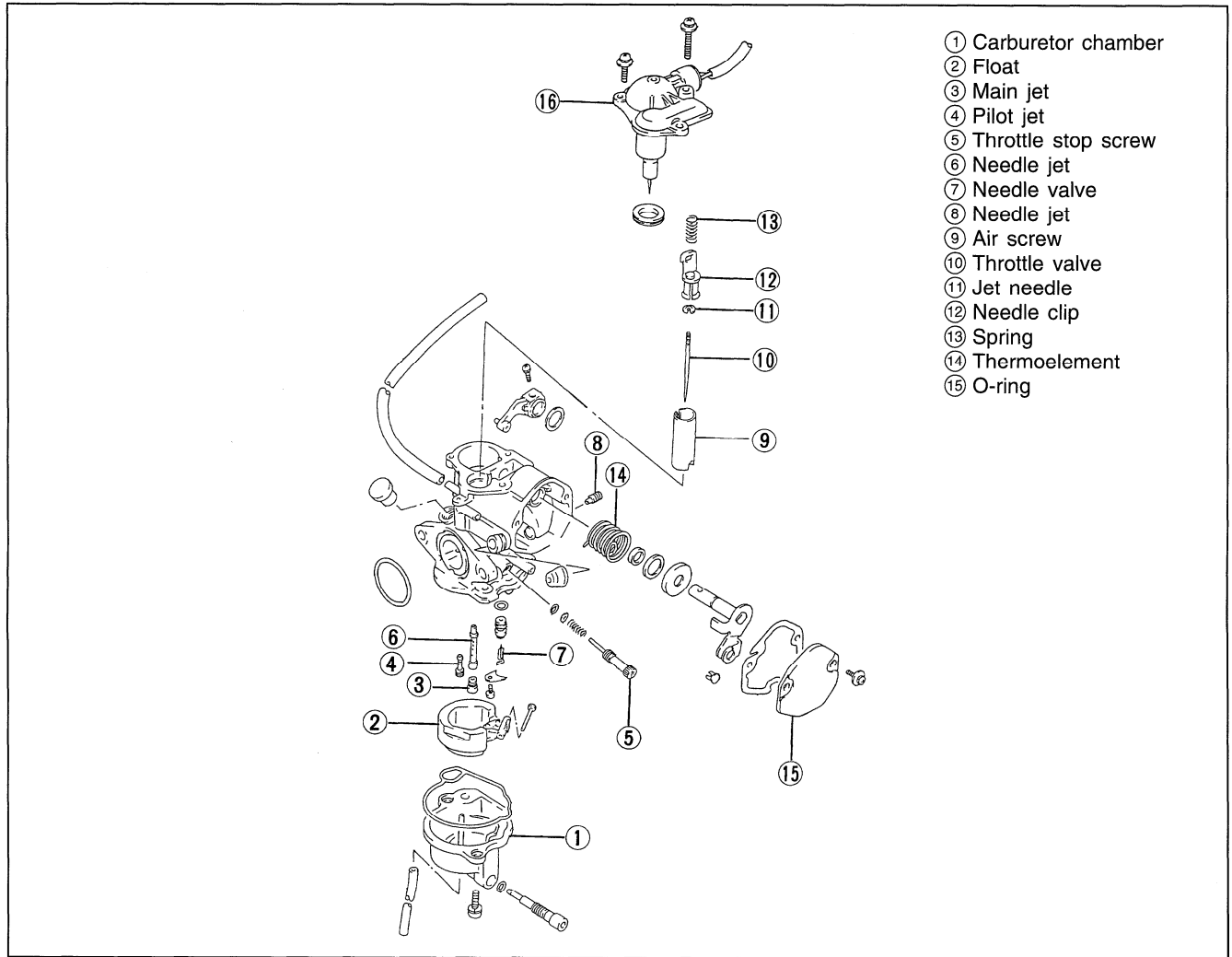


### INSPECTION

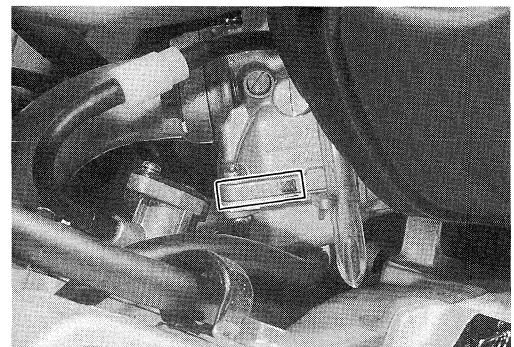
- Inspect the fuel strainer ① for damage and clogging.



# CARBURETOR



**CARBURETOR I.D. NO. ①**



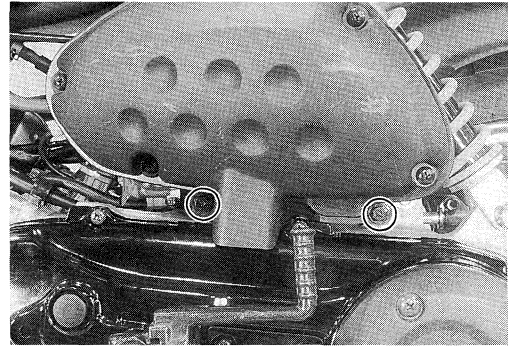
## CARBURETOR SETTING

Refer to page 7-24.

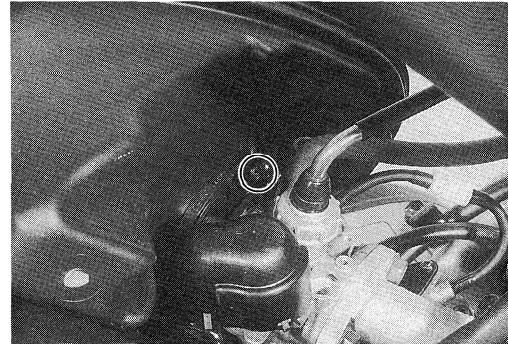


### REMOVAL

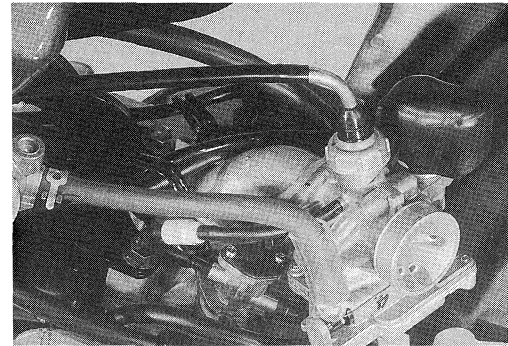
- Remove the bolts.



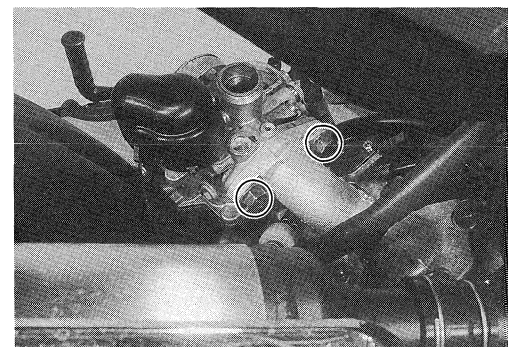
- Remove the screw.
- Remove the air cleaner.



- Remove the carburetor top cap.
- Disconnect the fuel hose.
- Disconnect the oil hose.
- Disconnect the thermoelement.

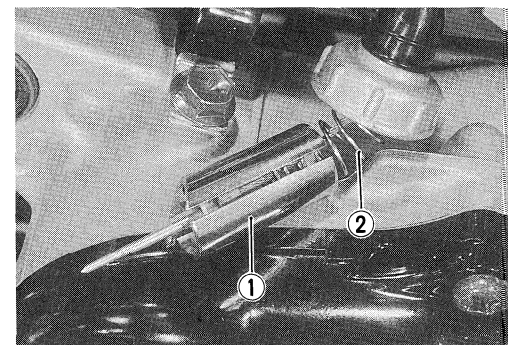


- Remove the carburetor mounting bolts.

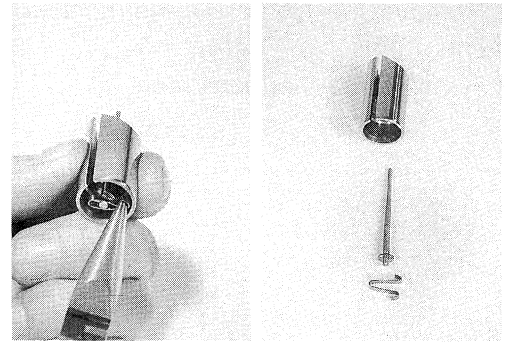


### DISASSEMBLY

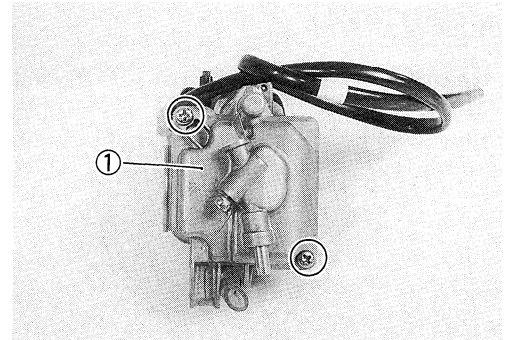
- Remove the throttle cable from the slit in the throttle valve and then remove the throttle valve ①, jet needle and throttle valve spring ②.



- Separate the jet needle and throttle valve.



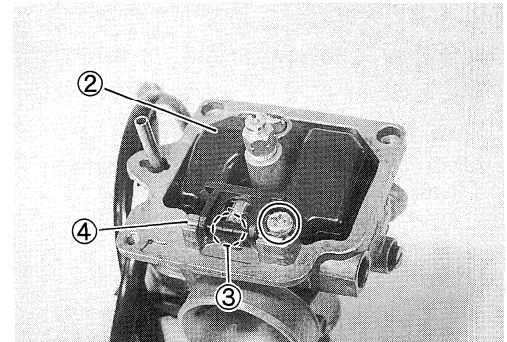
- Remove the float chamber ①.



- Remove the float ② and needle valve ③ by removing the float pin ④.

**▲ CAUTION**

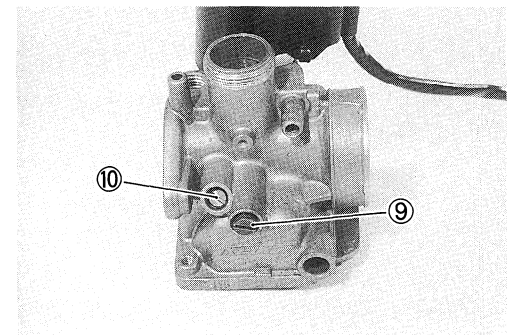
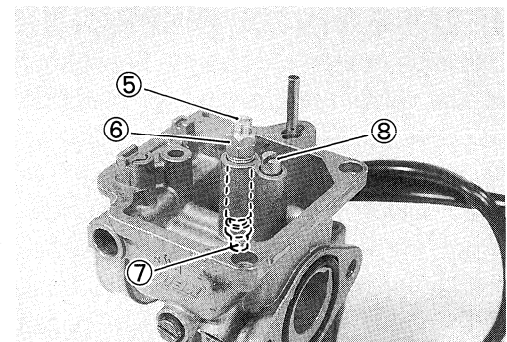
When removing the float pin, be careful not to damage the carburetor body and float.



- Remove the main jet ⑤, needle jet holder ⑥, needle jet ⑦ and pilot jet ⑧.
- Remove the throttle stop screw ⑨ and pilot air screw ⑩.

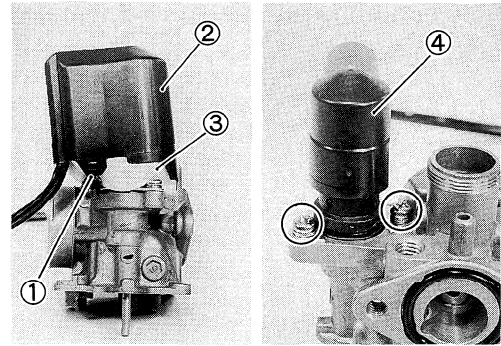
**▲ CAUTION**

Do not use a wire to clean the passages and jets. Only use compressed air.



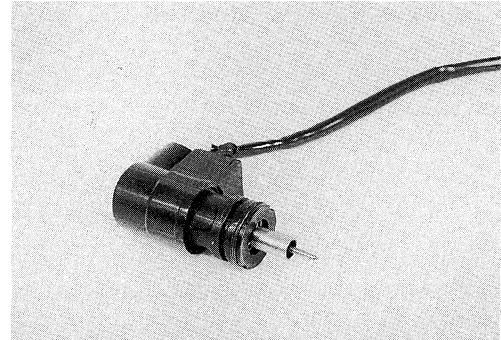
## 4-5 FUEL AND LUBRICATION SYSTEM

- Remove the clamp ①, thermoelement cover ② and foam liner ③.
- Remove the thermoelement ④.



### ▲ CAUTION

Do not disassemble the thermoelement. It is not serviceable.



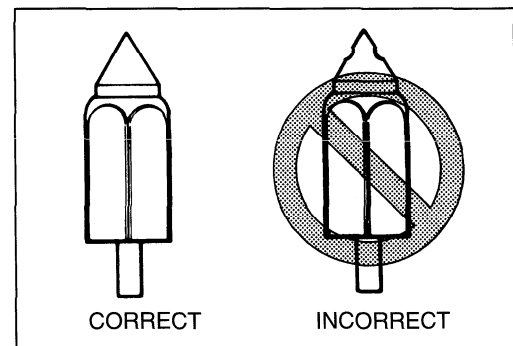
## INSPECTION

Check the following items for any damage or clogging.

- \* Main jet
- \* Pilot jet
- \* Needle jet
- \* Throttle valve
- \* Float
- \* Needle valve

## NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle valve, the gasoline will continue flowing and overflow. If the valve seat and needle valve are worn beyond the permissible limits, similar trouble will occur. Conversely, if the needle valve sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasoline. If the needle valve is worn, as shown in the illustration, replace it with a new valve seat. Clean the fuel passage of the mixing chamber with compressed air.

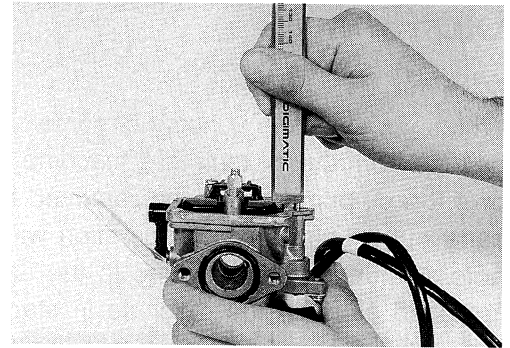


## FLOAT HEIGHT ADJUSTMENT

To check the float height, turn the carburetor upside down. Gradually lower the float and observe the clearance between the float tongue and the end of the needle valve. When the tongue just begins to contact the end of the needle valve, stop lowering the float and hold it. Then, measure the float height from the float chamber mating surface.

Use vernier calipers to measure the float height.

Bend the tongue as necessary to bring height  $\text{\textcircled{A}}$  to the proper specification.



### NOTE:

When measuring the float height, remove the O-ring.

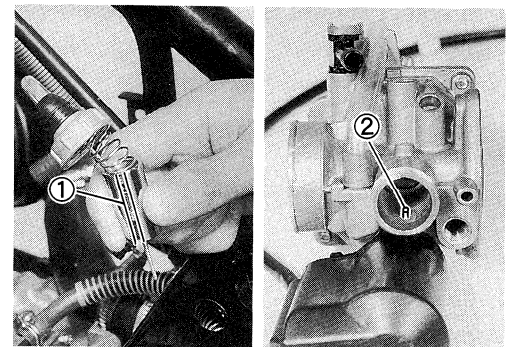
**TOOL** 09900-20101: Vernier calipers

Float height  $\text{\textcircled{A}}$ :  $5.1 \pm 0.5$  mm ( $0.20 \pm 0.02$  in)

## REASSEMBLY AND REMOUNTING

Reassemble and remount the carburetor in the reverse order of removal and disassembly. Pay attention to the following points:

- Adjust the pilot air screw. (Refer to page 7-17.)
- Install the throttle valve with the top. cap.
- Align the slit  $\text{\textcircled{1}}$  on the throttle valve with the projection  $\text{\textcircled{2}}$  on the carburetor body.



- After remounting the carburetor, the following adjustments are necessary.

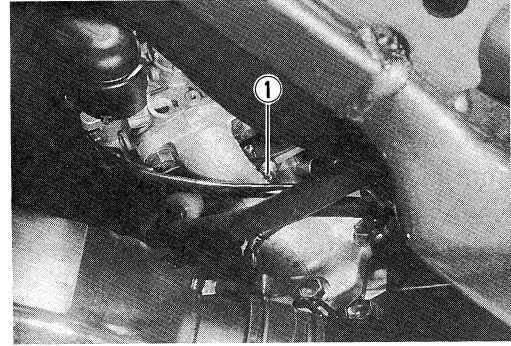
- \* Throttle cable play ..... Refer to page 2-5.
- \* Engine idle speed ..... Refer to page 2-5.

## OIL PUMP

### AIR BLEEDING

Whenever evidence is noted of some air having leaked into the oil pipe from the oil tank in a machine brought in for servicing, or if the oil pump has to be removed for servicing, be sure to carry out an air bleeding operation with the oil pump in place before returning the machine to the user.


To bleed air, hold the machine in standstill condition. Loosen the screw ① to let out air and after making sure that the trapped air has all been bled, tighten the screw good and hard.



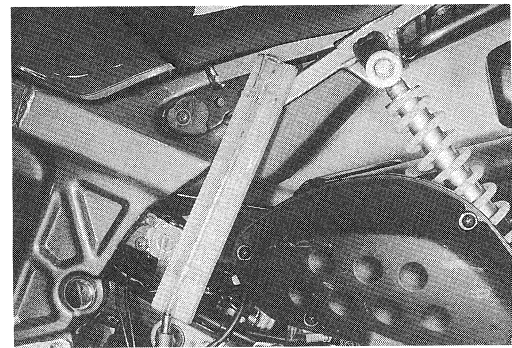
### CHECKING OIL PUMP

Use the special tool, to check the pump for capacity by measuring the amount of oil the pump draws during the specified interval.

- Remove the left side cover.
- Have the tool filled with SUZUKI CCI SUPER OIL and connect it to the suction side of the pump.
- Run the engine at 3 000 r/min.
- Holding engine speed at the same 3 000 r/min., and let the pump draw for 5 minutes. For this operation, the reading taken on the device should be 0.9–1.1 ml.

 **09900-21602: CCI oil gauge**

**Oil discharge amount: 0.9–1.1 ml at 3 000 r/min.  
for 5 minutes.**



### **⚠ CAUTION**

**During this inspection, strictly follow the following points.**

- \* **The machine should be rested on the center stand.**
- \* **Do not touch the rear wheel while running the engine.**

### **NOTE:**

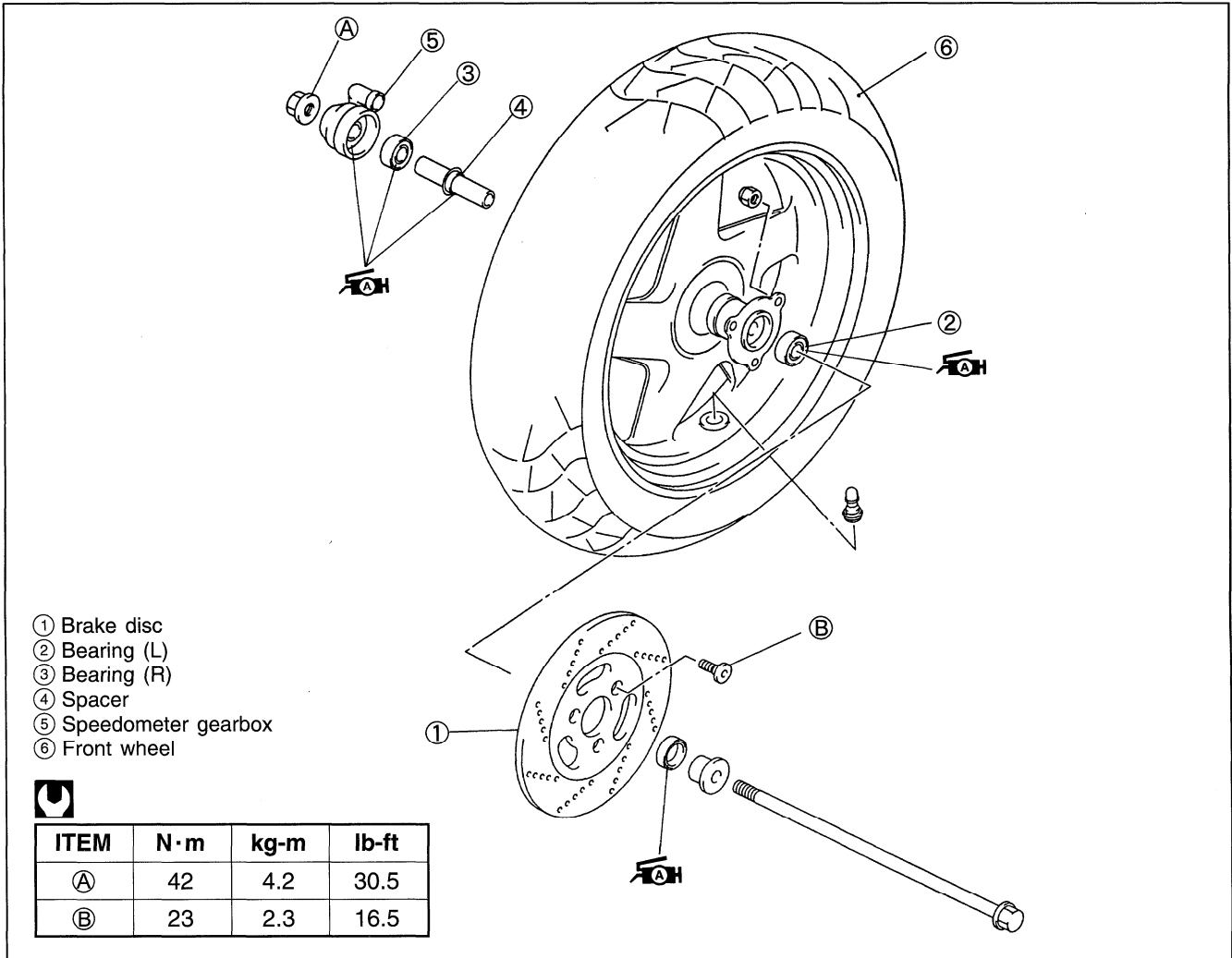
*Adjust the idle r/min after checking the oil pump.*

# CHASSIS

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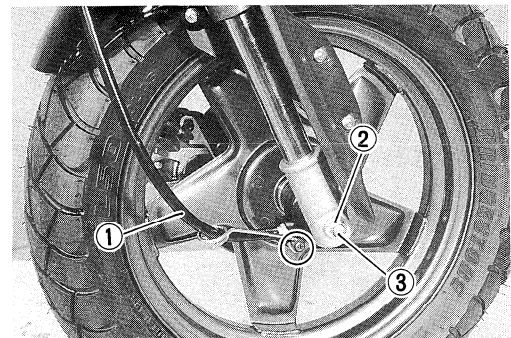
|  |             |
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## FRONT WHEEL

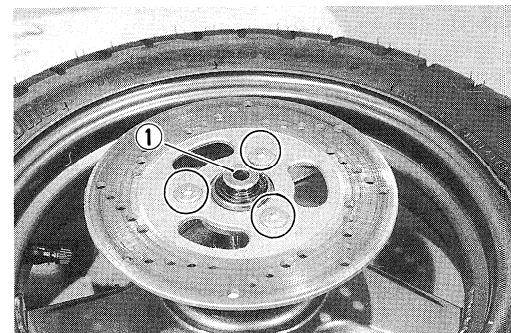


## REMOVAL

- Remove the speedometer cable ①.
- Loosen the axle nut ②.
- Place a jack under the chassis tube and lift the front end.
- Draw out the axle shaft ③ and remove the front wheel.

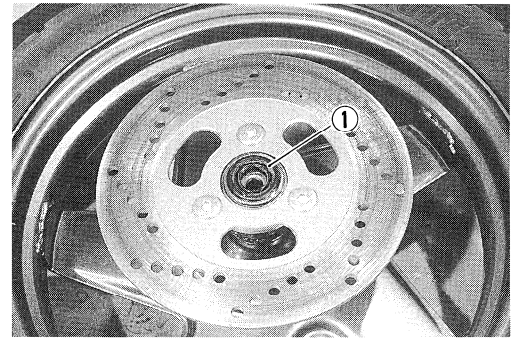


- Remove the spacer ①.
- Remove the bolts and brake disc.



- Remove the dust seal ① with the special tool.

**TOOL** 09913-50121: Oil seal remover

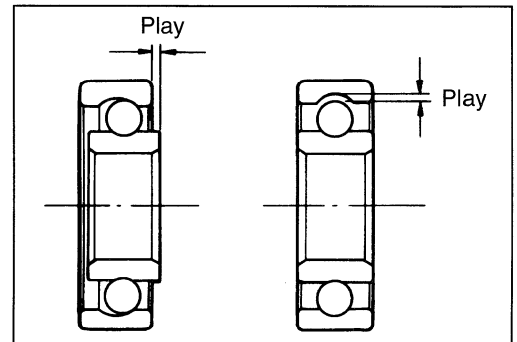


## INSPECTION AND DISASSEMBLY

### WHEEL BEARINGS

Inspect the play of wheel bearing inner ring by hand when installed in the wheel.

Rotate the inner ring by hand to inspect an abnormal noise and a smooth rotation. Replace the bearing if there is something unusual.



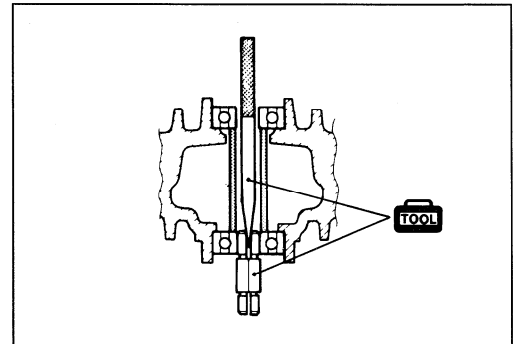
Drive out the right and left wheel bearings with the special tool in the following procedures.

**TOOL** 09941-50111: Bearing remover

- Insert the adapter into the wheel bearing.
- After inserting the wedge bar from the opposite side, lock the wedge bar in the slit of the adapter.
- Drive out the wheel bearing by knocking the wedge bar.

### ▲ CAUTION

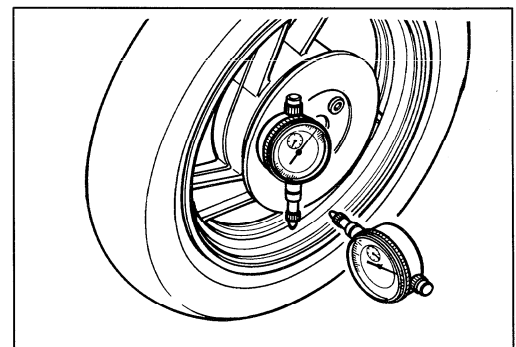
The removed bearing should be replaced.



### WHEEL

Make sure that the wheel runout checked as shown, does not exceed the service limit. An excessive runout is usually due to worn or loose wheel bearings and can be reduced by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.

**Service Limit (Axial and Radial): 2.0 mm (0.08 in)**



### TIRE

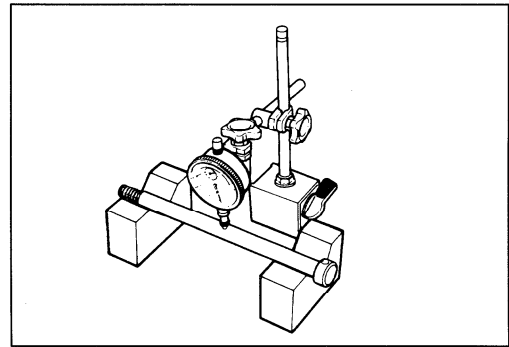
Refer to page 2-9.



### FRONT AXLE

Using a dial gauge, check the axle for runout. If the runout exceeds the limit, replace the axle.

**Service Limit: 0.25 mm (0.010 in)**



### REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel in the reverse order of removal and disassembly. Pay attention to the following points:

#### WHEEL BEARING

- Apply grease to the bearing.

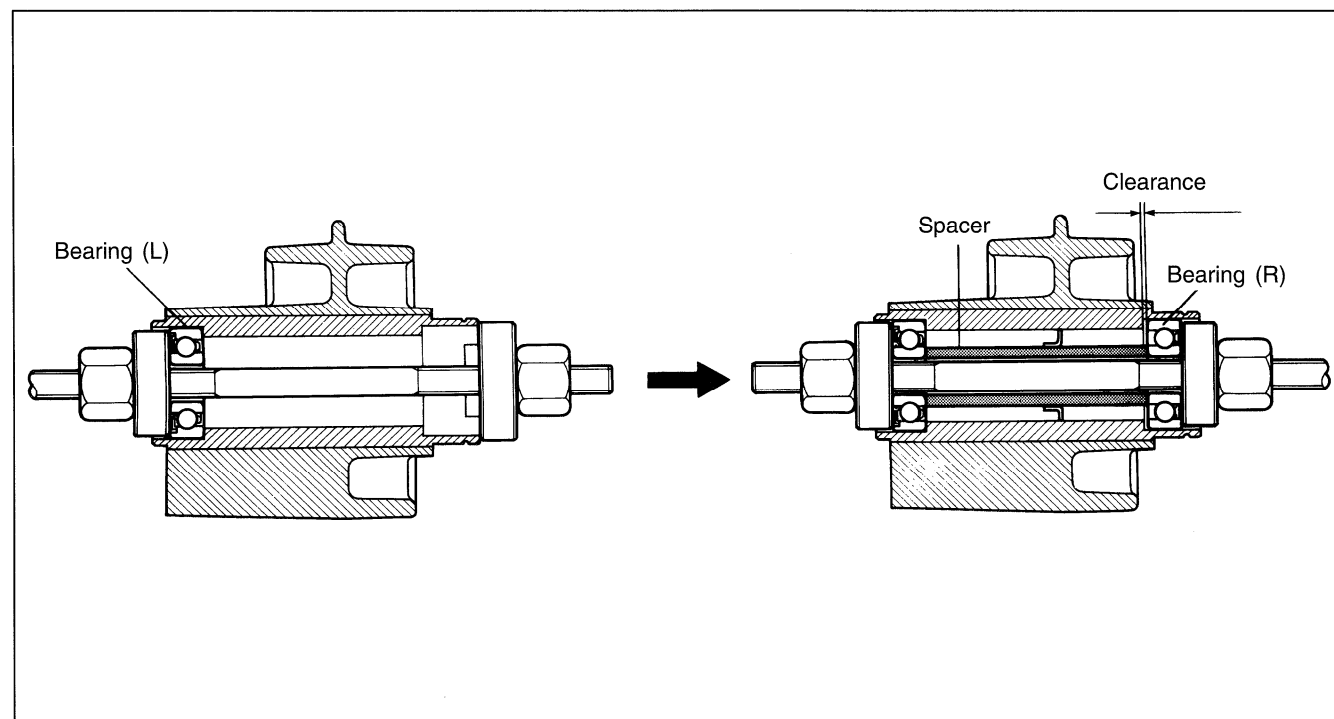
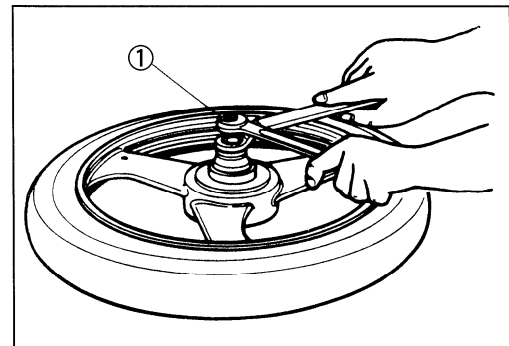
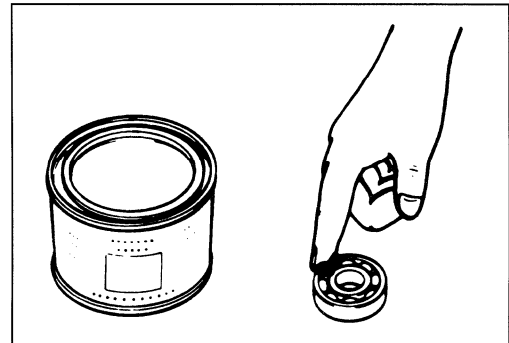
 99000-25010: SUZUKI SUPER GREASE "A"

- Install the wheel bearings with the special tool ①.

 09924-84521: Bearing installer set

**CAUTION**

First install the wheel bearing for left side.

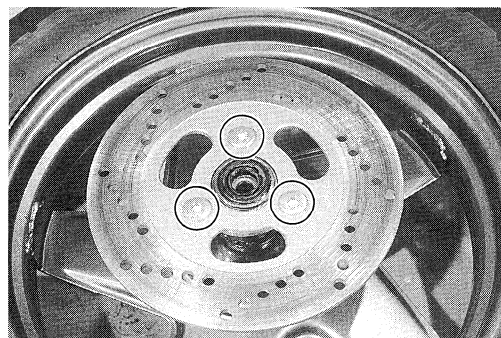


**BRAKE DISC**

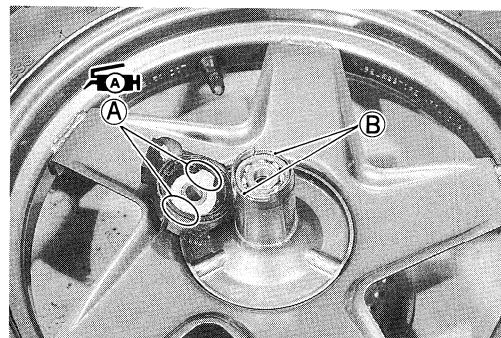
- Make sure that the brake disc is clean and free of any greasy matter. Apply THREAD LOCK SUPER “1360” to the disc bolts and tighten them to the specified torque.

 **99000-32130: THREAD LOCK SUPER “1360”**

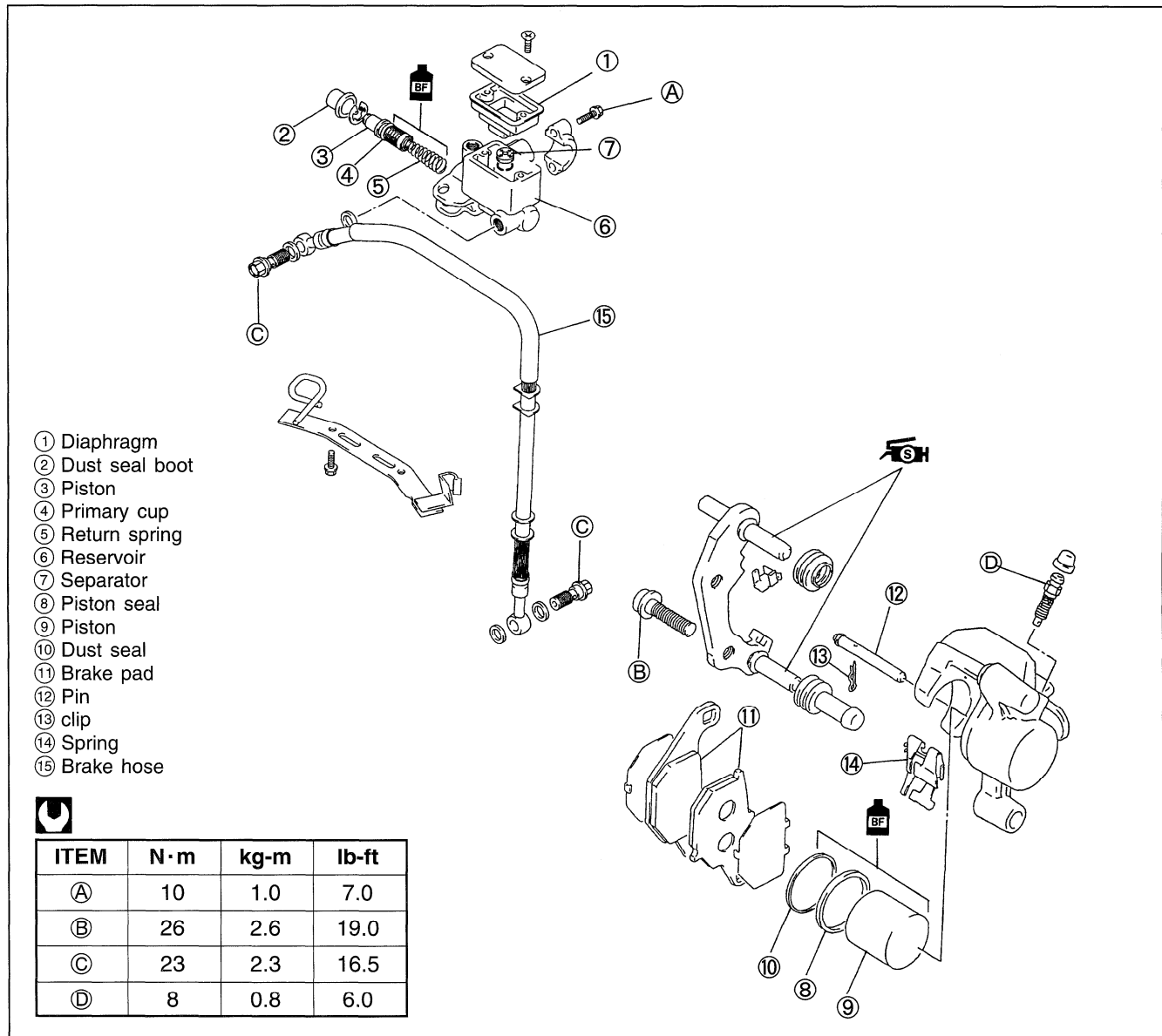
 **Brake disc bolt: 23 N·m (2.3 kg-m, 16.5 lb-ft)**

**SPEEDOMETER GEARBOX**

- Apply grease to the speedometer gearbox.
- Fit the speedometer gearbox ① to the wheel ②.



## FRONT BRAKE



**▲ WARNING**

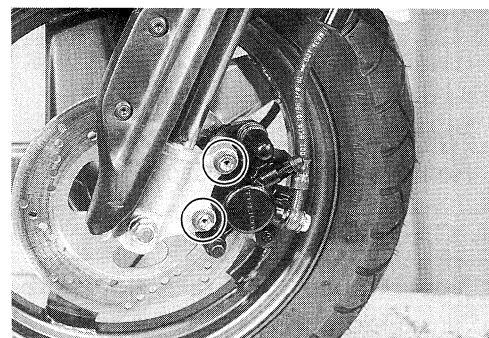
- \* This brake system is filled with a ethylene glycol-based DOT 4 brake fluid. Do not use or mix different types of fluid such as silicone-based or petroleum-based.
- \* Do not use any brake fluid taken from old, used or unsealed containers. Never reuse brake fluid left over from the last servicing or stored for long periods.
- \* When storing the brake fluid, seal the container completely and keep away from children.
- \* When replenishing brake fluid, take care not to get dust into fluid.
- \* When washing brake components, use fresh brake fluid. Never use cleaning solvent.
- \* A contaminated brake disc or brake pad reduces braking performance. Discard contaminated pads and clean the disc with high quality brake cleaner or neutral detergent.

**▲ CAUTION**

Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials etc.

## BRAKE PAD REPLACEMENT

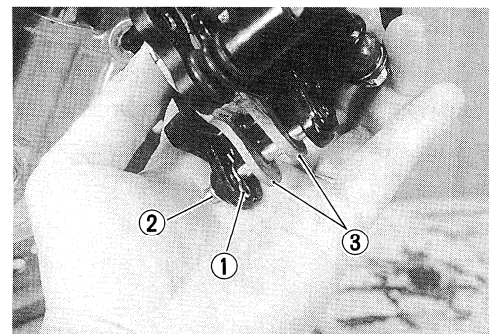
- Remove the caliper by removing the caliper mounting bolts.




- Remove the pads by removing the clip ① and pad mounting pin ②. Remove the brake pads ③.

### ⚠ CAUTION

- \* Replace the brake pad as a set, otherwise braking performance will be adversely affected.
- \* Do not operate the front brake lever while dismounting the pads.



 Brake caliper mounting bolt: 26 N·m  
(2.6 kg-m, 19.0 lb-ft)

## BRAKE FLUID REPLACEMENT

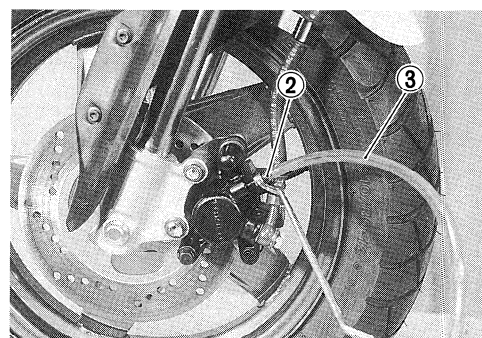
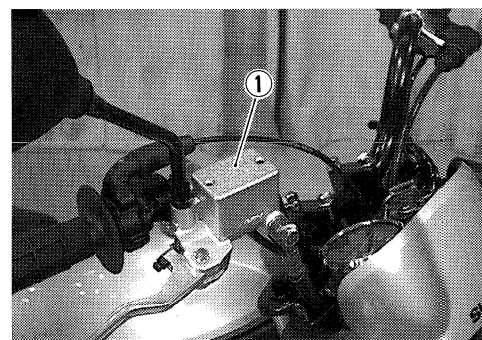
- Place the motorcycle on a level surface and keep the handlebars straight.
- Remove the master cylinder reservoir cap ① and diaphragm.
- Suck up the old brake fluid as much as possible.
- Fill the reservoir with fresh brake fluid.

 **Specification and Classification: DOT 4**

- Connect a clear hose ③ to the air bleeder valve ②, and insert the free end of hose into a receptacle.
- Loosen the bleeder valve and pump the brake lever until no more old brake fluid flows out of the bleeder valve.
- Close the air bleeder valve, and disconnect a clear hose. Fill the reservoir with fresh brake fluid to the upper end of the inspection window.

### ⚠ CAUTION

**Bleed air in the brake fluid circuit. (Refer to page 2-7.)**



## CALIPER REMOVAL AND DISASSEMBLY

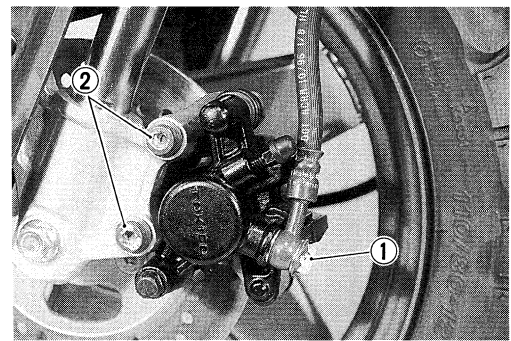
- Remove the brake hose union bolt ① and catch the brake fluid in a suitable receptacle.
- Remove the caliper mounting bolts ②.
- Remove the brake caliper.

### ⚠ CAUTION

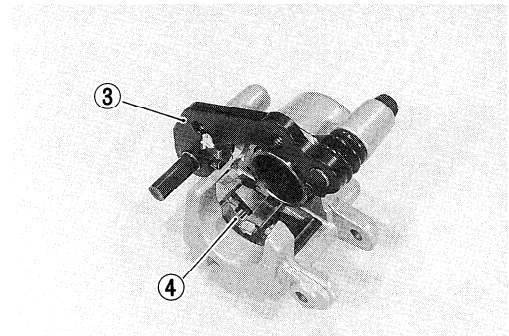
Never reuse the brake fluid left over from previous servicing and stored for long periods.

### ⚠ WARNING

Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose and hose joints for cracks and oil leakage.



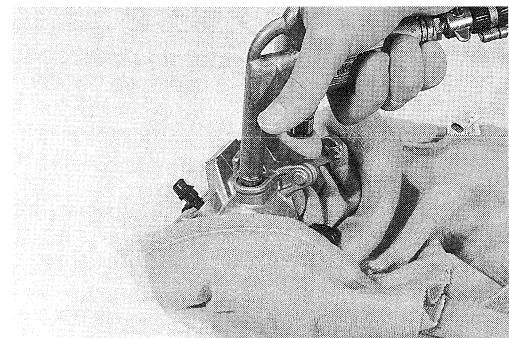
- Remove the pads.
- Remove the bracket ③ and spring ④.



- Place a rag over the piston to prevent its popping out and push out the piston with an air gun.

### ⚠ CAUTION

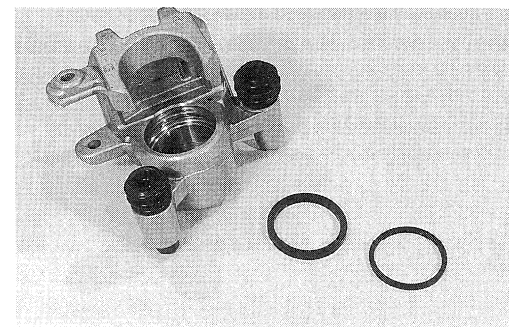
Do not use high pressure air to prevent piston damage.



- Remove the dust seals and piston seals.

### ⚠ CAUTION

Do not reuse the dust seals and piston seals to prevent fluid leakage.



## CALIPER INSPECTION

### CALIPER

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

### PISTON

Inspect the piston surface for any scratches or other damage.

## CALIPER REASSEMBLY AND REMOUNTING

Reassemble the caliper in the reverse order of removal and disassembly. Pay attention to the following points.

### ⚠ CAUTION

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



**Specification and Classification: DOT 4**

- Tighten the each bolt to the specified torque.



**Caliper mounting bolt ①: 26 N·m (2.6 kg-m, 19.0 lb-ft)**  
**Brake hose union bolt ②: 23 N·m (2.3 kg-m, 16.5 lb-ft)**

### NOTE:

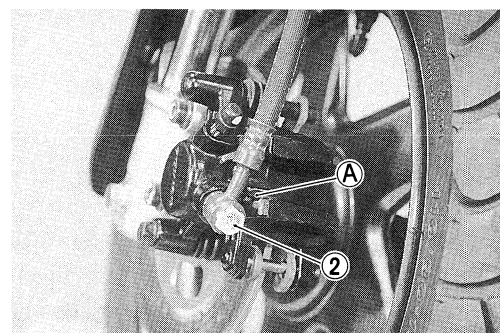
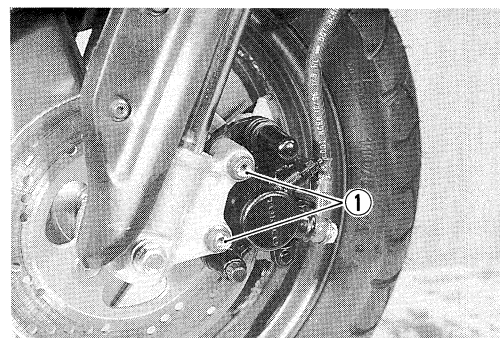
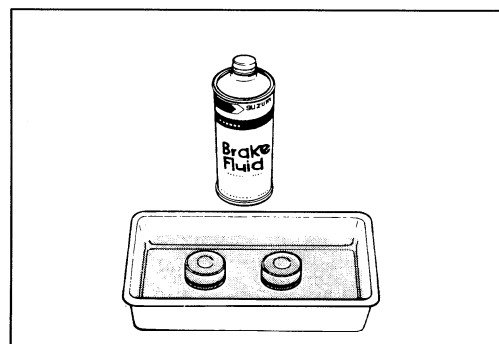
Before remounting the caliper, push the piston all the way into the caliper.

### ⚠ WARNING

**Bleed air from the system after reassembling the caliper. (Refer to page 2-7.)**

### NOTE:

Locate the brake hose so that the brake hose touches the stopper Ⓐ.



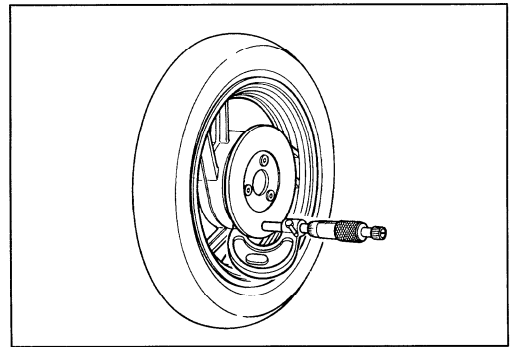
## DISC INSPECTION

- Remove the front wheel. (Refer to page 5-1.)

Using a micrometer, check the disc for wear, its thickness can be checked with disc and wheel in place. The service limit for the thickness of the disc is shown below.


**Service Limit: 3.5 mm (0.14 in)**

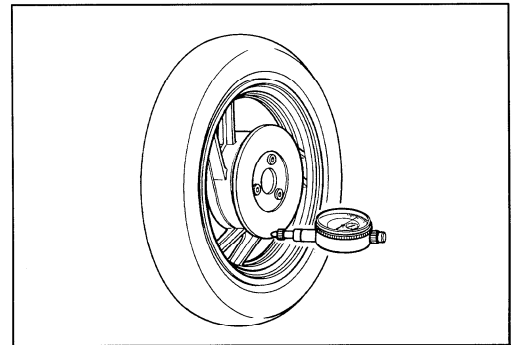
 **09900-20205: Micrometer (0–25 mm)**



With the disc mounted on the wheel, check the disc for face runout with a dial gauge, as shown.

**Service Limit: 0.30 mm (0.012 in)**

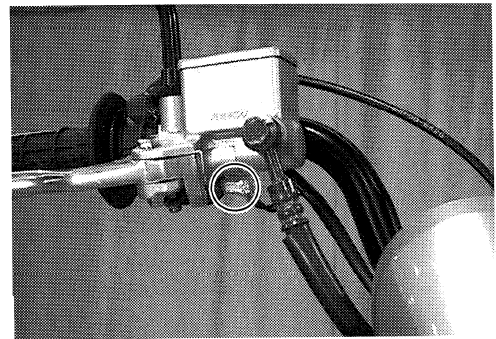
 **09900-20606: Dial gauge (1/100 mm)**  
**09900-20701: Magnetic stand**



- Remove the disc. (Refer to page 5-1.)
- Install the disc. (Refer to page 5-4.)
- Install the front wheel.

## MASTER CYLINDER REMOVAL AND DISASSEMBLY

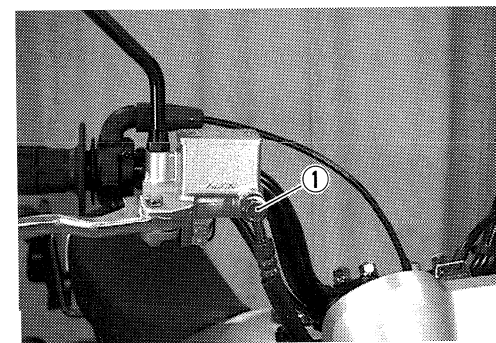
- Draw brake fluid from the master cylinder.
- Disconnect brake light switch lead wire.



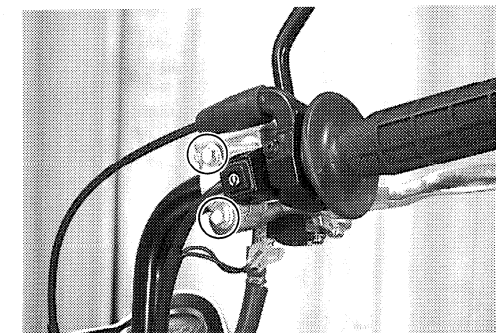
- Place a rag underneath the union bolt on the master cylinder to catch any spilled drops of brake fluid. Remove the union bolt ① and disconnect the brake hose/master cylinder joint.

### CAUTION

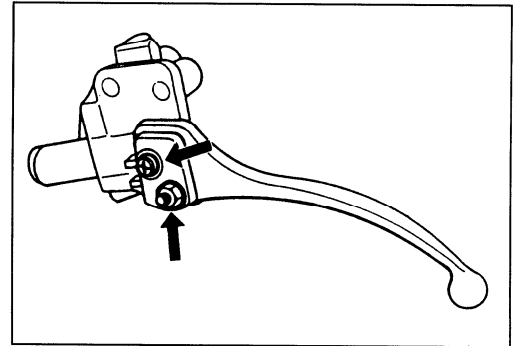
**Immediately and completely wipe off any brake fluid contacting any part of the motorcycle. The fluid reacts chemically with paint, plastics and rubber materials, etc. and will damage the severely.**



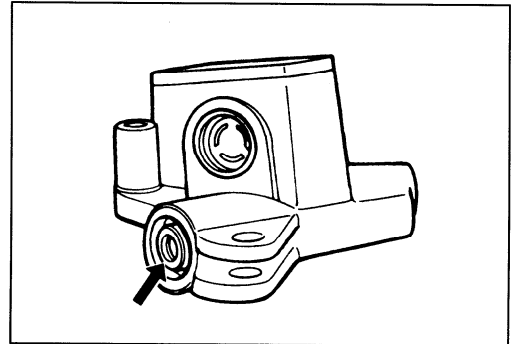
- Disconnect the front brake light switch lead wires ②.
- Remove the master cylinder assembly by removing the clamp bolts.



- Remove the brake lever and brake switch.

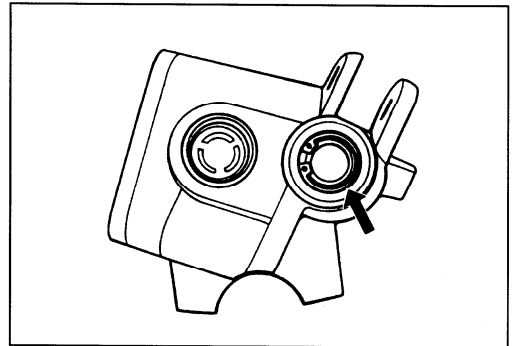


- Remove the dust boot.

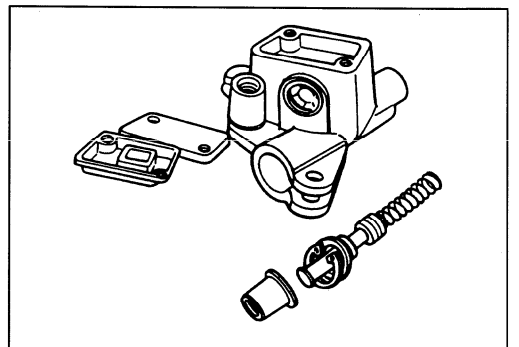


- Remove the circlip with the special tool.

**TOOL** 09900-06108: Snap ring pliers

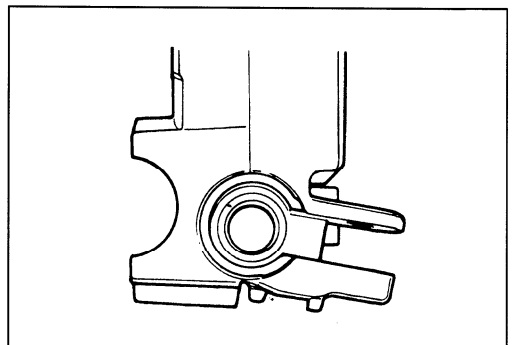


- Remove the piston/primary cap with return spring.
- Remove the reservoir cap and diaphragm.
- Drain brake fluid.



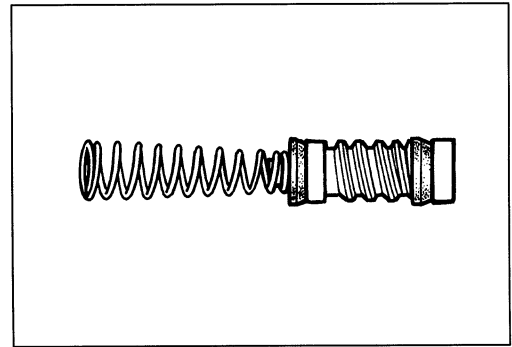
## MASTER CYLINDER INSPECTION

Inspect the master cylinder bore for any scratches or other damage.





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

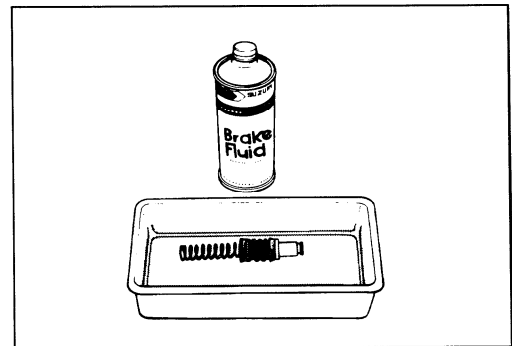


## MASTER CYLINDER REASSEMBLY AND REMOUNTING

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

### ⚠ CAUTION

- \* Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.
- \* Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.

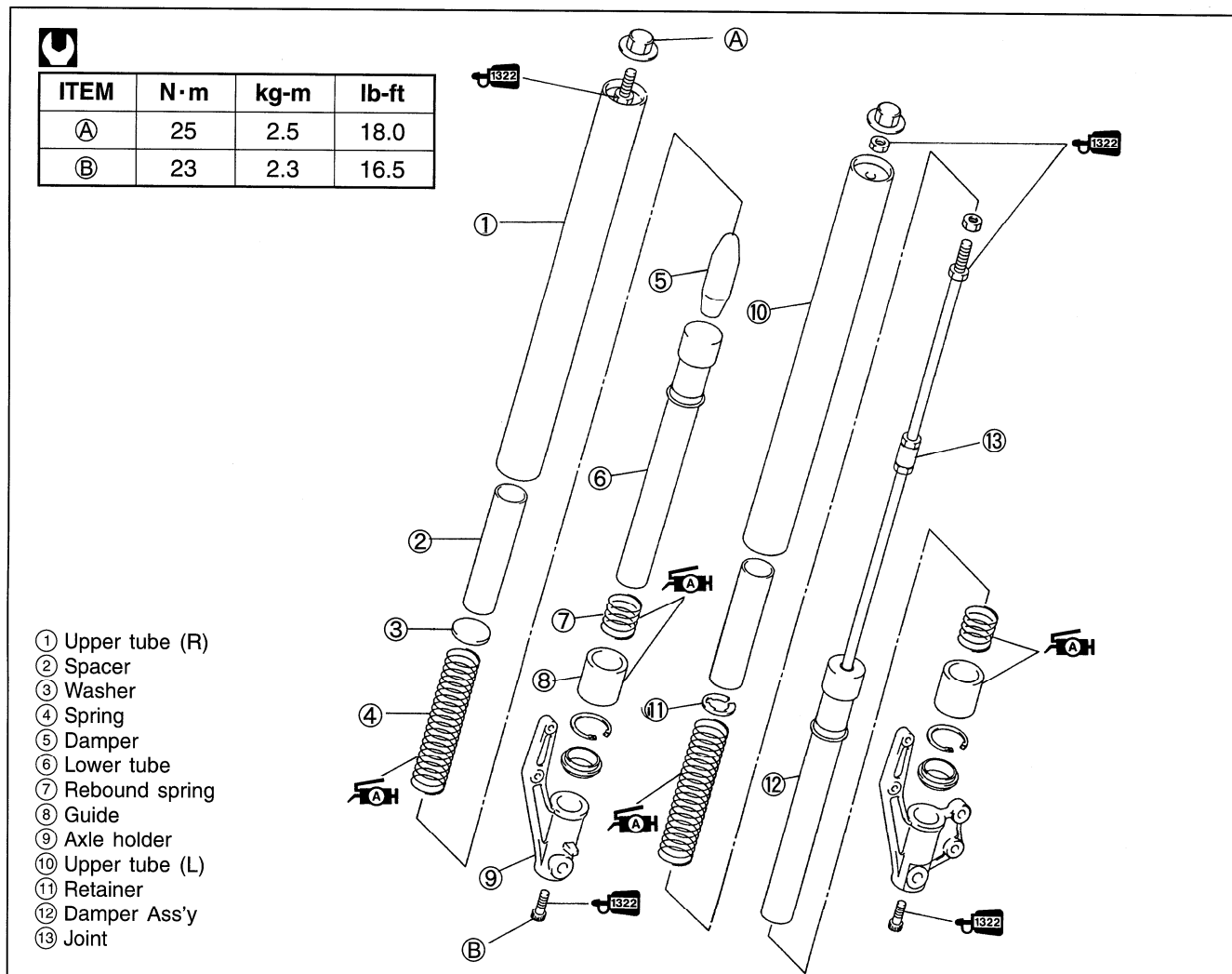


- Reassemble and remount the master cylinder. (Refer to page 5-9.)
- When remounting the master cylinder on the handlebars, first tighten the clamp bolt for upside.

### ⚠ WARNING

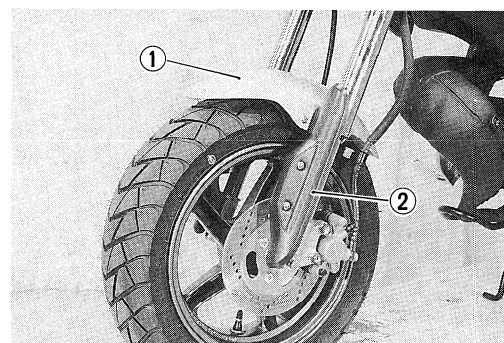
Bleed air after remounting the master cylinder. (Refer to page 2-7.)

## FRONT FORK

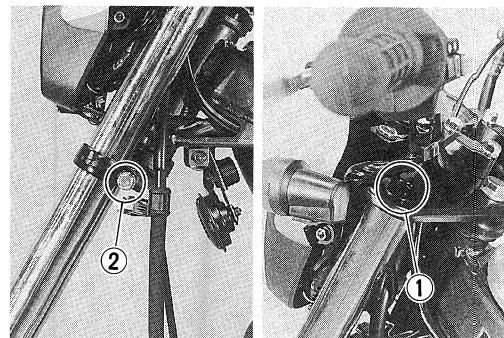


## REMOVAL AND DISASSEMBLY

- Remove the front wheel.
- Remove the front brake caliper.
- Remove the screws and front fork cover ②.
- Remove the front fender ①.

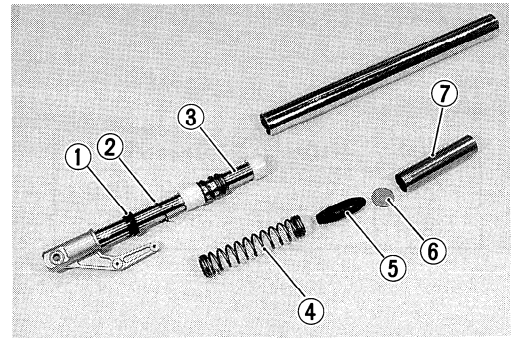


- Remove the bolts ①.
- Loosen the lower bracket bolts ②.

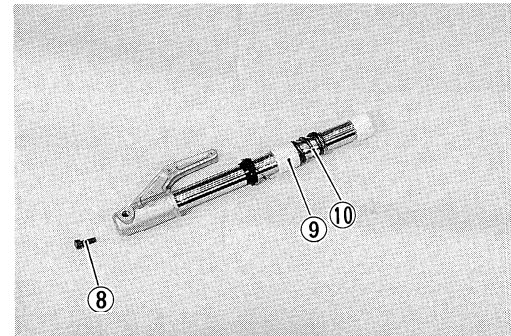


**RIGHT FRONT FORK**

- Remove the dust seal ① and circlip ②.
- Remove the damper assembly ③, spring ④, rubber damper ⑤, washer ⑥ and spacer ⑦.

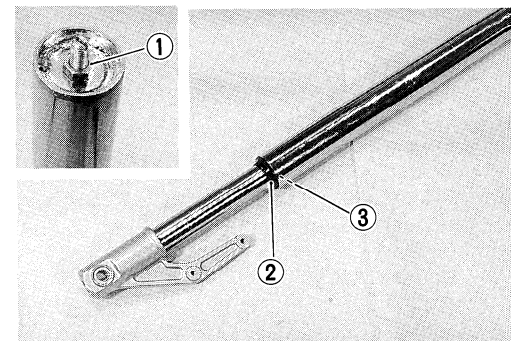


- Remove the bolt ⑧, guide ⑨ and rebound spring ⑩.

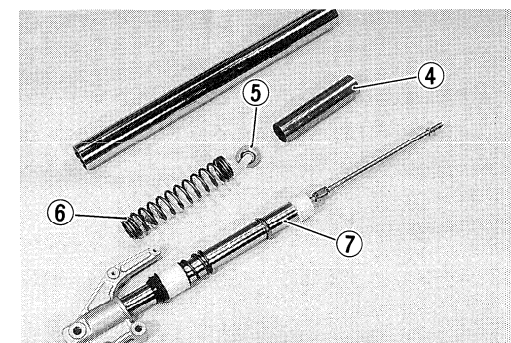


**LEFT FRONT FORK**

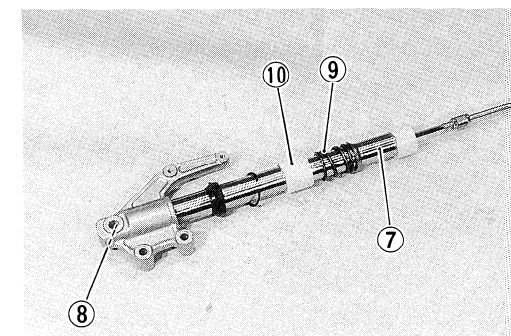
- Remove the nut ①.
- Remove the oil seal ② and circlip ③.



- Remove the spacer ④, retainer ⑤, spring ⑥ and damper assembly ⑦.



- Remove the bolt ⑧, rebound spring ⑨ and guide ⑩.

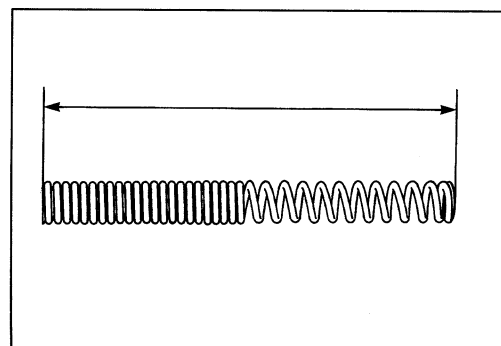


## INSPECTION

### FORK SPRING

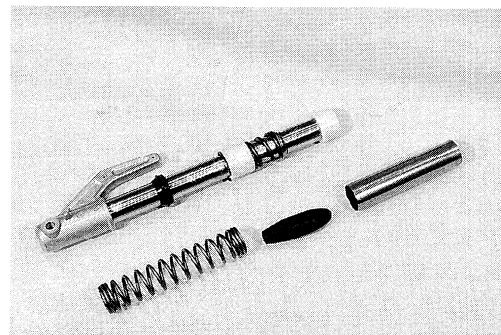
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

**Service Limit: 163 mm (6.4 in)**



### INNER AND OUTER TUBES

Inspect the inner tube sliding surface and outer tube sliding surface for any scuffing.




## REASSEMBLY AND REMOUNTING

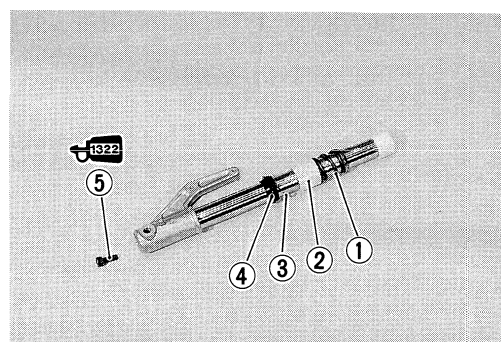
Reassemble and remount the front fork in the reverse order of removal and disassembly. Pay attention to the following points:

### RIGHT FRONT FORK

- Reassemble the spring ①, guide ②, snap ring ③ and dust seal ④.
- Apply thread lock "1322" to the bolt ⑤ and tighten it to the specified torque.

 **99000-32110: THREAD LOCK SUPER "1322"**

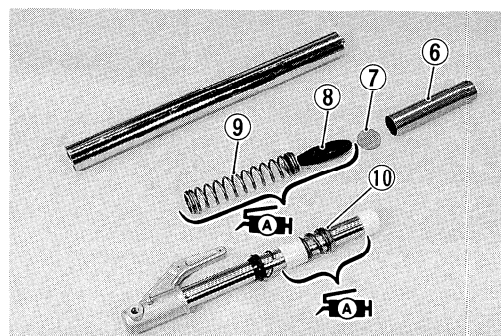
 **Bolt: 25 N·m (2.5 kg-m, 18.0 lb-ft)**



- Apply grease to the spring and moving parts.

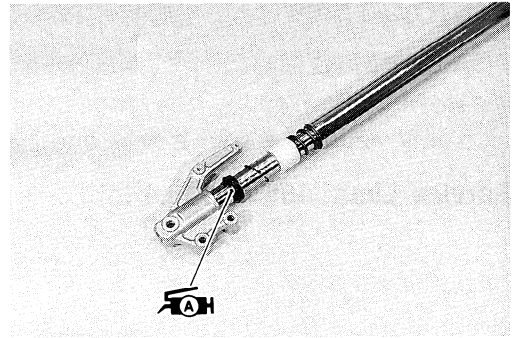
 **99000-25010: SUZUKI SUPER GREASE "A"**

- Reassemble the spacer ⑥, washer ⑦, rubber damper ⑧, spring ⑨ and damper ⑩.

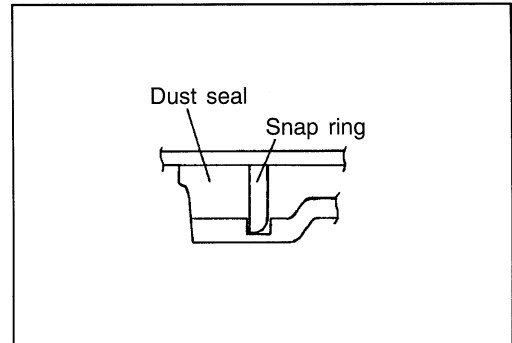


- Apply grease to the dust seal lip.

 99000-25010: SUZUKI SUPER GREASE "A"



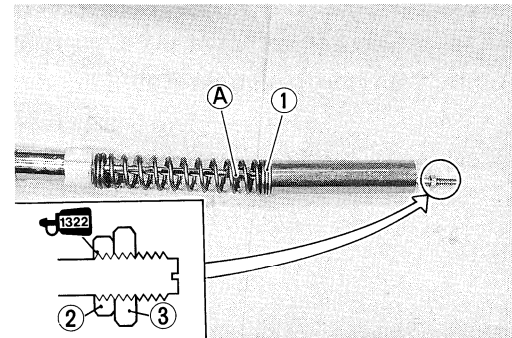
- Reassemble the snap ring as shown.



**LEFT FRONT FORK**

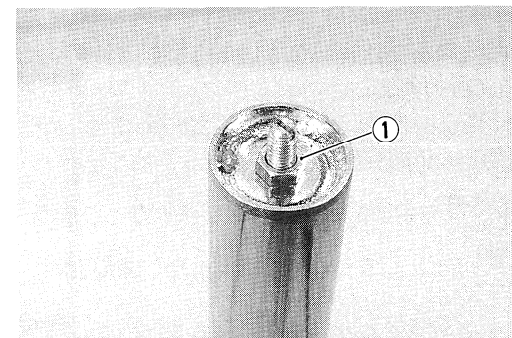
- Set the parts as joint A comes lower than the retainer ①.
- Apply thread lock "1322" to the nut ②.
- Tighten the nut ② and lock nut ③.

 99000-32110: THREAD LOCK SUPER "1322"



- Apply thread lock "1322" to the nut and tighten it.

 99000-32110: THREAD LOCK SUPER "1322"

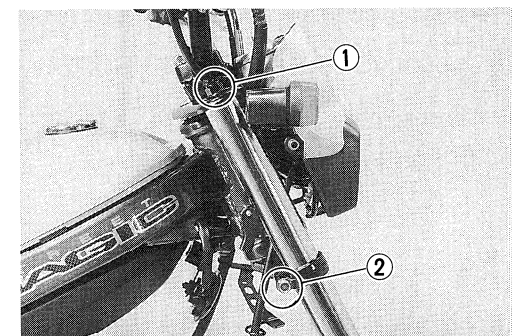


**REMountING**

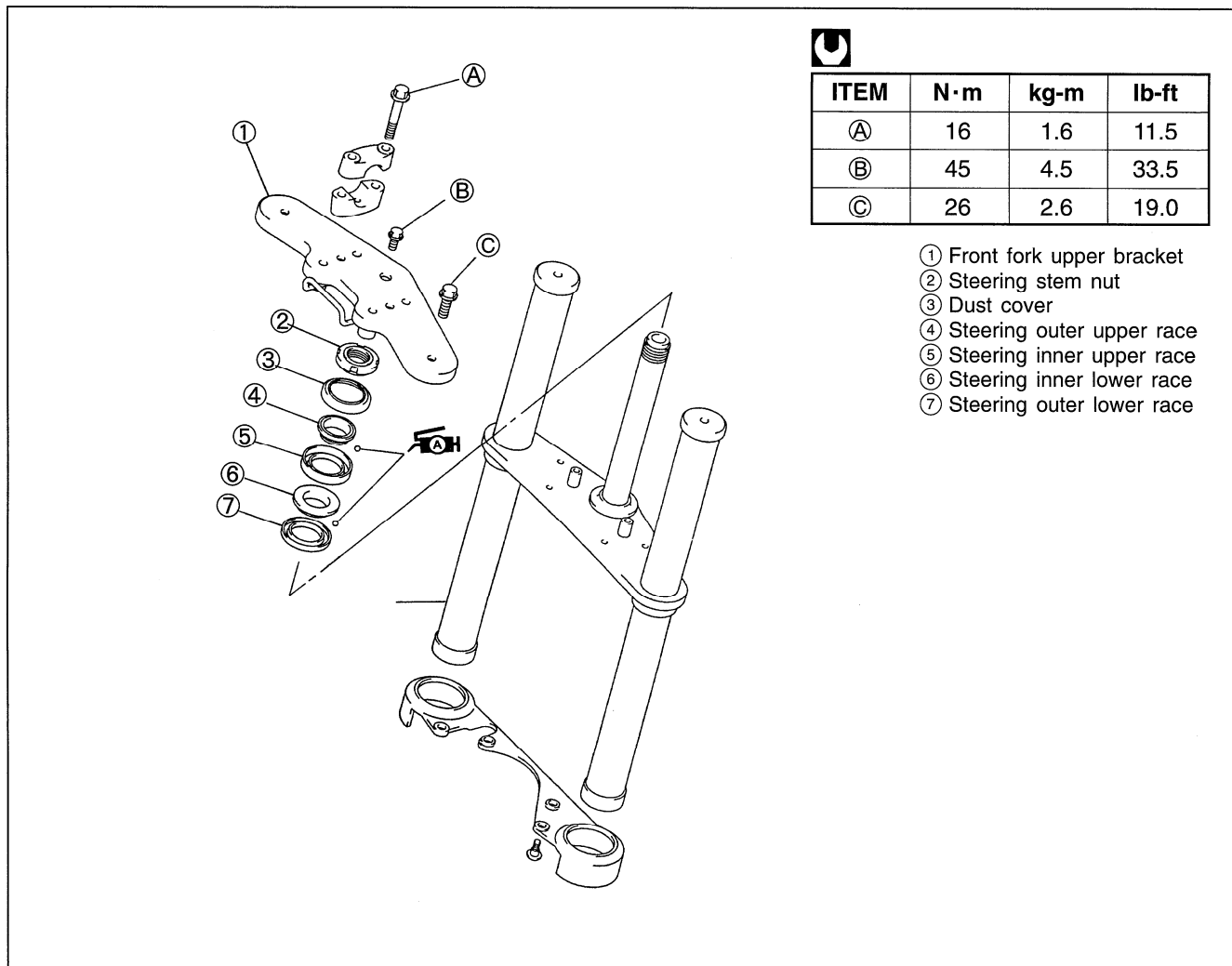
Tighten the nuts ① and bolts ② to the specified torque.

 **Upper bracket nut: 25 N·m (2.5 kg-m, 18.0 lb-ft)**

 **Lower bracket bolt: 23 N·m (2.3 kg-m, 16.5 lb-ft)**

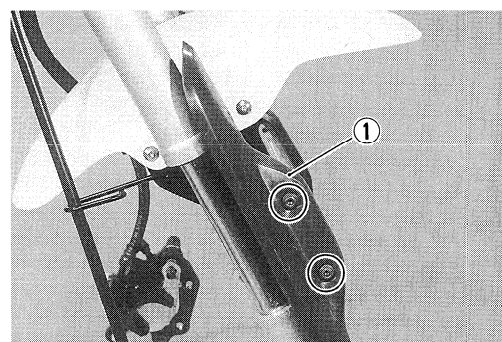


## STEERING STEM

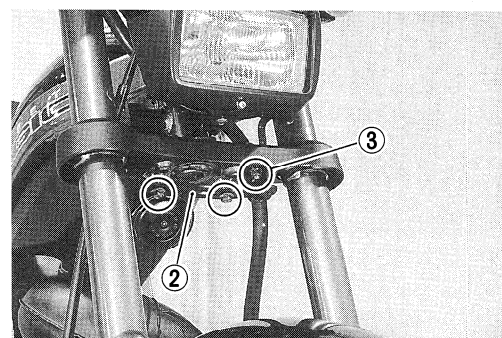


## REMOVAL AND DISASSEMBLY

- Remove the front wheel.
- Remove the brake caliper.
- Remove the front fork cover ①.

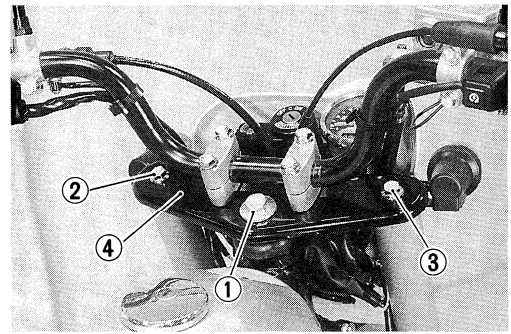


- Remove the brake hose bracket ②.
- Remove the nut ③.



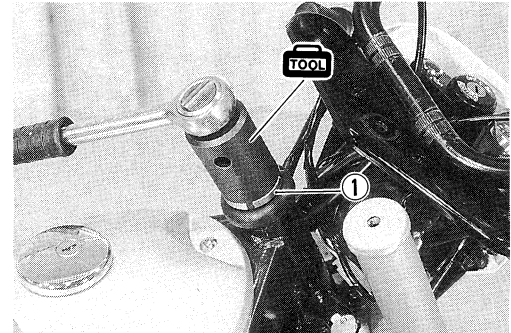
## 5-17 CHASSIS

- Remove the bolts, ①, ② and ③.
- Move the steering upper bracket ④ and headlight forward.

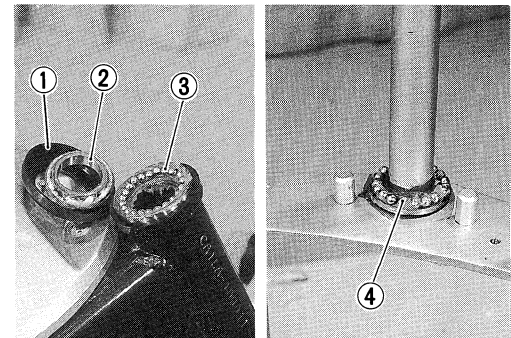


- Loosen the steering stem lock nut with the special tool.

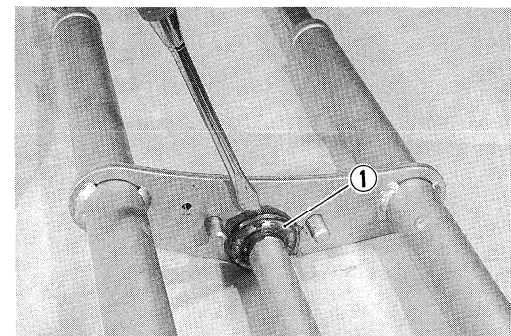
**TOOL** 09940-14911: Steering socket wrench



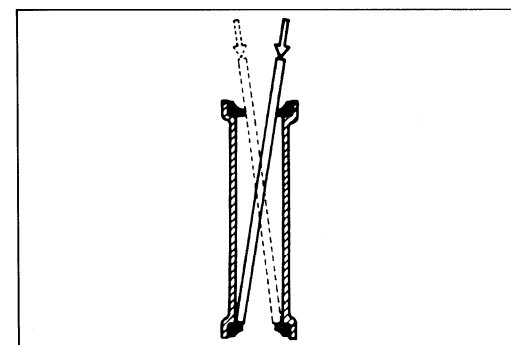
- Remove the dust cover ①, steering upper race ② and bearings ③.
- Remove the bearings ④.



- Remove the lower bearing outer race with a chisel.



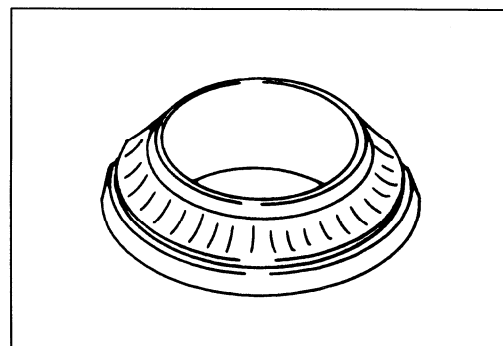
- Remove the upper and lower bearing inner races.



## INSPECTION

Inspect and check the removed parts for the following abnormalities.

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



## REASSEMBLY AND REMOUNTING

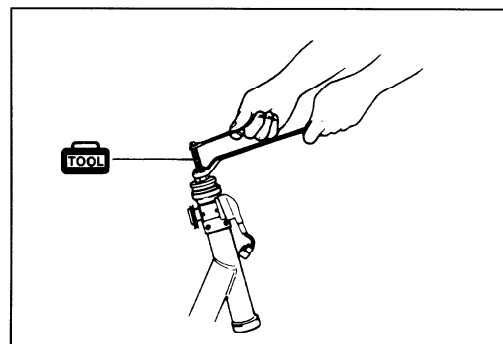
Reassemble and remount the steering stem and handlebars in the reverse order of removal and disassembly.

Pay attention to the following steps:

### INNER RACES

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

 **09941-34513: Steering inner race installer**

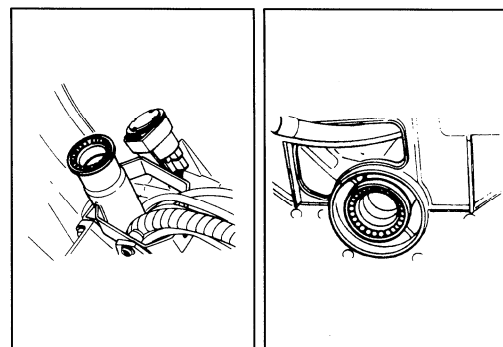


### STEEL BALL

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

 **99000-25010: SUZUKI SUPER GREASE "A"**

|                       |       |        |
|-----------------------|-------|--------|
| Number of steel balls | Upper | 22 pcs |
|                       | Lower | 18 pcs |



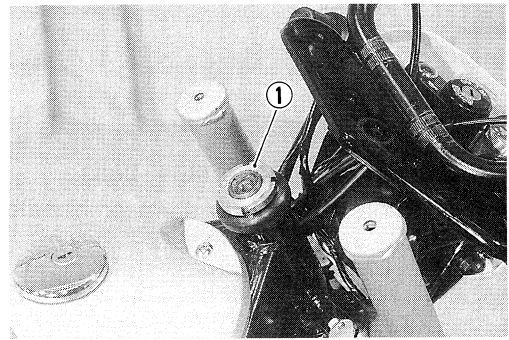


### STEERING STEM NUT

- Tighten the steering stem nut ①, then loosen it 1/8–1/4 turn.

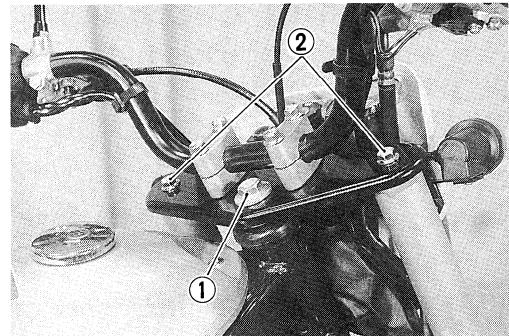
**NOTE:**

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



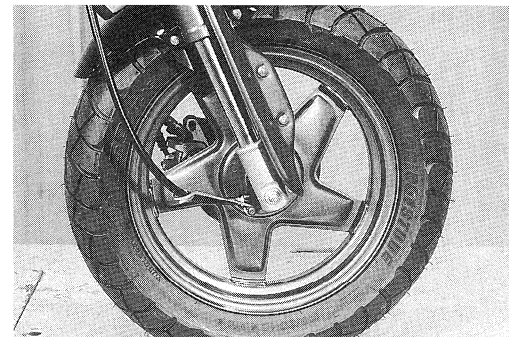
- Tighten the front fork top bolt ② temporarily.
- Tighten the steering stem top bolt ① and front fork top bolt to the specified torque.

- ①: 45 N·m (4.5 kg-m, 32.5 lb-ft)
- ②: 26 N·m (2.6 kg-m, 19.0 lb-ft)

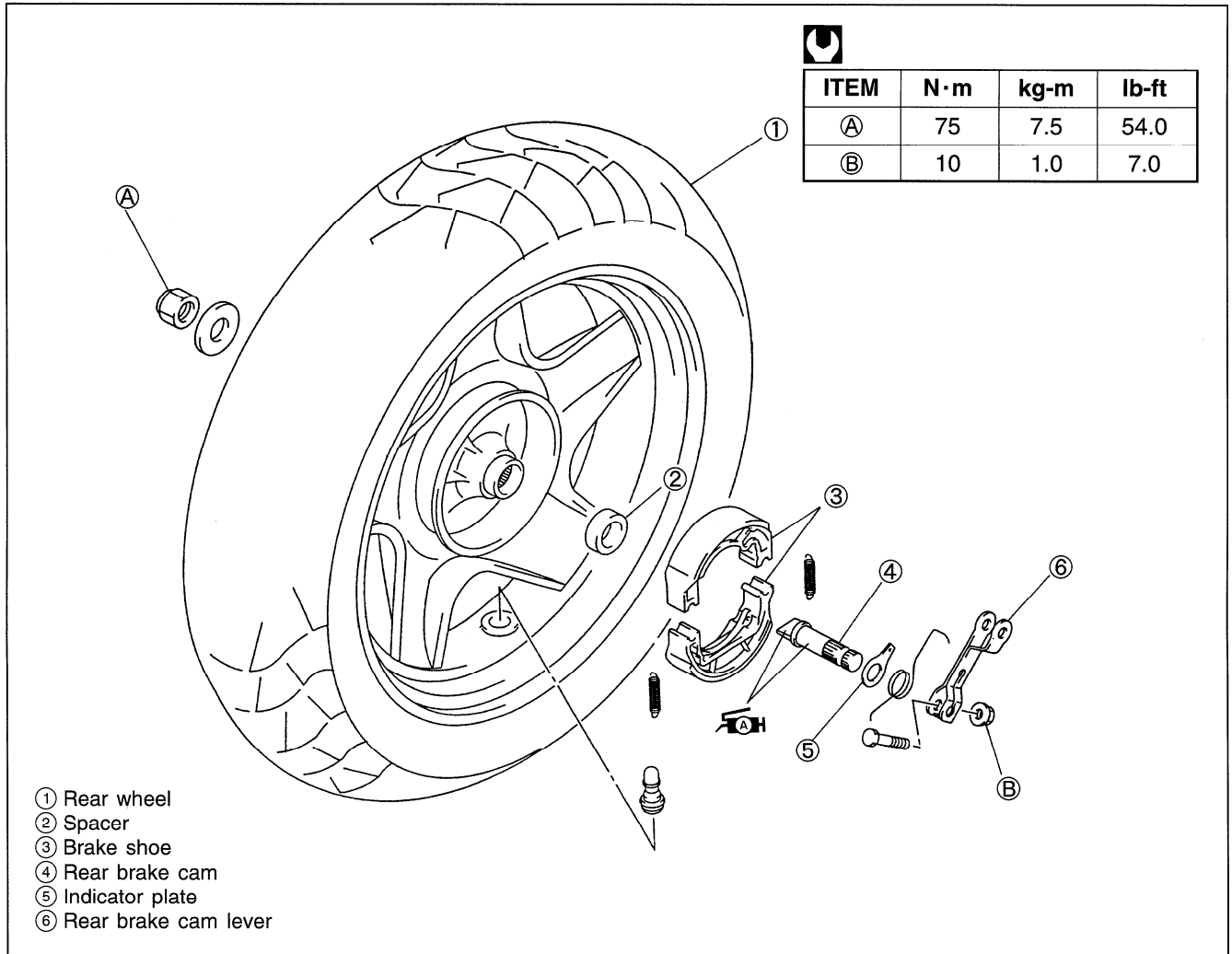


**▲ CAUTION**

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

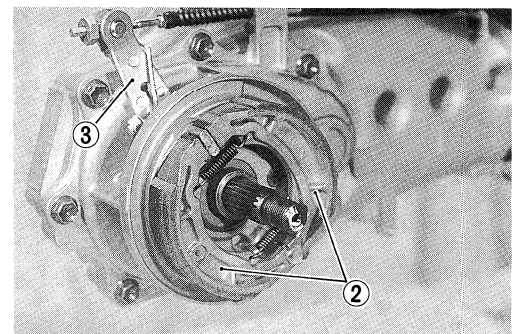
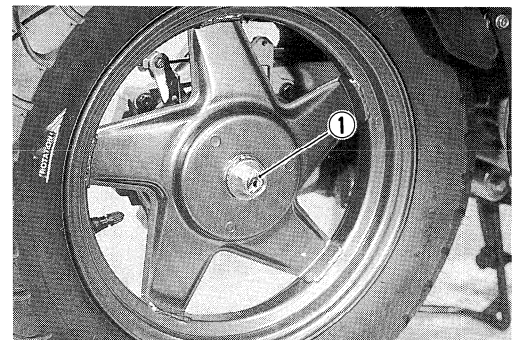


## REAR WHEEL, BRAKE AND SHOCK ABSORBER



### REMOVAL AND DISASSEMBLY REAR WHEEL AND BRAKE

- Remove the rear axle nut ①.
- Remove the rear wheel.
- Remove the brake shoes ② and brake cam ③.

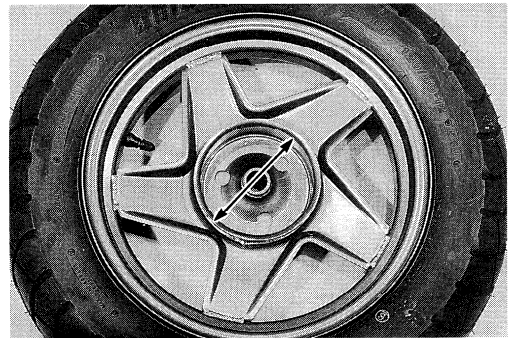


## INSPECTION

### BRAKE DRUM

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

**Service Limit: 120.7 mm (4.75 in)**



### TIRE

Refer to page 2-9.

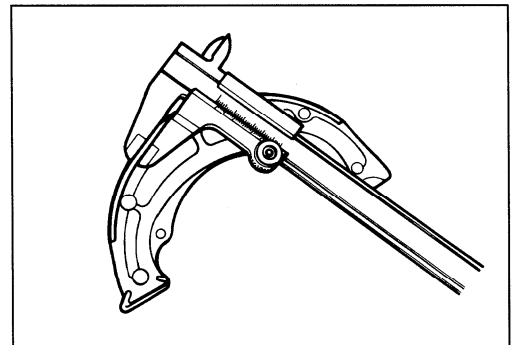
### BRAKE SHOE

Check the brake shoe and decide whether it should be replaced or not from the thickness of the brake shoe lining.

**Service Limit: 1.5 mm (0.06 in)**

#### ⚠ CAUTION

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

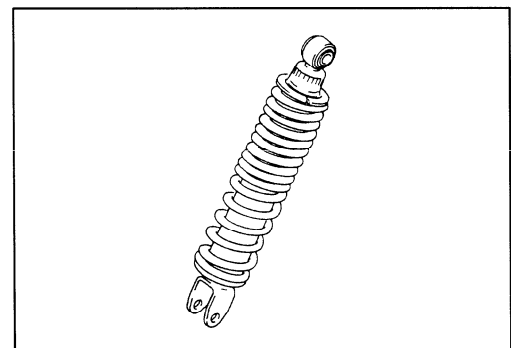


### REAR SHOCK ABSORBER

Inspect the shock absorber for oil leakage or other damage.

#### ⚠ CAUTION

Do not attempt to disassemble the shock absorber. It is not serviceable.

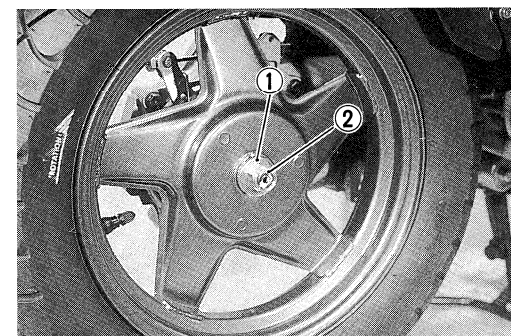


## REASSEMBLY AND REMOUNTING

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

- Refit the washer ①.
- Tighten the rear axle nut ② to the specified torque.

 **Rear axle nut: 75 N·m (7.5 kg-m, 54.0 lb-ft)**



# ***ELECTRICAL SYSTEM***

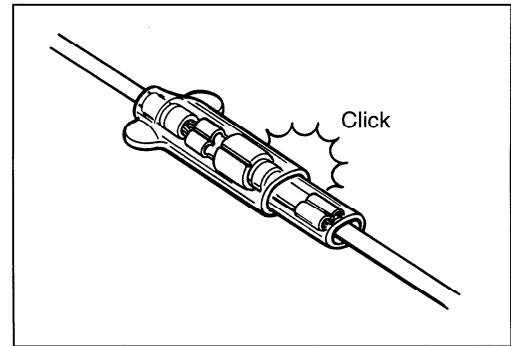
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| <b><i>LOCATION OF ELECTRICAL COMPONENTS</i></b> ..... | <b>6- 3</b> |
| <b><i>CHARGING AND LIGHTING SYSTEM</i></b> .....      | <b>6- 4</b> |
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| <b><i>OIL LEVEL SWITCH</i></b> .....                  | <b>6-13</b> |
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| <b><i>SWITCHES</i></b> .....                          | <b>6-14</b> |
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## CAUTIONS IN SERVICING

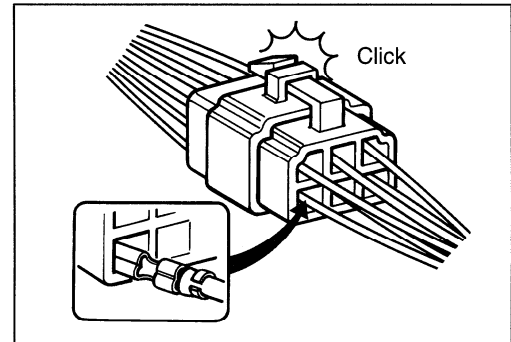
### CONNECTOR

- When connecting a connector, be sure to push it in until a click is felt.
- Inspect the connector for corrosion, contamination and breakage in its cover.



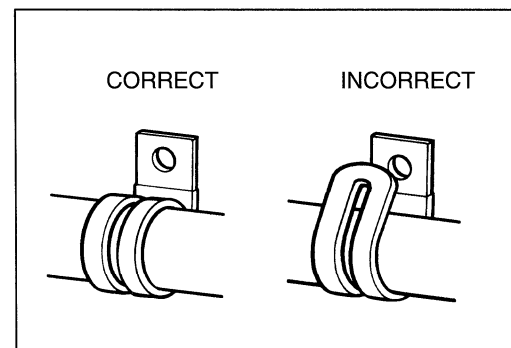
### COUPLER

- With a lock type coupler, be sure to release the lock before disconnecting it and push it in fully till the lock works when connecting it.
- When disconnecting the coupler, be sure to hold the coupler itself and do not pull the lead wires.
- Inspect each terminal on the coupler for being loose or bent.
- Inspect each terminal for corrosion and contamination.



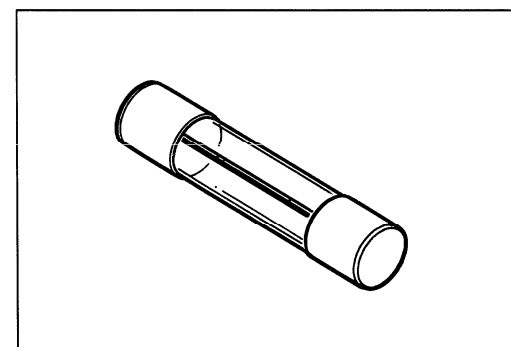
### CLAMP

- Clamp the wire harness at such positions as indicated in "WIRE HARNESS ROUTING" (Refer to page 7-11.).
- Bend the clamp properly so that the wire harness is clamped securely.
- In clamping the wire harness, use care not to allow it to hang down.
- Do not use wire or any other substitute for the band type clamp.



### FUSE

- When a fuse blows, always investigate the cause, correct it and then replace the fuse.
- Do not use a fuse of a different capacity.
- Do not use wire or any other substitute for the fuse.

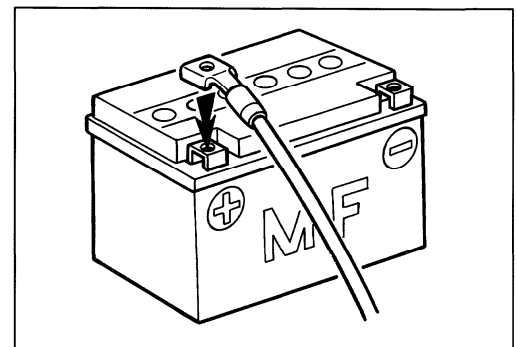
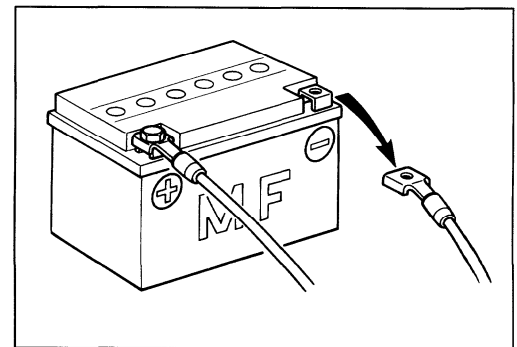
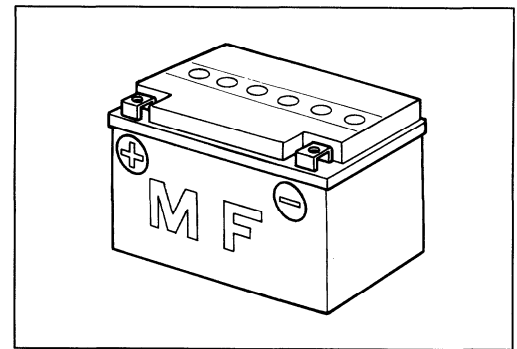


## BATTERY

- The MF battery used in this vehicle does not require maintenance as inspection of electrolyte level and replenishment of water.
- No hydrogen gas is produced during normal charging of the battery, but such gas may be produced when it is overcharged. Therefore, do not bring fire near the battery while it is being charged.
- Note that the charging system for the MF battery is different from that of an ordinary battery. Do not replace with an ordinary battery.

## CONNECTING BATTERY

- When disconnecting terminals from the battery for disassembly or servicing, be sure to disconnect the negative (⊖) terminal first.
- When connecting terminals to the battery, be sure to connect the positive (⊕) terminal first.
- If the terminal is found corroded, remove the battery, pour warm water over it and clean with a wire brush.
- Upon completion of connection, apply grease lightly.
- Put a cover over the positive (⊕) terminal.

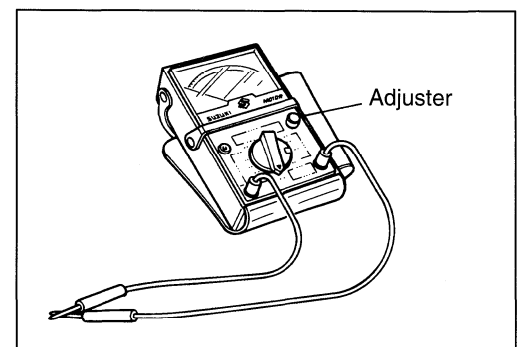


## WIRING PROCEDURE

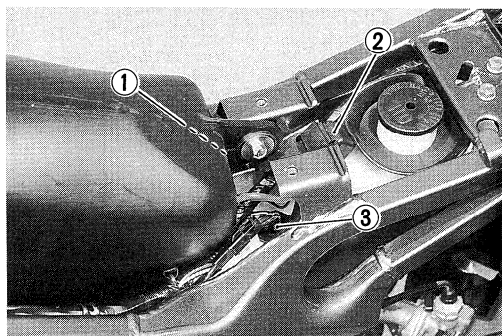
- Route the wire harness properly according to "WIRE HARNESS ROUTING" (Refer to page 7-9).

## USING POCKET TESTER

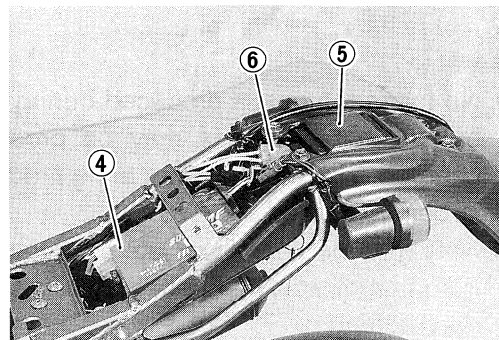
- Be sure to use positive (⊕) and negative (⊖) probes of the tester properly. Their false use may cause damage in the tester.
- If the voltage and current values are not known, start measuring in the higher range.
- Before measuring the resistance and after changing the resistance range, always perform 0 Ω adjustment.
- Taking a measurement where voltage is applied in the resistance range may cause damage in the tester. When measuring resistance, check to make sure that no voltage is applied there.
- After using the tester, turn the switch to the OFF position.



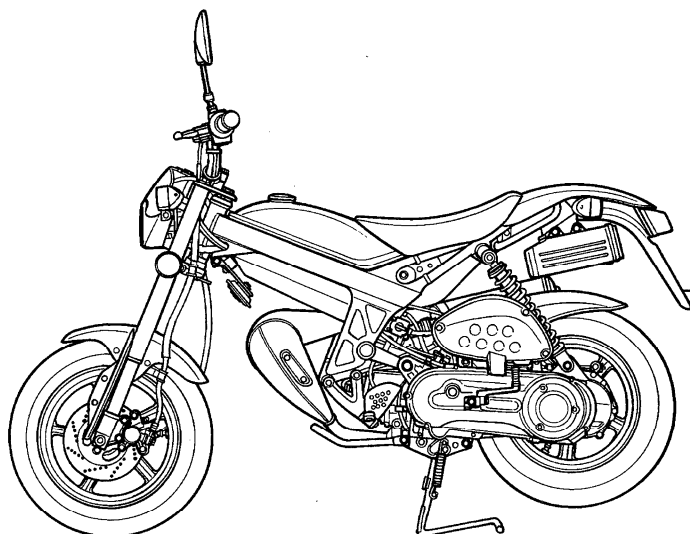
## LOCATION OF ELECTRICAL COMPONENTS



- ① Regulator/rectifier
- ② Starter relay
- ③ Oil level switch

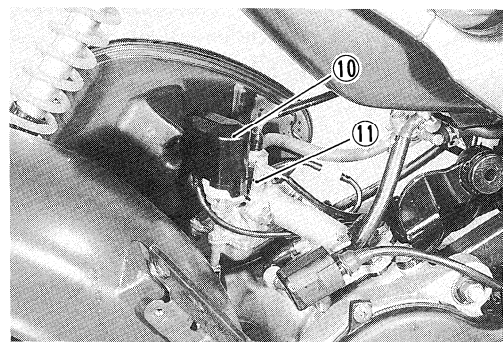
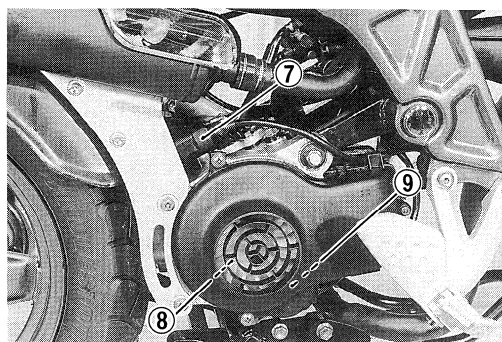


- ④ Battery/Fuse
- ⑤ CDI unit
- ⑥ Thermoswitch



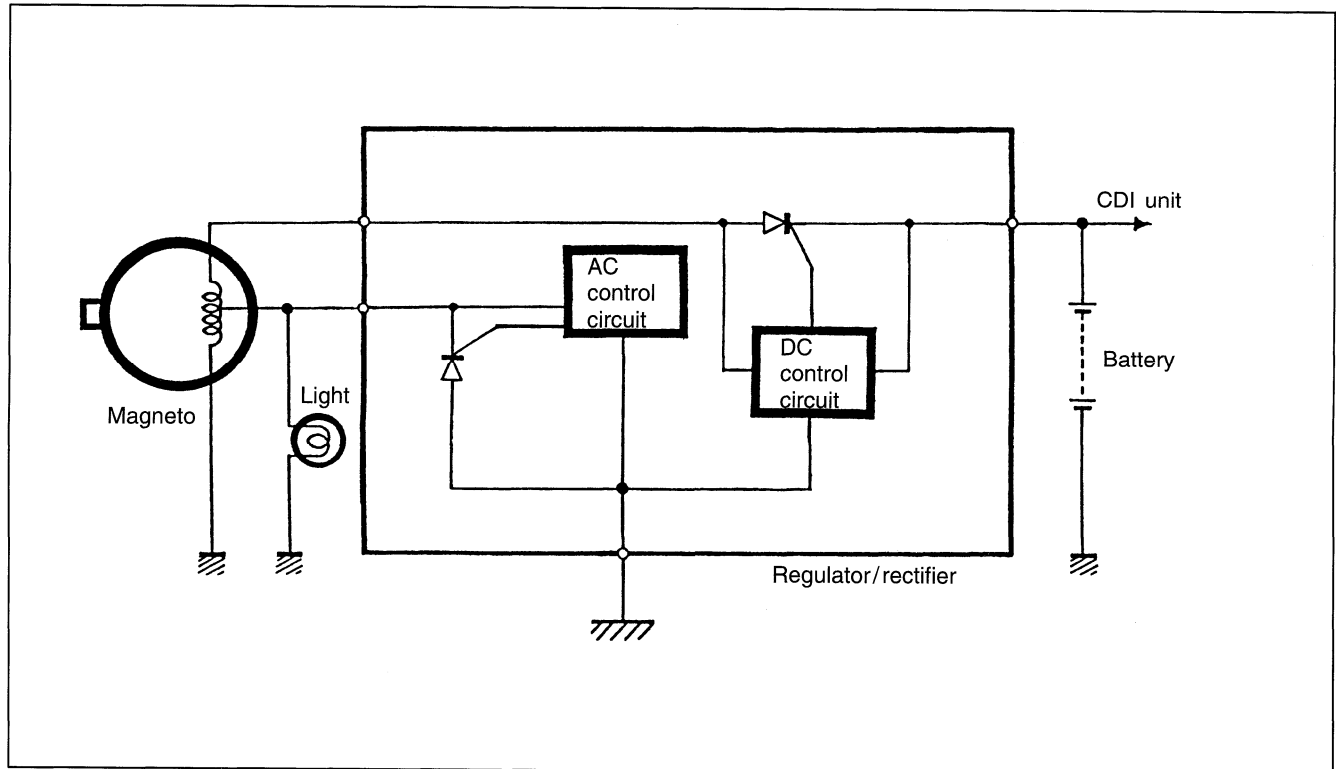
- ⑦ Ignition coil
- ⑧ Stator coil
- ⑨ Pickup coil

- ⑩ Thermoelement
- ⑪ Carburetor heater (UK)

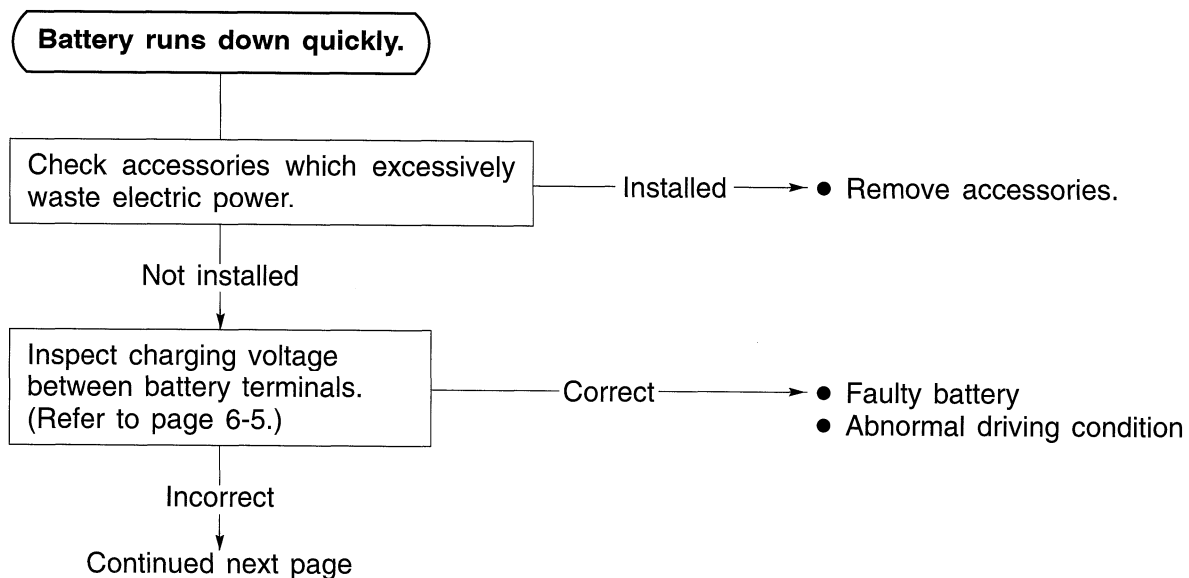


## CHARGING AND LIGHTING SYSTEM

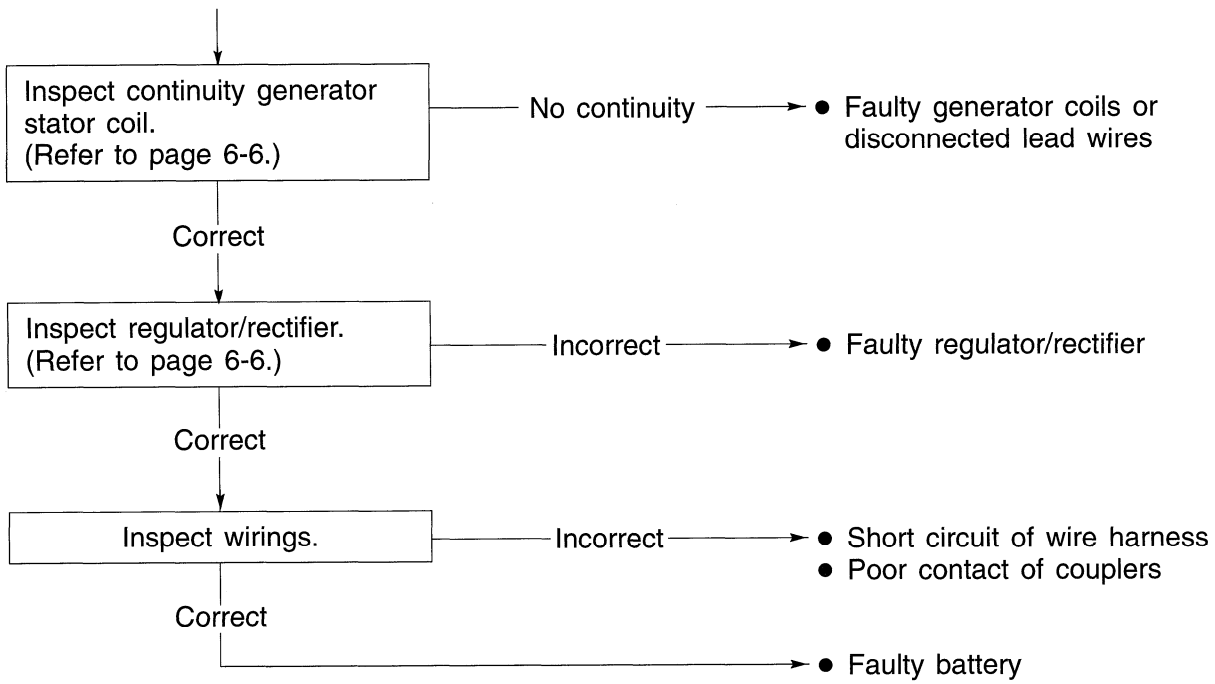
The charging system uses the flywheel magneto as shown in the figure. The charging and lighting coils are mounted on the magneto stator and generate AC as the flywheel rotor turns. AC generated in the charging coil flows to the regulator/rectifier which changes AC to DC. This DC then charges the battery. On the other hand, lighting coil supplies AC current to the headlight, taillight, and meter light under the regulated condition.



## TROUBLESHOOTING







**Others**

|                    |   |
|--------------------|---|
| Battery overcharge | <ul style="list-style-type: none"> <li>● Faulty regulator/rectifier</li> <li>● Faulty battery</li> <li>● Poor contact of regulator/rectifier lead wire coupler</li> </ul> |
|--------------------|---|

**INSPECTION**

**CHARGING OUTPUT CHECK**

Start the engine and keep it running at 5 000 r/min with lighting switch turned ON.

Measure the DC voltage between the battery terminal ⊕ and ⊖ with the multi circuit tester.

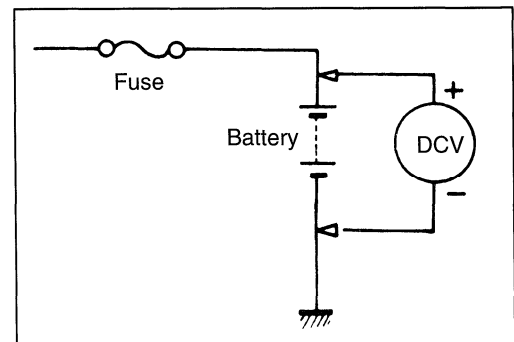
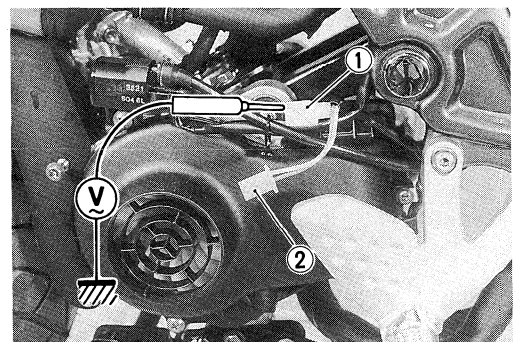
If the tester reads under or over following specification, check the no-load performance or replace the regulator/rectifier.

**NOTE:**

*When making this test, be sure that the battery is in fully-charged condition.*

**09900-25008: Multi circuit tester set**

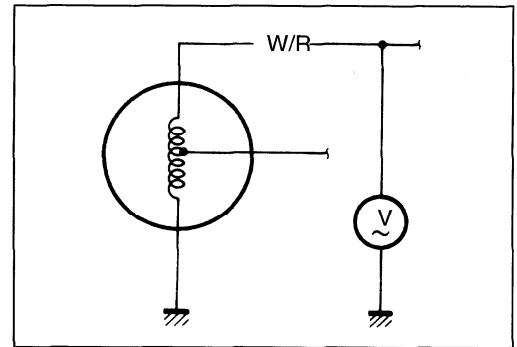
**STD charging output: 13.0–15.0V at 5 000 r/min.**



**NO-LOAD PERFORMANCE**

- Disconnect the magneto lead wire coupler.
- Start the engine and keep it running at 5 000 r/min.
- Using the multi circuit tester, measure the AC voltage between the White with Red tracer lead wire and ground. If the tester reading is as follows, magneto is in good condition.

 **STD No-load performance: More than 25V (AC) at 5 000 r/min.**



**STATOR COILS**

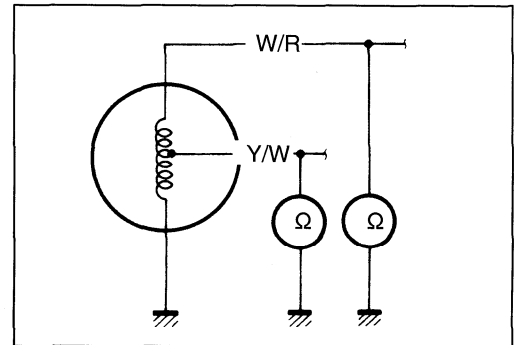
Using a pocket tester, measure the resistance between the lead wire and ground.

If the resistance checked is incorrect, replace the coil.

 **09900-25008: Multi circuit tester set**

 **Tester knob indication: × 1Ω range**

|            | Standard resistance |
|------------|---------------------|
| W/R–Ground | 0.5–1.2Ω            |
| Y/W–Ground | 0.3–1.0Ω            |

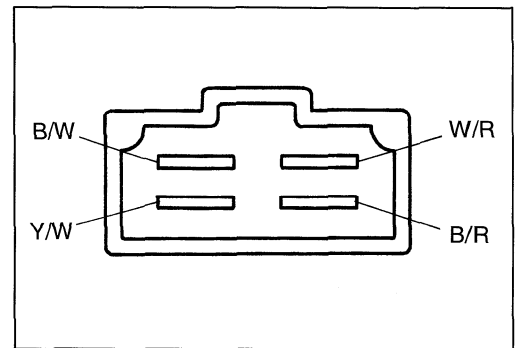


**REGULATOR/RECTIFIER**

- Disconnect the coupler.
- Using the multi circuit tester (× 1 kΩ range), measure the resistance between the terminals as shown in the following table. If the resistance checked is incorrect, replace the regulator/rectifier.

 **09900-25008: Multi circuit tester set**

 **Tester knob indication: Diode test (→←)**



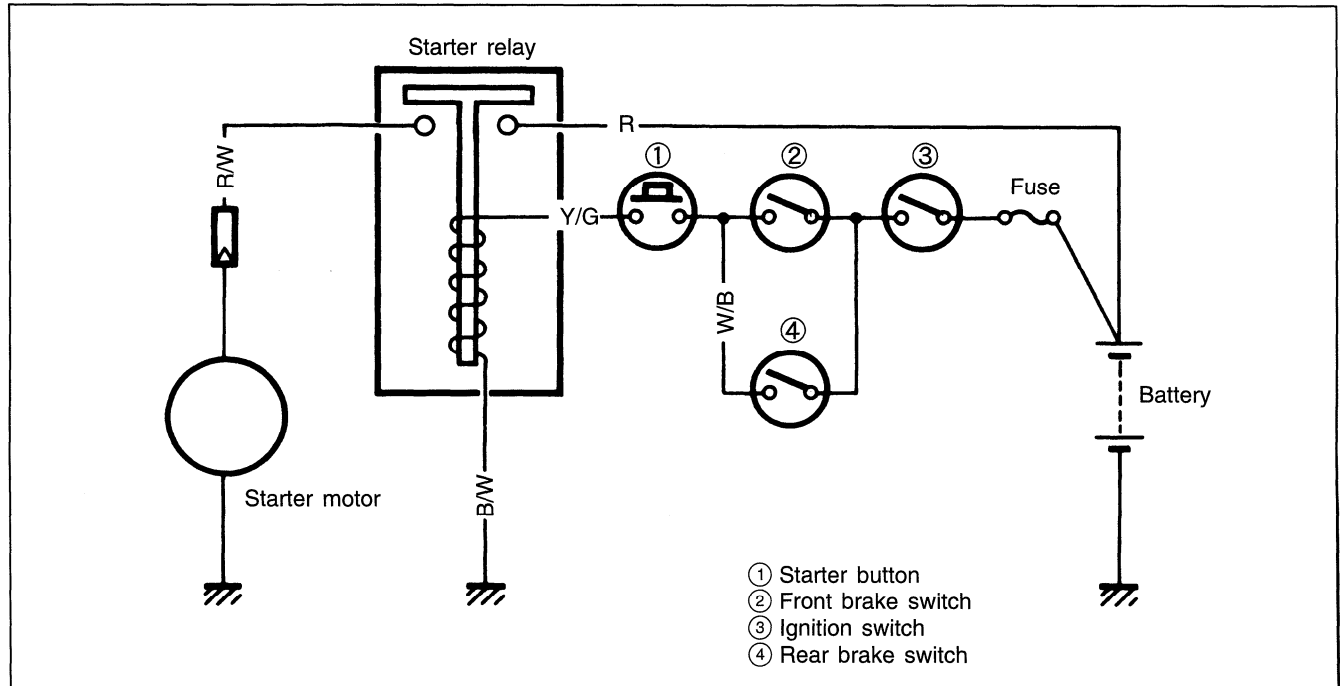
Unit: kΩ

|                       |     | ⊕ Probe of tester to: |         |         |         |
|-----------------------|-----|-----------------------|---------|---------|---------|
| ⊖ Probe of tester to: |     | Y/W                   | B/W     | W/R     | B/R     |
| ⊖ Probe of tester to: | Y/W |                       | 1.3–1.6 | 1.3–1.6 | 1.3–1.6 |
|                       | B/W | 1.3–1.6               |         | 1.3–1.6 | 1.3–1.6 |
|                       | W/R | 1.3–1.6               | 1.3–1.6 |         | 1.3–1.6 |
|                       | B/R | 1.3–1.6               | 1.3–1.6 | 1.2     |         |

# STARTER SYSTEM

## DESCRIPTION

The starter system is shown in the diagram below: namely, the starter motor, relay, starter switch and battery. Depressing the starter button (on the right handlebar switch box) while squeezing the front or rear brake lever energizes the relay, causing the contact points to close which connects the starter motor to the battery.



## TROUBLESHOOTING

**Starter motor will not run.**

Check whether to hear the click noise from the starter relay when the starter button is pushed.  
 Grasp the front or rear brake lever when pushing the starter button.

Clicks

Check whether to run the starter motor when connect the starter motor terminal to the battery ⊕ terminal directly.  
 (Do not use thin wire, because a large amount of current flows.)

Run

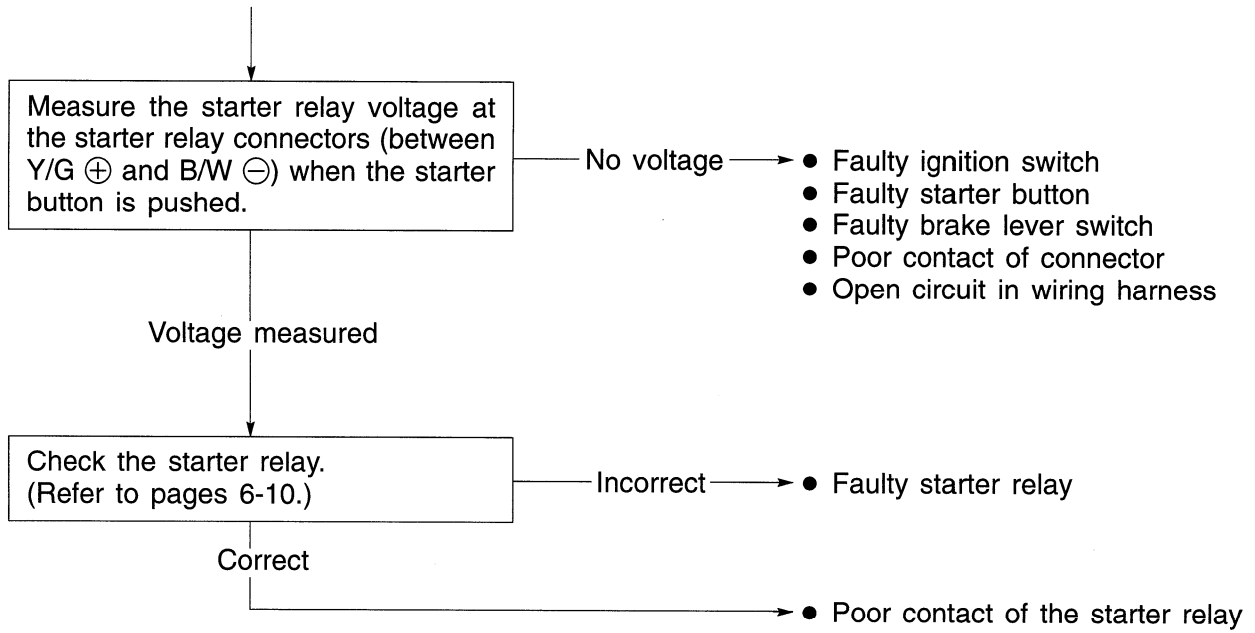
Not run

- Faulty starter motor

- Faulty starter relay
- Loosen or disconnected starter motor lead wire

No click

Continued next page



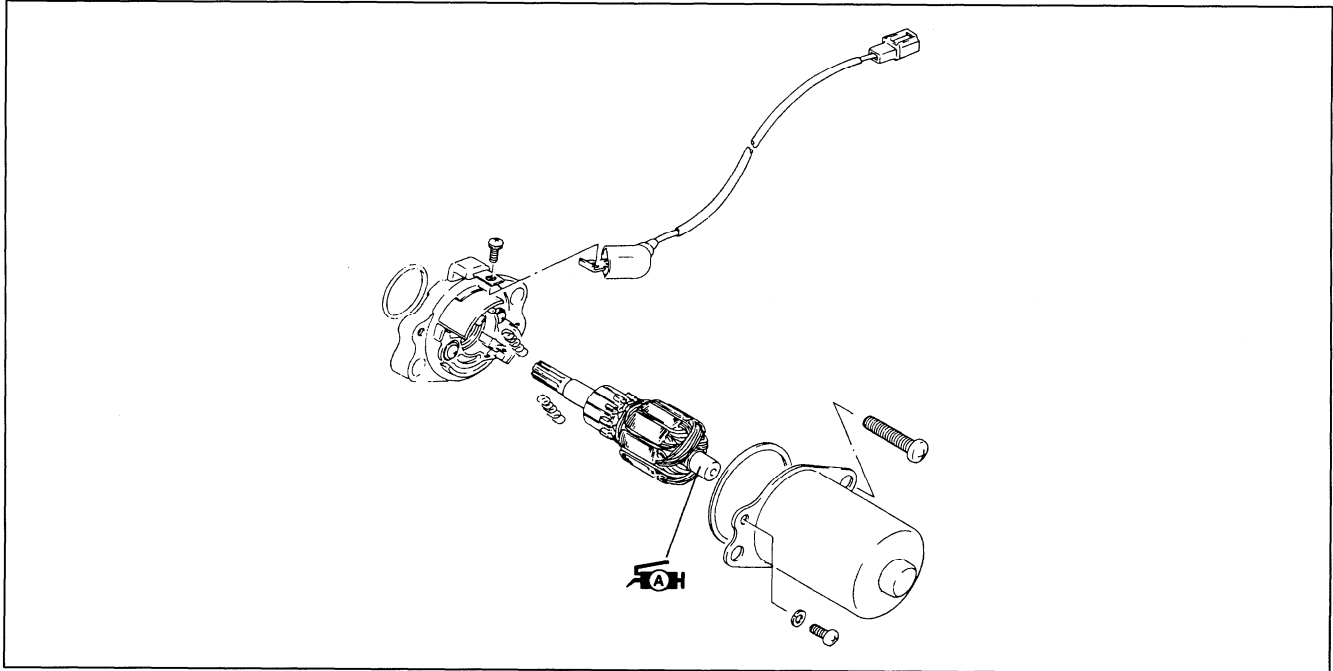
**Others**

|   |                         |
|---|-------------------------|
| Engine does not turn though starter motor runs. | • Faulty starter pinion |
|---|-------------------------|

**STARTER MOTOR REMOVAL AND DISASSEMBLY**

- Remove the muffler.
- Remove the starter motor. (Refer to page 3-6.)

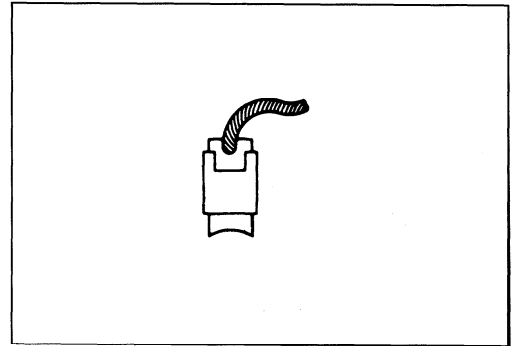
- Disassemble the starter motor as shown in the illustration.



### STARTER MOTOR INSPECTION

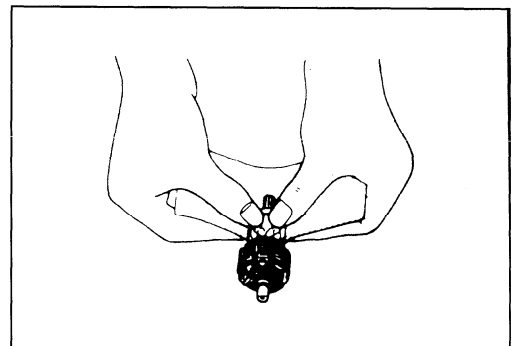
#### CARBON BRUSHES

Inspect the brushes for damage or wear. If any damage is found, replace them.



#### COMMUTATOR

If the commutator surface is dirty, starting performance will decrease. Polish the commutator with #400 or similar fine emery paper when it is dirty. After polishing wipe the commutator with a clean dry cloth.



#### ARMATURE COIL

Using the pocket tester, check the coil for open and ground by placing probe pins on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.

If the coil is found to be open-circuited or grounded, replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

## STARTER RELAY INSPECTION

Disconnect lead wire (R/W) of the starter motor.

Turn on the ignition switch and squeeze the front or rear brake lever, then inspect the continuity between the Red and Red/White lead wires at the starter relay when pushing the starter button.

If the starter relay is in sound condition, continuity is found.



**09900-25008: Multi circuit tester set**

Check the coil for “open”, “ground” and ohmic resistance.

The coil is in good condition if the resistance is as follows.



**09900-25008: Multi circuit tester set**

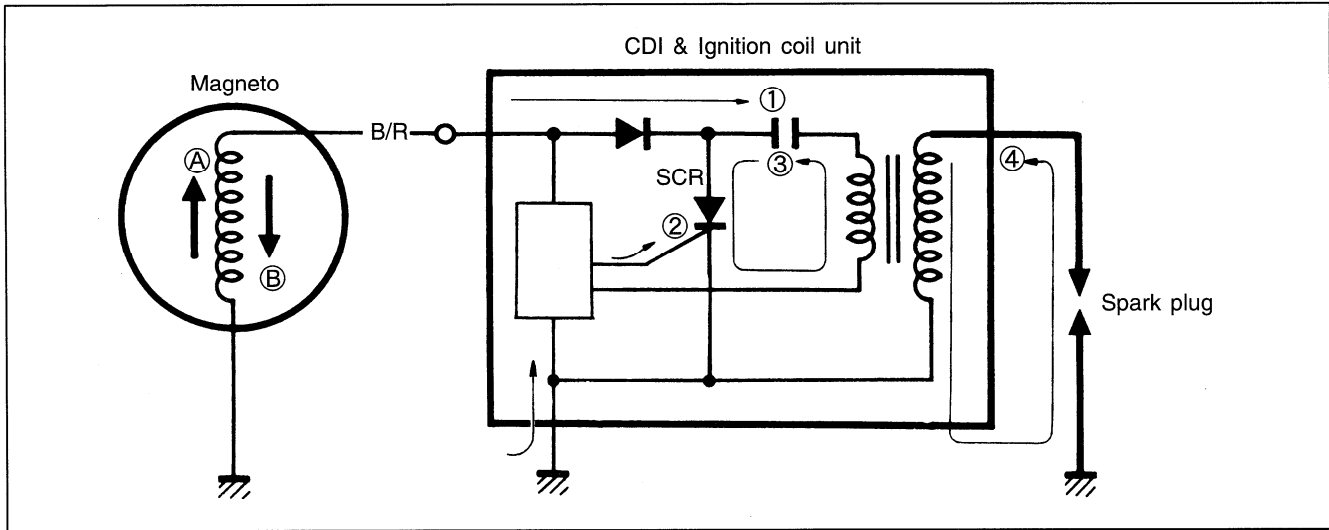
**STD resistance: 50–90 $\Omega$**



**Tester knob indication:  $\Omega$  range**

# IGNITION SYSTEM

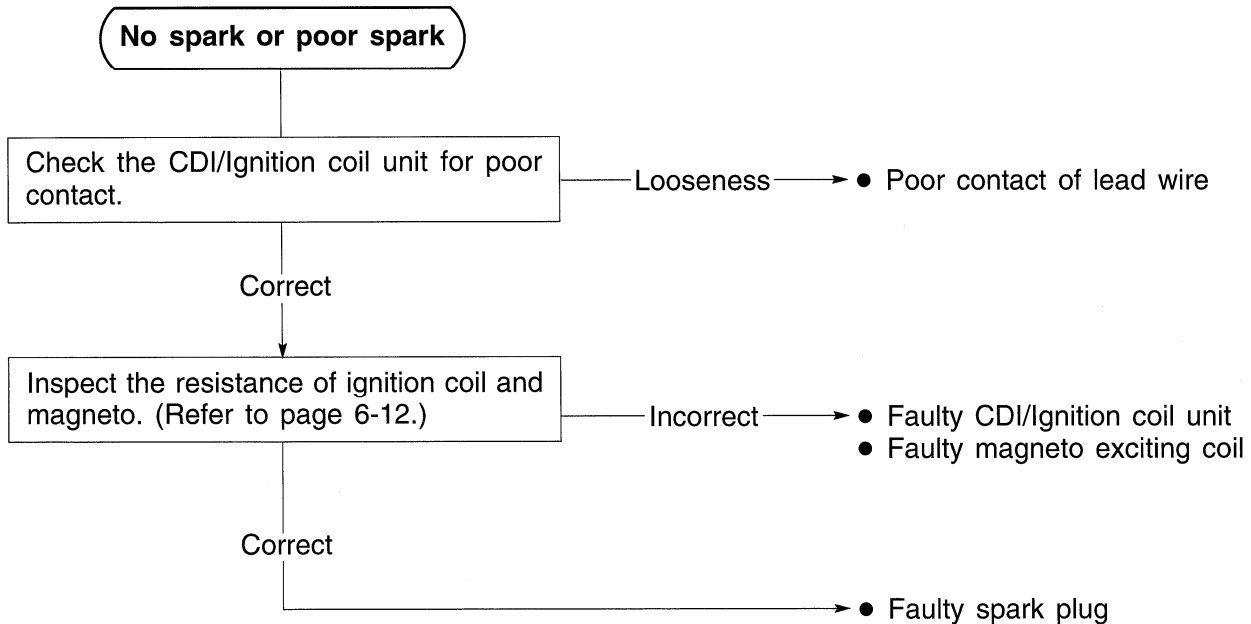
The ignition system consists of a flywheel magneto, a CDI & ignition coil unit and a spark plug.



- ① As the rotor rotates, an AC current is induced in the coil. The current induced in the (A) direction charges up the capacitor.
- ② As the rotor rotates further, the current is induced in the reverse direction (B) direction). This current causes a voltage applied through the ground to the gate of SCR.
- ③ As the SCR conducts, the energy which has been charged in the capacitor is instantaneously discharged through the primary winding of the ignition coil.
- ④ The current which flows in the primary winding of the ignition coil causes a high voltage induced in the secondary winding of the ignition coil. The induced voltage is much higher than the voltage of the primary winding because it is boosted up by the high ratio of turns between primary and secondary windings.

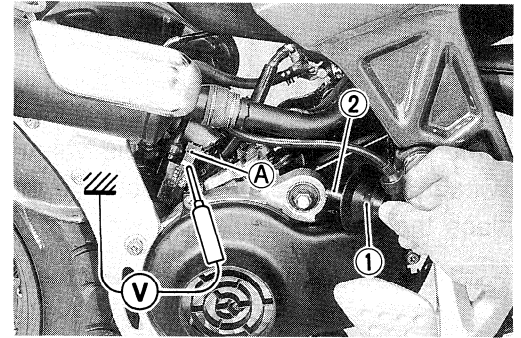
The high voltage is fed to the spark plug, where it produces discharge sparks across the spark plug gap and sparks ignite the fuel/air mixture in the combustion chamber.

## TROUBLE SHOOTING



## CDI UNIT AND IGNITION COIL INSPECTION CHECKING WITH MULTI CIRCUIT TESTER

- Remove the spark plug cap ①.
- Fit the new spark plug ② to the spark plug cap and ground it to the engine or chassis.
- Fit the peak voltage adapter to the multi circuit tester and measure peak volt.
  - ⊕: Ground
  - ⊖: Black/Blue lead wire

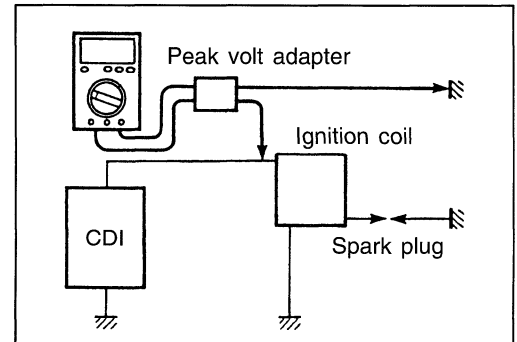


**TOOL** 09900-25008 Multi circuit tester set

**Tester knob indication: Voltage**

- Turn the ignition switch to the “ON” position. Push the electric starter button and measure the peak volt.

**Ignition coil peak volt: Over 150V**



## MAGNETO PICK UP COIL

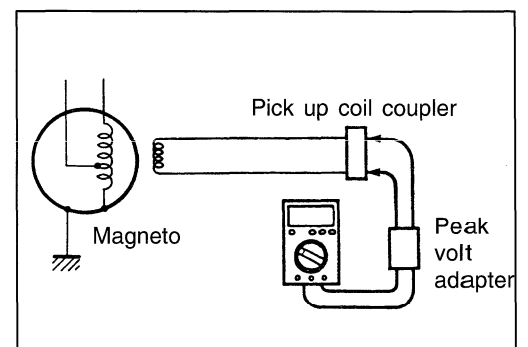
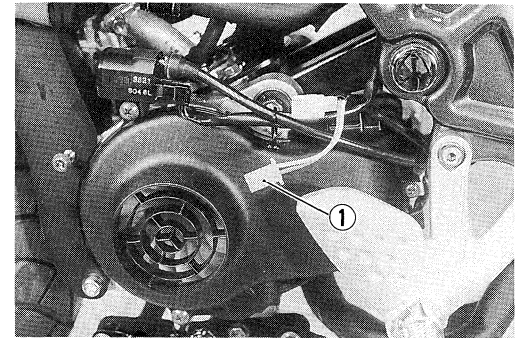
- Remove the pick up coil coupler ①.
- Connect the peak voltage adapter to the multi circuit tester.
- Measure the peak volt.

**TOOL** 09900-25008: Multi circuit tester set

**Tester knob indication: Voltage**

**Pick up coil peak volt:**

| ⊕ probe | ⊖ probe | Peak volt |
|---------|---------|-----------|
| White   | Brown   | Over 1.3V |
| White   | Ground  | 0V        |



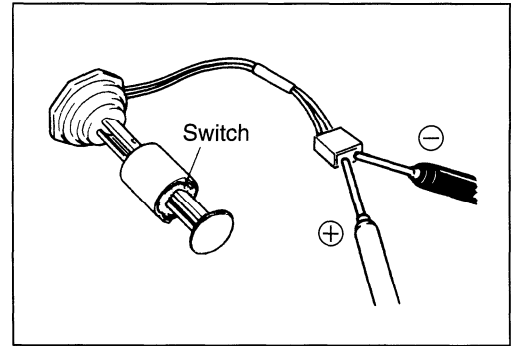


## OIL LEVEL INDICATOR SWITCH

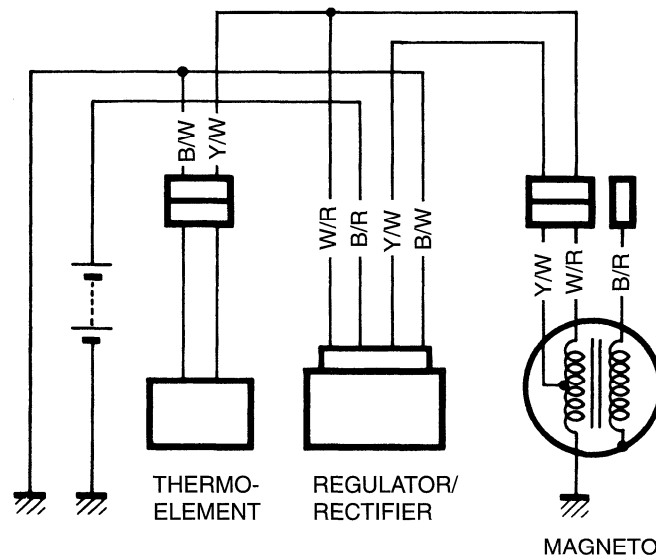
Check the oil level indicator switch for continuity between the lead wire.

If the tester does not show the value of 0–1 ohm when the switch ring is in bottom position, file the contact surface or replace the unit.

**TOOL** 09900-25008: Multi circuit tester set



## THERMOELEMENT



R : Red  
 Y : Yellow  
 B/R : Black with Red tracer  
 B/W : Black with White tracer

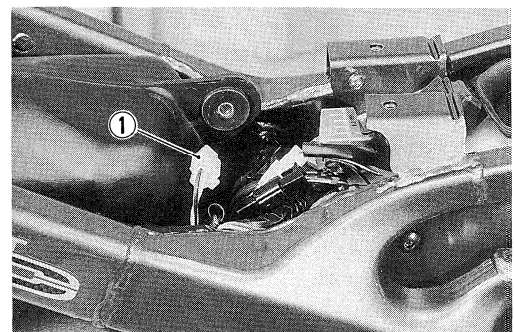
W/R: White with Red tracer  
 Y/R : Yellow with Red tracer  
 Y/W: Yellow with White tracer

## INSPECTION

- Disconnect the thermoelement coupler ①.
- Connect the thermoelement coupler to a 12V battery and touch the thermoelement to check the temperature being raised. The thermoelement should become heated to a temperature more than that of human body within five minutes. If not, replace with new one.

**NOTE:**

*This check should be carried out when the carburetor is cold.*



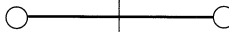
## SWITCHES

Inspect each switch for continuity with a pocket tester referring to the chart. If any abnormality is found, replace the respective switch assemblies with new ones.

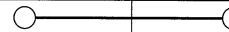
 **09900-25008: Multi circuit tester set**

 **Tester knob indication:  $\times 1\Omega$  range**


### IGNITION SWITCH

| Position \ Color | R   | O |
|------------------|---|---|
| OFF              |   |   |
| ON               |  |   |

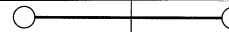
### HORN BUTTON

| Position \ Color | B/BI  | B/W |
|------------------|---|-----|
| OFF              |   |     |
| ON (Push)        |  |     |


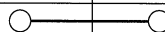
### LIGHTING SWITCH

| Position \ Color | Gr  | Y/W |
|------------------|---|-----|
| OFF              |   |     |
| ON               |  |     |

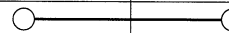
### FRONT BRAKE SWITCH

| Position \ Color | B/R   | B |
|------------------|---|---|
| OFF              |   |   |
| ON               |  |   |

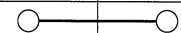
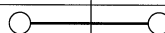
### DIMMER SWITCH (For UK)

| Position \ Color | W   | Y   | Y/W |
|------------------|---|---|-----|
| HI               |  |   |     |
| LO               |   |  |     |

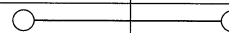
### REAR BRAKE SWITCH

| Position \ Color | O   | W/B |
|------------------|---|-----|
| OFF              |   |     |
| ON               |  |     |

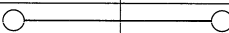
### TURN SIGNAL SWITCH

| Position \ Color | B   | Lbl   | Lg |
|------------------|---|---|----|
| L                |  |   |    |
| OFF              |   |   |    |
| R                |   |  |    |

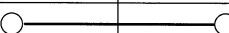
### OIL LEVEL SWITCH

| Position \ Color | B/BI  | B/W |
|------------------|---|-----|
| OFF              |   |     |
| ON               |  |     |

### ENGINE STOP SWITCH

| Position \ Color | O/Y   | O/W |
|------------------|---|-----|
| OFF              |   |     |
| RUN              |  |     |

### STARTER BUTTON

| Position \ Color | B   | Y/G |
|------------------|---|-----|
| OFF              |   |     |
| ON (Push)        |  |     |

### WIRE COLOR

B : Black  
 B : Black  
 G : Green  
 Gr : Gray  
 Lbl : Light blue  
 Lg : Light green  
 O : Orange  
 R : Red  
 W : White  
 Y : Yellow  
 B/R : Black with Red tracer  
 B/W : Black with White tracer  
 BI/W : Blue with White tracer  
 G/W : Green with White tracer  
 W/B : White with Black tracer  
 Y/G : Yellow with Green tracer  
 Y/R : Yellow with Red tracer  
 Y/W : Yellow with White tracer

# BATTERY

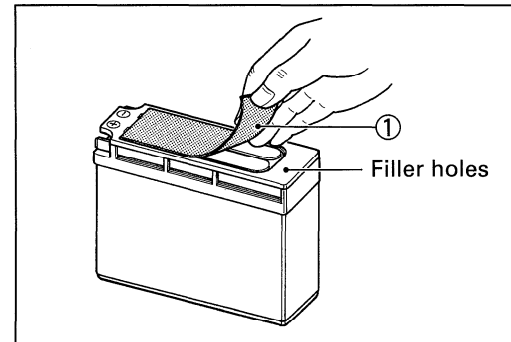
## SPECIFICATIONS

|                           |                            |
|---------------------------|----------------------------|
| Type designation          | YB4B-BS                    |
| Capacity                  | 12V, 8.28 kC (2.3 Ah)/10HR |
| Standard electrolyte S.G. | 1.35 at 20°C (68°F)        |

## INITIAL CHARGING

### Filling electrolyte

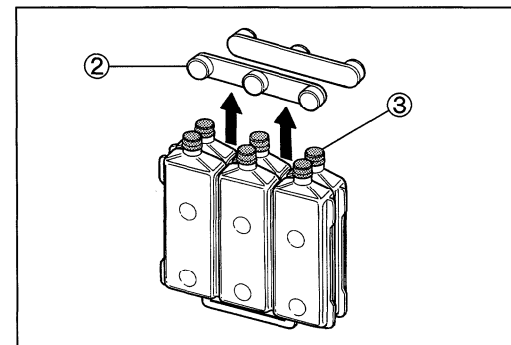
- Remove the aluminum tape ① sealing the battery electrolyte filler holes.



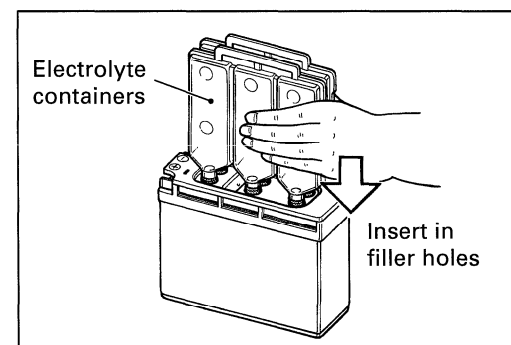
- Remove the caps ②.

### NOTE:

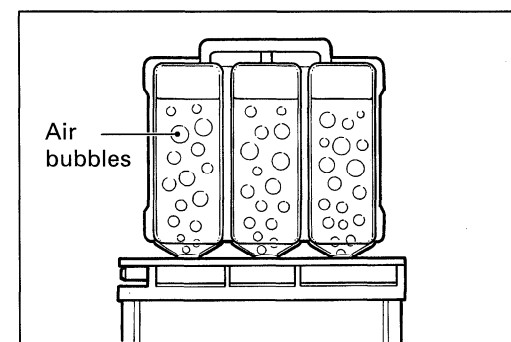
- \* After filling the electrolyte completely, use the removed cap ② as the sealed caps of battery-filler holes.
- \* Do not remove or pierce the sealed areas ③ of the electrolyte container.



- Insert the nozzles of the electrolyte container into the battery's electrolyte filler holes, holding the container firmly so that it does not fall. Take precaution not to allow any of the fluid to spill.



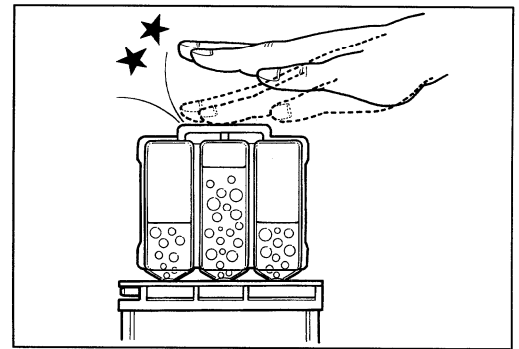
- Make sure air bubbles are coming up each electrolyte container, and leave in this position for about more than 20 minutes.



**NOTE:**

If no air bubbles are coming up from a filler port, tap the bottom of the two or three times.

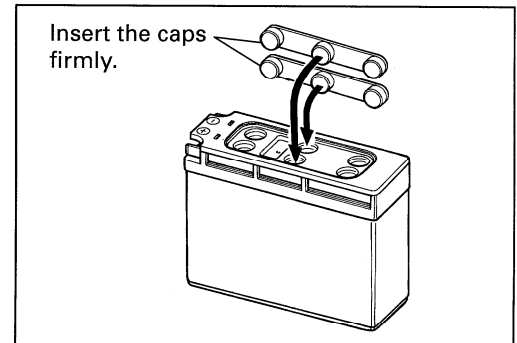
Never remove the container from the battery.



- After confirming that the electrolyte has entered the battery completely, remove the electrolyte containers from the battery. Wait for around 20 minutes.
- Insert the caps into the filler holes, pressing in firmly so that the top of the caps do not protrude above the upper surface of the battery's top cover.

**▲ CAUTION**

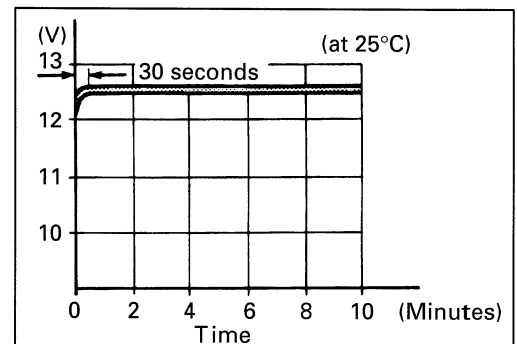
- \* **Never use anything except the specified battery.**
- \* **Once install the caps to the battery; do not remove the caps.**



- Using SUZUKI pocket tester, measure the battery voltage. The tester should indicate more than 12.5–12.6V (DC) as shown in the Fig. If the battery voltage is lower than the specification, charge the battery with a battery charger. (Refer to the recharging operation.)

**NOTE:**

Initial charging for a new battery is recommended if two years have elapsed since the date of manufacture.

**SERVICING**

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, then this can be cleaned away with sandpaper.

### RECHARGING OPERATION

- Using the pocket tester, check the battery voltage. If the voltage reading is less than the 12.0V (DC), recharge the battery with a battery charger.

**⚠ CAUTION**

**When recharging the battery, remove the battery from the motorcycle.**

*NOTE:*

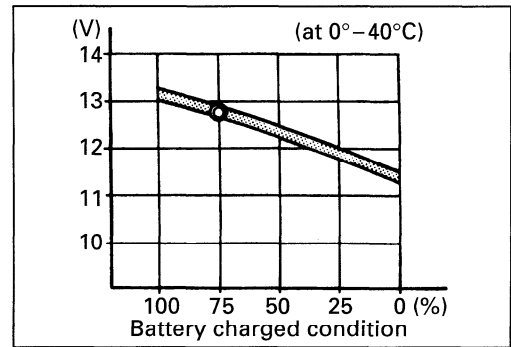
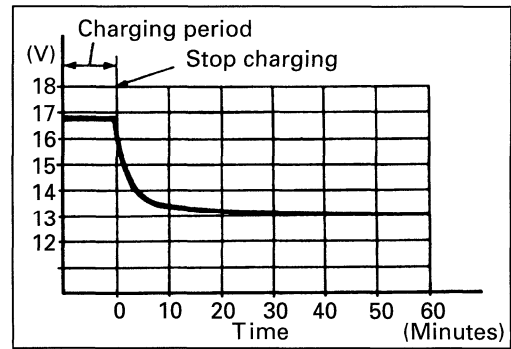
*Do not remove the caps on the battery top while recharging.*

**Recharging time: 0.3A for 5 hours or 3A for half an hour**

**⚠ CAUTION**

**Be careful not to permit the charging current to exceed 3A at any time.**

- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than the 12.5V, recharge the battery again.
- If battery voltage is still less than 12.5V, after recharging, replace the battery with a new one.
- When the motorcycle is not used for a long period, check the battery every 1 month to prevent the battery discharge.



# SERVICING INFORMATION

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# TROUBLESHOOTING

## ENGINE

| Complaint  | Symptom and possible causes   | Remedy   |
|--|---|--|
| <b>Engine will not start, or is hard to start.</b> | <p><b>Compression too low</b></p> <ol style="list-style-type: none"> <li>1. Excessively worn cylinder or piston rings.</li> <li>2. Stiff piston ring in place.</li> <li>3. Gas leaks from the joint in crankcase, cylinder or cylinder head.</li> <li>4. Damaged reed valve.</li> <li>5. Spark plug too loose.</li> <li>6. Broken, cracked or otherwise failed piston.</li> </ol> <p><b>Plug not sparking</b></p> <ol style="list-style-type: none"> <li>1. Damaged spark plug or spark plug cap.</li> <li>2. Dirty or wet spark plug.</li> <li>3. Defective CDI/Ignition coil unit or stator coil.</li> <li>4. Open or short in high-tension cord.</li> <li>5. Defective ignition switch.</li> </ol> <p><b>No fuel reaching the carburetor</b></p> <ol style="list-style-type: none"> <li>1. Clogged hole in the fuel tank cap.</li> <li>2. Clogged or defective fuel valve.</li> <li>3. Defective carburetor needle valve.</li> <li>4. Clogged fuel hose or defective vacuum hose.</li> </ol> | <p>Replace.<br/>Repair or replace.<br/>Repair or replace.</p> <p>Replace.<br/>Tighten.<br/>Replace.</p> <p>Replace.<br/>Clean and dry.<br/>Replace.<br/>Replace.<br/>Replace.</p> <p>Clean.<br/>Clean or replace.<br/>Replace.<br/>Clean or replace.</p> |
| <b>Engine stalls easily.</b>                       | <ol style="list-style-type: none"> <li>1. Carbon deposited on the spark plug.</li> <li>2. Defective CDI/Ignition coil.</li> <li>3. Clogged fuel hose.</li> <li>4. Clogged jets in carburetor.</li> <li>5. Clogged exhaust pipe.</li> </ol>  | <p>Clean.<br/>Replace.<br/>Clean.<br/>Clean.<br/>Clean.</p>  |
| <b>Noisy engine.</b>                               | <p><b>Noise appears to come from piston</b></p> <ol style="list-style-type: none"> <li>1. Piston or cylinder worn down.</li> <li>2. Combustion chamber fouled with carbon.</li> <li>3. Piston pin, bearing or piston pin bore worn.</li> <li>4. Piston rings or ring grooves worn.</li> </ol> <p><b>Noise seems to come from crankshaft</b></p> <ol style="list-style-type: none"> <li>1. Worn or burnt crankshaft bearings.</li> <li>2. Worn or burnt conrod big-end bearings.</li> </ol> <p><b>Noise seems to come from final gear box</b></p> <ol style="list-style-type: none"> <li>1. Gears worn or rubbing.</li> <li>2. Badly worn splines.</li> <li>3. Worn or damaged bearings of drive shaft or rear axle shaft.</li> </ol>  | <p>Replace.<br/>Clean.<br/>Replace.<br/>Replace.</p> <p>Replace.<br/>Replace.</p> <p>Replace.<br/>Replace.<br/>Replace.</p>  |
| <b>Slipping clutch.</b>                            | <ol style="list-style-type: none"> <li>1. Worn or damaged clutch shoes.</li> <li>2. Worn clutch drum.</li> </ol>  | <p>Replace.<br/>Replace.</p>   |

| Complaint                                      | Symptom and possible causes  | Remedy  |
|--|--|---|
| <b>Engine idles poorly.</b>                    | <ol style="list-style-type: none"> <li>1. Excessively worn cylinder or piston rings.</li> <li>2. Stiff piston ring in place.</li> <li>3. Gas leaks from crankshaft oil seal.</li> <li>4. Spark plug gaps too wide.</li> <li>5. Defective CDI/Ignition coil unit.</li> <li>6. Defective stator coil.</li> <li>7. Float-chamber fuel level out of adjustment in carburetor.</li> <li>8. Clogged jets of carburetor.</li> <li>9. Broken or damaged reed valve.</li> </ol>   | <p>Replace.<br/> Replace.<br/> Replace.<br/> Adjust or replace.<br/> Replace.<br/> Replace.<br/> Replace.<br/> Clean or adjust.<br/> Replace.</p>   |
| <b>Engine runs poorly in high-speed range.</b> | <ol style="list-style-type: none"> <li>1. Excessively worn cylinder or piston rings.</li> <li>2. Stiff piston ring in place.</li> <li>3. Spark plug gaps too narrow.</li> <li>4. Ignition not advanced sufficiently due to poorly working CDI/Ignition coil unit.</li> <li>5. Defective stator coil.</li> <li>6. Float-chamber fuel level too low.</li> <li>7. Clogged air cleaner element.</li> <li>8. Clogged fuel hose, resulting in inadequate fuel supply to carburetor.</li> <li>9. Clogged fuel valve vacuum pipe.</li> </ol>   | <p>Replace.<br/> Replace.<br/> Adjust.<br/> Replace.<br/> <br/> Replace.<br/> Replace.<br/> Clean.<br/> Clean and prime.<br/> <br/> Clean.</p>  |
| <b>Dirty or heavy exhaust smoke.</b>           | <ol style="list-style-type: none"> <li>1. Use of incorrect engine oil.</li> </ol>  | <p>Change.</p>  |
| <b>Engine lacks power.</b>                     | <ol style="list-style-type: none"> <li>1. Excessively worn cylinder or piston rings.</li> <li>2. Stiff piston rings in place.</li> <li>3. Gas leaks from crankshaft oil seal.</li> <li>4. Spark plug gaps incorrect.</li> <li>5. Clogged jets in carburetor.</li> <li>6. Float-chamber fuel level out of adjustment.</li> <li>7. Clogged air cleaner element.</li> <li>8. Fouled spark plug.</li> <li>9. Sucking air from intake pipe.</li> <li>10. Slipping or worn V-belt.</li> <li>11. Damaged/worn rollers in the movable drive face.</li> <li>12. Weakened movable driven face spring.</li> <li>13. Too rich fuel/air mixture due to defective starter system.</li> </ol> | <p>Replace.<br/> Replace.<br/> Replace.<br/> Adjust or replace.<br/> Clean.<br/> Replace.<br/> Clean.<br/> Clean or replace.<br/> Retighten or replace.<br/> Replace.<br/> Replace.<br/> Replace.<br/> Replace.</p> |
| <b>Engine overheats.</b>                       | <ol style="list-style-type: none"> <li>1. Heavy carbon deposit on piston crown.</li> <li>2. Defective oil pump or clogged oil circuit.</li> <li>3. Fuel level too low in float chamber.</li> <li>4. Air leakage from intake pipe.</li> <li>5. Use of incorrect engine oil.</li> <li>6. Use of improper spark plug.</li> <li>7. Clogged exhaust pipe/muffler.</li> </ol>  | <p>Clean.<br/> Replace or clean.<br/> Replace.<br/> Retighten or replace.<br/> Change.<br/> Change.<br/> Clean or replace.</p>  |



**CARBURETOR**

| <b>Complaint</b>                             | <b>Symptom and possible causes</b>   | <b>Remedy</b>  |
|--|--|--|
| <b>Trouble with starting.</b>                | <ol style="list-style-type: none"> <li>1. Starter jet is clogged.</li> <li>2. Air leaking from a joint between starter body and carburetor.</li> <li>3. Air leaking from carburetor's joint or vacuum hose joint.</li> <li>4. Starter plunger is not operating properly.</li> </ol>  | <p>Clean.<br/>Check starter body and carburetor for tightness, and replace gasket.<br/>Check and replace.<br/>Check and replace.</p> |
| <b>Idling or low-speed trouble.</b>          | <ol style="list-style-type: none"> <li>1. Pilot jet, pilot air jet are clogged or loose.</li> <li>2. Air leaking from carburetor's joint, vacuum pipe joint, or starter.</li> <li>3. Pilot outlet is clogged.</li> <li>4. Thermostatic element is not operating properly.</li> </ol> | <p>Check and clean.<br/>Clean and replace.<br/><br/>Check and clean.<br/>Check and replace.</p>                                      |
| <b>Medium- or high-speed trouble.</b>        | <ol style="list-style-type: none"> <li>1. Main jet or main air jet is clogged.</li> <li>2. Needle jet is clogged.</li> <li>3. Fuel level is improperly set.</li> <li>4. Throttle valve is not operating properly.</li> <li>5. Fuel filter is clogged.</li> </ol>                     | <p>Check and clean.<br/>Check and clean.<br/>Check and replace.<br/>Check throttle valve for operation.<br/>Check and clean.</p>     |
| <b>Overflow and fuel level fluctuations.</b> | <ol style="list-style-type: none"> <li>1. Needle valve is worn or damaged.</li> <li>2. Spring in needle valve is broken.</li> <li>3. Float is not working properly.</li> <li>4. Foreign matter has adhered to needle valve.</li> <li>5. Fuel level is too high or low.</li> </ol>    | <p>Replace.<br/>Replace.<br/>Check and adjust.<br/>Clean.<br/>Replace.</p>   |

**ELECTRICAL**

| <b>Complaint</b>  | <b>Symptom and possible causes</b>   | <b>Remedy</b>  |
|---|--|--|
| <b>No sparking or poor sparking.</b>                                  | <ol style="list-style-type: none"> <li>1. Defective CDI/Ignition coil unit.</li> <li>2. Defective spark plug.</li> <li>3. Defective stator coil.</li> <li>4. Loose connection of lead wire.</li> </ol>   | <p>Replace.<br/>Replace.<br/>Replace.<br/>Connect/tighten.</p>   |
| <b>Spark plug soon becomes fouled with carbon.</b>                    | <ol style="list-style-type: none"> <li>1. Mixture too rich.</li> <li>2. Idling speed set too high.</li> <li>3. Incorrect gasoline.</li> <li>4. Dirty element in air cleaner.</li> <li>5. Spark plug too cold.</li> <li>6. Incorrect engine oil.</li> </ol>   | <p>Adjust carburetor.<br/>Adjust carburetor.<br/>Change.<br/>Clean.<br/>Replace by hot type plug.<br/>Replace.</p> |
| <b>Spark plug electrodes overheat or burn.</b>                        | <ol style="list-style-type: none"> <li>1. Spark plug too hot.</li> <li>2. The engine overheats.</li> <li>3. Spark plug loose.</li> <li>4. Mixture too lean.</li> <li>5. Not enough engine oil.</li> </ol>  | <p>Replace by cold type plug.<br/>Turn up.<br/>Retighten.<br/>Adjust carburetor.<br/>Check oil pump.</p>           |
| <b>Magneto does not charge.</b>                                       | <ol style="list-style-type: none"> <li>1. Open or short in lead wires, or loose lead connections.</li> <li>2. Shorted, grounded or open magneto coil.</li> <li>3. Shorted or open regulator/rectifier.</li> </ol>  | <p>Repair, replace or retighten.<br/>Replace.<br/>Replace.</p>   |
| <b>Magneto charge, but charging rate is below the specifications.</b> | <ol style="list-style-type: none"> <li>1. Lead wires tend to get shorted or open-circuited or loosely connected at terminal.</li> <li>2. Grounded or open-circuited stator coils of magneto.</li> <li>3. Defective regulator/rectifier.</li> <li>4. Defective cell plates in the battery.</li> </ol> | <p>Repair or retighten.<br/><br/>Replace.<br/>Replace.<br/>Replace the battery.</p>                                |

| Complaint                               | Symptom and possible causes   | Remedy   |
|---|---|--|
| <b>Magneto overcharges.</b>             | <ol style="list-style-type: none"> <li>1. Internal short-circuit in the battery.</li> <li>2. Resistor element in the regulator/rectifier damaged or defective.</li> <li>3. Regulator/rectifier unit poorly grounded.</li> </ol>   | <p>Replace the battery.<br/>Replace.</p> <p>Clean and tighten ground connection.</p>                             |
| <b>Unstable charging.</b>               | <ol style="list-style-type: none"> <li>1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting.</li> <li>2. Magneto coil internally shorted.</li> <li>3. Defective regulator/rectifier.</li> </ol>  | <p>Repair or replace.</p> <p>Replace.<br/>Replace.</p>   |
| <b>Starter button is not effective.</b> | <ol style="list-style-type: none"> <li>1. Battery run down.</li> <li>2. Defective switch contacts.</li> <li>3. Brushes not seating properly on commutator in starter motor.</li> <li>4. Defective starter relay.</li> <li>5. Defective starter pinion gears.</li> <li>6. Defective front or rear brake light switch circuit.</li> </ol> | <p>Recharge or replace.<br/>Replace.<br/>Repair or replace.</p> <p>Replace.<br/>Replace.<br/>Replace/repair.</p> |

## BATTERY

| Complaint                              | Symptom and possible causes  | Remedy   |
|--|--|--|
| <b>Battery runs down quickly.</b>      | <ol style="list-style-type: none"> <li>1. The charging method is not correct.</li> <li>2. Cell plates have lost much of their active material as a result of over-charging.</li> <li>3. A short-circuit condition exists within the battery due to excessive accumulation of sediments caused by the incorrect electrolyte.</li> <li>4. Battery is too old.</li> </ol> | <p>Check the magneto and regulator/rectifier circuit connections, and make necessary adjustment to obtain specified charging operation.</p> <p>Replace the battery, and correct the charging system.</p> <p>Replace the battery.</p> <p>Replace the battery.</p> |
| <b>Reversed battery polarity.</b>      | <ol style="list-style-type: none"> <li>1. The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction.</li> </ol>   | <p>Replace the battery and be sure to connect the battery properly.</p>  |
| <b>Battery discharges too rapidly.</b> | <ol style="list-style-type: none"> <li>1. Dirty container top and sides.</li> <li>2. Battery is too old.</li> </ol>  | <p>Clean.<br/>Replace.</p>   |

**CHASSIS**

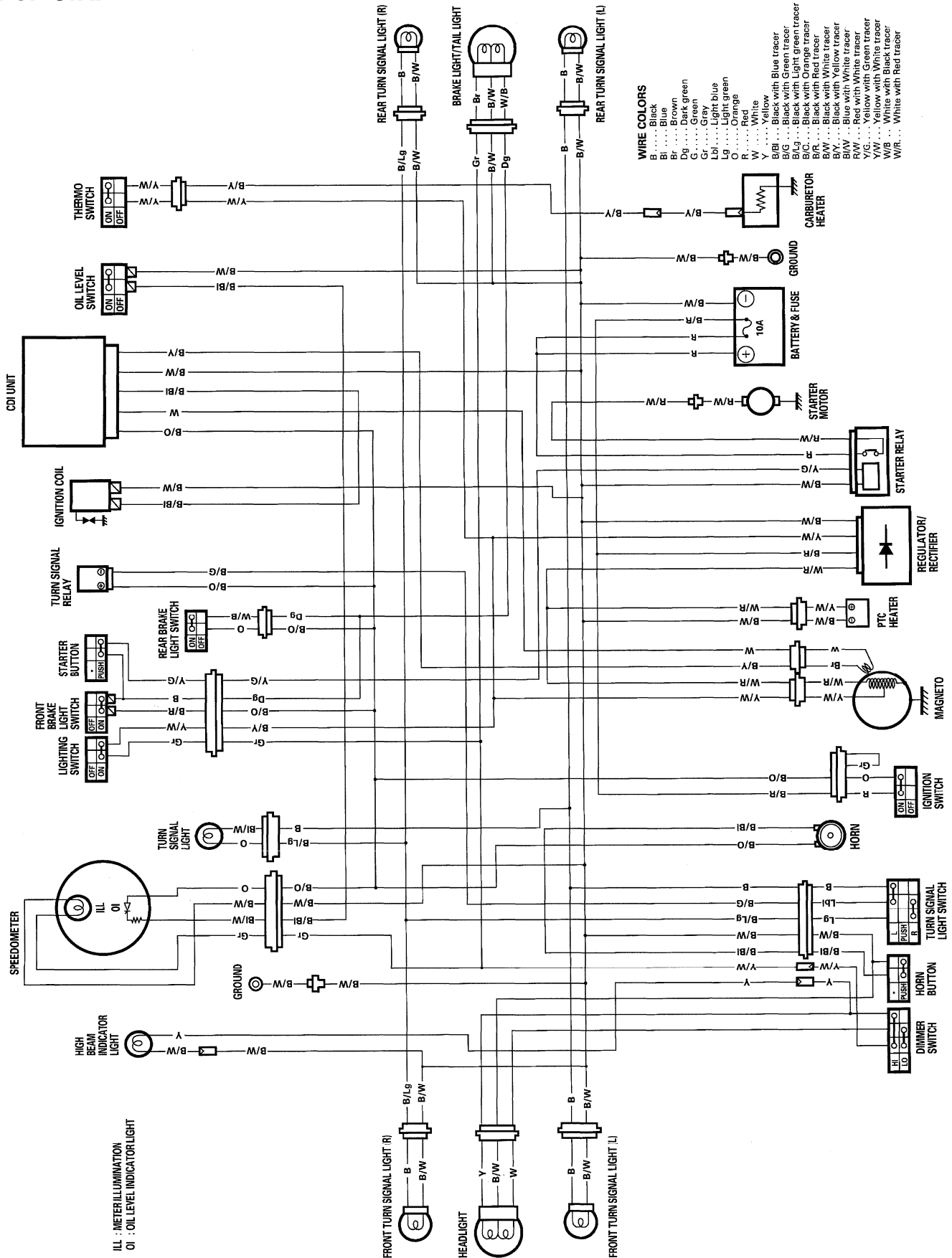
| <b>Complaint</b>                   | <b>Symptom and possible causes</b>  | <b>Remedy</b>  |
|------------------------------------|---|--|
| <b>Handling feels too heavy.</b>   | <ol style="list-style-type: none"> <li>1. Steering stem nut overtightened.</li> <li>2. Broken bearing/race in steering stem.</li> <li>3. Distorted steering stem.</li> <li>4. Not enough pressure in tires.</li> </ol>  | Adjust.<br>Replace.<br>Replace.<br>Adjust.   |
| <b>Wobbly handle.</b>              | <ol style="list-style-type: none"> <li>1. Loss of balance between right and left front suspension.</li> <li>2. Distorted front axle or crooked tire.</li> </ol>   | Replace.<br>Replace.   |
| <b>Wobbly front wheel.</b>         | <ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Worn front wheel bearings.</li> <li>3. Defective or incorrect tire.</li> <li>4. Loose nut on axle.</li> <li>5. Loose bolts on the rear shock absorber.</li> <li>6. Worn engine mounting bushing.</li> <li>7. Loose nuts or bolts for engine mounting.</li> </ol> | Replace.<br>Replace.<br>Replace.<br>Retighten.<br>Retighten.<br>Replace.<br>Tighten. |
| <b>Front suspension too soft.</b>  | <ol style="list-style-type: none"> <li>1. Weakened springs.</li> <li>2. Not enough fork oil.</li> </ol>   | Replace.<br>Refill.  |
| <b>Front suspension too stiff.</b> | <ol style="list-style-type: none"> <li>1. Fork oil too viscous.</li> <li>2. Too much fork oil.</li> </ol>   | Replace.<br>Drain excess oil.  |
| <b>Noisy front suspension.</b>     | <ol style="list-style-type: none"> <li>1. Not enough fork oil.</li> <li>2. Loose bolts or nuts on suspension.</li> </ol>  | Refill.<br>Retighten.  |
| <b>Wobbly rear wheel.</b>          | <ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Defective or incorrect tire.</li> <li>3. Loose bolts on the rear shock absorber.</li> <li>4. Worn engine mounting bushing.</li> <li>5. Loose nuts or bolts for engine mounting.</li> </ol>   | Replace.<br>Replace.<br>Replace.<br>Replace.<br>Retighten.                           |
| <b>Rear suspension too soft.</b>   | <ol style="list-style-type: none"> <li>1. Weakened spring.</li> <li>2. Oil leakage of rear shock absorber.</li> </ol>   | Replace.<br>Replace.   |
| <b>Noisy rear suspension.</b>      | <ol style="list-style-type: none"> <li>1. Loose nuts on suspension unit.</li> <li>2. Worn engine mounting bushing.</li> </ol>   | Retighten.<br>Replace.   |

**BRAKES**

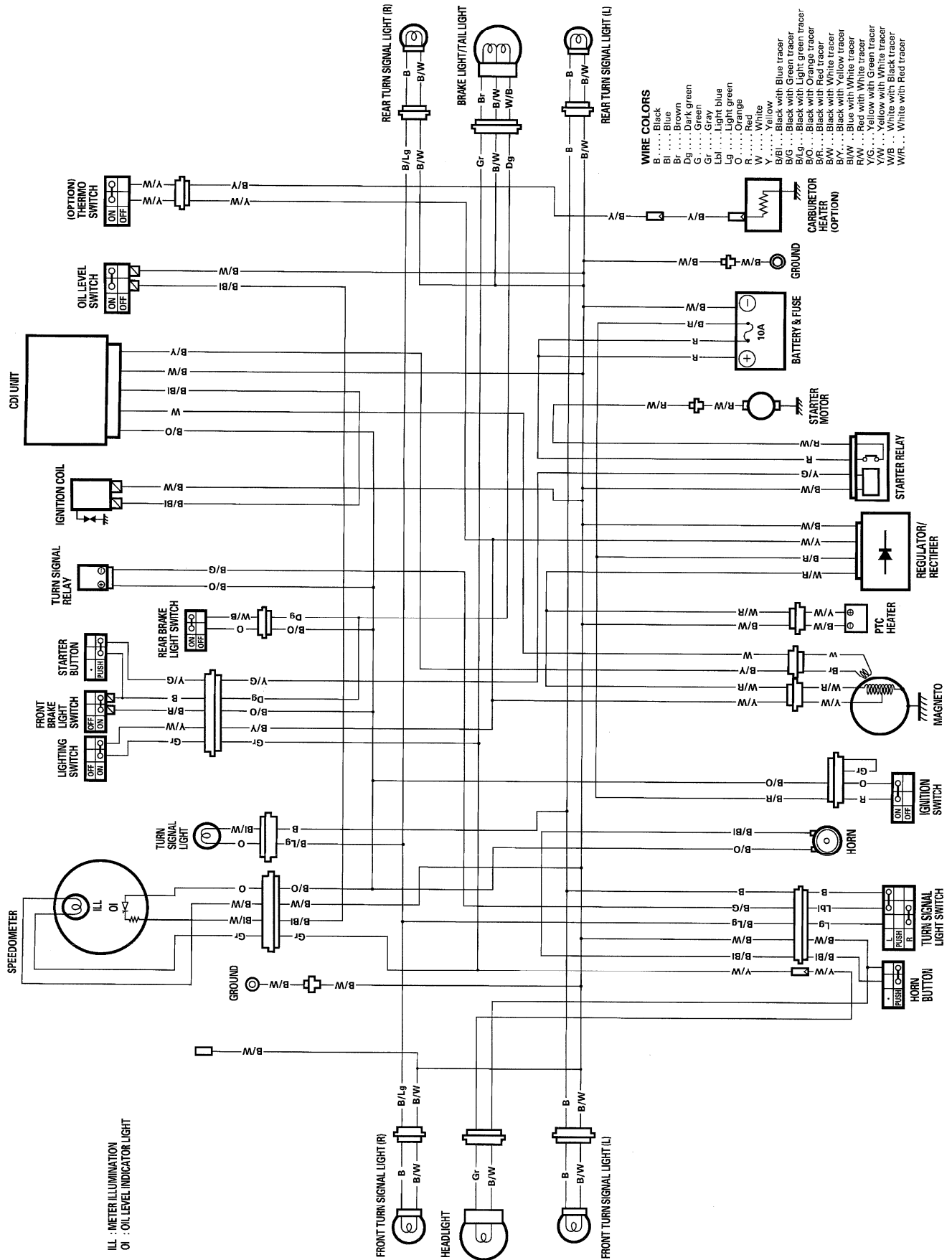
| <b>Complaint</b>                     | <b>Symptom and possible causes</b>  | <b>Remedy</b>  |
|--------------------------------------|---|--|
| <b>Insufficient brake power.</b>     | <ol style="list-style-type: none"> <li>1. Leakage of brake fluid from hydraulic system.</li> <li>2. Worn pad.</li> <li>3. Oil adhesion on engaging surface of pad.</li> <li>4. Worn disc.</li> <li>5. Air entered into hydraulic system.</li> <li>6. Worn shoe.</li> <li>7. Friction surfaces of shoes are dirty with oil.</li> <li>8. Excessively worn drum.</li> <li>9. Too much brake lever play.</li> </ol> | <p>Repair or replace.<br/>           Replace.<br/>           Clean disc and pads.<br/>           Replace.<br/>           Bleed air.<br/>           Replace.<br/>           Replace.<br/>           Replace.<br/>           Adjust.</p>   |
| <b>Brake squeaking.</b>              | <ol style="list-style-type: none"> <li>1. Carbon adhesion on pad surface.</li> <li>2. Tilted pad.</li> <li>3. Damaged wheel bearing.</li> <li>4. Worn pad.</li> <li>5. Foreign substance entered into brake fluid.</li> <li>6. Clogged return port of master cylinder.</li> <li>7. Brake shoe surface glazed.</li> <li>8. Loose front-wheel axle or rear-wheel axle nut.</li> <li>9. Worn shoe.</li> </ol>      | <p>Repair surface with sandpaper.<br/>           Modify and fitting.<br/>           Replace.<br/>           Replace.<br/>           Replace brake fluid.<br/>           Disassemble and clean master cylinder.<br/>           Repair surface with sandpaper.<br/>           Tighten to specified torque.<br/>           Replace.</p> |
| <b>Excessive brake lever stroke.</b> | <ol style="list-style-type: none"> <li>1. Air entered into hydraulic system.</li> <li>2. Insufficient brake fluid.</li> <li>3. Improper quality of brake fluid.</li> <li>4. Worn brake cam lever.</li> <li>5. Excessively worn shoes and/or drum.</li> </ol>  | <p>Bleed air.<br/>           Replenish fluid to normal level; bleed air.<br/>           Replace with correct fluid.<br/>           Replace.<br/>           Replace.</p>  |
| <b>Leakage of brake fluid.</b>       | <ol style="list-style-type: none"> <li>1. Insufficient tightening of connection joints.</li> <li>2. Cracked hose.</li> <li>3. Worn piston seal.</li> </ol>  | <p>Tighten to specified torque.<br/>           Replace.<br/>           Replace.</p>  |
| <b>Brake drags.</b>                  | <ol style="list-style-type: none"> <li>1. Rusty moving parts.</li> </ol>  | <p>Clean and lubricate.</p>  |

# WIRING DIAGRAM

For U.K.

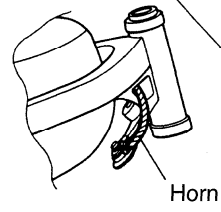
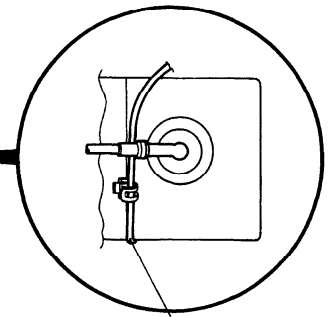
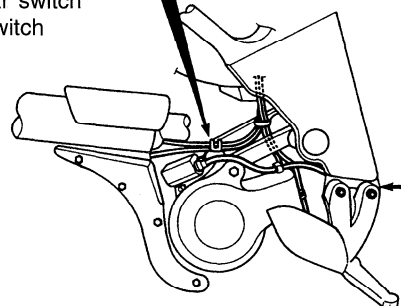
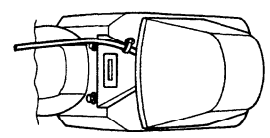
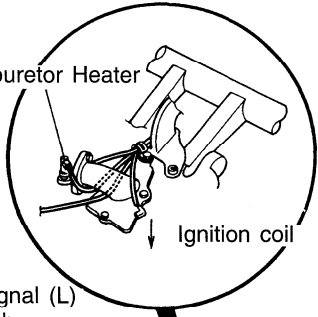
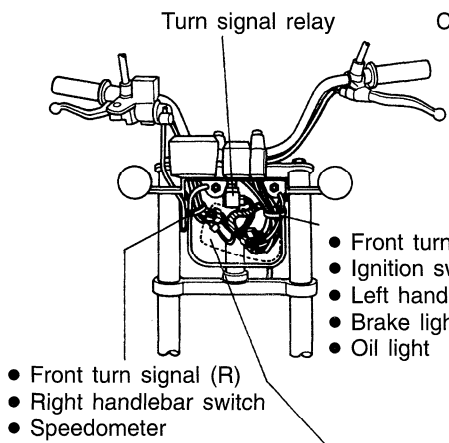
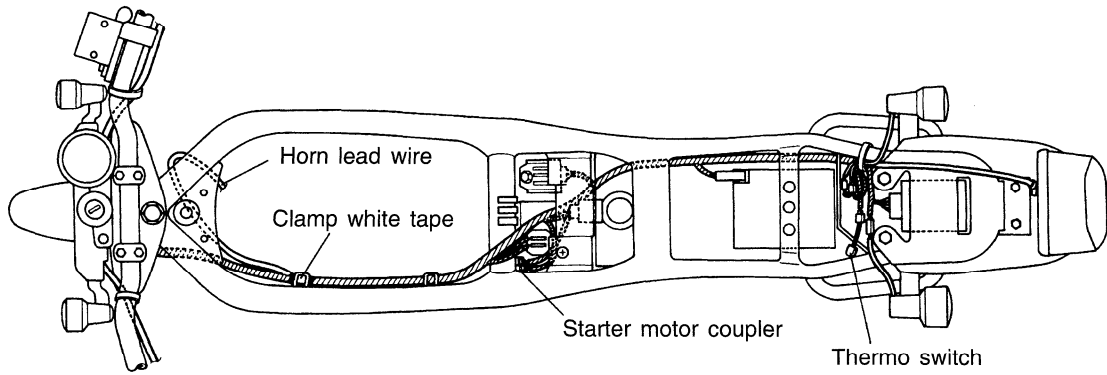


For Denmark, France, Germany, Italy and Spain



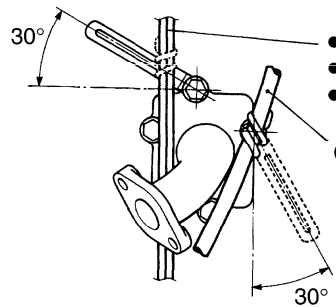
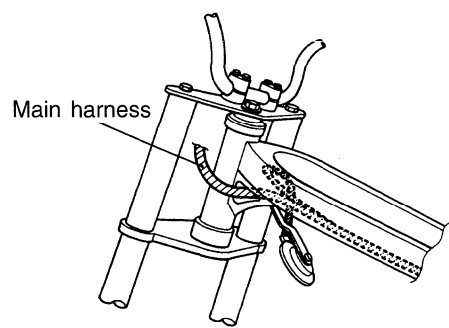
# WIRE, CABLE AND HOSE ROUTING

## WIRE ROUTING



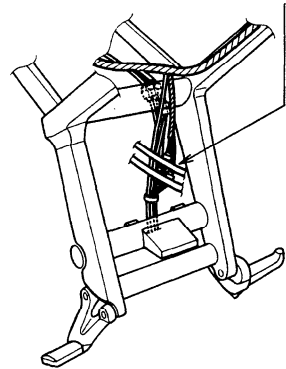
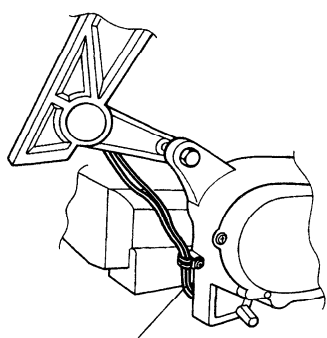
• Wrap the couplers with the sheet and place it behind the turn signal relay

Magneto lead wire



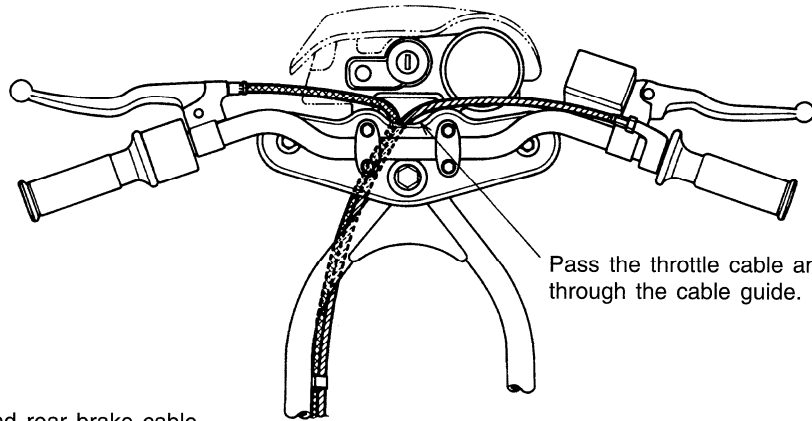
- PTC heater
  - Carburetor heater
  - Ignition coil
- Oil hose

Pass the lead wires between the fuel hose and frame.



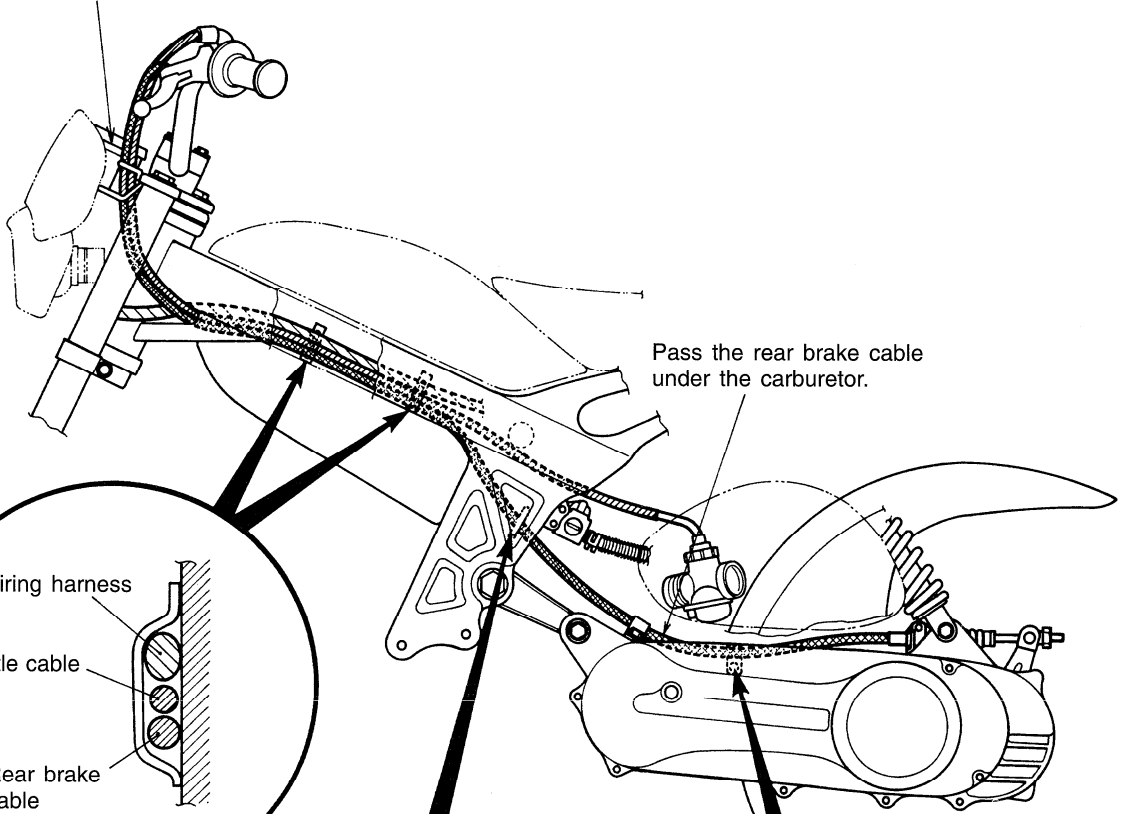
- Starter motor
- Engine ground

# CABLE ROUTING

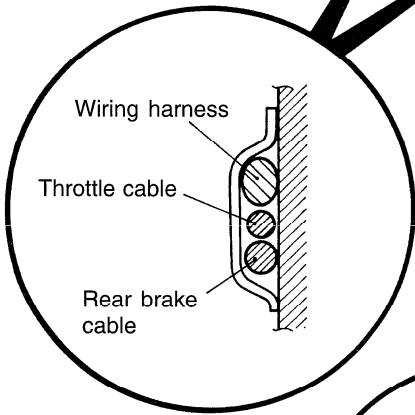


Pass the throttle cable and rear brake cable through the cable guide.

Pass the throttle cable and rear brake cable through the cable guide.



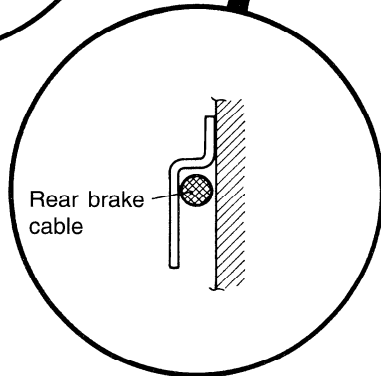
Pass the rear brake cable under the carburetor.



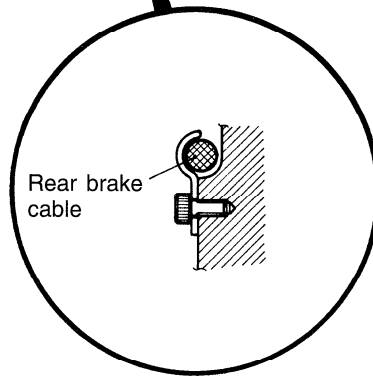
Wiring harness

Throttle cable

Rear brake cable



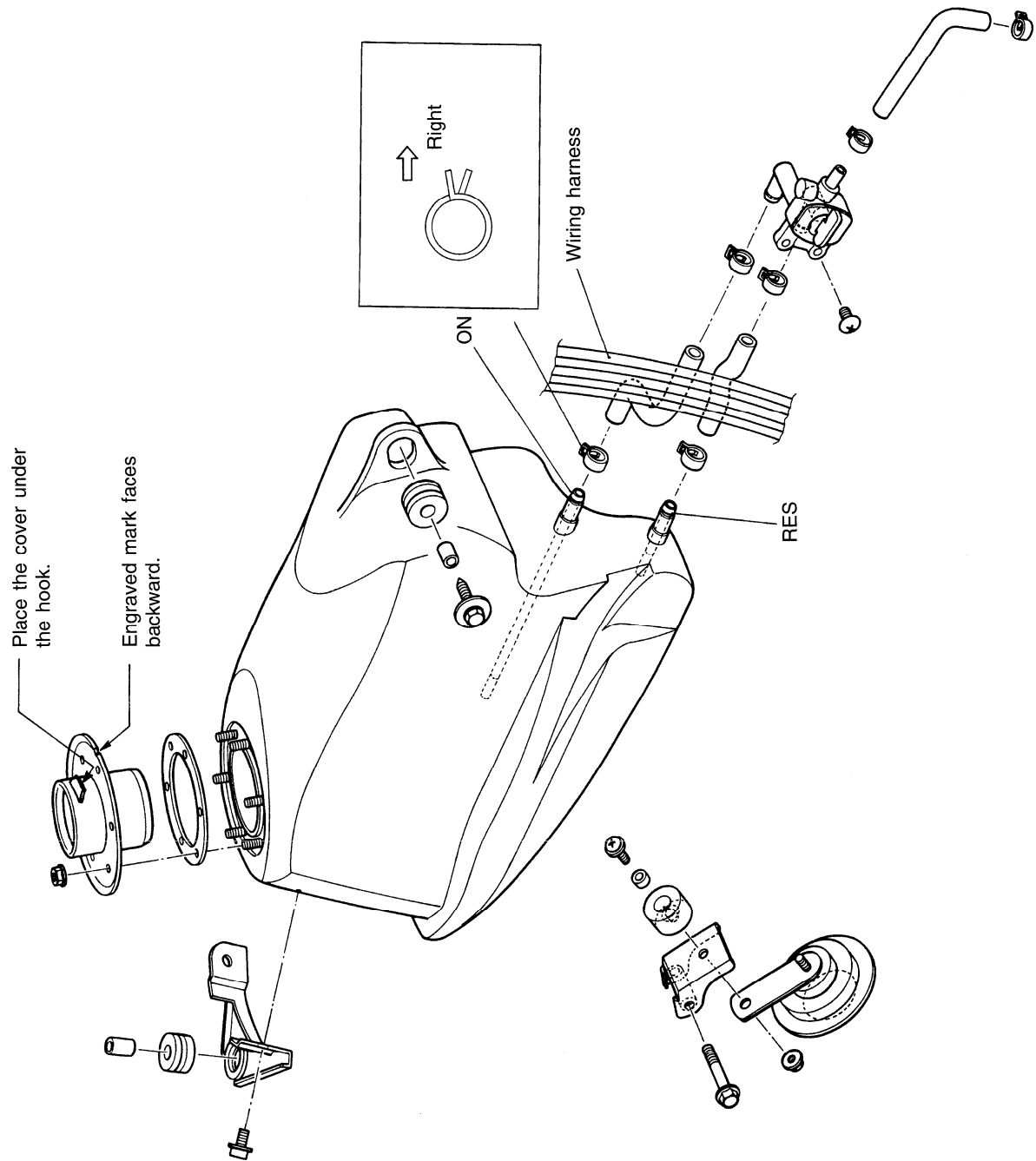
Rear brake cable



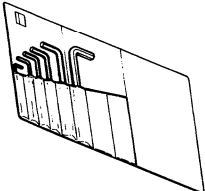
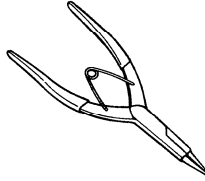
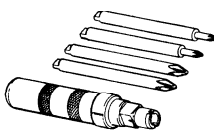
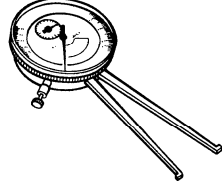
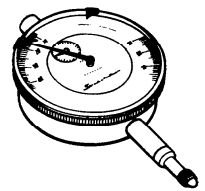
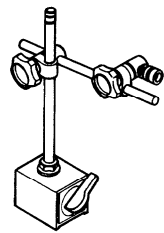
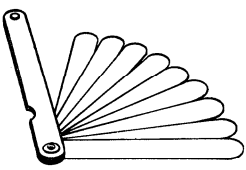

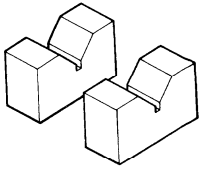
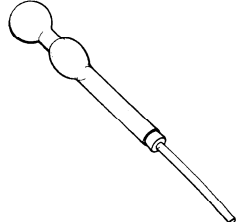
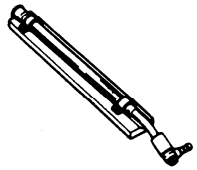
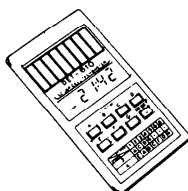
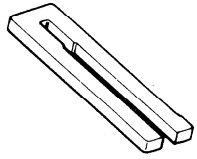
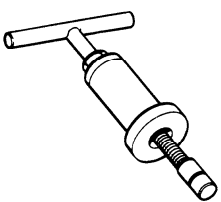
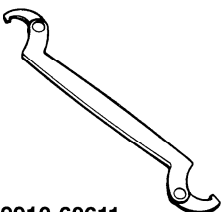
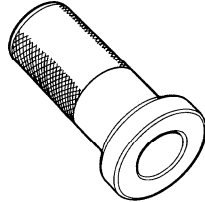
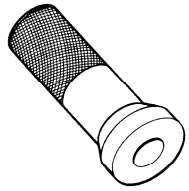
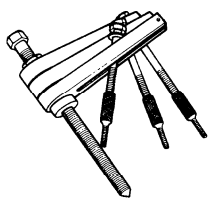
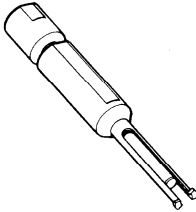
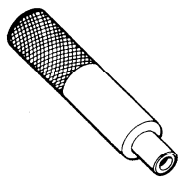
Rear brake cable



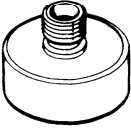
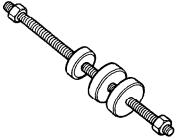
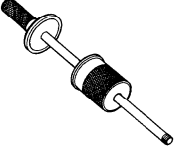
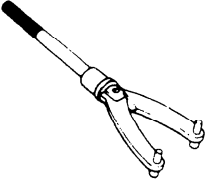
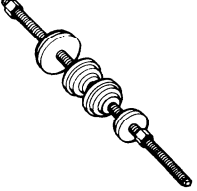
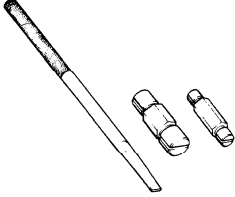
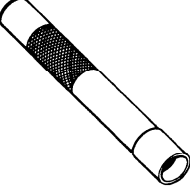

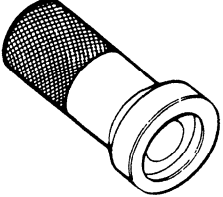
# FUEL HOSE ROUTING



# SPECIAL TOOLS

|   |   |   |  |  |
|---|---|---|--|--|
|  <p><b>09900-00401</b><br/>Hexagon wrench set</p>        |  <p><b>09900-06107</b><br/>Snap ring pliers</p>                |  <p><b>09900-06108</b><br/>Snap ring pliers</p>            |  <p><b>09900-09003</b><br/>Impact driver set</p>                |  <p><b>09900-20101</b><br/>Vernier calipers<br/>(150 mm)</p>          |
|  <p><b>09900-20202</b><br/>Micrometer<br/>(25–50 mm)</p> |  <p><b>09900-20205</b><br/>Micrometer<br/>(0–25 mm)</p>        |  <p><b>09900-20508</b><br/>Cylinder bore gauge<br/>set</p> |  <p><b>09900-20605</b><br/>Dial calipers</p>                     |  <p><b>09900-20606</b><br/>Dial gauge (1/100 mm)</p>                  |
|  <p><b>09900-20701</b><br/>Magnetic stand</p>           |  <p><b>09900-20803</b><br/>Thickness gauge</p>                |  <p><b>09900-20804</b><br/>Thickness gauge</p>            |  <p><b>09900-20805</b><br/>Tire depth gauge</p>                |  <p><b>09900-21304</b><br/>V-block (100 mm)</p>                      |
|  <p><b>09900-28403</b><br/>Hydrometer</p>              |  <p><b>09900-21602</b><br/>CCI oil gauge</p>                 |  <p><b>09900-26006</b><br/>Tachometer</p>                |  <p><b>09900-25008</b><br/>Multi circuit tester<br/>set</p>    |  <p><b>09910-20115</b><br/><b>09910-20116</b><br/>Conrod holder</p> |
|  <p><b>09910-32812</b><br/>Crankshaft installer</p>    |  <p><b>09910-60611</b><br/>Universal clamp<br/>wrench</p>    |  <p><b>09913-50121</b><br/>Oil seal remover</p>          |  <p><b>09913-75810</b><br/>Bearing remover/<br/>installer</p> |  <p><b>09913-75821</b><br/>Bearing remover/<br/>installer</p>       |
|  <p><b>09913-76010</b><br/>Bearing installer</p>       |  <p><b>09920-13120</b><br/>Crankcase separating<br/>tool</p> |  <p><b>09921-20210</b><br/>Bearing remover</p>           |  <p><b>09923-73210</b><br/>Bearing remover</p>                |  <p><b>09924-74510</b><br/>Oil seal installer<br/>handle</p>        |

**7-13 SERVICING INFORMATION**

|   |   |  |  |   |
|---|---|--|--|---|
|  <p><b>09924-74540</b><br/>Oil seal installer attachment</p> |  <p><b>09924-84521</b><br/>Bearing installer set</p> |  <p><b>09930-30102</b><br/>Sliding shaft</p>                  |  <p><b>09930-40113</b><br/>Rotor holder</p>      |  <p><b>09941-34513</b><br/>Bearing installer</p> |
|  <p><b>09941-50111</b><br/>Bearing remover</p>               |  <p><b>09941-74910</b><br/>Bearing installer</p>     |  <p><b>09943-88211</b><br/>Bearing remover/<br/>installer</p> |  <p><b>09951-16080</b><br/>Bearing installer</p> |   |

## TIGHTENING TORQUE

### ENGINE

| ITEM                        | N·m | kg-m | lb-ft |
|-----------------------------|-----|------|-------|
| Cylinder head nut           | 10  | 1.0  | 7.0   |
| Spark plug                  | 28  | 2.8  | 20.0  |
| Exhaust pipe bolt and nut   | 10  | 1.0  | 7.0   |
| Engine mounting bracket nut | 60  | 6.0  | 43.5  |
| Engine mounting nut         | 60  | 6.0  | 43.5  |
| Muffler mounting bolt       | 23  | 2.3  | 16.5  |
| Clutch housing nut          | 50  | 5.0  | 36.0  |
| Kick starter nut            | 50  | 5.0  | 36.0  |
| Magneto rotor nut           | 40  | 4.0  | 29.0  |
| Clutch shoe nut             | 50  | 5.0  | 36.0  |
| Kick starter lever bolt     | 10  | 1.0  | 7.0   |
| Final gear oil drain bolt   | 6   | 0.6  | 4.5   |
| Final gear oil level bolt   | 12  | 1.2  | 8.5   |
| Oil pump mounting screw     | 4   | 0.4  | 3.0   |

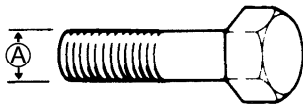
### CHASSIS

| ITEM                                  | N·m | kg-m | lb-ft |
|---------------------------------------|-----|------|-------|
| Steering stem head bolt               | 45  | 4.5  | 32.5  |
| Handlebars clamp bolt                 | 16  | 1.6  | 11.5  |
| Front fork upper bracket nut          | 26  | 2.6  | 19.0  |
| Front fork lower bracket bolt         | 23  | 2.3  | 16.5  |
| Front brake caliper mounting bolt     | 26  | 2.6  | 19.0  |
| Front brake hose union bolt           | 23  | 2.3  | 16.5  |
| Front brake caliper air bleeder valve | 8   | 0.8  | 6.0   |
| Front brake caliper housing bolt      | 25  | 2.5  | 18.0  |
| Front brake master cylinder bolt      | 10  | 1.0  | 7.0   |
| Front axle nut                        | 42  | 4.2  | 30.5  |
| Rear axle nut                         | 75  | 7.5  | 54.0  |
| Rear shock absorber bolt (Upper)      | 45  | 4.5  | 32.5  |
| Rear shock absorber nut (Lower)       | 32  | 3.2  | 23.0  |
| Rear brake cam lever nut              | 10  | 1.0  | 7.0   |

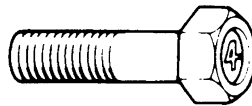
## TIGHTENING TORQUE CHART

For other bolts and nuts listed in the preceding page, refer to this chart:

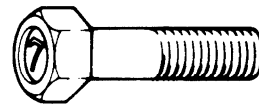
| Bolt Diameter<br>Ⓐ (mm) | Conventional or "4" marked bolt |      |       | "7" marked bolt |      |       |
|-------------------------|---------------------------------|------|-------|-----------------|------|-------|
|                         | N·m                             | kg-m | lb-ft | N·m             | kg-m | lb-ft |
| 4                       | 1.5                             | 0.15 | 1.0   | 2.3             | 0.23 | 1.5   |
| 5                       | 3                               | 0.3  | 2.0   | 4.5             | 0.45 | 3.0   |
| 6                       | 5.5                             | 0.55 | 4.0   | 10              | 1.0  | 7.0   |
| 8                       | 13                              | 1.3  | 9.5   | 23              | 2.3  | 16.5  |
| 10                      | 29                              | 2.9  | 21.0  | 50              | 5.0  | 36.0  |
| 12                      | 45                              | 4.5  | 32.5  | 85              | 8.5  | 61.5  |
| 14                      | 65                              | 6.5  | 47.0  | 135             | 13.5 | 97.5  |
| 16                      | 105                             | 10.5 | 76.0  | 210             | 21.0 | 152.0 |
| 18                      | 160                             | 16.0 | 115.5 | 240             | 24.0 | 173.5 |



Conventional bolt



"4" marked bolt



"7" marked bolt

**SERVICE DATA****CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

| ITEM                            | STANDARD  |                                | LIMIT                 |
|---------------------------------|---|--------------------------------|-----------------------|
| Piston to cylinder clearance    | 0.06–0.07<br>(0.0024–0.0028)  |                                | 0.120<br>(0.0047)     |
| Cylinder bore                   | 41.005–41.020<br>(1.6144–1.6150)<br>Measure at 20 (0.8) from the top surface. |                                | 41.075<br>(1.6171)    |
| Piston diam.                    | 40.940–40.955<br>(1.6118–1.6124)<br>Measure at 15 (0.6) from the skirt end.   |                                | 40.885<br>(1.6096)    |
| Cylinder distortion             | —   |                                | 0.05<br>(0.002)       |
| Cylinder head distortion        | —   |                                | 0.05<br>(0.002)       |
| Piston ring free end gap        | 1st   | R                              | Approx. 4.0<br>(0.16) |
|                                 | 2nd   | R                              | Approx. 4.3<br>(0.17) |
| Piston ring end gap             | 0.10–0.25<br>(0.004–0.010)  |                                | 0.80<br>(0.031)       |
| Piston ring to groove clearance | 1st & 2nd   | 0.020–0.060<br>(0.0008–0.0024) | —                     |
| Piston pin bore                 | 10.002–10.010<br>(0.3938–0.3941)  |                                | 10.030<br>(0.3949)    |
| Piston pin O.D.                 | 9.995–10.000<br>(0.3935–0.3937)   |                                | 9.980<br>(0.3929)     |

**CONROD + CRANKSHAFT**

Unit: mm (in)

| ITEM                   | STANDARD                         | LIMIT              |
|------------------------|----------------------------------|--------------------|
| Conrod small end I.D.  | 14.003–14.011<br>(0.5513–0.5516) | 14.040<br>(0.5528) |
| Conrod deflection      | —                                | 3.0<br>(0.12)      |
| Crank web to web width | 35 ± 0.1<br>(1.387 ± 0.004)      | —                  |
| Crankshaft runout      | —                                | 0.05<br>(0.002)    |

**OIL PUMP**

| ITEM                                | SPECIFICATION  |
|-------------------------------------|--|
| Oil pump reduction ratio            | 25.000 (25/1)  |
| Oil pump discharge rate (Full open) | 0.9–1.1 ml<br>(0.03/0.03–0.04/0.04 US/Imp oz)<br>for 5 minutes at 3 000 r/min. |

**CLUTCH**

Unit: mm (in)

| ITEM                  | STANDARD                        | LIMIT             |
|-----------------------|---------------------------------|-------------------|
| Clutch wheel I.D.     | 110.000–110.15<br>(4.331–4.337) | 110.50<br>(4.350) |
| Clutch shoe thickness | 3.0<br>(0.12)                   | 2.0<br>(0.08)     |
| Clutch engagement     | 3 600 ± 300 r/min.              | —                 |
| Clutch lock-up        | 6 000 ± 500 r/min.              | —                 |

**TRANSMISSION + DRIVE CHAIN**

Unit: mm (in) Except ratio

| ITEM                           | STANDARD               | LIMIT            |
|--------------------------------|------------------------|------------------|
| Reduction ratio                | Variable 2.864–0.794   | —                |
| Final reduction ratio          | 14.960 (51/15 × 66/15) | E-04, 26, 34, 53 |
|                                | 16.271 (51/15 × 67/14) | E-02, 22         |
| Drive belt width               | 18.4<br>(0.72)         | 17.4<br>(0.69)   |
| Driven face spring free length | 110<br>(4.3)           | 104.5<br>(4.11)  |

**CARBURETOR**

| ITEM                  | SPECIFICATION                    |                  |                |
|-----------------------|----------------------------------|------------------|----------------|
|                       | E-22                             | E-02, 04, 26, 53 | E-34           |
| Carburetor type       | KEIHIN PWS14                     |                  | KEIHIN PWS12   |
| Bore size             | 14 mm (0.6 in)                   |                  | 12 mm (0.5 in) |
| I.D. No.              | 06F3                             | 06F5             | 06F4           |
| Idle r/min.           | 1 600 ± 200 r/min.               |                  |                |
| Float height          | 5.1 ± 1.0 mm<br>(0.20 ± 0.04 in) |                  |                |
| Main jet (M.J.)       | #60                              | #75              | #72            |
| Main air jet (M.A.J.) | 1.0 mm                           | ←                | 1.7 mm         |
| Jet needle (J.N.)     | N4WB                             | 6LJJ             | 3LLN           |
| Cut-away (C.A.)       | 3.5 mm                           | ←                | ←              |
| Pilot jet (P.J.)      | #38                              | #40              | ←              |
| Air screw (A.S.)      | 1-7/8 turns back                 | 1-3/4            | 1-1/2          |
| Starter jet (G.S.)    | #48                              | ←                | ←              |
| Throttle cable play   | 3–6 mm<br>(0.12–0.24 in)         |                  |                |

**ELECTRICAL**

Unit: mm (in)

| ITEM                      | SPECIFICATION                      |                              | NOTE              |
|---------------------------|------------------------------------|------------------------------|-------------------|
| Ignition timing           | 14° B.T.D.C. at 1 500 r/min.       |                              |                   |
| Spark plug                | Type                               | NGK: BPR6HS<br>DENSO: W20FPR |                   |
|                           | Gap                                | 0.6–0.7<br>(0.024–0.028)     |                   |
| Spark performance         | Over 8 (0.3) at 1 atm.             |                              |                   |
| Ignition coil resistance  | Primary                            | 0.8–1.3 Ω                    | —                 |
|                           | Secondary                          | 5–8 kΩ                       | Plug cap – Ground |
| Magneto coil resistance   | Y/W–Ground                         | 0.4–0.7 Ω                    | —                 |
|                           | W/R–Ground                         | 0.5–0.9 Ω                    | —                 |
|                           | W–Br                               | 140–230 Ω                    | —                 |
| Generator no-load voltage | More than 25V (AC) at 5 000 r/min. |                              |                   |
| Regulated voltage         | 13–16V at 5 000 r/min.             |                              |                   |
| Starter relay resistance  | 50–70 Ω                            |                              | —                 |
| Battery                   | Type designation                   | YT4B-BS                      |                   |
|                           | Capacity                           | 8.28 kC (2.3Ah)/10HR         |                   |
| Fuse size                 | 10A                                |                              |                   |

**WATTAGE**

Unit: W

| ITEM                        |    | SPECIFICATION |                  |
|-----------------------------|----|---------------|------------------|
|                             |    | E-02          | E-04, 22, 34, 53 |
| Headlight                   | HI | 25            |                  |
|                             | LO | 25            | 15               |
| Brake light/Taillight       |    | 21/5          | ←                |
| Turn signal light           |    | 21            | ←                |
| Speedometer light           |    | 1.7           | ←                |
| Turn signal indicator light |    | 3.4           | ←                |
| High beam indicator light   |    | 1.7           |                  |
| Oil level warning light     |    | LED           | ←                |

**BRAKE + WHEEL**

Unit: mm (in)

| ITEM                         | STANDARD           |                                     | LIMIT          |
|------------------------------|--------------------|-------------------------------------|----------------|
| Rear brake lever play        | 15–25<br>(0.6–1.0) |                                     |                |
| Brake drum I.D.              | Rear               |                                     | 110.7<br>(4.4) |
| Brake lining thickness       |                    |                                     | 1.5<br>(0.006) |
| Brake disc thickness         | Front              | $4 \pm 0.2$<br>( $0.16 \pm 0.008$ ) | 3.5<br>(0.14)  |
| Brake disc runout            |                    |                                     | 0.3<br>(0.012) |
| Master cylinder bore         | Front              | 11.000–11.043<br>(0.4331–0.4348)    |                |
| Master cylinder piston diam. | Front              | 10.957–10.984<br>(0.4314–0.4324)    |                |
| Brake caliper cylinder bore  | Front              | 30.230–30.306<br>(11.9016–11.9315)  |                |
| Brake caliper piston diam.   | Front              | 30.150–30.200<br>(1.1870–1.1890)    |                |
| Wheel rim runout             | Axial              |                                     | 2.0<br>(0.08)  |
|                              | Radial             |                                     | 2.0<br>(0.08)  |
| Wheel axle runout            | Front              |                                     | 0.25<br>(0.01) |
|                              | Rear               |                                     | 0.25<br>(0.01) |
| Tire size                    | Front              | 120/70-12 44J                       |                |
|                              | Rear               | 130/70-12 49J                       |                |
| Tire tread depth             | Front              |                                     | 1.6<br>(0.06)  |
|                              | Rear               |                                     | 1.6<br>(0.06)  |



**SUSPENSION**

Unit: mm (in)

| ITEM                          | STANDARD    | LIMIT        | NOTE |
|-------------------------------|-------------|--------------|------|
| Front fork stroke             | 90<br>(3.5) |              |      |
| Front fork spring free length |             | 163<br>(6.4) |      |
| Rear wheel travel             | 90<br>(3.5) |              |      |

**TIRE PRESSURE**

| COLD INFLATION<br>TIRE PRESSURE | kPa | kg/cm <sup>2</sup> | psi |
|---------------------------------|-----|--------------------|-----|
| FRONT                           | 125 | 1.25               | 18  |
| REAR                            | 175 | 1.75               | 25  |

**FUEL + OIL**

| ITEM                        | SPECIFICATION   |                               | NOTE |
|-----------------------------|---|-------------------------------|------|
| Fuel type                   | Gasoline used should be graded 85–95 octane or higher. An unleaded gasoline is recommended. |                               |      |
| Fuel tank including reserve | 6.4 L<br>(1.7/1.4 US/Imp gal)   |                               |      |
| reserve                     | 1.5 L<br>(0.4/0.3 US/Imp gal)   |                               |      |
| Engine oil type             | Use CCI SUPER OIL or an equivalent good quality synthetic based 2-cycle oil.                |                               |      |
| Engine oil tank capacity    | 1.2 L<br>(1.3/1.1 US/Imp qt)  |                               |      |
| Final gear oil type         | SAE 10W/40  |                               |      |
| Final gear oil capacity     | Change  | 120 ml<br>(4.1/4.2 US/Imp oz) |      |
|                             | Overhaul  | 130 ml<br>(4.4/4.6 US/Imp oz) |      |
| Brake fluid type            | DOT 4   |                               |      |

# TR50SX ('99-MODEL)

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## SERVICE DATA

### CYLINDER + PISTON + PISTON RING

Unit: mm (in)

| ITEM                            | STANDARD  |                                |                       | LIMIT              |
|---------------------------------|---|--------------------------------|-----------------------|--------------------|
| Piston to cylinder clearance    | 0.06–0.07<br>(0.0024–0.0028)  |                                |                       | 0.120<br>(0.0047)  |
| Cylinder bore                   | 41.005–41.020<br>(1.6144–1.6150)<br>Measure at 20 (0.8) from the top surface. |                                |                       | 41.075<br>(1.6171) |
| Piston diam.                    | 40.940–40.955<br>(1.6118–1.6124)<br>Measure at 15 (0.6) from the skirt end.   |                                |                       | 40.885<br>(1.6096) |
| Cylinder distortion             | —   |                                |                       | 0.05<br>(0.002)    |
| Cylinder head distortion        | —   |                                |                       | 0.05<br>(0.002)    |
| Piston ring free end gap        | 1st   | R                              | Approx. 4.0<br>(0.16) | 3.2<br>(0.13)      |
|                                 | 2nd   | R                              | Approx. 4.3<br>(0.17) | 3.4<br>(0.13)      |
| Piston ring end gap             | 0.10–0.25<br>(0.004–0.010)  |                                |                       | 0.80<br>(0.031)    |
| Piston ring to groove clearance | 1st & 2nd   | 0.020–0.060<br>(0.0008–0.0024) |                       | —                  |
| Piston pin bore                 | 10.002–10.010<br>(0.3938–0.3941)  |                                |                       | 10.030<br>(0.3949) |
| Piston pin O.D.                 | 9.995–10.000<br>(0.3935–0.3937)   |                                |                       | 9.980<br>(0.3929)  |

### CONROD + CRANKSHAFT

Unit: mm (in)

| ITEM                   | STANDARD                         |  |  | LIMIT              |
|------------------------|----------------------------------|--|--|--------------------|
| Conrod small end I.D.  | 14.003–14.011<br>(0.5513–0.5516) |  |  | 14.040<br>(0.5528) |
| Conrod deflection      | —                                |  |  | 3.0<br>(0.12)      |
| Crank web to web width | 35 ± 0.1<br>(1.387 ± 0.004)      |  |  | —                  |
| Crankshaft runout      | —                                |  |  | 0.05<br>(0.002)    |

### OIL PUMP

| ITEM                                | SPECIFICATION  |
|-------------------------------------|--|
| Oil pump reduction ratio            | 25.000 (25/1)  |
| Oil pump discharge rate (Full open) | 0.9–1.1 ml<br>(0.03/0.03–0.04/0.04 US/Imp oz)<br>for minutes at 3 000 r/min. |

### CLUTCH

Unit: mm (in)

| ITEM                  | STANDARD                        | LIMIT             |
|-----------------------|---------------------------------|-------------------|
| Clutch wheel I.D.     | 110.000–110.15<br>(4.331–4.337) | 110.50<br>(4.350) |
| Clutch shoe thickness | 3.0<br>(0.12)                   | 2.0<br>(0.08)     |
| Clutch engagement     | 3 600 ± 300 r/min.              | —                 |
| Clutch lock-up        | 6 000 ± 500 r/min.              | —                 |

**TRANSMISSION + DRIVE CHAIN**

Unit: mm (in) Except ratio

| ITEM                           | STANDARD               | LIMIT            |
|--------------------------------|------------------------|------------------|
| Reduction ratio                | Variable 2.864–0.794   | —                |
| Final reduction ratio          | 14.960 (51/15 × 66/15) | E-04, 34, 53     |
|                                | 16.271 (51/15 × 67/14) | E-02, 22, 25, 26 |
| Drive belt width               | 18.4<br>(0.72)         | 17.4<br>(0.69)   |
| Driven face spring free length | 110<br>(4.3)           | 104.5<br>(4.11)  |

**CARBURETOR**

| ITEM                  | SPECIFICATION                    |                  |        |        |                   |
|-----------------------|----------------------------------|------------------|--------|--------|-------------------|
|                       | E-22                             | E-02,04,53       | E-25   | E-26   | E-34              |
| Carburetor type       | KEIHIN PWS14                     |                  |        |        | KEIHIN PWS12      |
| Bore size             | 14 mm<br>(0.6 in)                |                  |        |        | 12 mm<br>(0.5 in) |
| I.D. No.              | 06F3                             | 06F5             | 06F60  | 06F70  | 06F4              |
| Idle r/min.           | 1 600 ± 200 r/min.               |                  |        |        |                   |
| Float height          | 5.1 ± 1.0 mm<br>(0.20 ± 0.04 in) |                  |        |        |                   |
| Main jet (M.J.)       | #60                              | #75              | #58    | ←      | #72               |
| Main air jet (M.A.J.) | 1.0 mm                           | ←                | 1.7 mm | 1.0 mm | 1.7 mm            |
| Jet needle (J.N.)     | N4WB                             | 6LJJ             | N4TH   | ←      | 3LLN              |
| Cut-away (C.A.)       | 3.5 mm                           | ←                | ←      | ←      | ←                 |
| Pilot jet (P.J.)      | #38                              | #40              | ←      | #35    | #40               |
| Air screw (A.S.)      | 1-7/8 turns back                 | 1-3/4 turns back | ←      | ←      | 1-1/2 turns back  |
| Starter jet (G.S.)    | #48                              | ←                | ←      | ←      | ←                 |
| Throttle cable play   | 3–6 mm<br>(0.12–0.24 in)         |                  |        |        |                   |

**ELECTRICAL**

Unit: mm (in)

| ITEM                      | SPECIFICATION                      |                              | NOTE              |
|---------------------------|------------------------------------|------------------------------|-------------------|
| Ignition timing           | 14° B.T.D.C. at 1 500 r/min.       |                              |                   |
| Spark plug                | Type                               | NGK: BPR6HS<br>DENSO: W20FPR |                   |
|                           | Gap                                | 0.6–0.7<br>(0.024–0.028)     |                   |
| Spark performance         | Over 8 (0.3) at 1 atm.             |                              |                   |
| Ignition coil resistance  | Primary                            | 0.8–1.3 Ω                    | —                 |
|                           | Secondary                          | 5–8 kΩ                       | Plug cap – Ground |
| Magneto coil resistance   | Y/W–Ground                         | 0.4–0.7 Ω                    | —                 |
|                           | W/R–Ground                         | 0.5–0.9 Ω                    | —                 |
|                           | W–Br                               | 140–230 Ω                    | —                 |
| Generator no-load voltage | More than 25V (AC) at 5 000 r/min. |                              |                   |
| Regulated voltage         | 13–16V at 5 000 r/min.             |                              |                   |
| Starter relay resistance  | 50–70 Ω                            |                              | —                 |

| ITEM      | SPECIFICATION    |                      | NOTE |
|-----------|------------------|----------------------|------|
| Battery   | Type designation | YT4B-BS              |      |
|           | Capacity         | 8.28 kC (2.3Ah)/10HR |      |
| Fuse size | 10A              |                      |      |

**WATTAGE**

Unit: W

| ITEM                        |    | SPECIFICATION |                          |
|-----------------------------|----|---------------|--------------------------|
|                             |    | E-02          | E-04, 22, 25, 26, 34, 53 |
| Headlight                   | HI | 25            | —                        |
|                             | LO | 25            | 15                       |
| Brake light/Taillight       |    | 21/5          | ←                        |
| Turn signal light           |    | 21            | ←                        |
| Speedometer light           |    | 1.7           | ←                        |
| Turn signal indicator light |    | 3.4           | ←                        |
| High beam indicator light   |    | 1.7           | —                        |
| Oil level warning light     |    | LED           | ←                        |

**BRAKE + WHEEL**

Unit: mm (in)

| ITEM                         | STANDARD           |                                    | LIMIT          |
|------------------------------|--------------------|------------------------------------|----------------|
| Rear brake lever play        | 15–25<br>(0.6–1.0) |                                    | —              |
| Brake drum I.D.              | Rear               | —                                  | 110.7<br>(4.4) |
| Brake lining thickness       | —                  |                                    | 1.5<br>(0.006) |
| Brake disc thickness         | Front              | 4 ± 0.2<br>(0.16 ± 0.008)          | 3.5<br>(0.14)  |
| Brake disc runout            | —                  |                                    | 0.3<br>(0.012) |
| Master cylinder bore         | Front              | 11.000–11.043<br>(0.4331–0.4348)   | —              |
| Master cylinder piston diam. | Front              | 10.957–10.984<br>(0.4314–0.4324)   | —              |
| Brake caliper cylinder bore  | Front              | 30.230–30.306<br>(11.9016–11.9315) | —              |
| Brake caliper piston diam.   | Front              | 30.150–30.200<br>(1.1870–1.1890)   | —              |
| Wheel rim runout             | Axial              | —                                  | 2.0<br>(0.08)  |
|                              | Radial             | —                                  | 2.0<br>(0.08)  |
| Wheel axle runout            | Front              | —                                  | 0.25<br>(0.01) |
|                              | Rear               | —                                  | 0.25<br>(0.01) |
| Tire size                    | Front              | 120/70-12 44J                      | —              |
|                              | Rear               | 130/70-12 49J                      | —              |
| Tire tread depth             | Front              | —                                  | 1.6<br>(0.06)  |
|                              | Rear               | —                                  | 1.6<br>(0.06)  |

**SUSPENSION**

Unit: mm (in)

| ITEM                          | STANDARD    | LIMIT        | NOTE |
|-------------------------------|-------------|--------------|------|
| Front fork stroke             | 90<br>(3.5) | —            |      |
| Front fork spring free length | —           | 163<br>(6.4) |      |
| Rear wheel travel             | 90<br>(3.5) | —            |      |

**TIRE PRESSURE**

| COLD INFLATION<br>TIRE PRESSURE | kPa | kg/cm <sup>2</sup> | psi |
|---------------------------------|-----|--------------------|-----|
| FRONT                           | 125 | 1.25               | 18  |
| REAR                            | 175 | 1.75               | 25  |

**FUEL + OIL**

| ITEM                        | SPECIFICATION   |                               | NOTE |
|-----------------------------|---|-------------------------------|------|
| Fuel type                   | Gasoline used should be graded 85–95 octane or higher. An unleaded gasoline is recommended. |                               |      |
| Fuel tank including reserve | 6.4 L<br>(1.7/1.4 US/Imp gal)   |                               |      |
| reserve                     | 1.5 L<br>(0.4/0.3 US/Imp gal)   |                               |      |
| Engine oil type             | Use CCI SUPER OIL or an equivalent good quality synthetic based 2-cycle oil.                |                               |      |
| Engine oil tank capacity    | 1.2 L<br>(1.3/1.1 US/Imp qt)  |                               |      |
| Final gear oil type         | SAE 10W/40  |                               |      |
| Final gear oil capacity     | Change  | 120 ml<br>(4.1/4.2 US/Imp oz) |      |
|                             | Overhaul  | 130 ml<br>(4.4/4.6 US/Imp oz) |      |
| Brake fluid type            | DOT 4   |                               |      |

Prepared by

**SUZUKI MOTOR CORPORATION**

Motorcycle Service Department

2nd Ed. April, 1999

1st Ed. January, 1998

Part No. 99500-10461-01E

Printed in Japan

**SUZUKI MOTOR CORPORATION**