SUZUKI

UF50

SERVICE MANUAL

99500-10491-01E

FOREWORD

This manual contains an introductory description on the SUZUKI UF50/UF50Z and procedures for its inspection, service, and overhaul of its main components. Other information considered as generally known is not included.

Read the GENERAL INFORMATION section to familiarize yourself with the motorcycle and its maintenance. Use this section as well as other sections as a guide for proper inspection and service.

This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

- *This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual motorcycle.*
- *Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.*
- *This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

⚠ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual. Improper repair may result in injury to the mechanic and may render the motorcycle unsafe for the rider and passenger.

SUZUKI MOTOR ESPAÑA, S. A.

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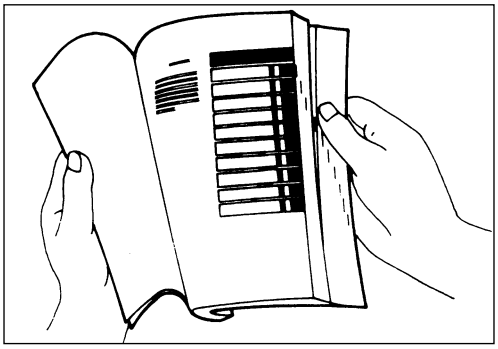
GROUP INDEX

HOW TO USE THIS MANUAL

TO LOCATE WHAT YOU ARE LOOKING FOR:

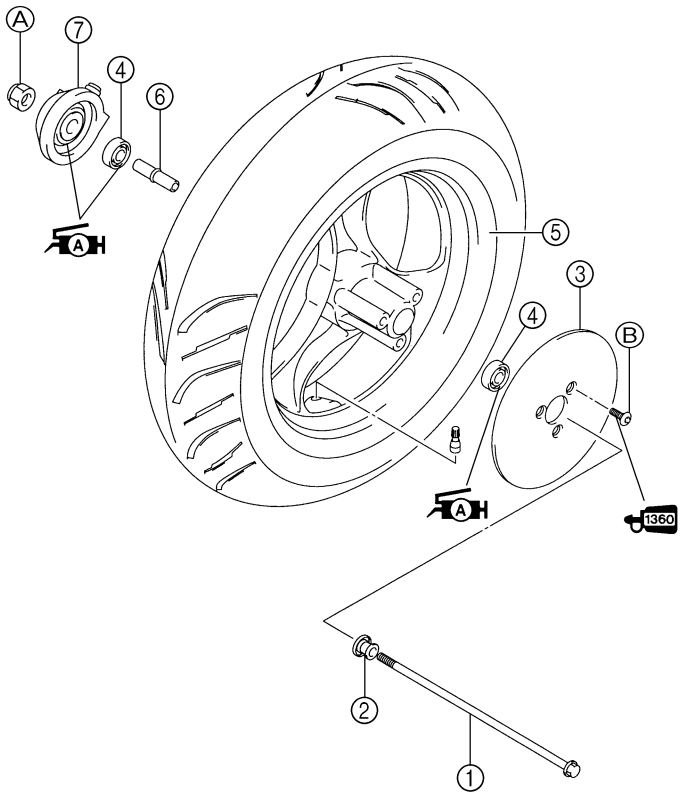
1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help you find the item and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



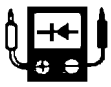
① Front axle
② Spacer
③ Brake disc
④ Bearing
⑤ Front wheel
⑥ Spacer
⑦ Speedometer gearbox

Ⓐ Front axle nut
Ⓑ Brake disc bolt

ITEM	N·m	kgf-m
Ⓐ	42	4.2
Ⓑ	23	2.3

SYMBOL

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Apply or use brake fluid.
	Indicates service data.		Measure in voltage range.
	Apply oil. Use engine oil unless otherwise specified.		Measure in resistance range.
	Apply SUZUKI SUPER GREASE “A”. 99000-25010		Measure in current range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in diode test range.
	Apply THREAD LOCK “1342”. 99000-32050		Measure in continuity test range.
	Apply THREAD LOCK SUPER “1322”. 99000-32110		Use special tool.
	Apply THREAD LOCK SUPER “1360”. 99000-32130		

GENERAL INFORMATION

1

CONTENTS

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 motorcycle.**
- **When two 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 manufacturer's instructions.**
- **Never use gasoline as a cleaning solvent.**
- **To avoid getting burned, do not touch the engine, engine oil, and exhaust system until they have cooled.**
- **After servicing the fuel, oil, exhaust or brake systems, check all of the 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.**
- **Be sure to use special tools when instructed.**
- **Make sure that all parts used in reassembly are clean. Lubricate them when specified.**
- **Use the specified lubricants, bonds, or sealants.**
- **When removing the battery, disconnect the ⊖ battery lead wire first, then the ⊕ battery lead wire.**
- **When reconnecting the battery, connect the ⊕ battery lead wire first, then the ⊖ battery lead wire. Finally, cover the ⊕ battery terminal with the terminal cover.**
- **When performing service to electrical parts, disconnect the ⊖ battery lead wire, unless the service procedure requires the battery power.**
- **When tightening cylinder head and crankcase nuts and bolts, tighten the larger sizes first. Always tighten the nuts and bolts from the inside working out, diagonally and to the specified torque.**
- **Whenever you remove oil seals, gaskets, packing, O-rings, self-locking nuts, locking washers, cotter pins, circlips, and other specified parts, 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 it is completely seated in its groove and securely fitted.**
- **Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.**
- **After reassembling, check parts for tightness and proper operation.**

- **To protect the environment, do not unlawfully dispose of used motor oil, all other fluids, batteries, and tires.**
- **To protect the earth's natural resources, properly dispose of used motorcycles and parts.**

SUZUKI UF50Y/UF50ZY (2000-MODEL)

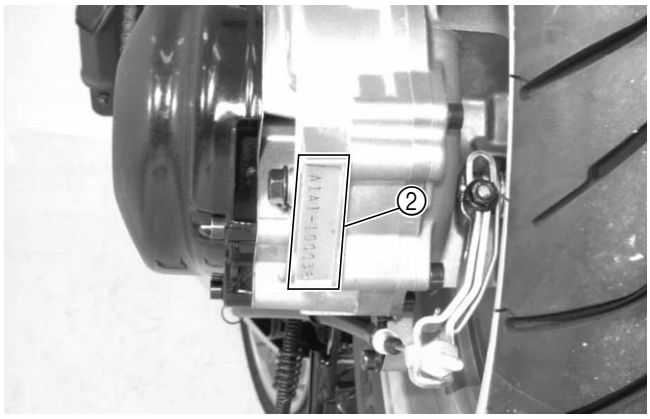
RIGHT SIDE

LEFT SIDE

* Difference between photographs and the 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 right side of the steering head pipe. 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. Fuel and oil specifications are listed below.

FUEL

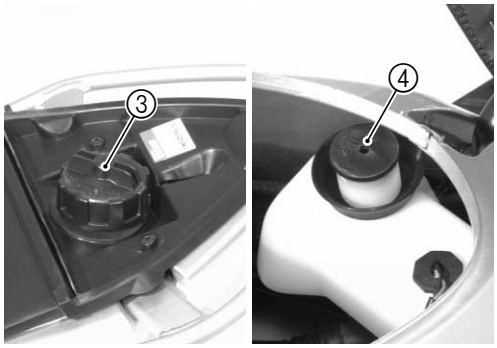
Use unleaded gasoline that is graded 91 octane or higher rated by the Research Method.

③ Fuel tank cap

ENGINE OIL

Use SUZUKI CCI SUPER OIL or an equivalent premium quality 2-stroke synthetic engine oil. Use only oils which are rated FC under the JASO classification.

④ Engine oil tank cap



FINAL GEAR OIL

Use a good quality SAE 10W-40 multigrade motor oil.

BRAKE FLUID

Specification and classification: DOT 4

⚠ WARNING

- **This motorcycle uses a glycol-based brake fluid. Do not use or mix other types of brake fluid such as silicone-based and petroleum-based fluids for refilling the system, otherwise serious damage will result to the brake system.**
- **Do not use any brake fluid taken from old, used, or unsealed containers.**
- **Do not reuse brake fluid left over from the last servicing or which has been stored for a long period of time.**

BREAK-IN PROCEDURES

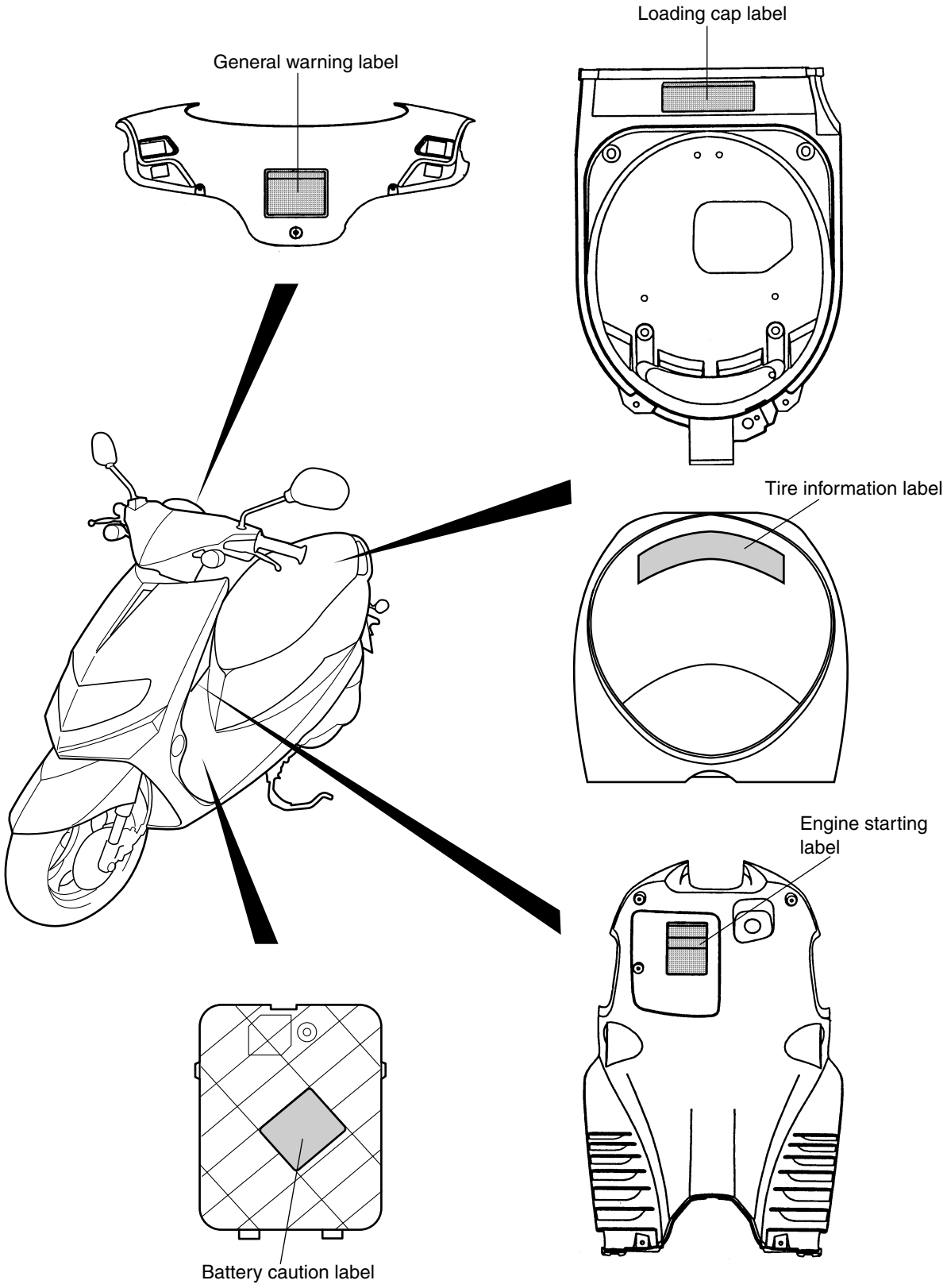
During manufacturing only the best possible materials are used and all machined parts are finished to a very high standard. It is still necessary to allow the moving parts to “BREAK-IN” before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. Refer to the following break-in engine speed recommendations.

- Keep to these break-in throttle positions during the break-in period.

Break-in throttle position
Initial 800 km: Less than 1/2 throttle
Up to 1 600 km: Less than 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	1 840 mm
Overall width	650 mm
Overall height	1 095 mm
Wheelbase	1 255 mm
Ground clearance	135 mm
Seat height	795 mm
Dry mass	83 kg

ENGINE

Type	Two-stroke, forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	7.2:1
Carburetor	KEIHIN PWS14
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 reduction ratio... (2.975 – 1.033)
Final reduction ratio	13.812 (51/15) × (65/16)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25°30’
Trail	82 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51L
Rear tire size	130/70-12 56L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK: BPR7HS or DENSO: W22FPR
Battery	12 V 14.4 kC (4 Ah)/10 HR
Generator	Generator
Fuse	10 A
Headlight	12 V 35/35 W
Brake light/taillight	12 V 21/5 W
Turn signal light	12 V 10 W

CAPACITIES

Fuel tank	6.0 L
Engine oil tank	1.2 L
Final gear oil	130 ml

NOTE:
These specifications are subject to change without notice.

PERIODIC MAINTENANCE

CONTENTS

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. Maintenance intervals are expressed in terms of kilometers and months, and are dependent on whichever comes first.

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

PERIODIC MAINTENANCE CHART

Interval / Item	km / months	Initial 1 000 / 2	Every 3 000 / 6	Every 6 000 / 12
Battery		–	I	I
Air cleaner		–	C	C
Cylinder head and cylinder		–	C	C
Spark plug		–	C	R
Carburetor		I	I	I
Fuel line		I	I	I
		Replace every four years.		
Final gear oil		I	–	I
Brakes		I	I	I
Brake hose		–	I	I
		Replace every four years.		
Brake fluid		–	I	I
		Replace every two years.		
Steering		I	I	I
Front fork		–	–	I
Rear suspension		–	–	I
Tires		I	I	I
Cylinder head nuts and exhaust pipe nut and bolt		T	T	T
Chassis nuts and bolts		T	T	T

NOTE: I : Inspect and clean, adjust, lubricate, or replace as necessary.
C : Clean
R : Replace
T : Tighten

MAINTENANCE AND TUNE-UP PROCEDURE

This section describes the servicing procedures for each item mentioned in the periodic maintenance chart on the previous page.

BATTERY

Inspect every 3 000 km (6 months).

- Remove the battery holder cover. (☞ 6-30)
- First, disconnect the ⊖ battery lead wire, and then disconnect the ⊕ battery lead wire.

Check the electrolyte level. It should be within the UPPER LEVEL and LOWER LEVEL lines. If the electrolyte is below the LOWER LEVEL line, add distilled water to the UPPER LEVEL line. Use a hydrometer ① to measure the specific gravity of the electrolyte.

TOOL 09900-28403: Hydrometer

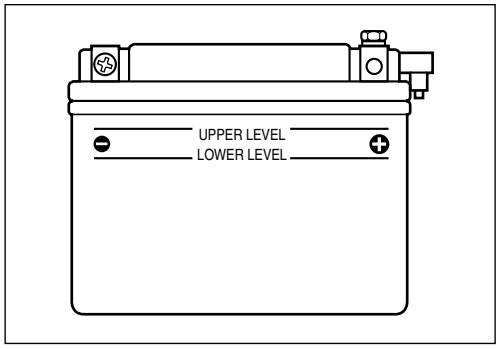
A specific gravity reading of 1.22 (at 20°C) or less means that the battery needs to be recharged. Remove the battery from the motorcycle and charge it with a battery charger.

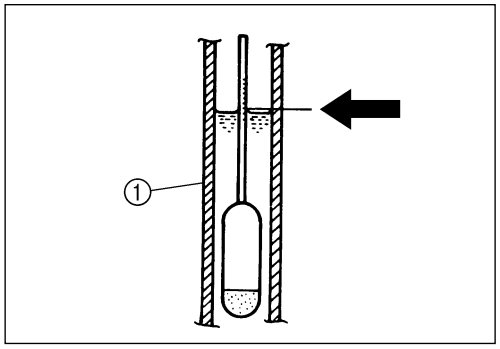
DATA Standard specific gravity: 1.280 at 20°C

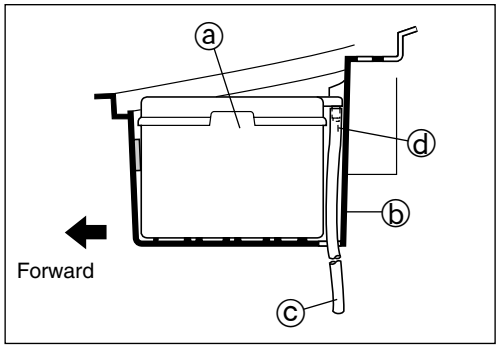
⚠ CAUTION

- **When removing the battery from the motorcycle, be sure to disconnect the ⊖ battery lead wire first.**
- **Never charge a battery while it is still in the motorcycle, as damage may result to the battery or regulator/rectifier.**
- **Be careful not to bend, obstruct, or change the routing of the battery breather hose. Make sure that the battery breather hose is attached to the battery vent and that its opposite end is always unobstructed.**
- **When installing the battery lead wires, install the ⊕ battery lead wire first.**

ⓐ Battery
ⓑ Battery holder
ⓒ Battery breather hose
ⓓ Slit of breather hose







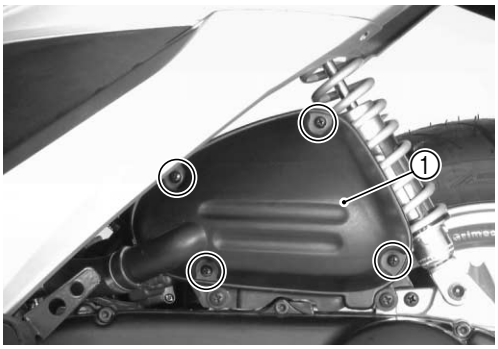
AIR CLEANER

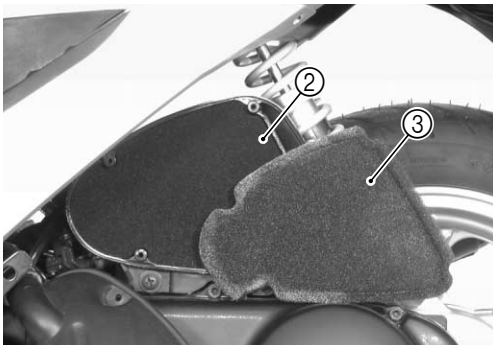
Clean every 3 000 km (6 months).

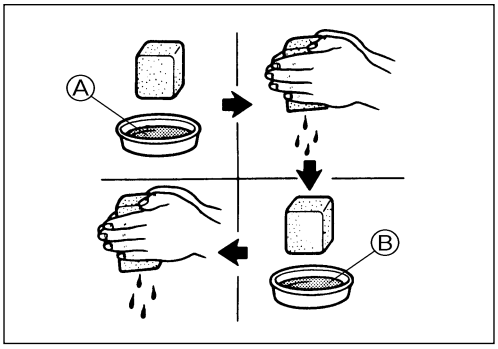
If the air cleaner is clogged with dust, intake resistance will be increased, with a resultant decrease in engine output and an increase in fuel consumption. Check and clean the air cleaner elements in the following manner.

- Remove the air cleaner case cover ①.
- Remove air cleaner elements ② and ③.
- Fill a washing pan of a proper size with a nonflammable cleaning solvent. Immerse the air cleaner elements in the cleaning solvent and wash them.
- Press the air cleaner element between the palms of both hands to remove the excess solvent: do not twist or wring the elements or they will develop tears.
- Immerse the elements in motor oil, and squeeze out the excess oil. The elements should be wet but not dripping.
- Properly install the air cleaner elements into the air cleaner case.

Ⓐ Nonflammable cleaning solvent
Ⓑ Motor oil SAE #30 or SAE 10W-40







⚠ CAUTION

*** Inspect the air cleaner element for tears. A torn element must be replaced.**
*** When installing the air cleaner elements, install the fine mesh air cleaner element first, and then install the large mesh air cleaner element.**
*** Be sure to position the air cleaner element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of the piston rings and cylinder bore is often caused by a defective or poorly fitted air cleaner element.**

CYLINDER HEAD AND CYLINDER

Remove carbon every 3 000 km (6 months).

(☞ 3-13)

SPARK PLUG

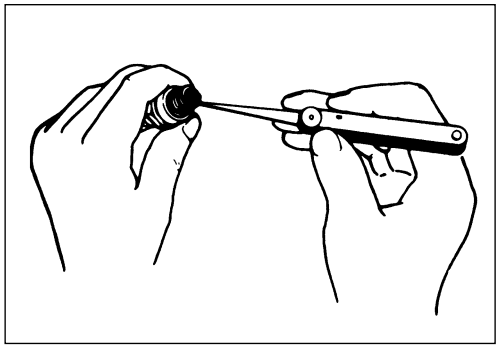
Clean every 3 000 km (6 months).
Replace every 6 000 km (12 months).

- Remove the left side leg shield. (☞ 5-3)
- Disconnect the spark plug cap and remove the spark plug.

	NGK	DENSO
Standard	BPR7HS	W22FPR

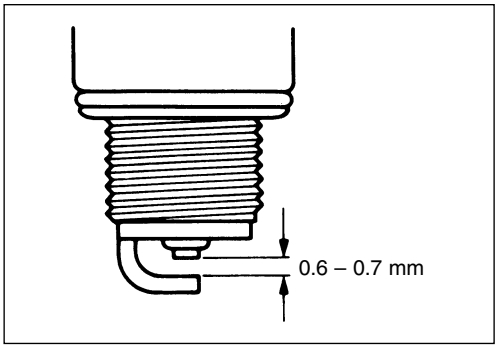
CARBON DEPOSIT

Check for carbon deposits on the spark plug. If any carbon is deposited on the spark plug, remove it using a spark plug cleaner machine or carefully use a tool with a pointed end.



SPARK PLUG GAP

Measure the spark plug gap using a thickness gauge. If the spark plug gap is out of specification, adjust the gap.



DATA Spark plug gap
Standard: 0.6 – 0.7 mm

TOOL 09900-20804: Thickness gauge

ELECTRODES

Check the condition of the electrodes.
If the electrode is extremely worn or burnt, replace the spark plug with a new one.
Also, replace the spark plug if it has a broken insulator, damaged threads, etc.

⚠ CAUTION

Check the tread size and reach when replacing the spark plug. If the reach is too short, carbon will be deposited on the screw portion of the spark plug hole and engine damage may result.

SPARK PLUG INSTALLATION

⚠ CAUTION

To avoid damaging the cylinder head threads; first, finger tighten the spark plug, and then tighten it to the specified torque using the spark plug wrench.

- Insert the spark plug and finger tighten it to the cylinder head and then tighten it to the specified torque.

Spark plug: 28 N·m (2.8 kgf-m)

CARBURETOR

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

ENGINE IDLE SPEED

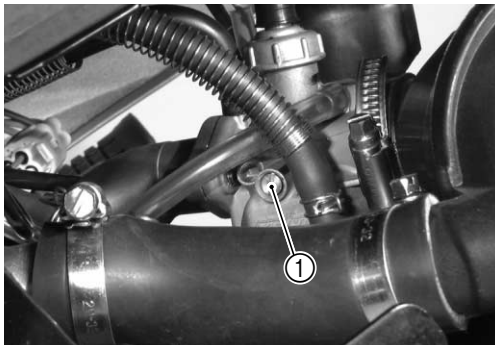
- Adjust the throttle cable play.
- Remove the left side leg shield. (☞ 5-3)
- Warm up the engine.

NOTE:
Make this adjustment when the engine is hot.

- Connect the multi circuit tester to the high-tension cord.
- Start the engine, and then turn the throttle stop screw ① to set the engine idle speed as shown below.

DATA Engine idle speed: 1 900 ± 200 r/min

TOOL 09900-25008: Multi circuit tester set

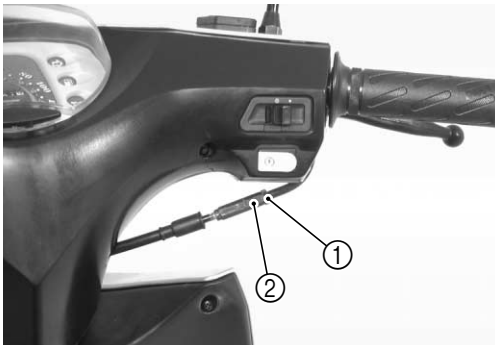


THROTTLE CABLE PLAY

Throttle cable play Ⓐ should be 2 – 4 mm as measured at the throttle grip when turning the throttle grip lightly. If the throttle cable play Ⓐ is incorrect, adjust it as follows:

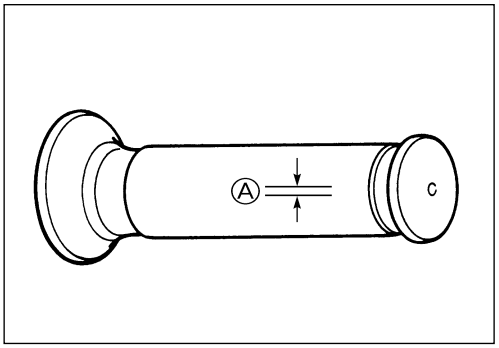
- Loosen the locknut ① and turn the adjuster ② in or out until the specified play is obtained.
- Tighten the locknut ① while holding the adjuster ②.

DATA Throttle cable play Ⓐ: 2 – 4 mm



⚠ WARNING

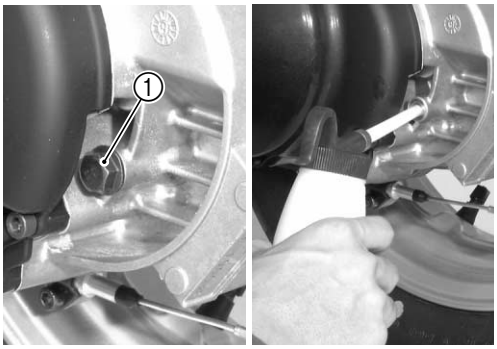
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.



FUEL LINE

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

FINAL GEAR OIL



Inspect initially at 1 000 km (2 months) and every 6 000 km (12 months) thereafter.

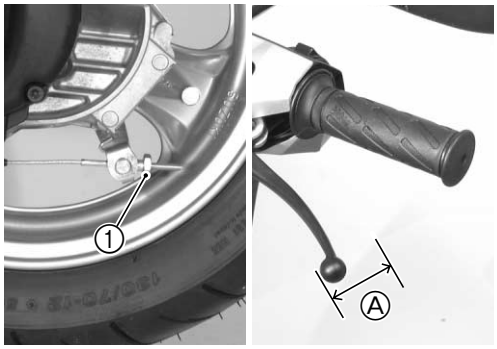
- Remove the final gear oil level bolt ① and inspect the oil level. If the oil level is below the brim of the final gear oil level hole, add oil until it runs out from the level hole.

Final gear oil viscosity and classification: SAE 10W-40

- Tighten the final gear oil level bolt ① to the specified torque.

Final gear oil level bolt: 12 N·m (1.2 kgf-m)

BRAKES

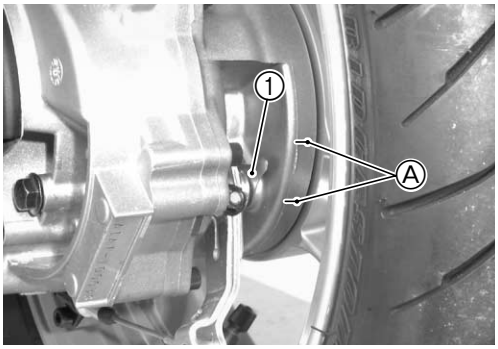


Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months) thereafter.

REAR BRAKE LEVER PLAY

- Turn the adjusting nut ① until the rear brake lever play Ⓐ is within specification.

DATA Rear brake lever play Ⓐ: 15 – 25 mm



REAR BRAKE SHOE WEAR

This motorcycle is equipped with a brake lining wear limit indicator ① on the brake cam lever.
To check brake lining wear, perform the following steps.

- Make sure that the rear brake lever play is properly adjusted.
- Squeeze the rear brake lever. Make sure that the indicator ① is within the range Ⓐ embossed on the crankcase.
- If the indicator goes beyond the range, the brake shoe assembly should be replaced with a new set of shoes. (☞ 5-30)

FRONT BRAKE PADS

(☞ 5-11)

BRAKE HOSE

Inspect every 3 000 km (6 months).
Replace every four years.

Check the brake hose for leakage, cracks, wear, and damages. If any damages are found, replace the brake hose with a new one.

BRAKE FLUID

Inspect every 3 000 km (6 months).
Replace fluid every two 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 brake fluid level is below the lower limit line, replenish with a brake fluid that meets the following specification.

NOTE:
If the brake fluid level is difficult to check, remove the master cylinder reservoir cap to check the brake fluid level.

Specification and classification: DOT 4

⚠ WARNING

- **The brake system is filled with an glycol-based brake fluid, which is classified DOT 4. Do not use or mix other types of brake fluid, such as silicone-based and petroleum-based brake fluids when refilling the brake system, otherwise serious damage to the brake system will result.**
- **Do not use any brake fluid taken from old, used, or unsealed containers.**
- **Do not reuse brake fluid left over from the last servicing or which has been stored for a long period of time.**
- **When storing brake fluid, be sure to seal the container completely and keep it out of the reach of children.**
- **When replenishing brake fluid, be sure not to get any dust or other foreign materials in the fluid.**
- **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.**

AIR BLEEDING THE BRAKE FLUID CIRCUIT

Air trapped in the brake fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder, 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 the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent dirt from entering.
- Attach a hose to the caliper bleeder valve, and insert the free end of the hose into a receptacle.
- Bleed air from the bleeder valve.
- Squeeze and release the brake lever several times in rapid succession and squeeze the lever fully 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:
While bleeding the brake system, replenish the brake fluid in the reservoir as necessary. Make sure that there is always some fluid visible in the reservoir.

- Close the bleeder valve, and disconnect the hose. Fill the reservoir with brake fluid to the top of the inspection window.

Air bleeder valve: 7.5 N·m (0.75 kgf-m)

⚠ CAUTION

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

STEERING

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

The steering should be adjusted properly for smooth turning of the handlebar and safe operation. Overtight steering prevents smooth turning of the handlebar and too loose steering will cause poor stability. Check that there is no play in the front fork. Support the motorcycle so that the front wheel is off the ground. With the wheel facing straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, adjust the steering. (☞ 5-28 and 5-29)

FRONT FORK

Inspect every 6 000 km (12 months).

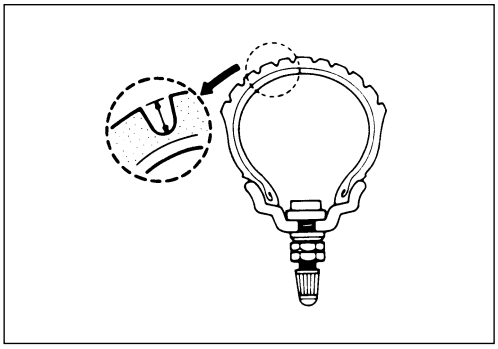
Inspect the front fork for scoring or scratches on the outer surface of the inner tubes. If any damages are found, replace the inner tubes with new ones. (☞ 5-18 and 5-19)

REAR SUSPENSION

Inspect every 6 000 km (12 months).

Inspect the rear shock absorber for oil leakage and the bushings for wear and damage. If oil leakage or any damages are found, replace the rear shock absorber with a new one.

TIRES



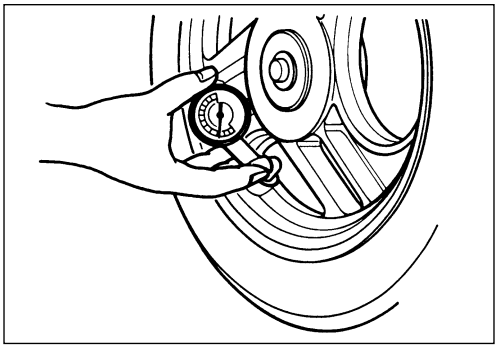
Inspect initially at 1 000 km (2 months) and every 3 000 km (6 months) thereafter.

TIRE TREAD CONDITION

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

DATA Tire tread depth (front and rear)
Service Limit: 1.6 mm

TOOL 09900-20805: Tire depth gauge



TIRE PRESSURE

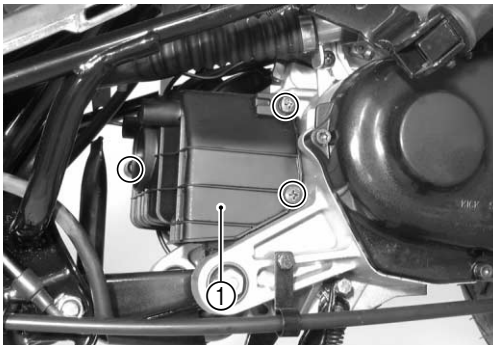
If the tire pressure is too high or too low, steering will be adversely affected and tire wear will increase. Therefore, maintain the correct tire pressure for good roadability and a longer tire life. Cold inflation tire pressure is as follows.

DATA Cold inflation tire pressure
Solo riding
Front: 125 kPa (1.25 kgf/cm^2)
Rear: 175 kPa (1.75 kgf/cm^2)
Dual riding (except for UF50Z)
Front: 125 kPa (1.25 kgf/cm^2)
Rear: 230 kPa (2.30 kgf/cm^2)

⚠ CAUTION

The standard tire fitted on this motorcycle is 120/70-12 51L for the front and 130/70-12 56L for the rear. The use of tires other than those specified may cause instability. It is highly recommended to use the specified tires.

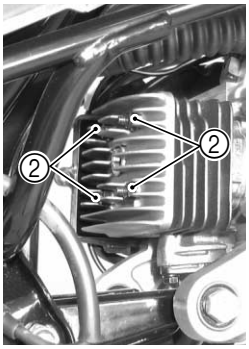
CYLINDER HEAD NUTS AND EXHAUST PIPE NUT AND BOLT

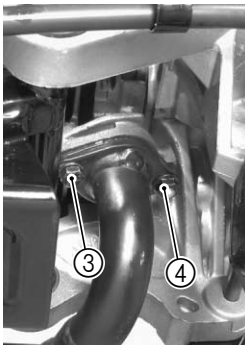


Tighten initially at 1 000 km (2 months) and every 3 000 km (6 months) thereafter.

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 as follows.

- Disconnect the spark plug cap and remove the spark plug. (☞ 2-5)
- Remove the frame cover. (☞ 5-4 and 5-5)
- Remove the cylinder/cylinder head cover ①.
- Disconnect the spark plug cap.
- Tighten the cylinder head nuts ② and exhaust pipe nut ③ and bolt ④ to the specified torque.





Cylinder head nut: 10 N·m (1.0 kgf-m)
Exhaust pipe nut and bolt: 10 N·m (1.0 kgf-m)

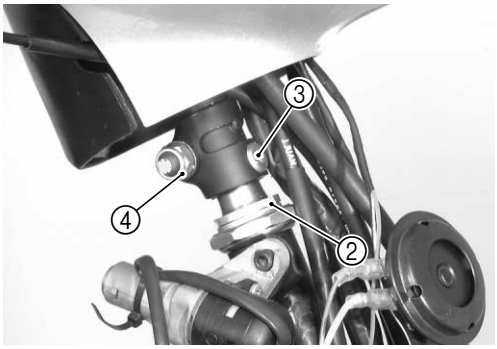
CHASSIS NUTS AND BOLTS

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

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

Item	N·m	kgf-m
① Front axle nut	42	4.2
② Steering stem locknut	30	3.0
③ Handlebar set bolt	25	2.5
④ Handlebar clamp nut	50	5.0
⑤ Front brake caliper mounting bolt	26	2.6
⑥ Front brake hose union bolt	23	2.3
⑦ Front brake caliper air bleeder valve	7.5	0.75
⑧ Front brake disc mounting bolt	23	2.3
⑨ Front brake master cylinder clamp bolt	10	1.0
⑩ Rear axle nut	120	12.0
⑪ Rear shock absorber upper mounting bolt	29	2.9
⑫ Rear shock absorber lower mounting nut	35	3.5
⑬ Rear brake cam lever nut	10	1.0


1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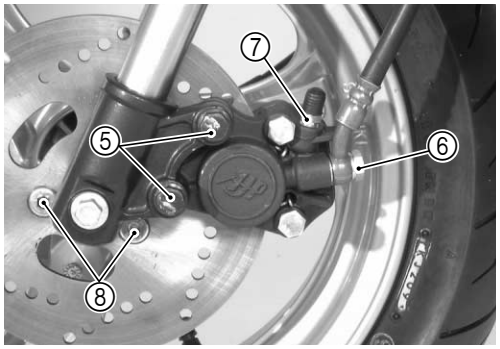
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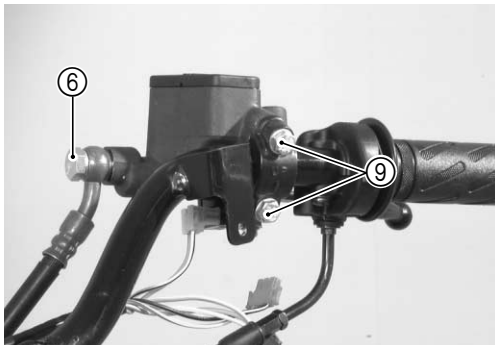
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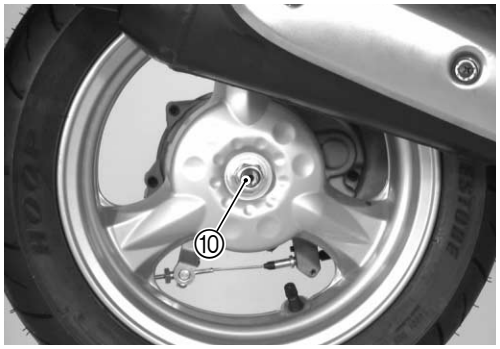
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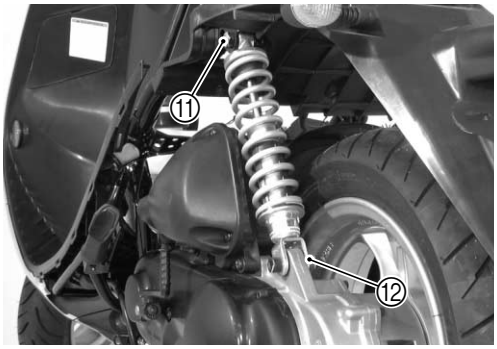
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13

GENERAL LUBRICATION

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

① Rear brake lever holder
② Center stand pivot and spring hook
③ Front brake lever holder
④ Speedometer cable

NOTE:

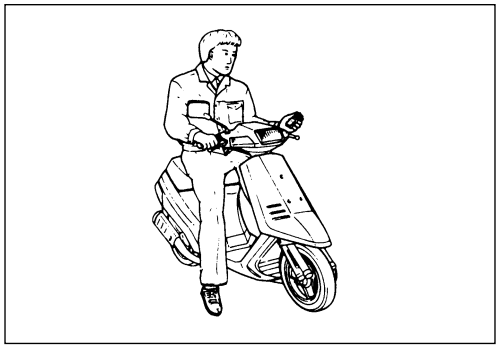
* *Before lubricating each part, remove any rust and wipe off any grease, oil, dirt, or grime.*
* *Lubricate exposed parts which are subject to rust, with a rust preventative spray, especially whenever the motorcycle has been operated under wet or rainy conditions.*

AUTOMATIC CLUTCH INSPECTION

The UF50/UF50Z is equipped with a centrifugal type automatic clutch and a variable ratio belt drive transmission.
To insure proper performance and longevity of the clutch assembly it is essential that the clutch assembly engages smoothly and gradually. Two inspection checks must be performed to thoroughly check the operation of the drive train. Follow the procedures listed.

NOTE:
Warm up the engine.

INITIAL ENGAGEMENT



- Remove the trunk. (☞ 5-4)
- Connect the multi circuit tester to the high-tension cord.
- Start the engine.
- While seated on the machine, slowly increase the engine speed and record the speed when the machine begins to move forward.

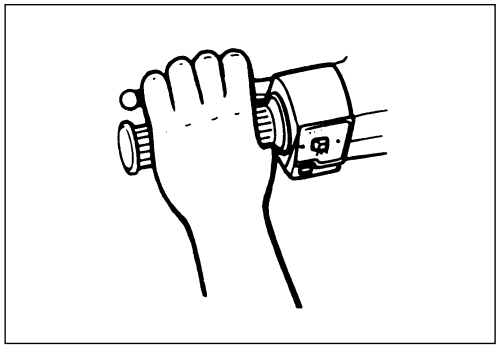
TOOL 09900-25008: Multi circuit tester

DATA Engagement speed: 4 100 – 4 500 r/min

If the engagement speed does not coincide with the standard range, refer to the following section to inspection the respective items for any abnormalities.

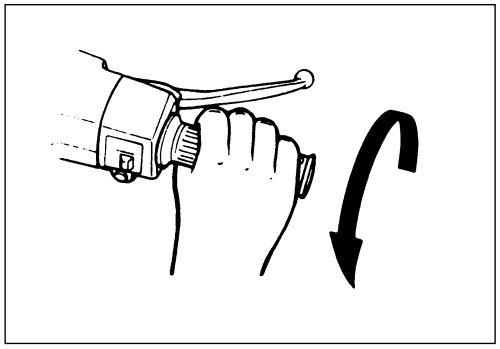
*** CLUTCH SHOE/MOVABLE DRIVEN FACE** ..... ☞ 3-18 to 3-22

CLUTCH LOCK-UP



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

- Remove the trunk. (☞ 5-4)
- Connect the multi circuit tester to the high-tension cord.
- Start the engine.
- Apply the rear brake as firm as possible.
- Fully open the throttle for a brief period and note the maximum engine speed sustained during the test cycle.



TOOL 09900-25008: Multi circuit tester

DATA Lock-up speed: 5 600 – 6 200 r/min

⚠ CAUTION

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

If the lock-up speed does not coincide with the standard range, refer to the following section to inspect the respective items for any abnormalities.

∗ CLUTCH SHOE/MOVABLE DRIVEN FACE ..... ☞ 3-18 to 3-22

ENGINE

CONTENTS

ENGINE COMPONENTS REMOVABLE WITH THE 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 each section for removal reinstallation instructions.

ENGINE LEFT SIDE

PARTS	REMOVAL	INSTALLATION
Air cleaner	3-6	–
Kick starter lever	3-9	3-39
Clutch cover	3-9	3-39
Kick starter	3-9	3-38
Fixed drive face	3-9	–
Movable drive face	3-9	3-38
Clutch housing	3-9	3-38
Clutch shoe assembly	3-9	–
Drive belt	3-9	3-38
Starter driven gear	3-9	3-37
Starter pinion gear	3-10	3-37

ENGINE RIGHT SIDE

PARTS	REMOVAL	INSTALLATION
Exhaust pipe/muffler assembly	3-6	3-40
Cooling fan	3-7	–
Starter motor	3-8	–
Generator rotor	3-10	3-37
Stator coil	3-10	3-36
Pickup coil	3-10	3-36
Gearbox cover	3-11	3-35
Final driven gear	3-11	3-34

ENGINE CENTER

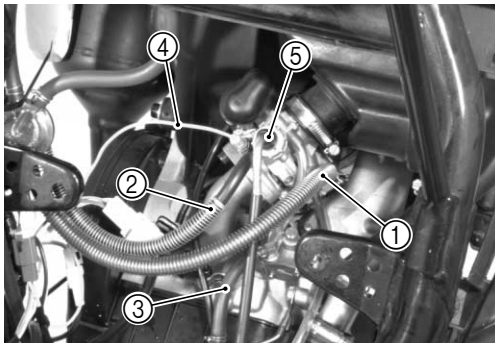
PARTS	REMOVAL	INSTALLATION
Oil pump	3-6	–
Oil pump gear	3-7	3-40
Intake pipe	3-7	3-40
Reed valve	3-7	–
Cylinder head	3-8	3-40
Cylinder	3-8	3-40
Piston	3-8	3-39

ENGINE REMOVAL AND REMOUNTING

ENGINE REMOVAL

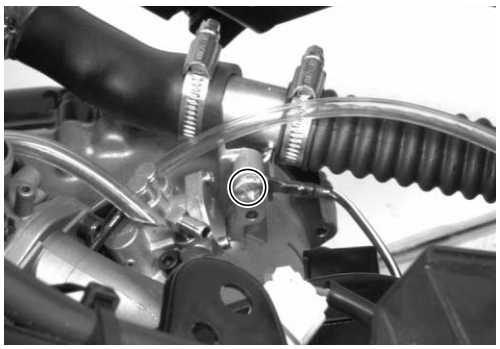
Before taking the engine out of the frame, wash the engine with a steam cleaner. Engine removal is sequentially explained in the following steps.

- Remove the side leg shields and frame covers. (☞ 5-3 to 5-5)
- Disconnect the ⊖ battery lead wire. (☞ 6-30)
- Disconnect the fuel hose ①, vacuum hose ②, oil hose ③, and carburetor heater lead wire ④.
- Remove the carburetor top cap ⑤ with the throttle cable and throttle valve.

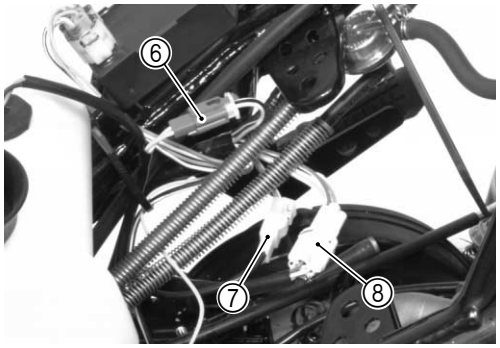


- Disconnect the spark plug cap.

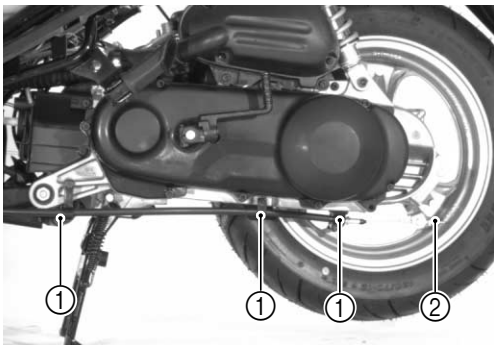
- Disconnect the engine ground wire.



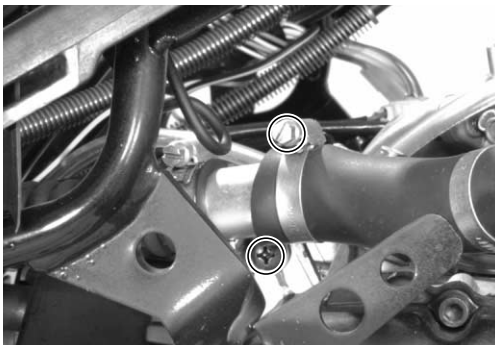
- Disconnect the thermoelement coupler ⑥, starter motor coupler ⑦, and generator coupler ⑧.



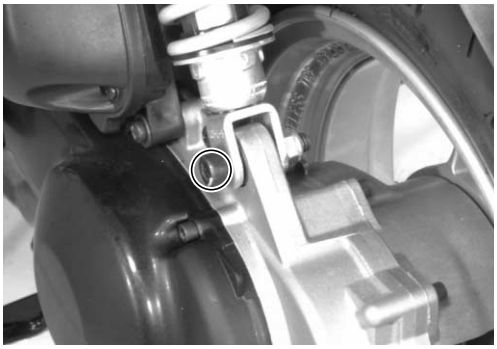
- Remove the rear brake cable holders ① and adjusting nut ②.



- Disconnect the air cleaner intake boot.

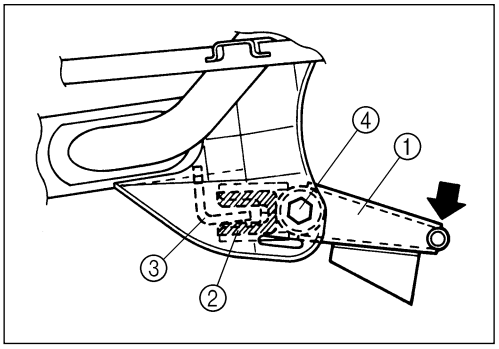


- Remove the rear shock absorber lower mounting bolt.



- Remove the engine mounting nut, shaft, and engine.

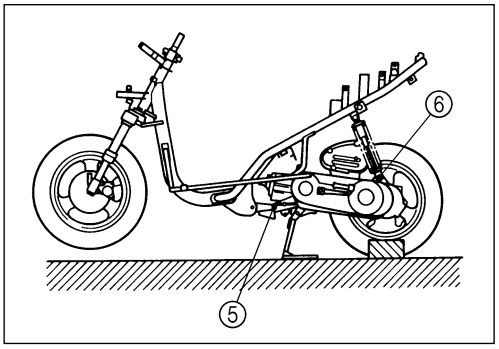
ENGINE REMOUNTING



Remount the engine in the reverse order of removal. Pay attention to the following points:

- Install the crankcase bracket ① to the frame and insert the crankcase bracket mounting shaft.
- Push down on the rear part of the crankcase bracket and have the damper ② touch the stopper ③. While holding the damper, tighten the engine mounting bracket nut ④ to the specified torque.

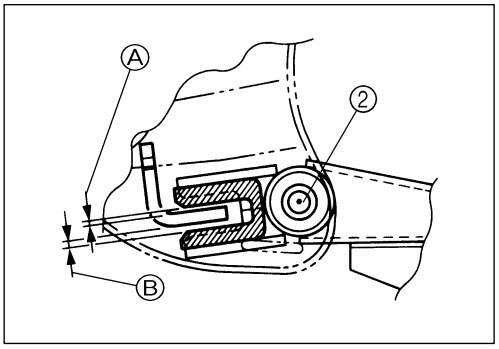
Engine mounting bracket nut: 65 N·m (6.5 kgf-m)



- Install the engine and tighten the engine mounting nut ⑤ to the specified torque.

Engine mounting nut: 60 N·m (6.0 kgf-m)

NOTE:
When tightening the engine mounting nut, make sure that the front wheel is elevated.



- Tighten the rear shock absorber lower mounting nut ⑥ to the specified torque.

Rear shock absorber nut: 35 N·m (3.5 kgf-m)

- Place 65 kg on the seat, after installing the engine.
- Check that clearances Ⓐ and Ⓑ are equal. If clearances Ⓐ and Ⓑ are not equal, repeat the engine installation procedures.
- After installing the engine, properly route the wire harness, cables, and hoses. Refer to the wire and cable routing sections. (☞ 7-10 to 7-16)
- Refer to the following sections to adjust the respective items to specification.

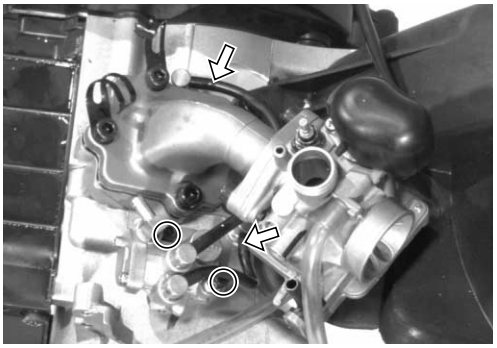
* **THROTTLE CABLE PLAY** ..... ☞ 2-7
* **ENGINE IDLE SPEED** ..... ☞ 2-7
* **REAR BRAKE CABLE ADJUSTMENT** ..... ☞ 2-8
* **OIL PUMP AIR BLEEDING** ..... ☞ 4-13

ENGINE DISASSEMBLY

- Remove the air cleaner.

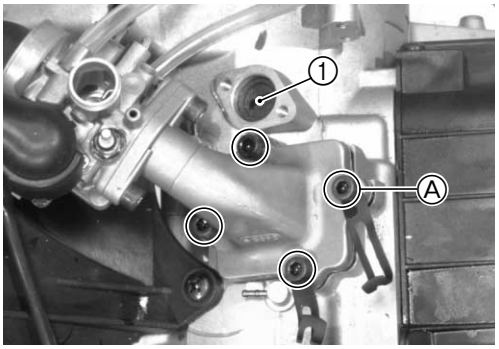
- Remove the exhaust pipe/muffler assembly.

- Disconnect the oil hoses and remove the oil pump.

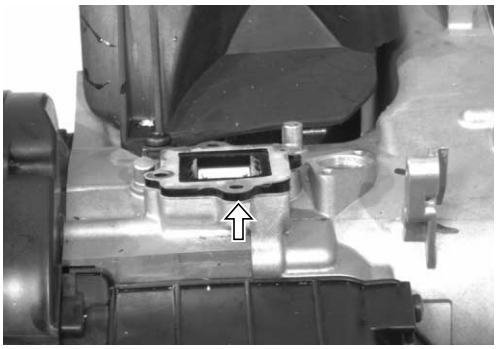


- Remove the oil pump gear ①, intake pipe and carburetor.

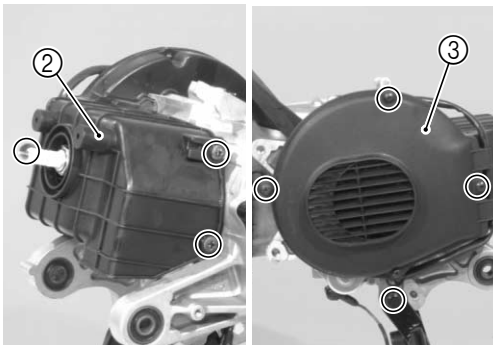
Ⓐ: Twist-off bolt



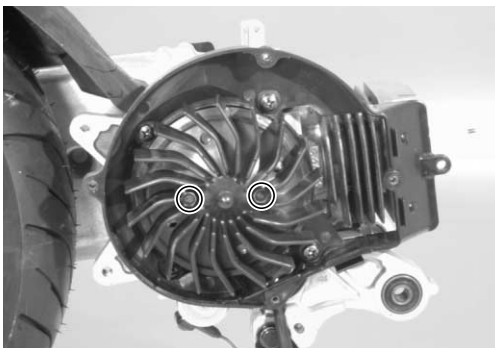
- Remove the reed valve and gaskets.



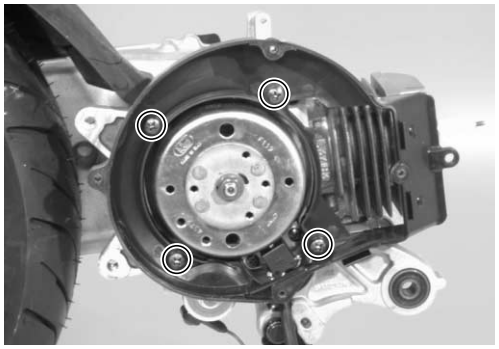
- Remove the cylinder/cylinder head cover ② and cooling fan cover ③.



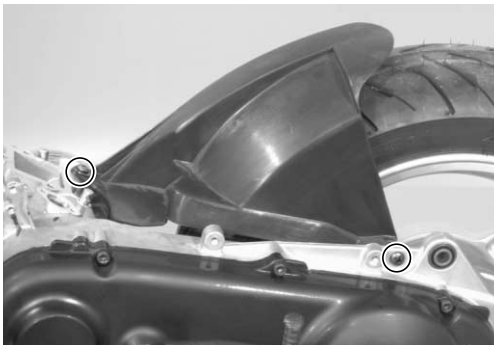
- Remove the cooling fan.



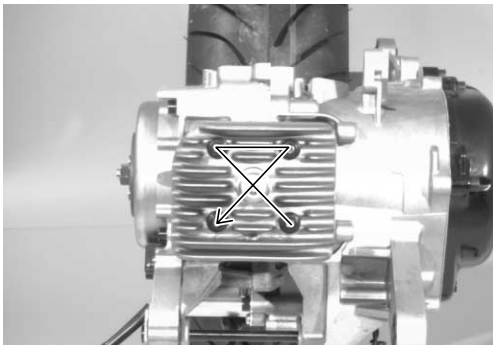
- Remove the cooling fan case.



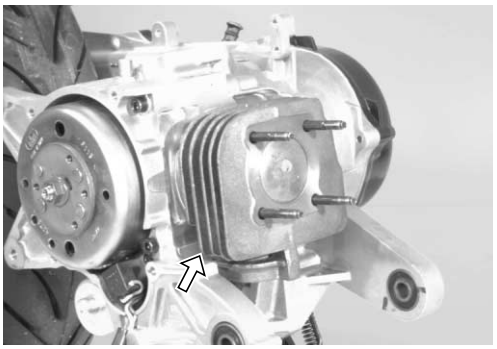
- Remove the rear fender.



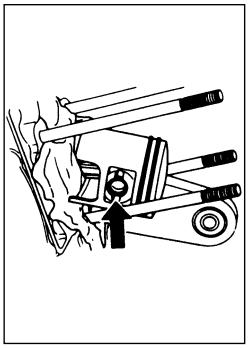
- Loosen the cylinder head nuts diagonally, as shown, and then remove them.
- Remove the cylinder head and gasket.

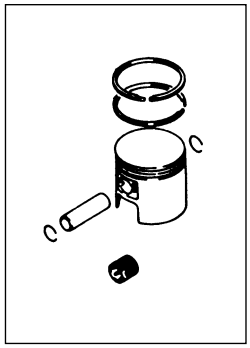


- Remove the cylinder and gasket.



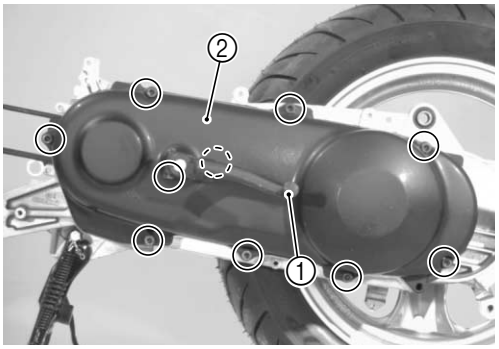
- Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into the crankcase. Then, remove the piston pin circlip with long-nose pliers.
- Remove the piston pin and piston.





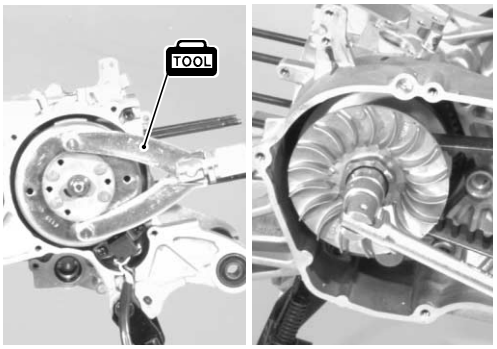
- Remove the starter motor.

- Remove the kick starter lever ①, clutch cover ②, gaskets, and dowel pins.

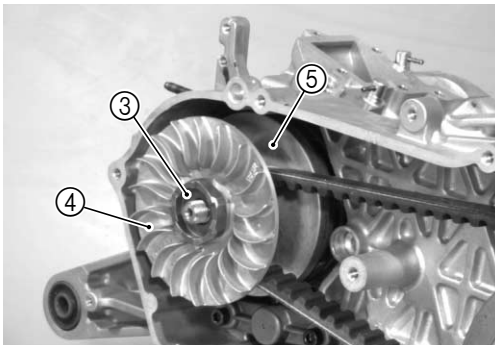


- Hold the generator rotor using the special tool and then remove the kick starter nut.

TOOL 09930-40113: Rotor holder



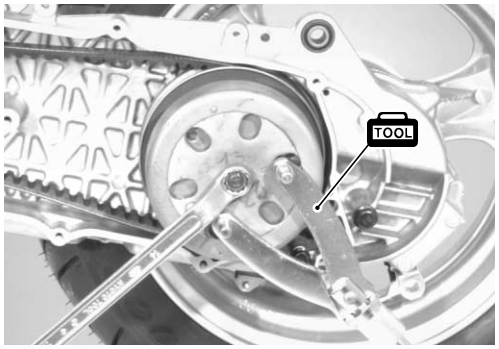
- Remove the kick starter ③, fixed drive face ④, movable drive face ⑤, spacers, and washers.



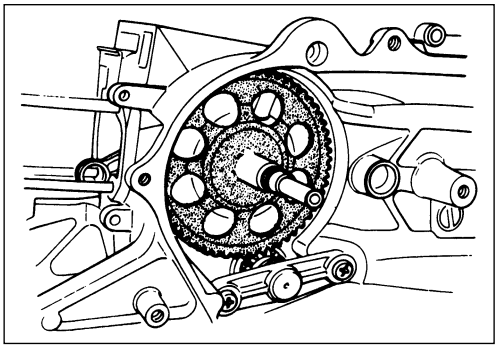
- Hold the clutch housing using the special tool and then remove the clutch housing nut.

TOOL 09930-40113: Rotor holder

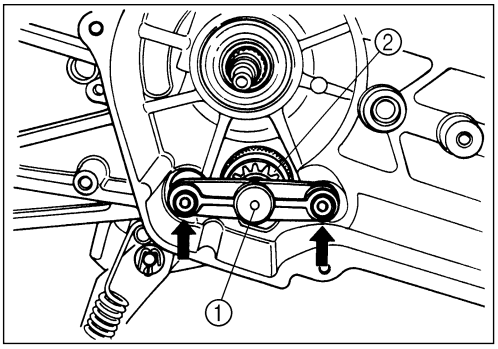
- Remove the clutch housing, clutch shoe assembly, and drive belt.



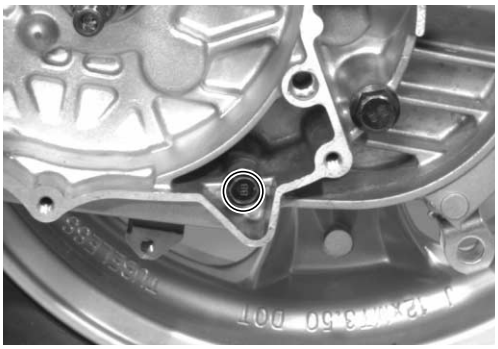
- Remove the starter driven gear.



- Remove the starter pinion gear cap ①, starter pinion gear assembly ②, and dowel pins.

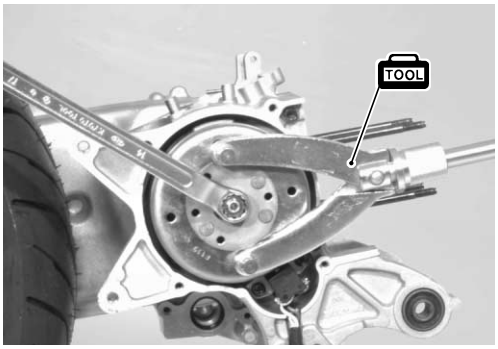


- Drain the final gear oil.



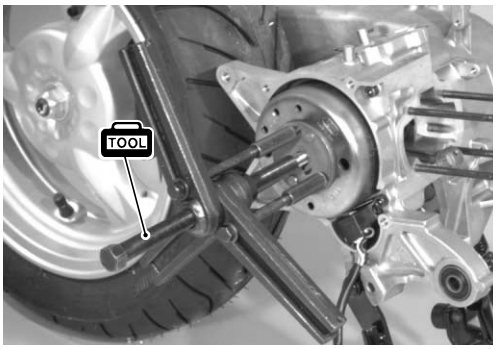
- Hold the generator rotor using the special tool and then remove the generator rotor nut.

09930-40113: Rotor holder

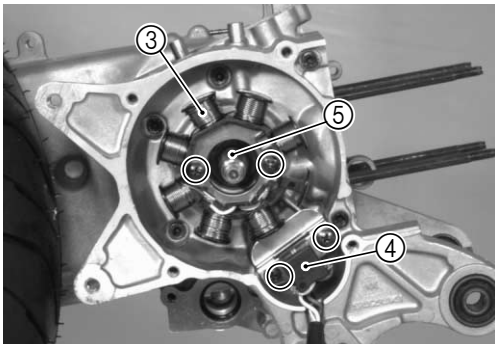


- Remove the generator rotor using the special tool.

09920-13120: Crankcase separating tool

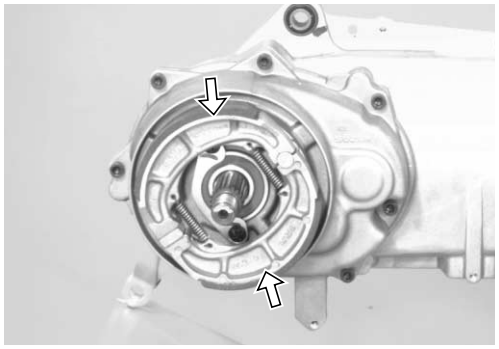


- Remove the stator coil ③, pickup coil ④, and key ⑤.

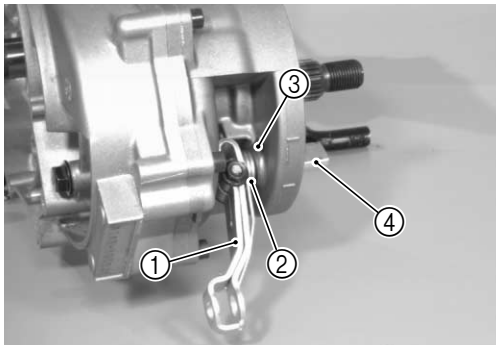


- Remove the rear wheel.

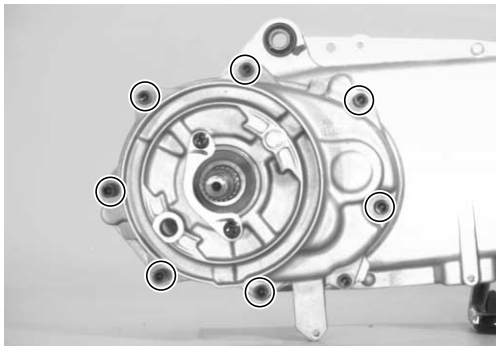
- Remove the brake shoes.



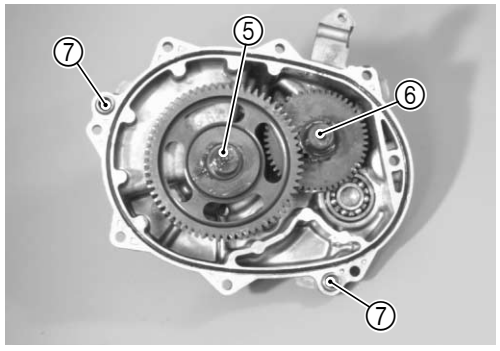
- Remove the brake cam lever ①, return spring ②, brake lining wear limit indicator ③, and brake camshaft ④.



- Remove the gearbox cover.

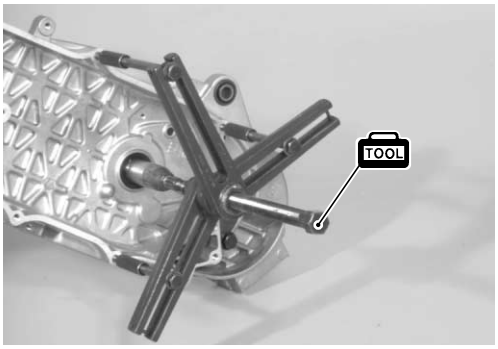


- Remove the final driven gear with the rear axle shaft ⑤, idle shaft/gear ⑥, and dowel pins ⑦.

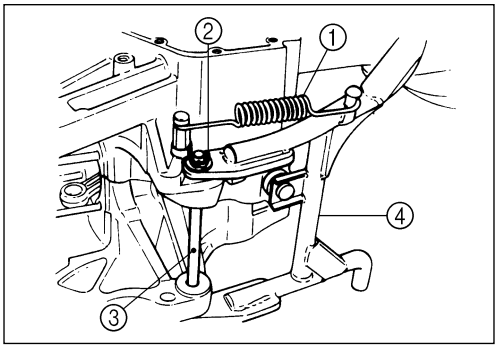


- Remove the driveshaft using the special tool.

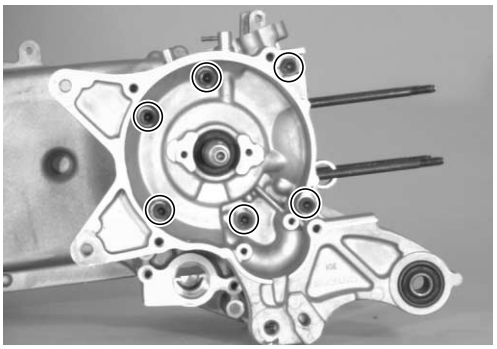
TOOL **09920-13120: Crankcase separating tool**



- Remove the center stand spring ①.
- Remove the cotter pin ② and center stand shaft ③.
- Remove the center stand ④.



- Remove the crankcase bolts.



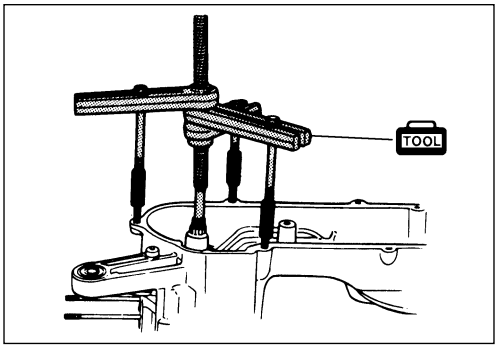
- Separate the left and right crankcases using the special tool.

TOOL **09920-13120: Crankcase separating tool**

- Remove the gaskets and dowel pins.

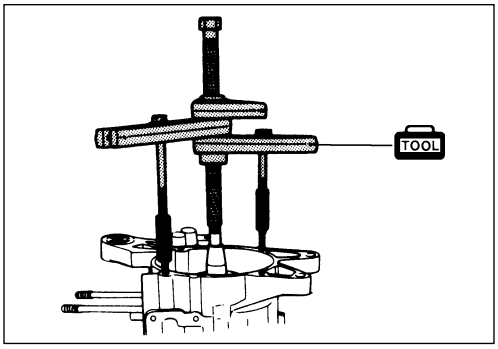
⚠ CAUTION

Replace the removed gaskets with new ones.



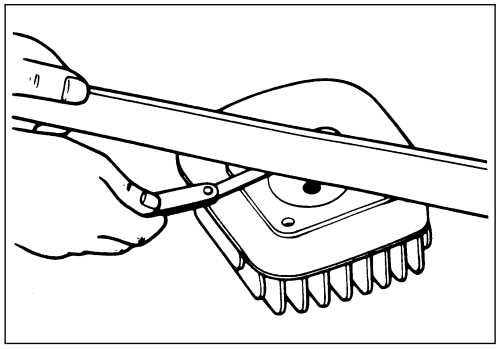
- Remove the crankshaft using the special tool.

TOOL **09920-13120: Crankcase separating tool**



ENGINE COMPONENTS INSPECTION AND SERVICE

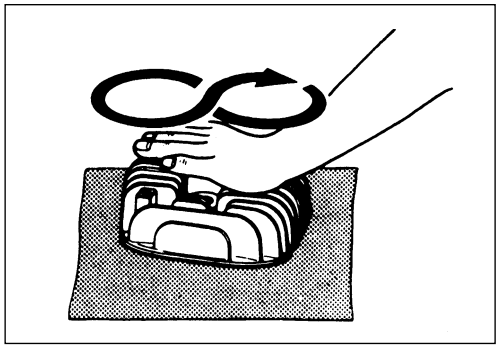
CYLINDER HEAD DISTORTION



Decarbonize the combustion chamber.
Check the gasket surface of the cylinder head for distortion. Use a straightedge and thickness gauge. Take clearance readings at several places. If readings exceed the service limit, replace or flatten the cylinder head.

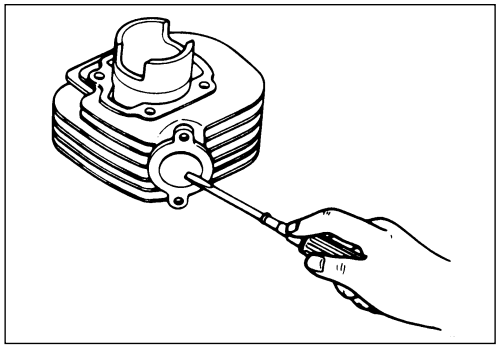
TOOL 09900-20803: Thickness gauge

DATA Cylinder head distortion
Service Limit: 0.05 mm



Place a sheet of emery paper (about #400 grit) on a surface plate. Use a figure-eight motion when grinding the cylinder head surface.
The gasket surface must be smooth and perfectly flat, for a tight fit. A leaky joint can cause reduced power and increased fuel consumption.

CYLINDER



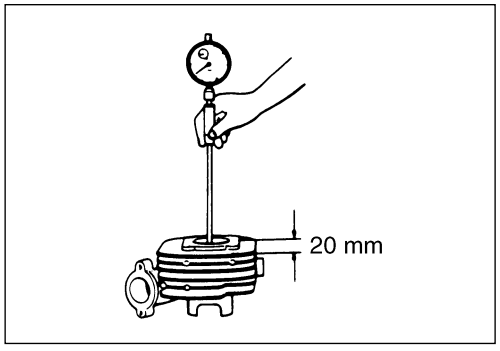
Remove carbon from the exhaust port and the upper part of the cylinder. Take care not to damage the surface of the cylinder wall.

CYLINDER BORE

Measure the cylinder bore with the cylinder gauge at 20 mm from the top of the cylinder.
If the measurement exceeds the service limit, rebore the cylinder and replace the piston with an oversized piston or replace the cylinder with a new one. Oversized pistons are available in two sizes: 0.5 mm and 1.0 mm.

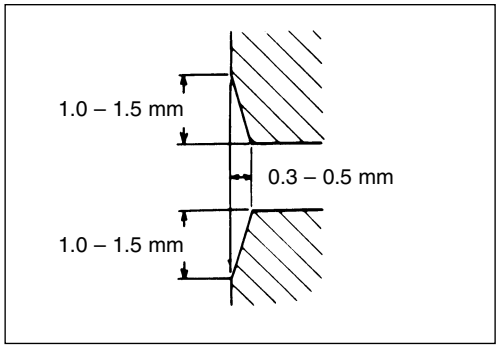
TOOL 09900-20508: Cylinder gauge set

DATA Cylinder bore
Service Limit: 41.075 mm



Chamfer the port edges after reboring. Use a scraper and take care not to nick the surface of the walls. Use emery paper (about #400 grit) to smooth the chamfered edges.

NOTE:
Shallow grooves or minor scuffs can be removed by using emery paper (about #400 grit). If the flaws are deep grooves or cannot be removed with the emery paper, the cylinder must be rebored to the next oversize.

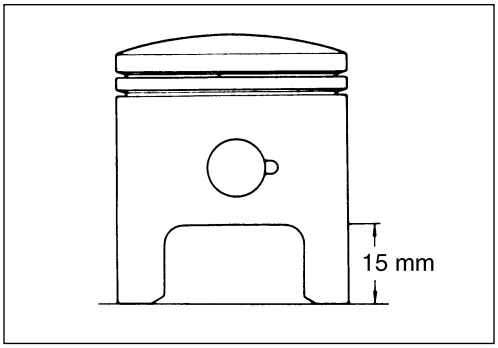


PISTON

PISTON DIAMETER

Measure the piston diameter using a micrometer at 15 mm from the skirt end.

If the piston diameter is less than the service limit, replace the piston with a new one.



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

DATA **Piston diameter**
Service Limit: 40.885 mm

PISTON-TO-CYLINDER CLEARANCE

Subtract the piston diameter from the cylinder bore diameter. If the piston-to-cylinder clearance exceeds the service limit, rebore the cylinder and use an oversized piston or replace both the cylinder and the piston with new ones.

DATA **Piston-to-cylinder clearance**
Service Limit: 0.120 mm

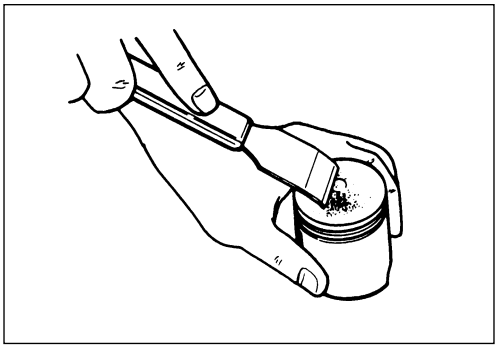
CARBON REMOVAL

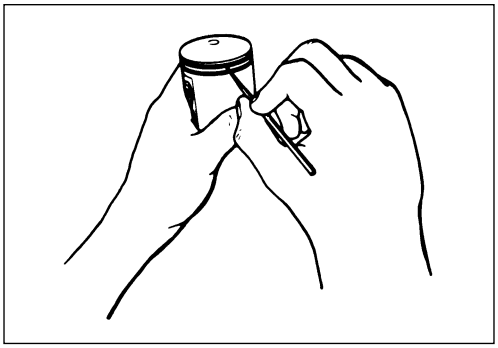
Remove carbon from the crown of the piston and piston ring grooves. After cleaning the piston ring grooves, install the piston rings and rotate them in their respective grooves to be sure that they move smoothly.

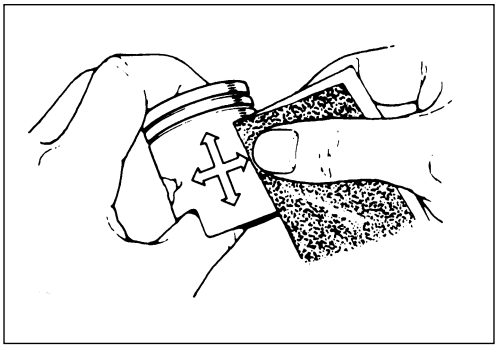
Carbon in the piston ring groove can cause the piston ring to get stuck, reducing engine power output.

If any scuffing is found, replace the piston with a new one.

Shallow grooves or minor scuffs can be removed by using emery paper (about #400 grit) as shown.

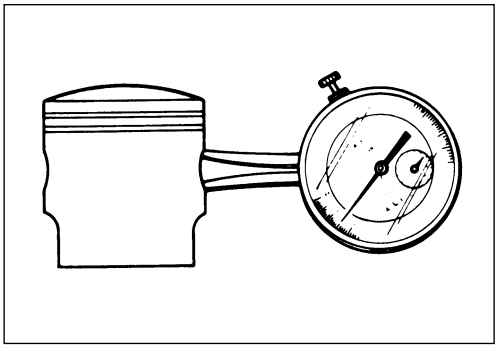




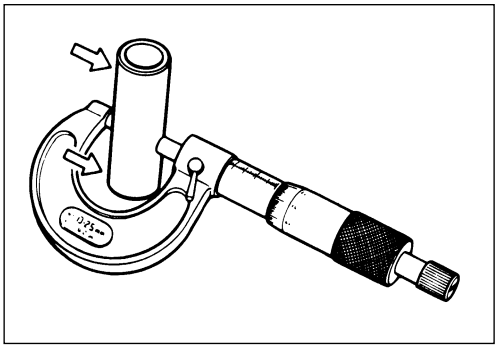


PISTON PIN AND PIN BORE

Measure the piston pin bore inside diameter using the dial calipers and the piston pin outside diameter using the micrometer. If either is out of specification or the difference between the measurements is more than their limits, replace the piston and piston pin with new ones.



TOOL **09900-20605: Dial calipers**
09900-20205: Micrometer (0 – 25 mm)

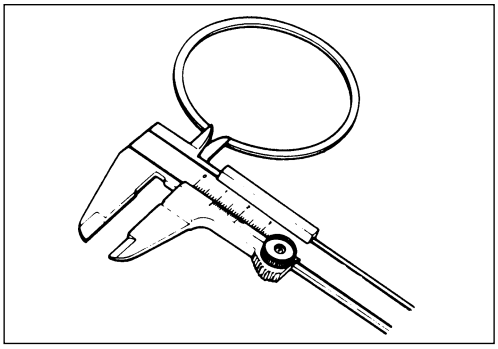


DATA **Piston pin bore I.D.**
Service Limit: 10.030 mm

DATA **Piston pin O.D.**
Service Limit: 9.980 mm

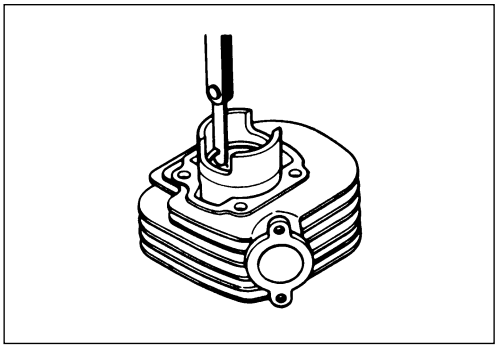
PISTON RING FREE END GAP AND PISTON RING END GAP

Measure the piston ring free end gap using vernier calipers. Then, fit the piston ring squarely into the cylinder and measure the piston ring end gap using a thickness gauge.
If any of the measurements exceed the service limit, replace the piston ring with a new one.



TOOL **09900-20101: Vernier calipers**

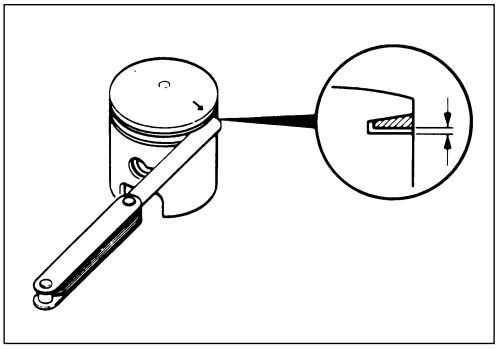
DATA **Piston ring free end gap**
Service Limit:
1st: 3.2 mm ... R
2nd: 3.4 mm ... R



TOOL **09900-20803: Thickness gauge**

DATA **Piston ring end gap**
Service Limit: 0.80 mm

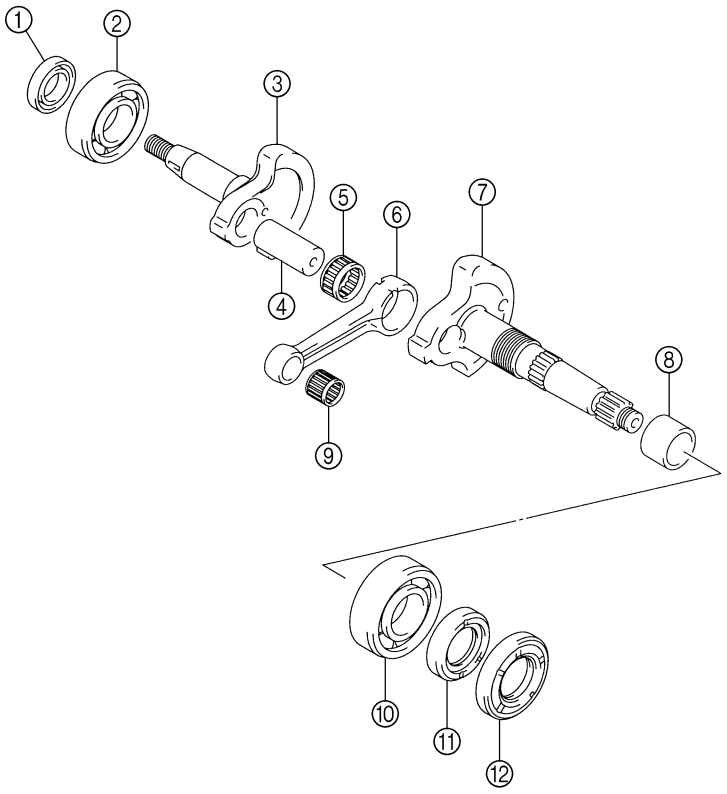
Measure the piston-ring-to-groove clearance using the thickness gauge.
If any of the clearances are out of specification, clean the groove of the piston and piston rings.



TOOL **09900-20803: Thickness gauge**

DATA **Piston-ring-to-groove clearance**
Standard:
1st: 0.03 – 0.07 mm
2nd: 0.02 – 0.06 mm

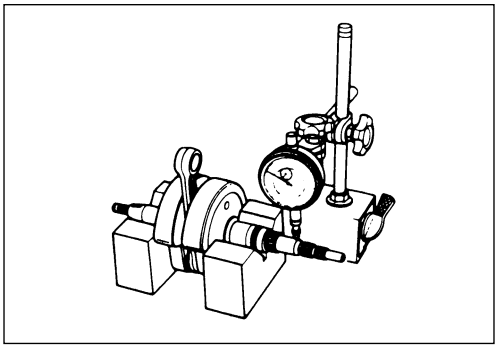
CRANKSHAFT AND CONROD



① Oil seal (R)
② Bearing (R)
③ Crankshaft (R)
④ Crank pin
⑤ Crank pin bearing
⑥ Conrod
⑦ Crankshaft (L)
⑧ Spacer
⑨ Piston pin bearing
⑩ Bearing (L)
⑪ Oil seal (L)
⑫ Oil seal

CRANKSHAFT RUNOUT

Support the crankshaft using V-blocks as shown. Position the dial gauge, as shown, and rotate the crankshaft slowly to read the runout. If the runout exceeds the service limit, correct the runout or replace the crankshaft assembly with a new one.

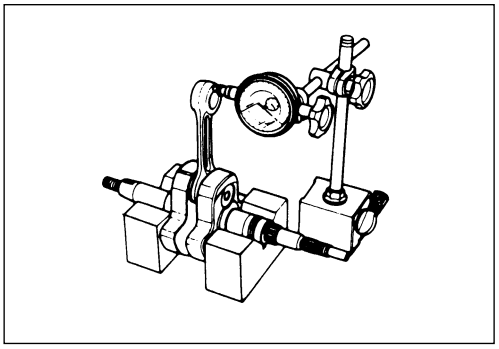


TOOL **09900-20701: Magnetic stand**
09900-20606: Dial gauge (1/100 mm)
09900-21304: V-block set (100 mm)

DATA **Crankshaft runout**
Service Limit: 0.05 mm

CONROD DEFLECTION

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 big end of the conrod.



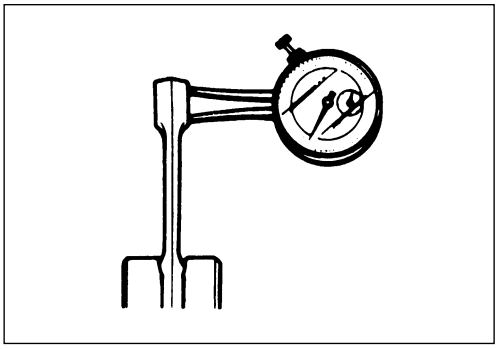
TOOL 09900-20701: Magnetic stand
09900-20606: Dial gauge (1/100 mm)
09900-21304: V-block set (100 mm)

DATA Conrod deflection
Service Limit: 3.0 mm

If the service limit is exceeded, replace the crankshaft assembly or bring the deflection into specification by replacing the worn parts (e.g., conrod, big end bearing and crank pin).

CONROD SMALL END I.D.

Measure the conrod small end inside diameter using the dial calipers. If the conrod small end inside diameter exceeds the service limit, replace the conrod with a new one.

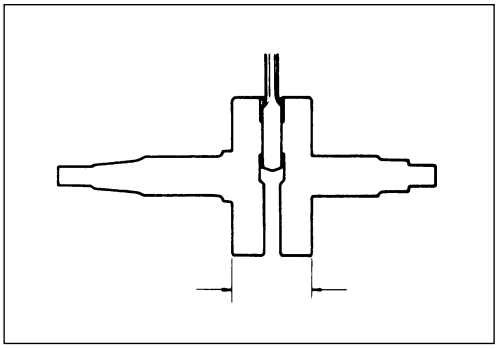


DATA Conrod small end I.D.
Service Limit: 14.040 mm

TOOL 09900-20605: Dial calipers

REASSEMBLY

- When rebuilding the crankshaft, the width between the webs should be within the standard range.

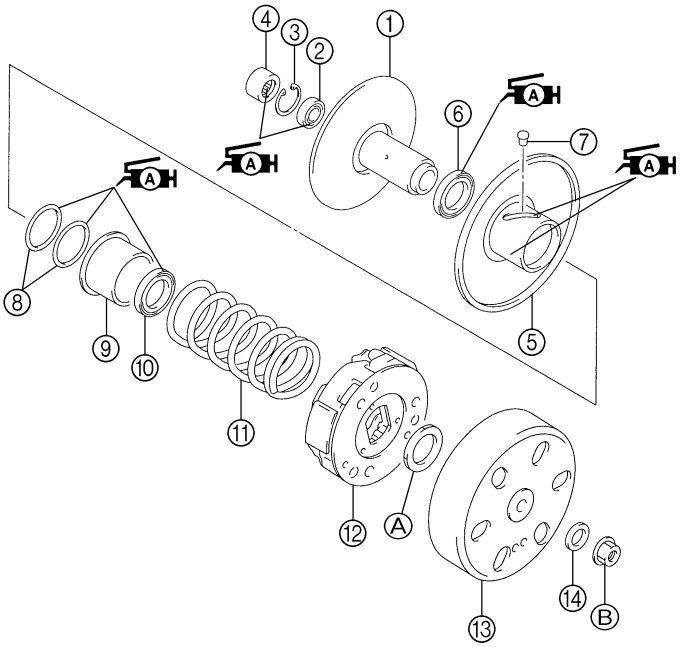


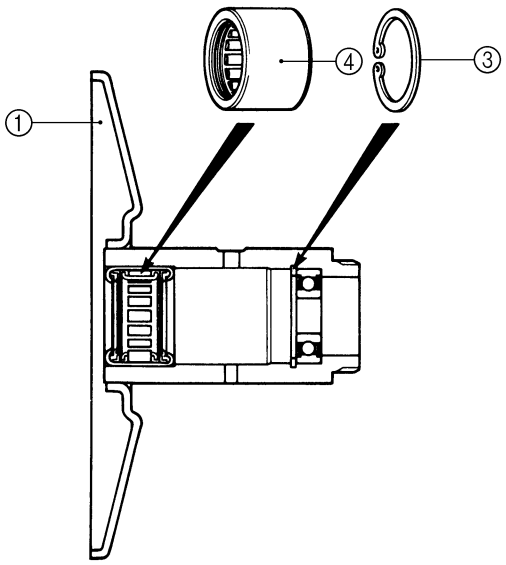
DATA Crank web to web width
Standard: 36.0 ± 0.05 mm

REED VALVE

Inspect the reed valve for wear or damage. If any damages are found, replace the reed valve with a new one.

CLUTCH SHOE/MOVABLE DRIVEN FACE





① Fixed driven face
② Bearing
③ Circlip
④ Needle roller bearing
⑤ Movable driven face
⑥ Oil seal
⑦ Pin
⑧ O-ring
⑨ Movable driven face spring guide
⑩ Oil seal
⑪ Spring
⑫ Clutch shoe assembly
⑬ Clutch housing
⑭ Washer

Ⓐ Clutch shoe nut
Ⓑ Clutch housing nut

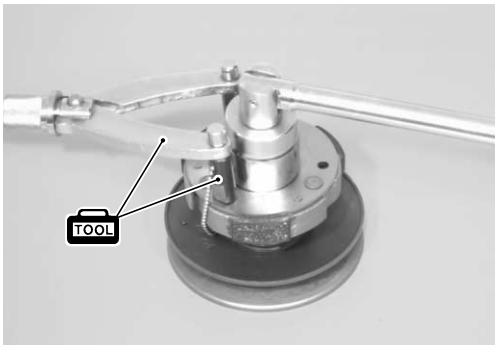
ITEM	N·m	kgf-m
Ⓐ	50	5.0
Ⓑ	50	5.0

DISASSEMBLY

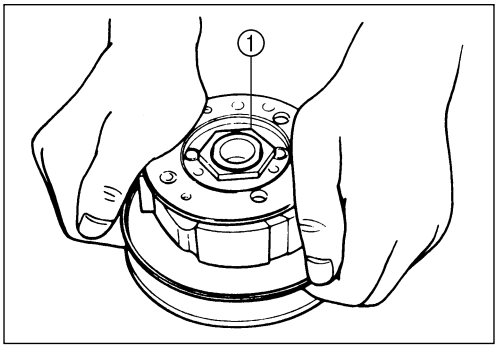
If the engine speed does not coincide with the specified engine speed range, disassemble the clutch shoe/movable driven face as follows.

- Hold the clutch shoe assembly using the special tools and then loosen the clutch shoe nut.

TOOL 09930-40113: Rotor holder
09930-40131: Rotor holder attachment



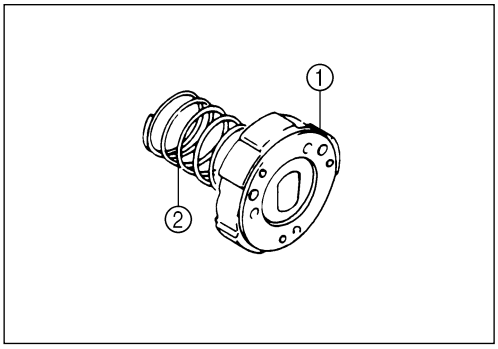
- Remove the clutch shoe nut ① while holding down the clutch shoe assembly, as shown.



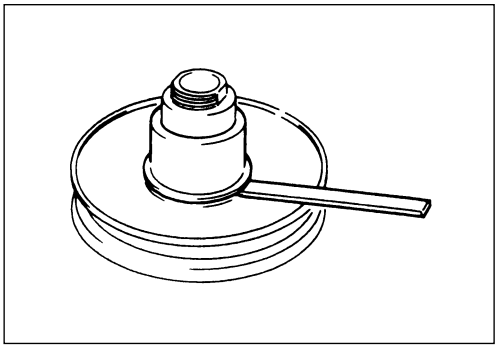
⚠ WARNING

Gradually ease apart the clutch shoe assembly (to counter the clutch spring force). Quickly releasing the clutch shoe assembly may cause the parts to fly apart.

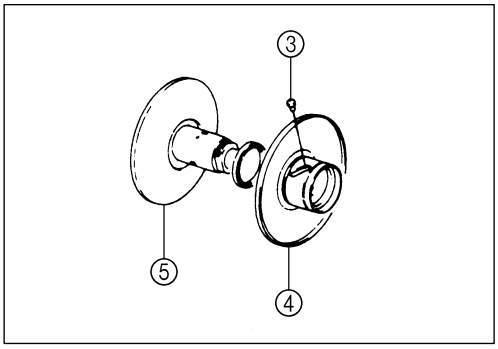
- Remove the clutch shoe assembly ① and driven face spring ②.



- Use a thin-blade screwdriver to pry up the movable driven face spring guide.



- Remove the pins ③, movable driven face ④, and fixed driven face ⑤.

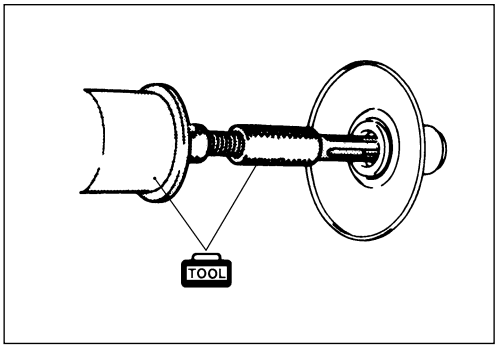


- Remove the bearing using the special tools.

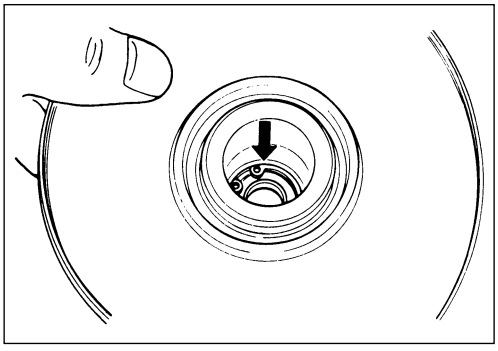
TOOL **09923-73210: Bearing remover**
09930-30102: Sliding hammer

⚠ CAUTION

Replace the removed bearing with a new one.

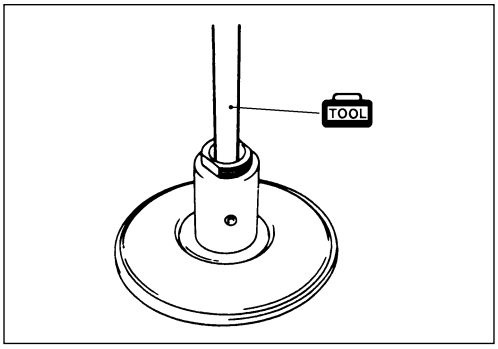


- Remove the circlip.



- Remove the bearing using the special tool.

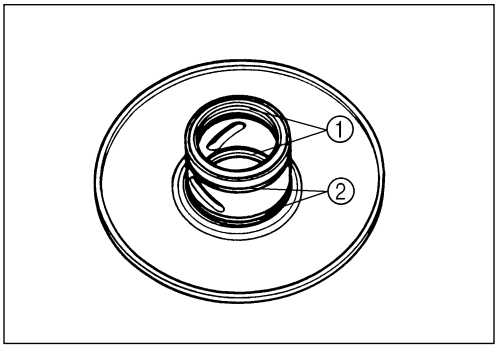
TOOL 09941-50111: Bearing remover



⚠ CAUTION

Replace the removed bearing with a new one.

- Remove the oil seals ① and O-rings ②.

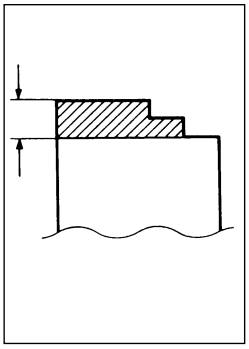


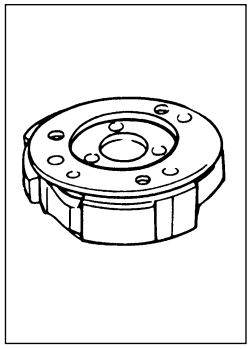
⚠ CAUTION

Replace the removed oil seals and O-rings with new ones.

CLUTCH SHOE

Inspect the clutch shoe for chips, cracks, uneven wear and burning. Check the thickness of the shoe using vernier calipers. If any damages are found or if the thickness is less than the service limit, replace the clutch shoe with a new one.

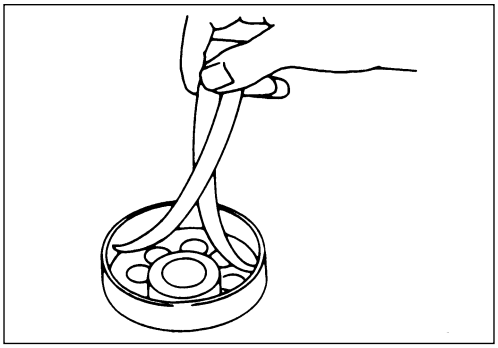




TOOL 09900-20101: Vernier calipers

DATA Clutch shoe thickness
Service Limit: 2.0 mm

Inspect the clutch spring for stretched or broken coils. If any damages are found, replace the clutch spring with a new one.



⚠ CAUTION

Replace the clutch shoe and clutch spring as a set.

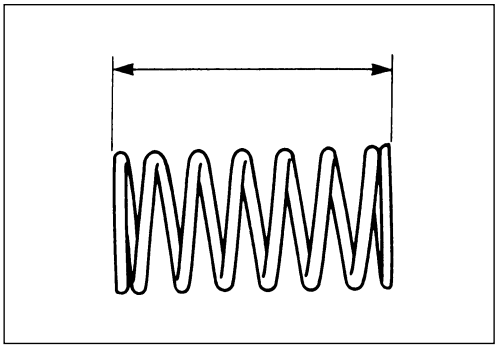
Inspect the clutch housing surface for scrolling, cracks, or uneven wear and measure the inside diameter of the clutch housing with inside calipers. Measure the diameter at several points to check for out-of-round and wear. If any damages are found or if the inside diameter exceeds the service limit, replace the clutch housing with a new one.

DATA Clutch housing I.D.
Service Limit: 110.50 mm

DRIVEN FACE SPRING

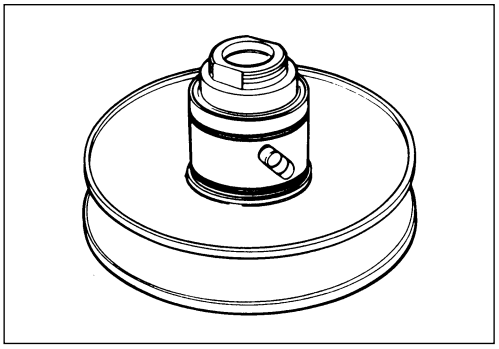
Measure the free length of the driven face spring. If the length is shorter than the service limit, replace the spring with a new one.

DATA Driven face spring length
Service Limit: 104.5 mm



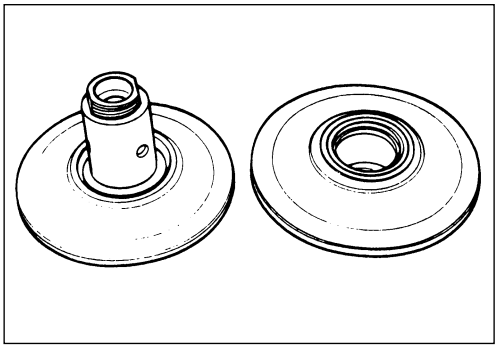
DRIVEN FACE PINS AND OIL SEALS

Rotate the driven faces and make sure that they turn smoothly. If they stick or do not turn smoothly, inspect the lip of each oil seal, and the sliding surface and sliding pins for wear or damage. If any damages are found, replace the driven face with a new one.



DRIVEN FACE

Inspect the drive belt contacting surface of both driven faces for any scratches, wear or damage. If any damages are found, replace the driven faces with new ones.

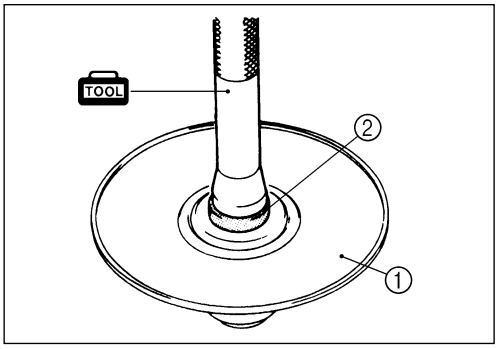


REASSEMBLY

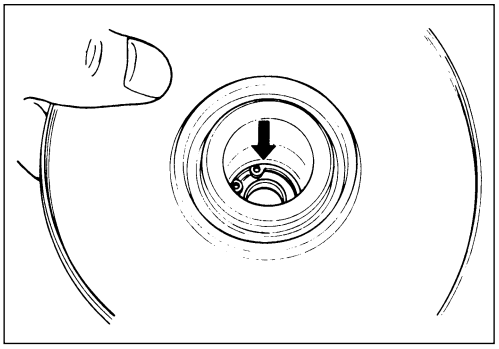
Reassemble the clutch shoe assembly and movable driven face in the reverse order of disassembly. Pay attention to the following points.

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

TOOL 09943-88211: Bearing installer



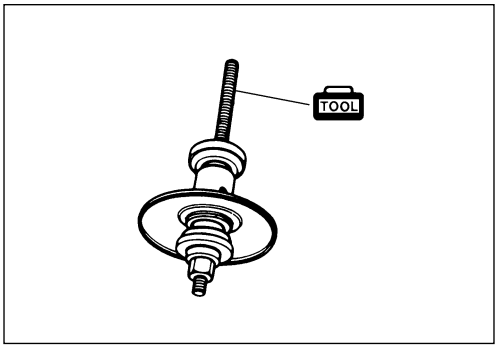
- Securely install the circlip.



- Install the needle roller bearing using the special tool.

09924-84521: Bearing installer

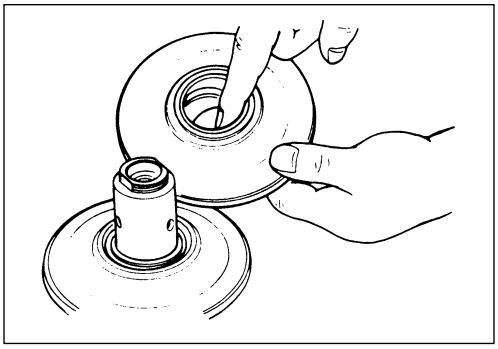
NOTE:
Face the stamped side of the needle roller bearing out.



- Apply SUZUKI SUPER GREASE "A" between the sliding surface of the fixed driven face and movable driven face.

99000-25010: SUZUKI SUPER GREASE "A"

NOTE:
When installing the movable face to the fixed face, make sure that the oil seal is positioned properly.

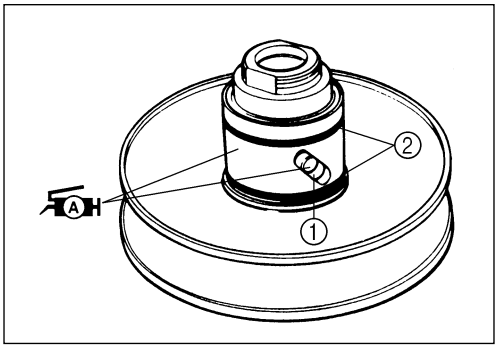


- Install the pins ① at three places on the drive face hub.
- Apply sufficient SUZUKI SUPER GREASE "A" to the cam where the pins are placed and to the surface of the driven face, as shown.

99000-25010: SUZUKI SUPER GREASE "A"

- Position the two O-rings ②.
- Install the movable driven face spring guide.

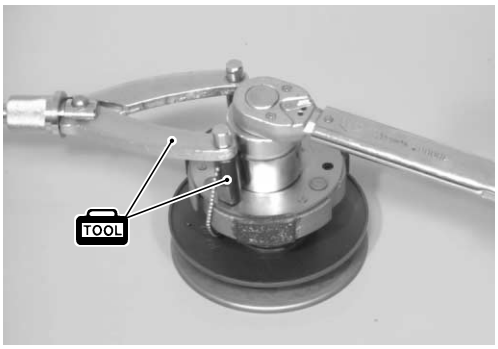
NOTE:
Remove any grease from the movable driven face spring guide, after installation.



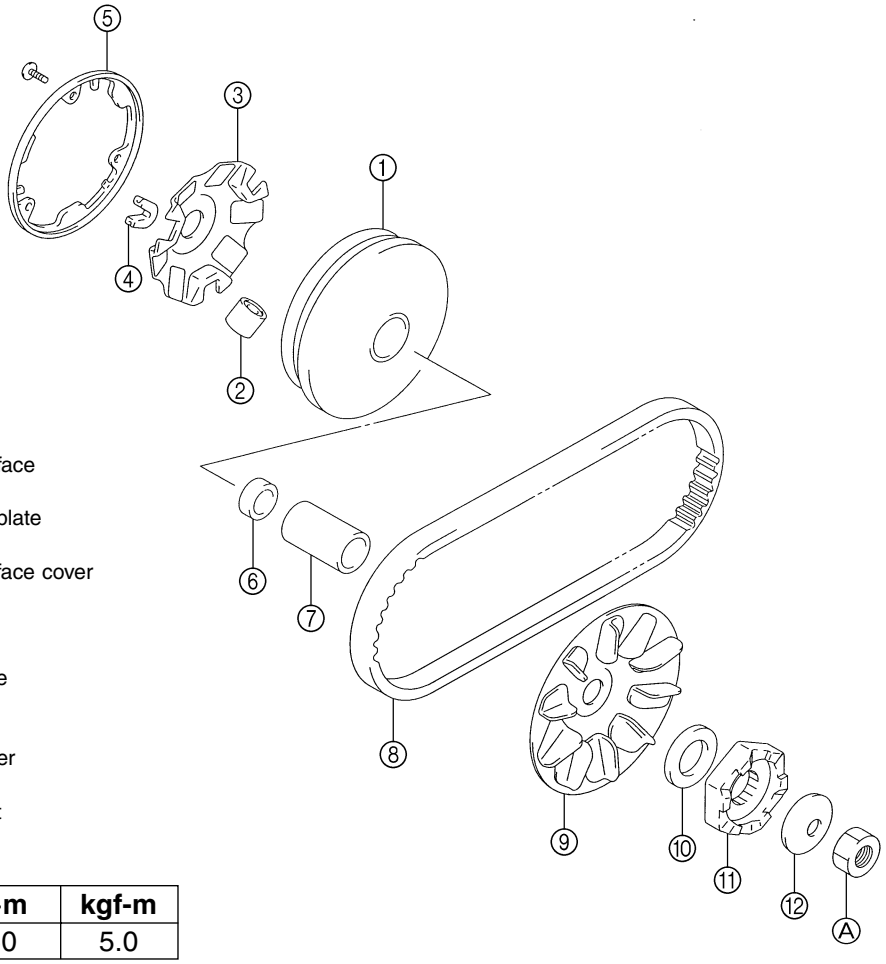
- Hold the clutch shoe assembly using the special tools and then tighten the clutch shoe nut to the specified torque.

09930-40113: Rotor holder
09930-40131: Rotor holder attachment

Clutch shoe nut: 50 N·m (5.0 kgf-m)



MOVABLE DRIVE FACE



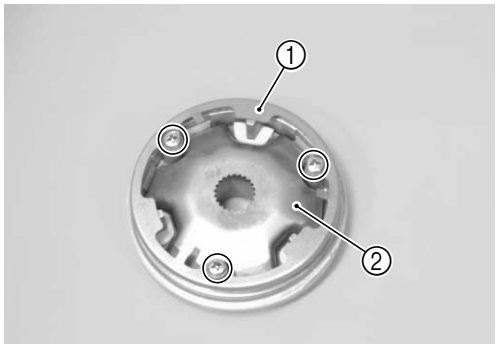
① Movable drive face
② Roller
③ Movable drive plate
④ Damper
⑤ Movable drive face cover
⑥ Spacer
⑦ Spacer
⑧ Drive belt
⑨ Fixed drive face
⑩ Washer
⑪ Kick starter
⑫ Concave washer

Ⓐ Kick starter nut

ITEM	N·m	kgf-m
Ⓐ	50	5.0

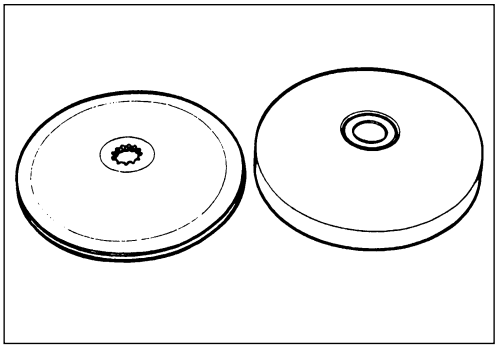
DISASSEMBLY

- Remove the movable drive face cover ① and movable drive plate ②.



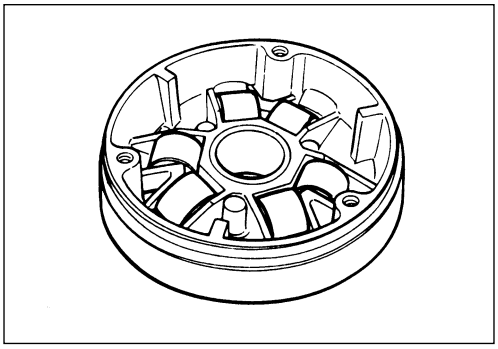
DRIVE FACE

Inspect the belt contact surface of the drive faces for wear, scratches or any abnormalities. If any damages are found, replace the drive face with a new one.



ROLLER AND SLIDING SURFACE

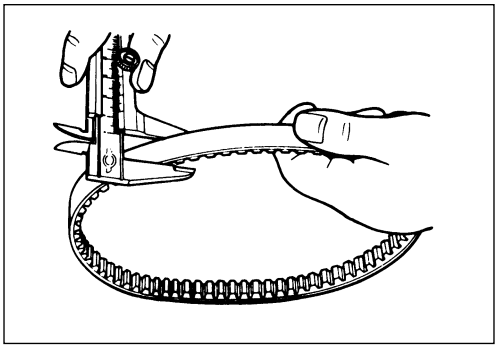
Inspect each roller and its sliding surface for wear or damage. If any damages are found, replace the rollers as a set.



DRIVE BELT

Remove the drive belt and check for cracks, wear and separation and measure the drive belt width with vernier calipers. If any damages are found or if the width of the drive belt is less than the service limit, replace the drive belt with a new one.

DATA Drive belt width
Service Limit: 17.4 mm

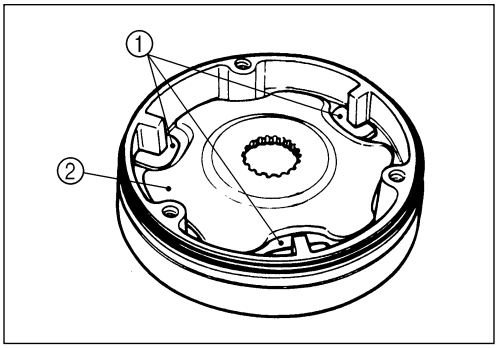


⚠ CAUTION

Always keep the drive belt away from grease, oil, etc.

REASSEMBLY

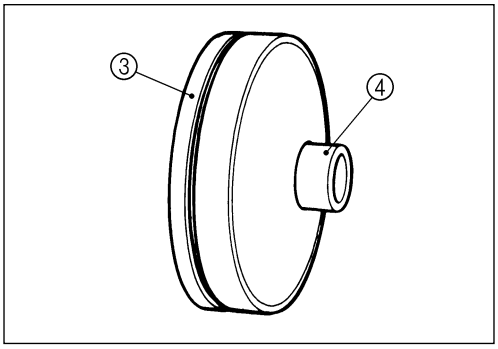
- Mount the three dampers ① on the movable drive plate ② and install it onto the movable drive face.



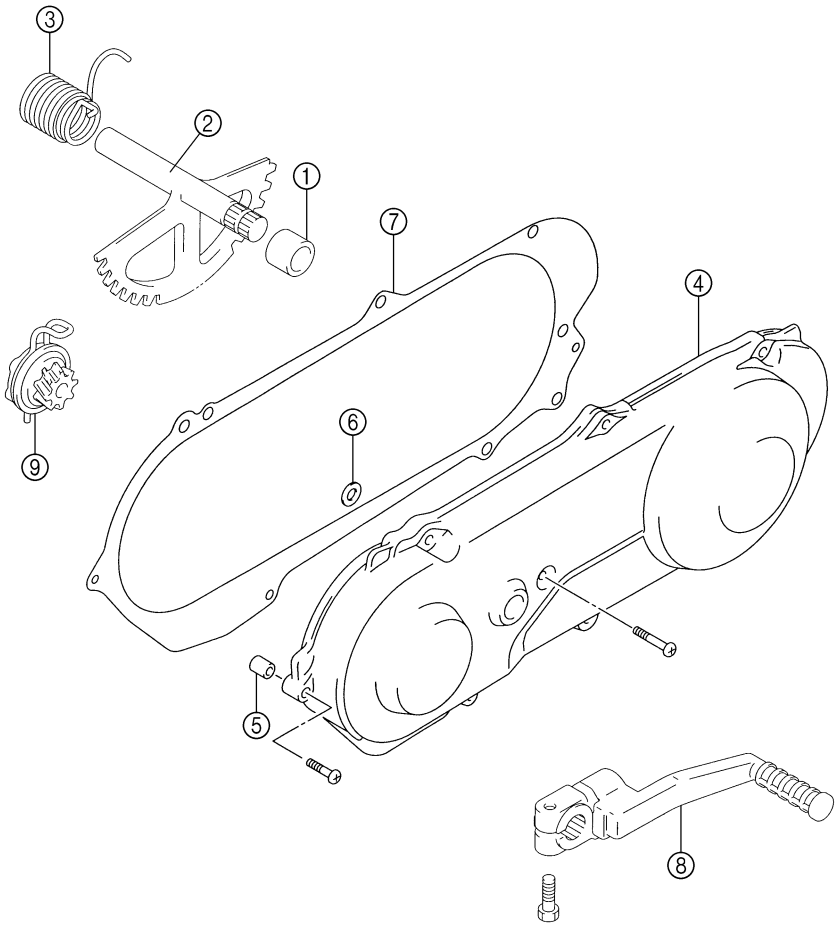
- Install the movable drive face cover ③.

NOTE:
Make sure that the movable drive plate is fully positioned inside the movable drive face, otherwise the rollers may fall out.

- Insert the spacer ④.



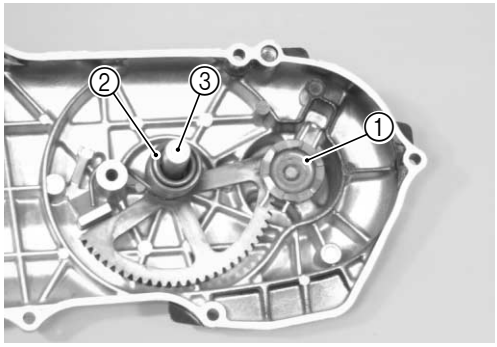
KICK STARTER



① Spacer
② Kick starter shaft
③ Kick starter spring
④ Clutch cover
⑤ Dowel pin
⑥ Gasket
⑦ Gasket
⑧ Kick starter lever
⑨ Kick starter drive gear

DISASSEMBLY

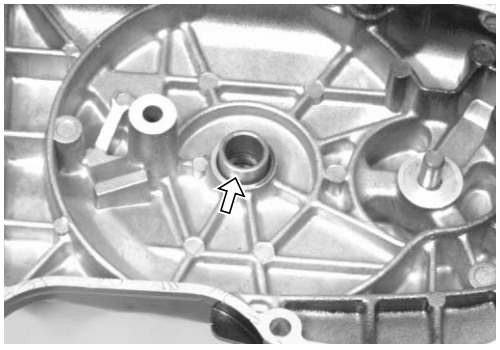
- Remove the kick starter driven gear ①, kick starter shaft spring ②, and kick starter shaft ③.



REASSEMBLY

- Apply SUZUKI SUPER GREASE “A” onto the inside of the kick starter shaft spacer.

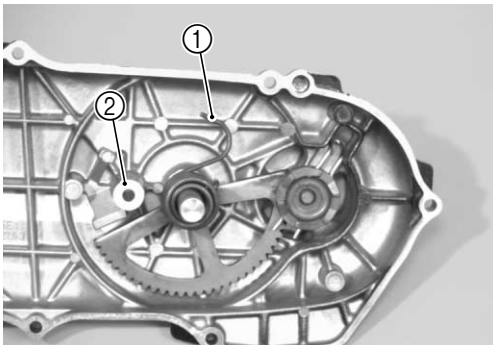
99000-25010: SUZUKI SUPER GREASE “A”



- Apply a light coat of SUZUKI SUPER GREASE “A” onto the end of the kick starter shaft.

99000-25010: SUZUKI SUPER GREASE “A”

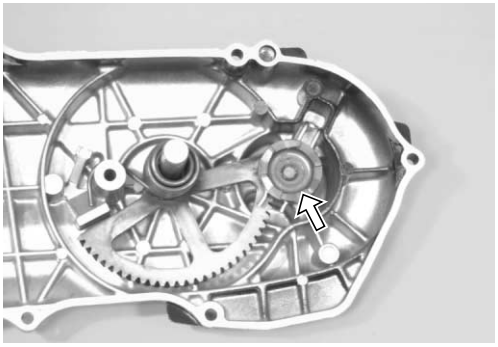
- Install the kick starter spring and hook its end ① onto the clutch cover boss ②.



- Apply SUZUKI SUPER GREASE “A” onto the shaft and gear of the kick starter drive gear.

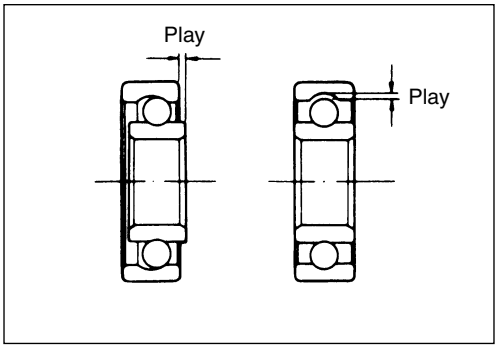
99000-25010: SUZUKI SUPER GREASE “A”

- Install the kick starter drive gear.



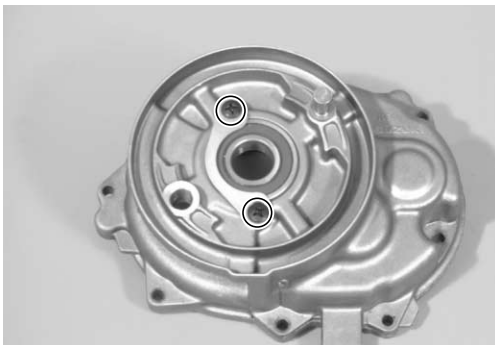
BEARINGS

Wash the bearing with a cleaning solvent and lubricate it with motor oil before inspection. Rotate the inner race and check to see that it turns smoothly. If it does not turn quietly and smoothly, or if there are signs of any abnormalities, the bearing is defective and must be replaced with a new one.



REAR AXLE SHAFT BEARING

- Remove the bearing retainer.



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

09921-20220: Bearing remover set

⚠ CAUTION

Replace the removed bearing with a new one.

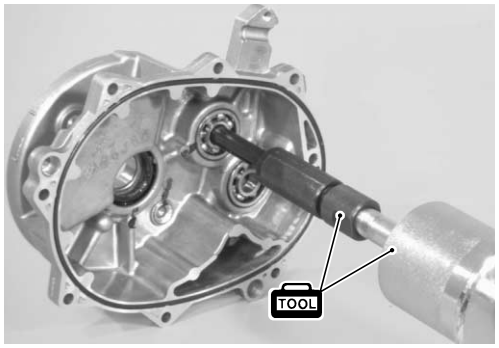
- Install the rear axle shaft bearing using the special tool.

09913-70210: Bearing installer set

RIGHT DRIVESHAFT BEARING AND IDLE SHAFT BEARING

- Remove the right driveshaft bearing and idle shaft bearing using the special tools.

09921-20210: Bearing remover
09930-30102: Sliding hammer

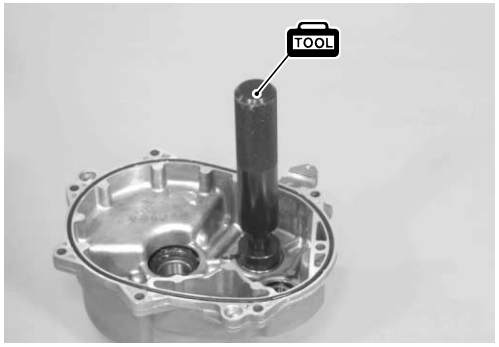


⚠ CAUTION

Replace the removed bearings with new ones.

- Install the right driveshaft bearing and idle shaft bearing using the special tool.

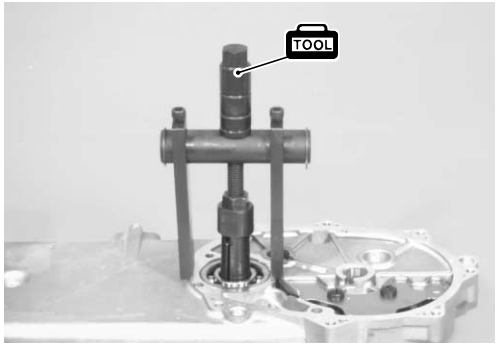
09913-70210: Bearing installer set



LEFT DRIVESHAFT BEARING

- Remove the left driveshaft bearing using the special tool.

09921-20220: Bearing remover set



⚠ CAUTION

Replace the removed bearing with a new one.

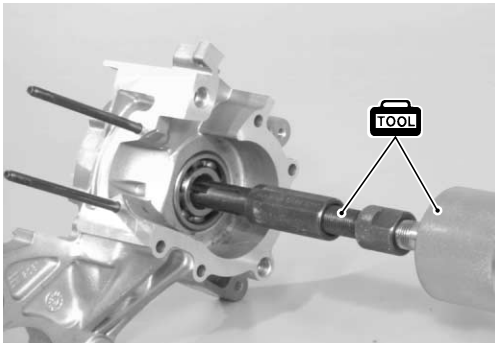
- Install the left driveshaft bearing using the special tool.

09913-70210: Bearing installer set

RIGHT CRANKSHAFT BEARING

- Remove the right crankshaft bearings using the special tools.

TOOL 09923-73210: Bearing remover
09930-30102: Sliding hammer

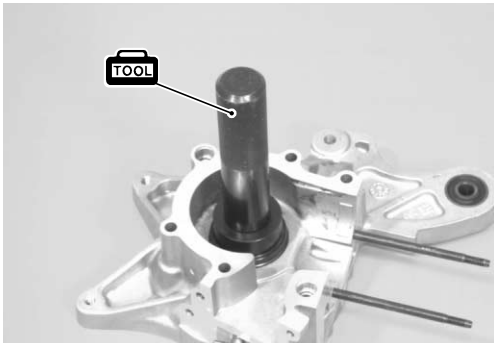


⚠ CAUTION

Replace the removed bearing with a new one.

- Install the right crankshaft bearing using the special tool.

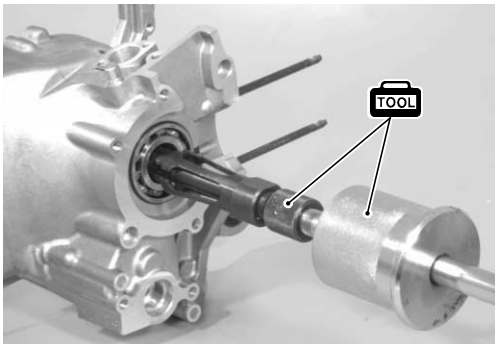
TOOL 09913-70210: Bearing installer set



LEFT CRANKSHAFT BEARING

- Remove the left crankshaft bearing using the special tools.

TOOL 09923-74510: Bearing remover
09930-30102: Sliding hammer

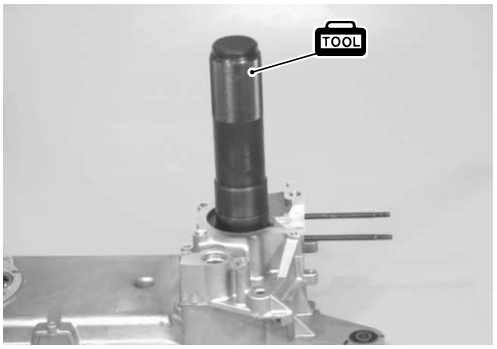


⚠ CAUTION

Replace the removed bearing with a new one.

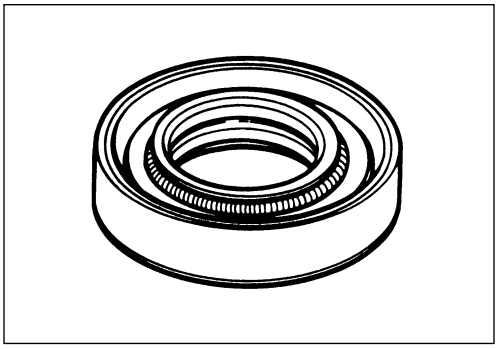
- Install the left crankshaft bearing using the special tool.

TOOL 09913-70210: Bearing installer set

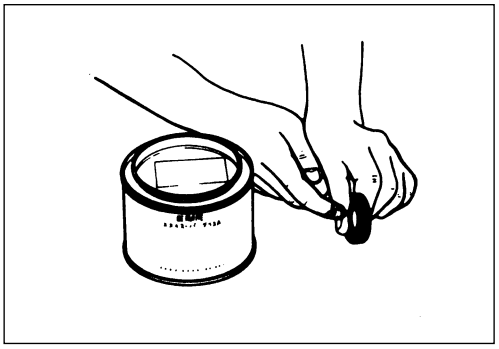


OIL SEALS

Damage to the lip of the oil seal may result in leakage of the air-fuel mixture or gear oil. Inspect the oil seal and if it is damaged, replace it with a new one.



- Install the oil seals into the crankcase and gearbox cover, as shown below.



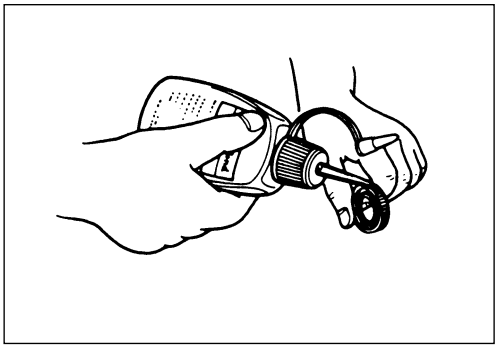
⚠ CAUTION

Replace the removed oil seals with new ones.

- Apply SUZUKI SUPER GREASE "A" to the lip of the oil seals.

99000-25010: SUZUKI SUPER GREASE "A"

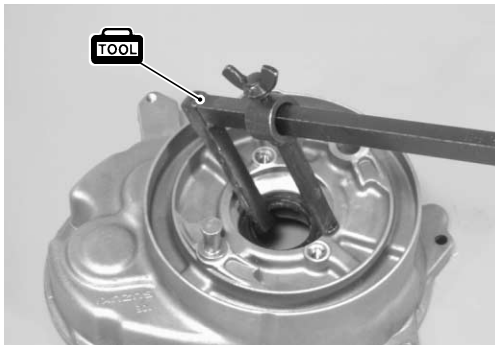
- Be sure to apply THREAD LOCK "1342" to the outer surfaces of the right and left crankshaft oil seals to prevent them from moving.



99000-32050: THREAD LOCK "1342"

REAR AXLE SHAFT OIL SEAL

- Remove the rear axle shaft bearing. (☞ 3-26)
- Remove the rear axle shaft oil seal from the gearbox cover using the special tool.



09913-50121: Oil seal remover

⚠ CAUTION

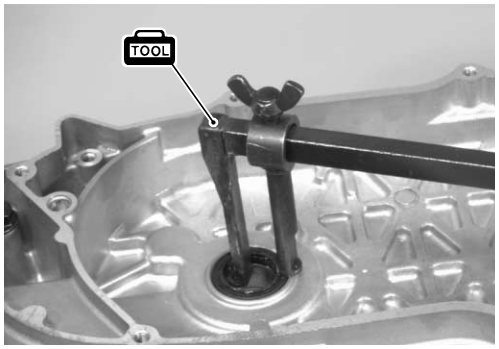
Replace the removed oil seal with a new one.

- Install the rear axle shaft oil seal into the gearbox cover, slowly, using the special tool.

09913-70210: Bearing installer set

DRIVE SHAFT OIL SEAL

- Remove the drive shaft oil seal from the left crankcase using the special tool.



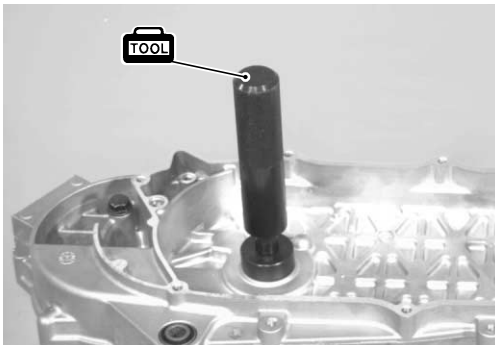
09913-50121: Oil seal remover

⚠ CAUTION

Replace the removed oil seal with a new one.

- Install the drive shaft oil seal into the left crankcase, slowly, using the special tool.

TOOL 09913-70210: Bearing installer set



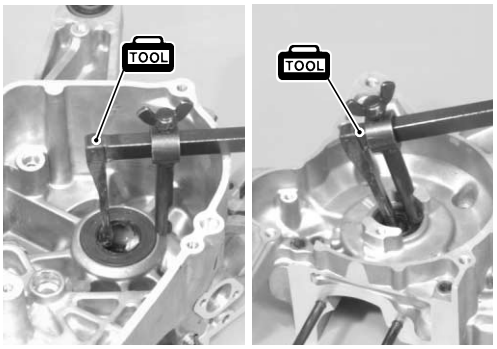
CRANKSHAFT OIL SEALS

- Remove the crankshaft oil seals from the left and right crankcase, using the special tool.

TOOL 09913-50121: Oil seal remover

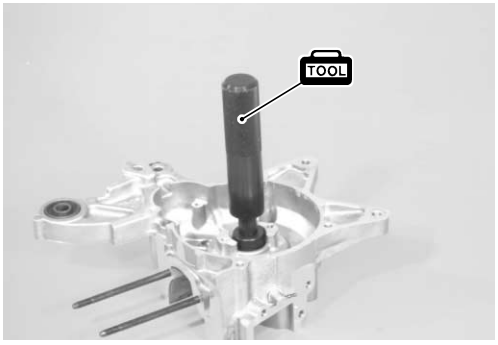
⚠ CAUTION

Replace the removed oil seals with new ones.



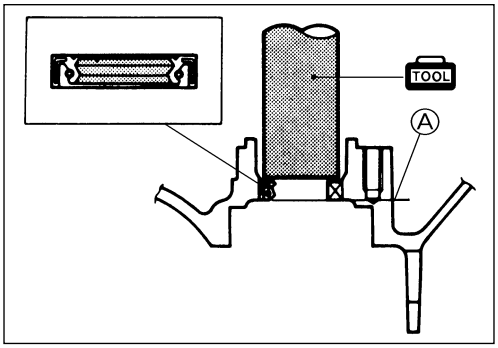
- Install the crankshaft oil seal into the right crankcase, slowly, using the special tool.

TOOL 09913-70210: Bearing installer set



NOTE:

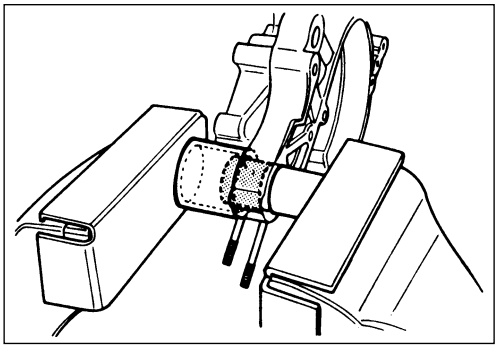
* *Align the oil seal with the edge Ⓐ of the crankcase, as shown.*
* *Install the left crankshaft oil seals using the special tool after installing the crankshaft to the crankcase. (☞ 3-33)*



ENGINE MOUNTING BUSHINGS

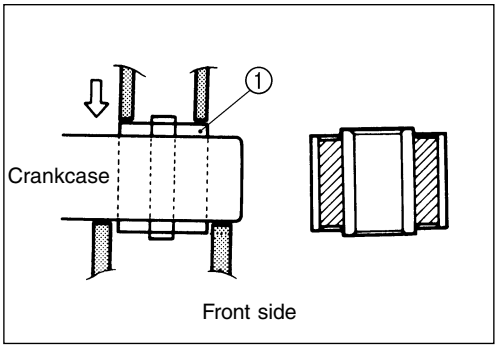
Inspect each engine mounting bushings ① and ② for damage. If any damage is found, replace the engine mounting bushing with a new one.

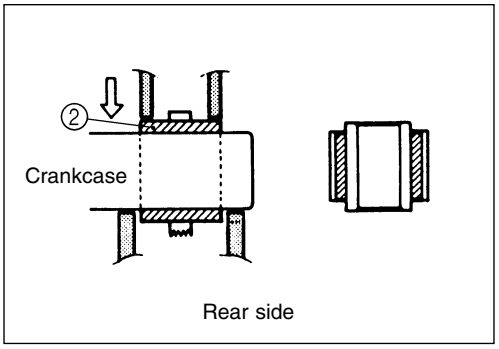
- Press out the engine mounting bushings in a vise using two steel tubes of the appropriate size, as shown.



⚠ CAUTION

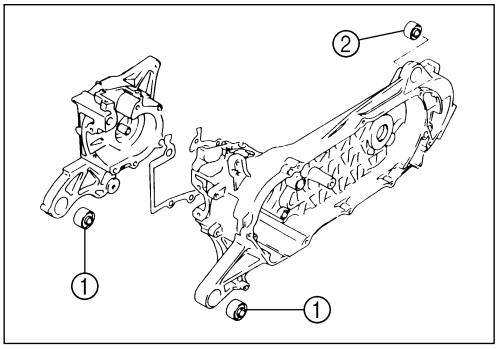
Replace the removed bushing with a new one.

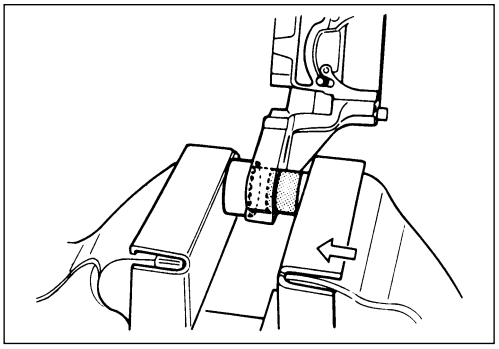


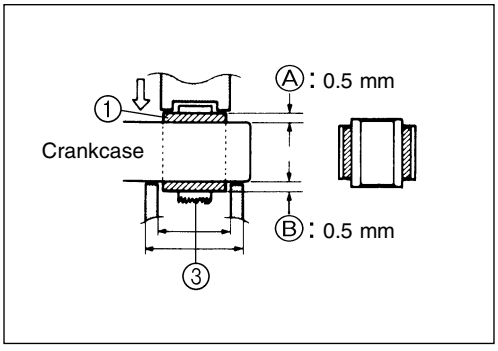


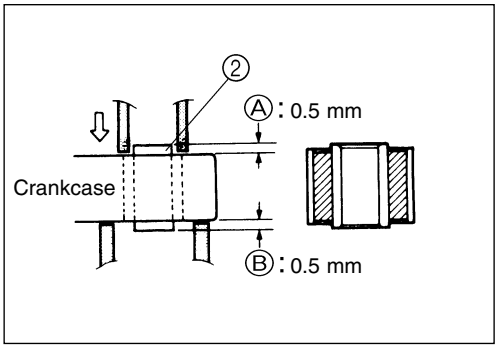
- Install the engine mounting bushings using two steel tubes of the appropriate size and a vise. Press the mounting bushings ① and ② into the crankcase holes, as shown.

NOTE:
The knurled end ③ should face in. Projections Ⓐ and Ⓑ should be aligned evenly.









ENGINE REASSEMBLY

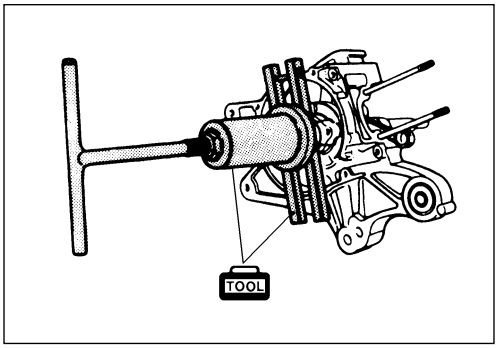
Reassemble the engine in the reverse order of disassembly. The following steps require special attention or precautionary measures should be taken.

NOTE:
Apply engine oil to each running and sliding part before reassembling.

CRANKSHAFT

- Mount the crankshaft into the right crankcase by pulling its right end into the crankcase using the special tools.

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

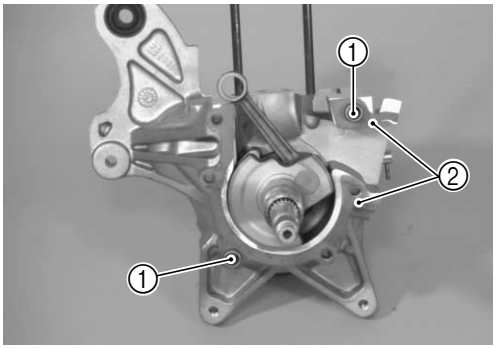


⚠ CAUTION

Never fit the crankshaft into the crankcase by striking it with a plastic hammer. Always use the special tool, otherwise the crankshaft may be misaligned.

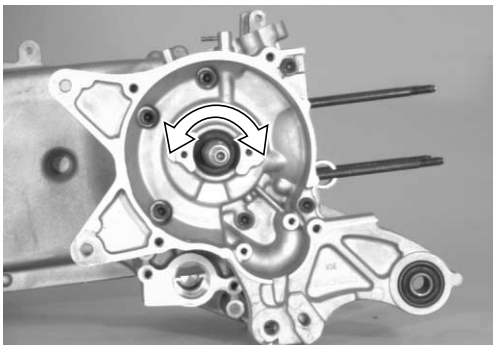
CRANKCASE

- Install the two dowel pins ① and new gaskets ②.
- Install the left crankcase onto the right crankcase.



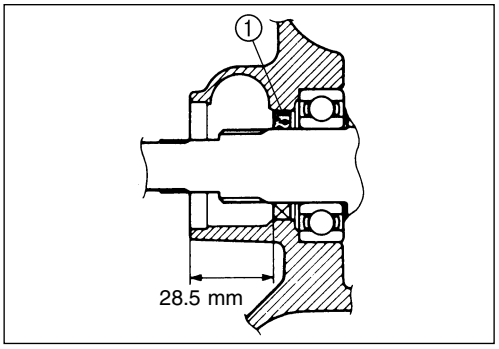
- Tighten the crankcase bolts.

NOTE:
* *After the crankcase bolts have been tightened, make sure that the crankshaft rotates smoothly.*
* *If the crankshaft does not rotate smoothly, try to free it by tapping it with a plastic hammer.*



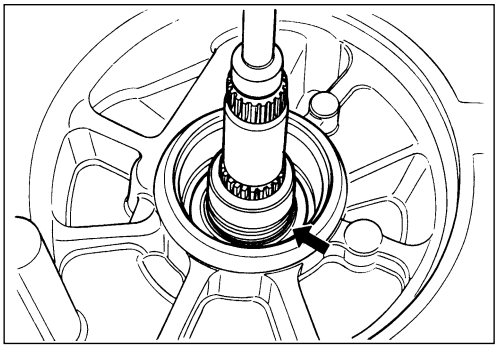
- Install the left crankshaft inner oil seal ① using the special tool.

09941-74910: Bearing installer



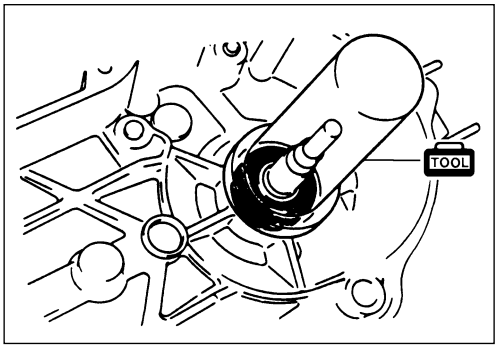
- Apply SUZUKI SUPER GREASE "A" (approximately 10 g) to the oil pump drive gear (on the crankshaft surface side).

99000-25010: SUZUKI SUPER GREASE "A"

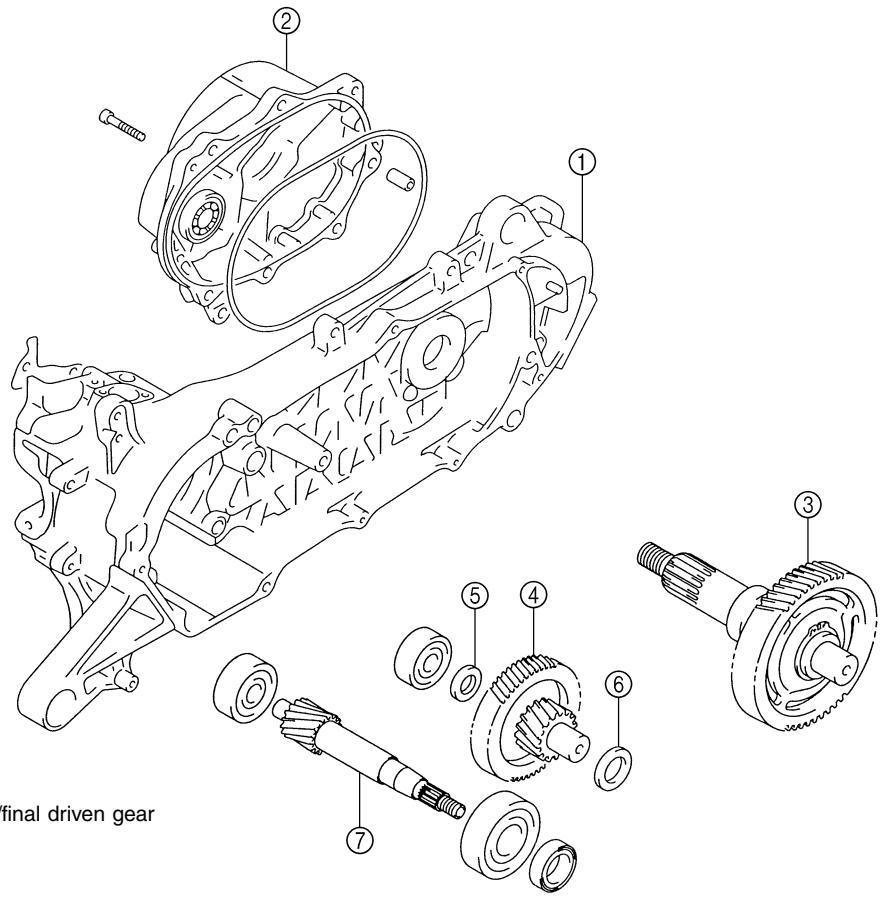


- Install the left crankshaft outer oil seal using the special tool.

09913-70210: Bearing installer set

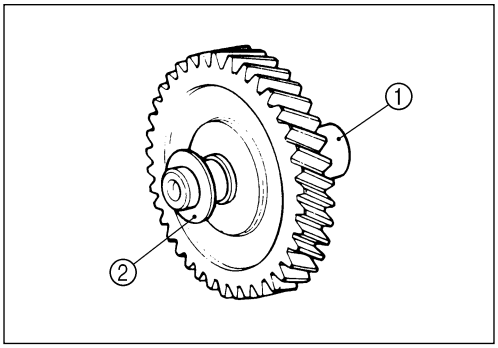


REAR AXLE SHAFT AND TRANSMISSION

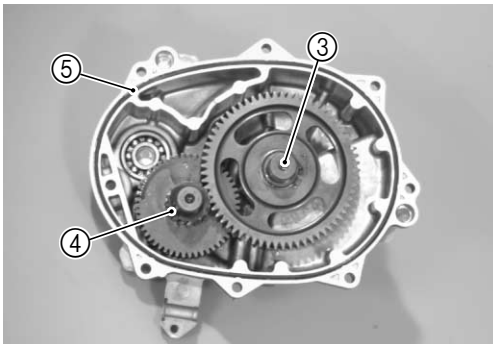


① Crankcase
② Gearbox cover
③ Rear axle shaft/final driven gear
④ Idle shaft/gear
⑤ Washer
⑥ Washer
⑦ Drive shaft

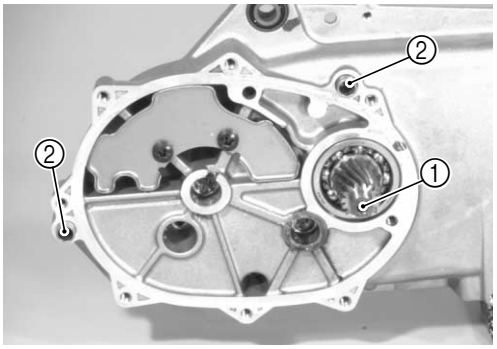
- Install the idle shaft/gear ①, with the thrust washer ②, into the gearbox.



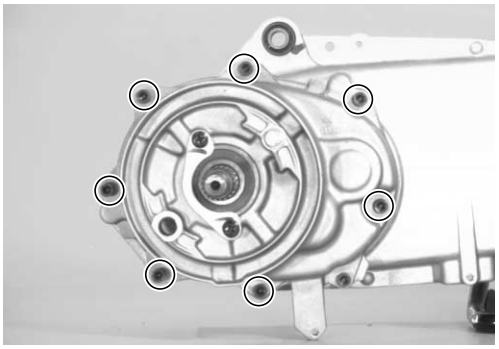
- Install the rear axle shaft/final driven gear ③.
- Install the thrust washer ④ and the O-ring ⑤.



- Install the driveshaft ① and dowel pins ②.

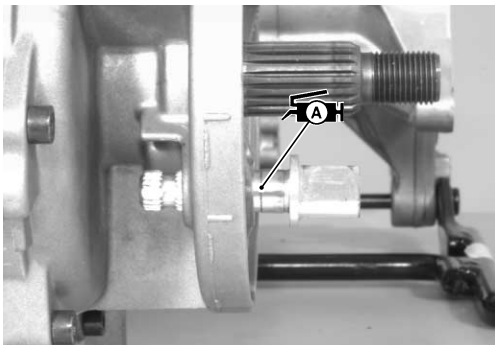


- Install the gearbox cover.
- Tighten the bolts, a little at a time, diagonally.

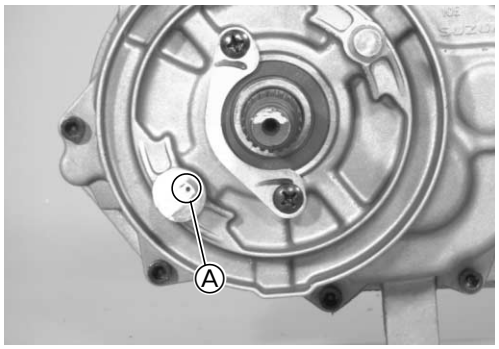


- Apply a light coat of SUZUKI SUPER GREASE “A” onto the pivoting surface of the brake cam, and then install the brake cam into the crankcase.

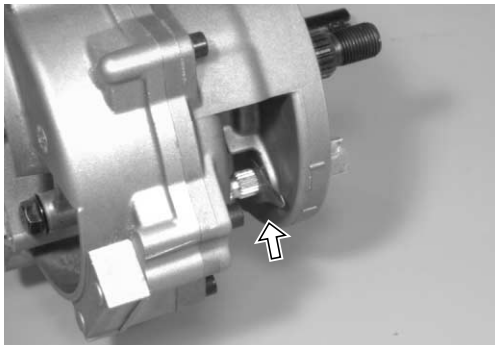
99000-25010: SUZUKI SUPER GREASE “A”

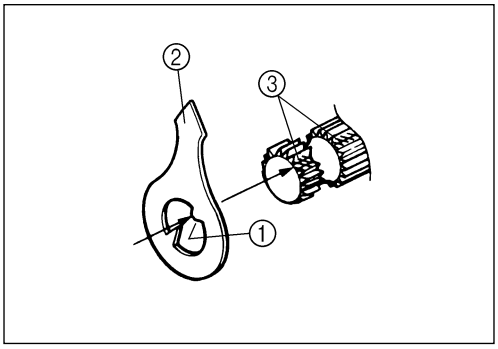


- Position the brake cam so that the punch mark Ⓐ faces the rear axle shaft.



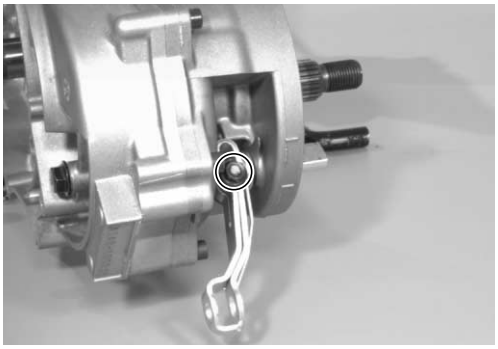
- Align the tang ① on the brake lining wear indicator plate ② with the cutaway ③ on the brake cam. Then, slide the brake lining wear indicator plate onto the brake cam.





- Install the return spring and brake cam lever onto the brake cam and tighten the brake cam lever nut to the specified torque.

Brake cam lever nut: 10 N·m (1.0 kgf-m)



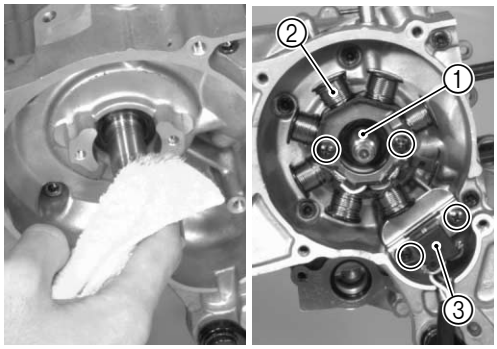
- Install the brake shoes and rear wheel.
- Tighten the rear axle nut to the specified torque.

NOTE:
Apply final gear oil (10W-40) to the axle nut before tightening it.

Rear axle nut: 120 N·m (12.0 kgf-m)

GENERATOR

- Remove any grease from the tapered portion of the crankshaft and also from the generator rotor.
- Install the key ①, stator coil ②, and pickup coil ③.

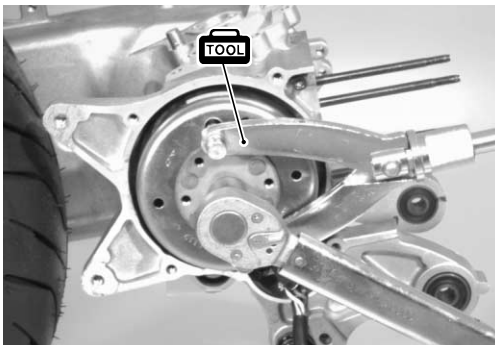


- Apply THREAD LOCK SUPER “1322” to the generator rotor nut and then tighten it to the specified torque using the special tool.

99000-32110: THREAD LOCK SUPER “1322”

09930-40113: Rotor holder

Generator rotor nut: 40 N·m (4.0 kgf-m)



STARTER PINION AND STARTER GEAR

- Tighten the final gear oil drain bolt ① to the specified torque.

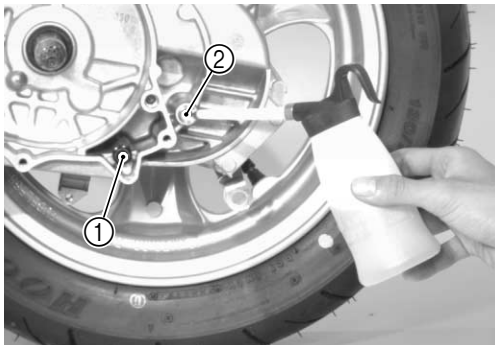
Final gear oil drain bolt: 5.5 N·m (0.55 kgf-m)

- Add final gear oil until it flows from the final gear oil level hole ②.

Final gear oil quantity: 130 ml

- Tighten the final gear oil level bolt to the specified torque.

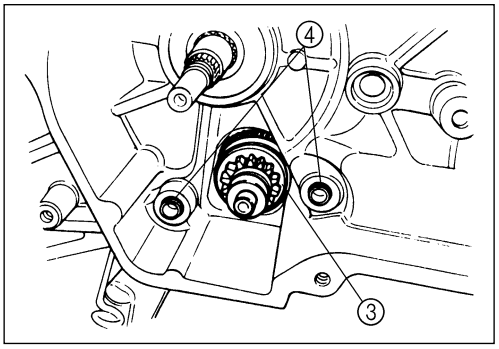
Oil level bolt: 12 N·m (1.2 kgf-m)



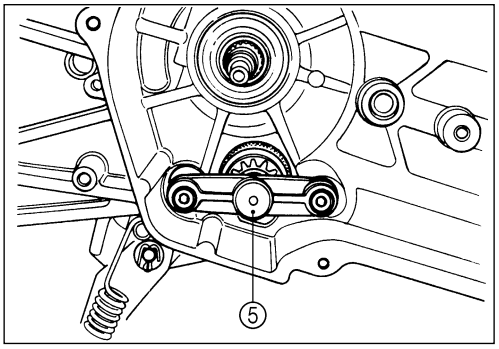
- Apply SUZUKI SUPER GREASE “A” onto the starter pinion shaft and install the starter pinion gear assembly ③.

99000-25010: SUZUKI SUPER GREASE “A”

- Insert the dowel pins ④.

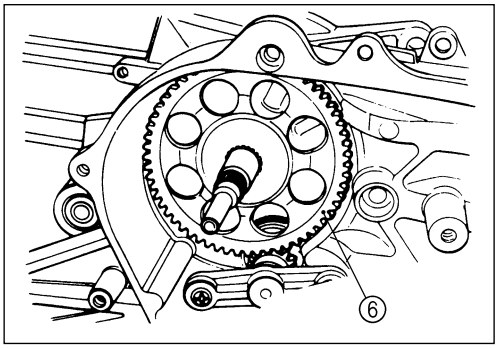


- Install the starter idle gear cap ⑤.

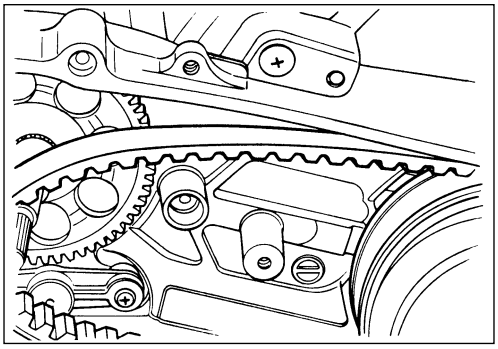


- Install the starter driven gear ⑥ onto the left crankshaft.

NOTE:
The convex side of the starter driven gear should face out.



DRIVE BELT

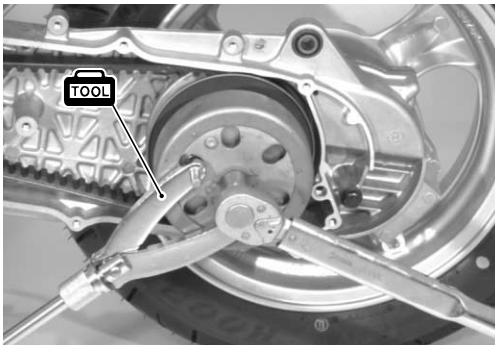


- Insert the drive belt, as low as possible, between the clutch shoe/movable driven face while pulling out the driven face to provide the maximum drive belt clearance.

⚠ CAUTION

The drive belt contact surface of the driven face should be thoroughly cleaned.

- Thoroughly clean the clutch housing and position it over the clutch shoe assembly.
- Hold the clutch housing using the special tool, and tighten the clutch housing nut to the specified torque.

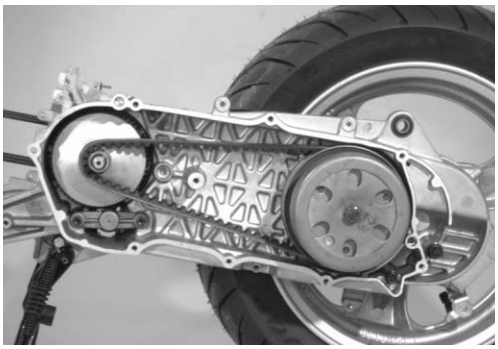


TOOL 09930-40113: Rotor holder

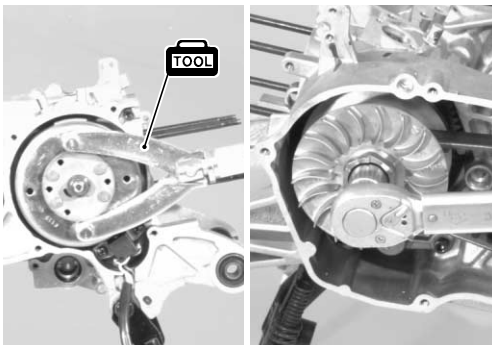
Clutch housing nut: 50 N·m (5,0 kgf-m)

- Install the movable drive face onto the crankshaft, as shown.

NOTE:
Thoroughly clean the drive belt contact surface.



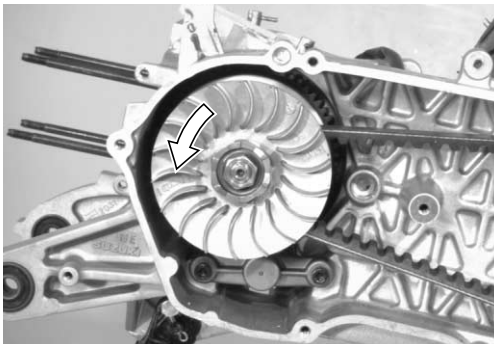
- Hold the generator rotor using the special tool, and tighten the kick starter nut to the specified torque.



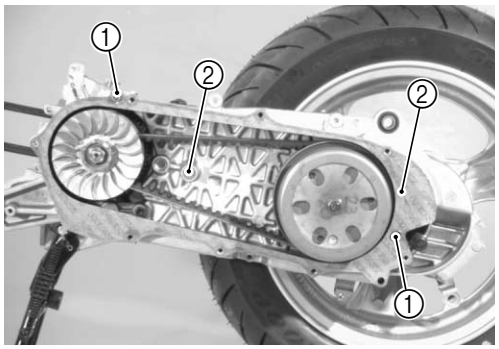
TOOL 09913-40113: Rotor holder

Kick starter nut: 50 N·m (5.0 kgf-m)

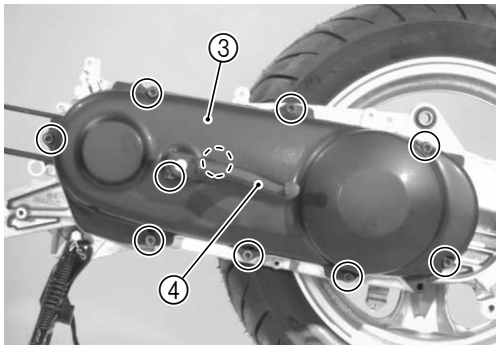
- Turn the fixed drive face by hand, until the drive belt is properly seated and both the drive and driven faces rotate together smoothly and without slipping.



- Install the dowel pins ① and new gaskets ②.



- Install the clutch cover ③ and kick starter lever ④.

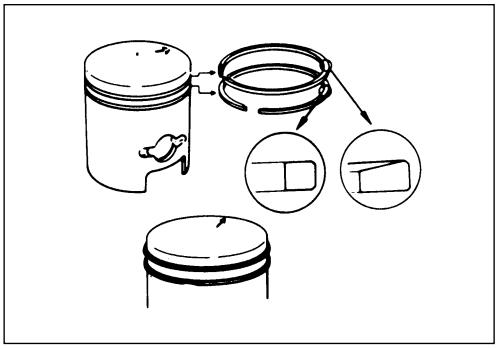


PISTON

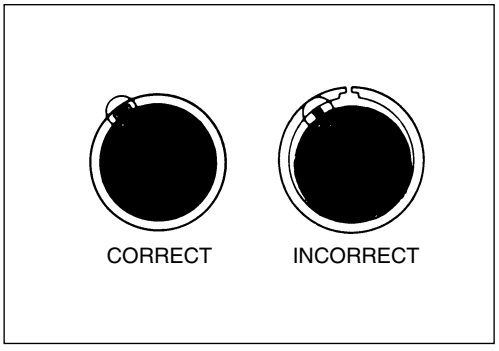
- Install the piston rings onto the piston.

1st: Keystone ring
2nd: Rectangular ring and expander ring

NOTE:
The piston rings should be installed with the mark facing up.



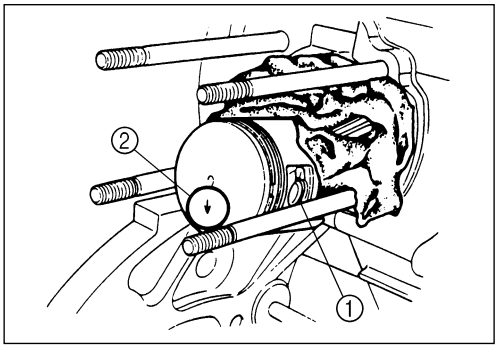
- Position the piston ring gaps, as shown. Before inserting the piston into the cylinder, check that the gaps are properly positioned.



- Securely install the circlip ①.

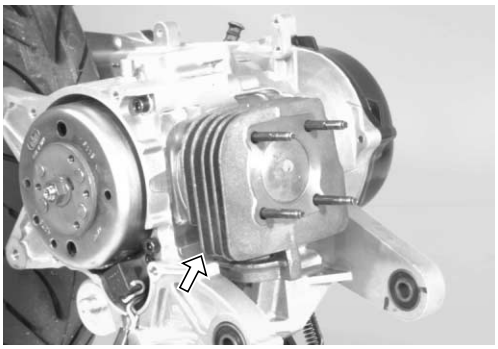
NOTE:
The arrow mark ② on the piston crown should be pointing towards the exhaust side.

- Apply engine oil onto the piston pin, and then install the piston.



CYLINDER

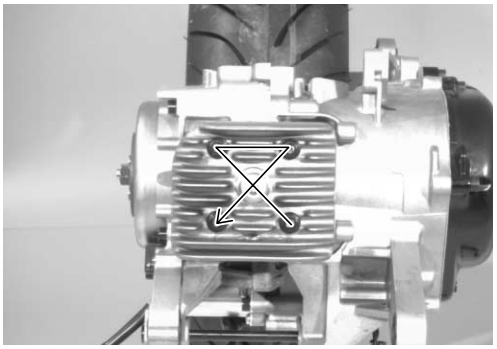
- Apply engine oil onto the piston and cylinder wall surfaces, and then install the cylinder over the piston carefully.



CYLINDER HEAD

- Tighten the cylinder head nuts diagonally, as shown, and to the specified torque.

Cylinder head nut: 10 N·m (1.0 kgf-m)



OIL PUMP GEAR

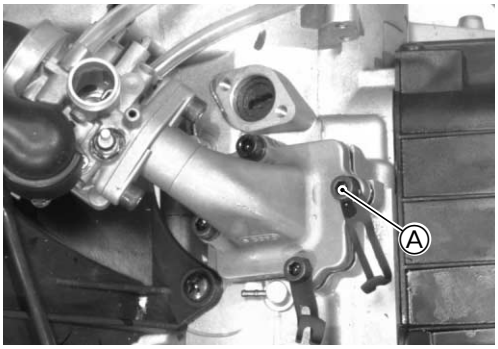
- Apply SUZUKI SUPER GREASE “A” onto the oil pump gear, and then install it.

99000-25010: SUZUKI SUPER GREASE “A”

INTAKE PIPE

Install the intake pipe and tighten the bolts securely.

NOTE:
Be sure to use the special twist-off bolt Ⓐ as shown.



EXHAUST PIPE/MUFFLER

- Tighten the exhaust pipe mounting nut and bolt to the specified torque.

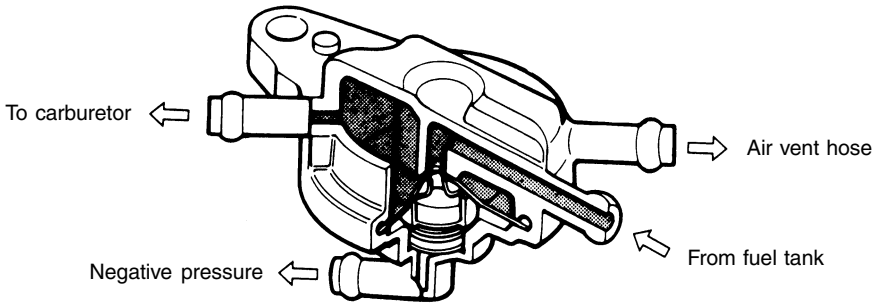
Exhaust pipe mounting nut and bolt: 10 N·m (1.0 kgf-m)

FUEL AND LUBRICATION SYSTEM

CONTENTS

FUEL VALVE

When the engine has started, negative pressure (vacuum) is generated at the intake port. The negative pressure causes the fuel valve diaphragm to compress its spring, opening the fuel passageway and allowing the fuel to flow to the carburetor.
When the engine has stopped, the spring pushes against the valve, closing the fuel passageway, and stopping the flow of fuel to the carburetor.



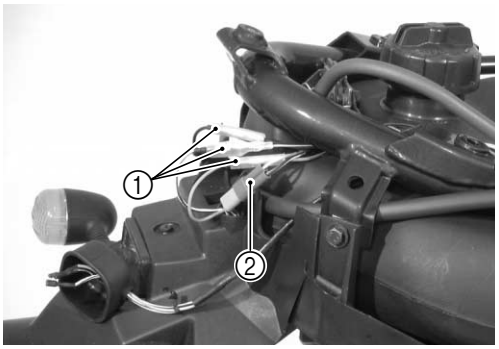
FUEL TANK AND OIL TANK
REMOVAL

⚠ WARNING

Gasoline is highly flammable and explosive.
Keep heat, sparks, and flames away from gasoline.

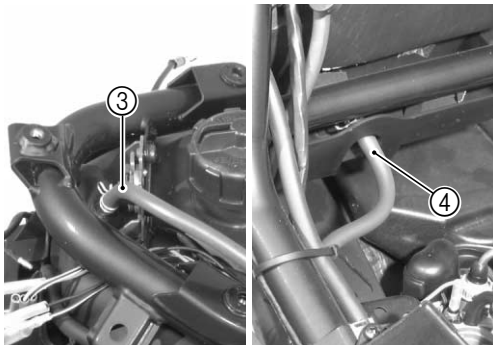
- Remove the frame cover. (☞ 5-4 and 5-5)

- Disconnect the turn signal light lead wires ① and license plate light coupler ②.

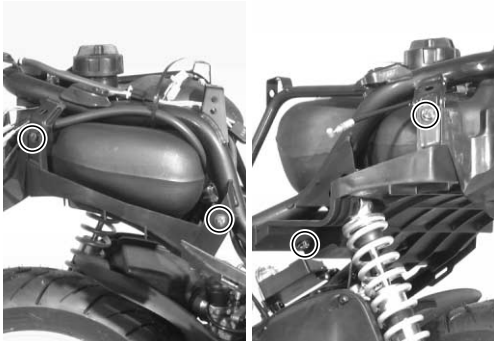


- Disconnect the fuel level indicator switch coupler.

- Disconnect the air vent hose ③ and fuel hose ④.

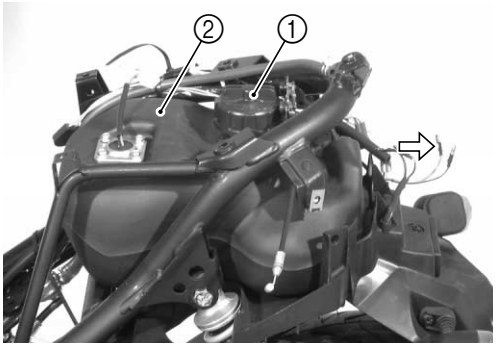


- Remove the lower fuel tank cover mounting bolts.

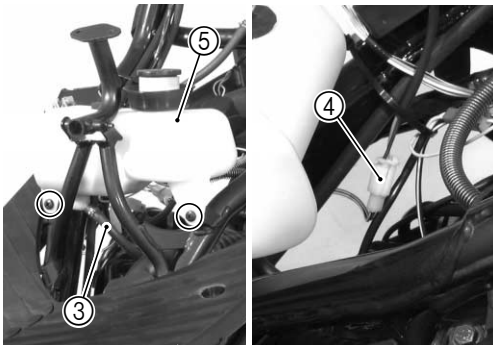


- Remove the fuel tank cap ① and fuel tank ②.

NOTE:
After removing the fuel tank, reinstall the fuel tank cap.



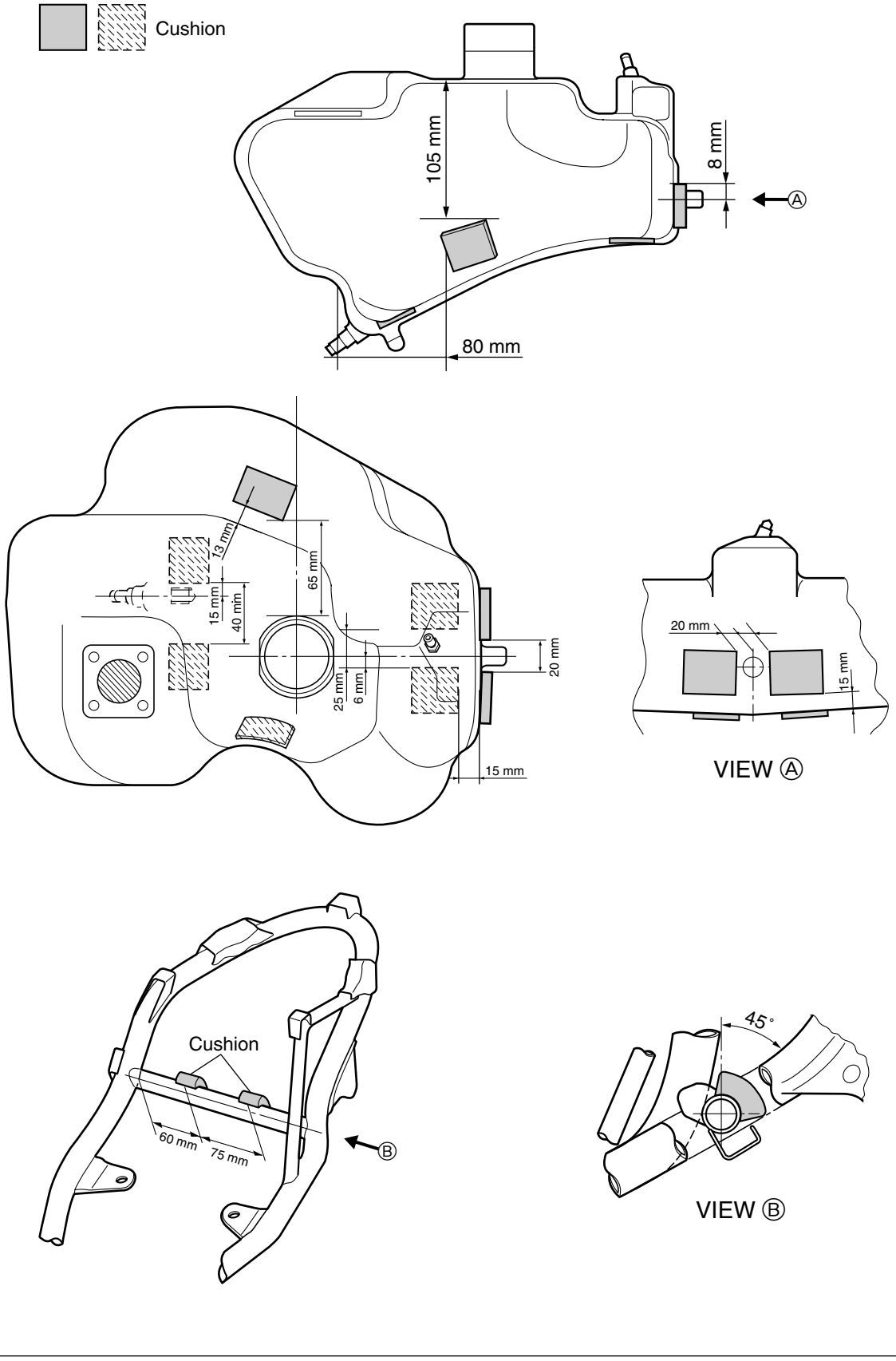
- Disconnect the oil hose ③, oil level indicator switch coupler ④, and remove the oil tank ⑤.



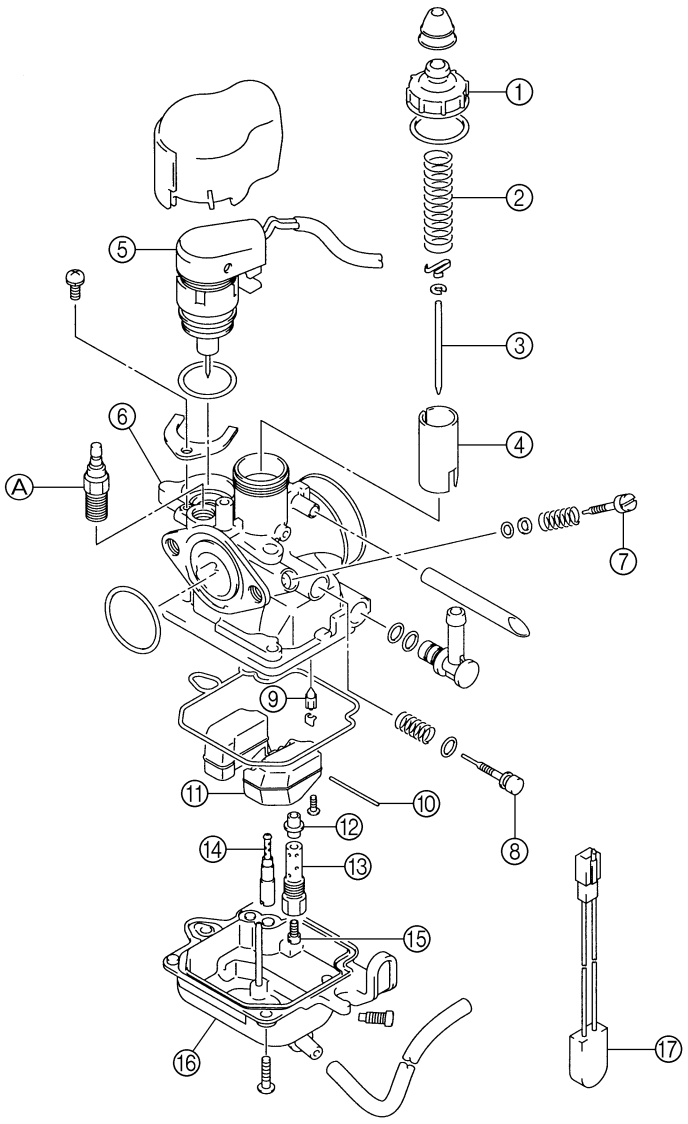
REMOUNTING

Remount the fuel tank and oil tank in the reverse order of removal.

FUEL TANK CUSHIONS



CARBURETOR
CONSTRUCTION



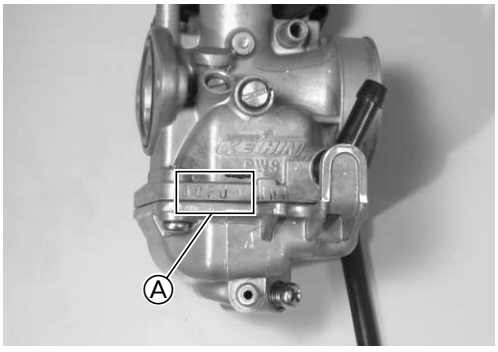
① Top cap
② Throttle valve spring
③ Jet needle
④ Throttle valve
⑤ Thermoelement
⑥ Carburetor body
⑦ Pilot air screw
⑧ Throttle stop screw
⑨ Needle valve
⑩ Float pin
⑪ Float
⑫ Needle jet
⑬ Needle jet holder
⑭ Slow jet
⑮ Main jet
⑯ Float chamber
⑰ Thermoswitch

Ⓐ Carburetor heater

ITEM	N·m	kgf-m
Ⓐ	3	0.3

I. D. NO. LOCATION

The carburetor has an I. D. number Ⓐ stamped on its body according to its specifications.

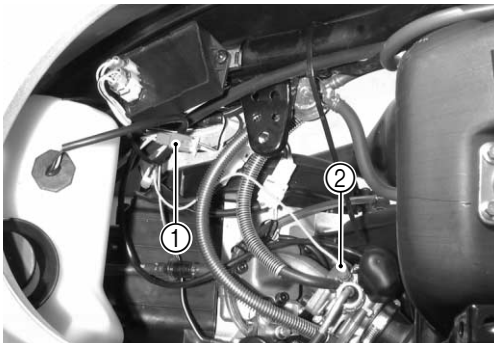


SPECIFICATIONS

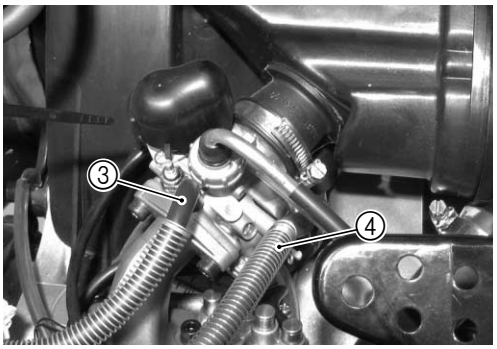
ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		30F0
Idle r/min		1 900 ± 200 r/min
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	# 65
Jet needle	(J.N.)	N5GJ-2nd
Slow jet	(S.J.)	# 42
Air screw	(A.S.)	2 turns back
Throttle cable play		2 – 4 mm

REMOVAL

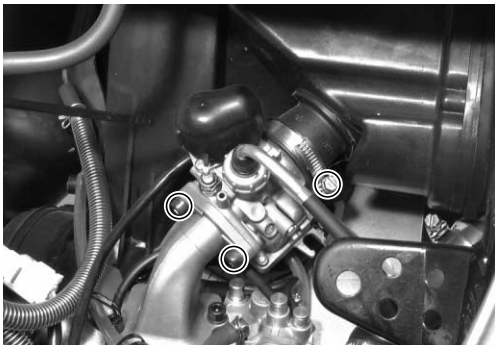
- Remove the trunk. (☞ 5-4)
- Remove the clamps, disconnect the thermoelement coupler ① and carburetor heater lead wire ②.



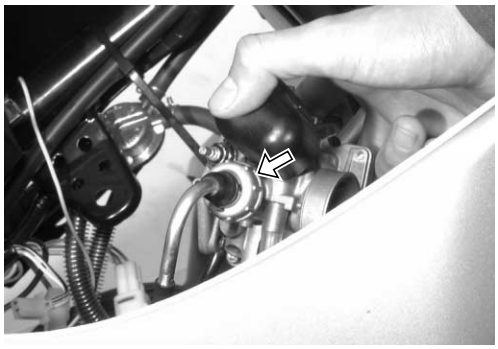
- Disconnect the vacuum hose ③ and fuel hose ④.



- Loosen the carburetor clamp screw and remove the carburetor mounting bolts.

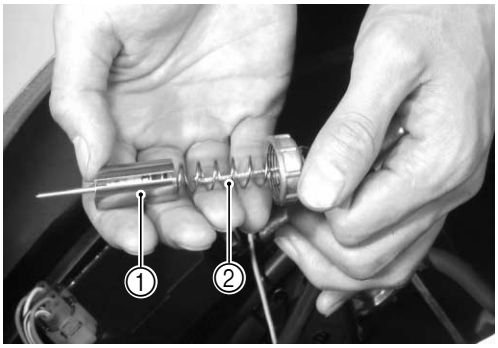


- Remove the top cap.

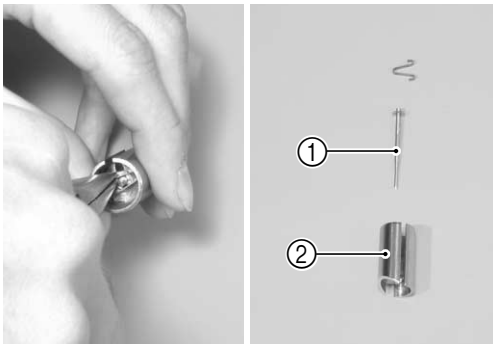


DISASSEMBLY

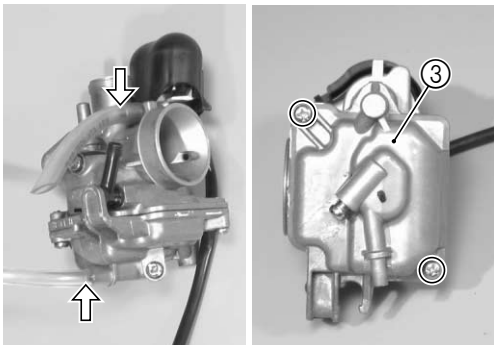
- Remove the throttle cable from the slit in the throttle valve, and then remove the throttle valve ① along with the jet needle and throttle valve spring ②.



- Separate the jet needle ① and throttle valve ②.



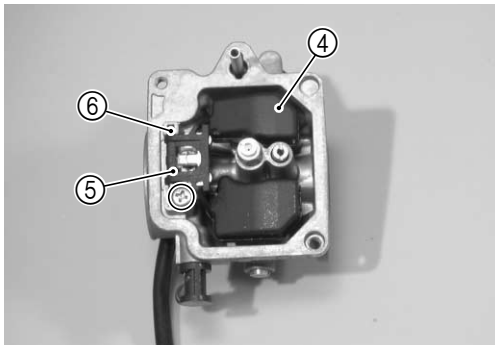
- Remove the each carburetor hoses.
- Remove the float chamber ③.



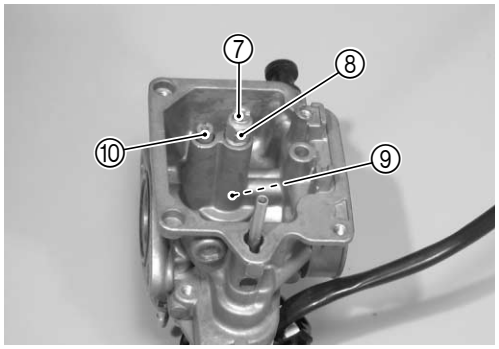
- Remove the float ④ and needle valve ⑤ by removing the float pin ⑥.

⚠ CAUTION

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



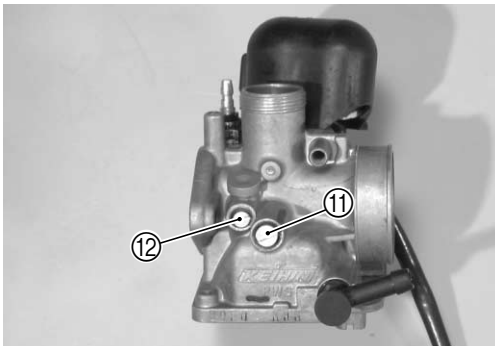
- Remove the main jet ⑦, needle jet holder ⑧, needle jet ⑨, and pilot jet ⑩.



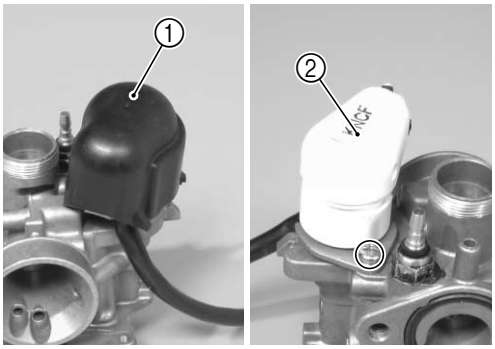
- Remove the throttle stop screw ⑪ and pilot air screw ⑫.

⚠ CAUTION

Do not use wire to clean the passageways, valve seat, and jets. Use compressed air only.



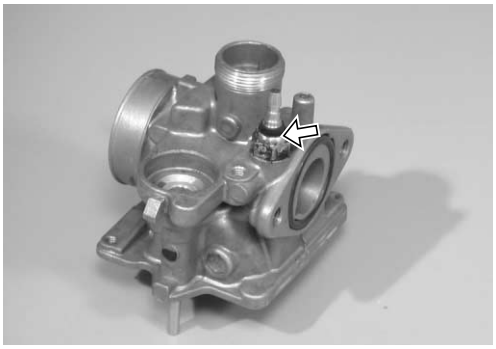
- Remove the thermoelement cover ① and remove the thermoelement ②.



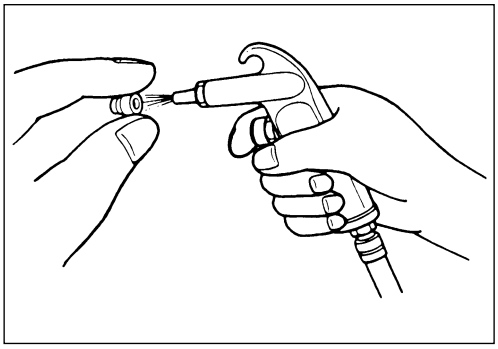
⚠ CAUTION

Do not disassemble the thermoelement. It is not serviceable.

- Remove the carburetor heater.



CLEANING



⚠ WARNING

Some carburetor cleaning chemicals, especially dip-type soaking solutions, are very corrosive and must be handled carefully. Always follow the chemical manufacturer's instructions for proper use, handling and storage.

- Clean all jets with a spray-type carburetor cleaner and dry them using compressed air.
- Clean all circuits of the carburetor thoroughly—not just the perceived problem area. Clean the circuits in the carburetor body with a spray-type cleaner. If necessary, soak each circuit in a dip-type cleaning solution to loosen dirt and varnish. Dry the carburetor body using compressed air.

⚠ CAUTION

Do not use wire to clean the passageways, valve seat, and jets. If the components cannot be cleaned with a spray-type cleaner it may be necessary to soak them in a dip-type cleaning solution. Always follow the chemical manufacturer's instructions for proper use and cleaning of the carburetor components.

- After cleaning, reassemble the carburetor with new O-rings.

⚠ CAUTION

Replace the removed O-rings with new ones.

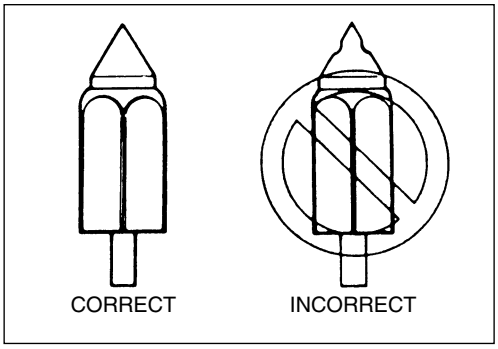
INSPECTION AND ADJUSTMENT

Check the following items for any damage or clogging. If any damages are found, replace the damaged parts with new ones.

* Main jet
* Pilot jet
* Needle jet
* Pilot air screw
* Throttle valve
* Float
* Needle valve
* Pilot outlet and bypass holes
* Thermoelement (☞ 6-21)
* Carburetor heater (☞ 6-22)

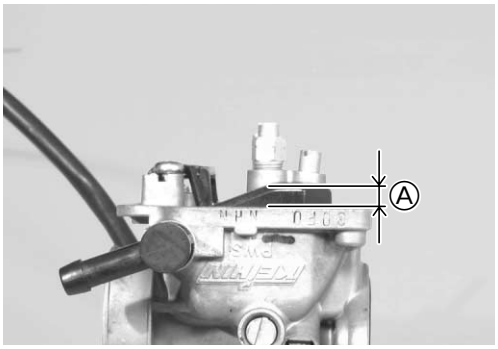
NEEDLE VALVE

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. Measure the float height Ⓐ while the float arm is just contacting the needle valve using vernier calipers. Bend the tongue as necessary to bring the float height Ⓐ to the specified value.



DATA Float height Ⓐ
Standard: 5.1 ± 0.5 mm

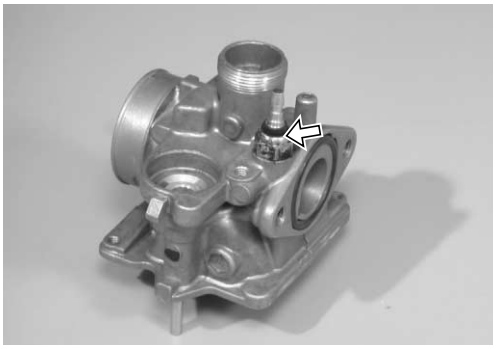
TOOL 09900-20101: Vernier calipers

REASSEMBLY

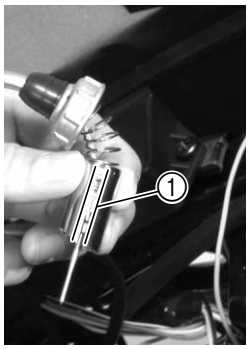
Reassemble the carburetor in the reverse order of disassembly. Pay attention to the following points:

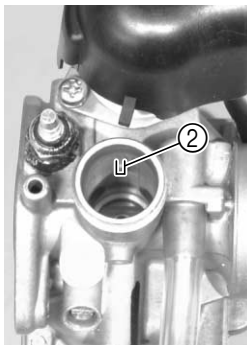
- Tighten the carburetor heater to the specified torque.

Carburetor heater: 3 N·m (0.3 kgf-m)



- Adjust the pilot air screw. (☞ 4-7)
- Install the throttle valve with the top cap.
- Align the slit ① on the throttle valve with the projection ② on the carburetor body.





REMOUNTING

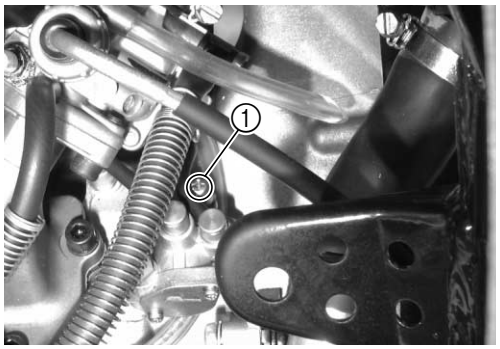
Remount the carburetor in the reverse order of removal. Pay attention to the following points:

- After all of the work has been completed, install the carburetor onto the motorcycle and refer to the following section to adjust the respective items to specification.

∗ **ENGINE IDLE SPEED** ..... ☞ 2-7
∗ **THROTTLE CABLE PLAY** ..... ☞ 2-7

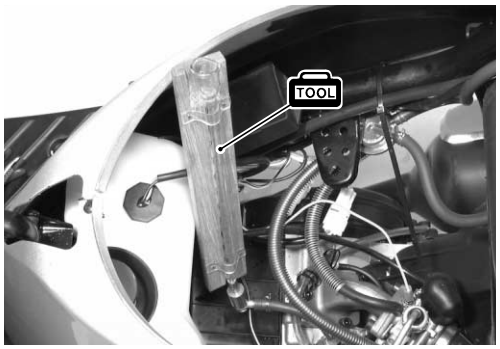
OIL PUMP

AIR BLEEDING



Whenever air leaks into the oil pipe from the oil tank or the oil pump is removed, the oil pump must be bled of any air.
Hold the motorcycle in a stationary position. Loosen the screw ① to bleed the air. After all of the air has been bled, tighten the screw.

DISCHARGE RATE CHECK



Use the CCI oil gauge to check the oil pump discharge rate. Measure the amount of oil that the oil pump draws during the procedure.

- Remove the trunk. (☞ 5-4)
- Fill the CCI oil gauge with SUZUKI CCI SUPER OIL. Connect the oil gauge to the suction side of the oil pump.
- Run the engine at 3 000 r/min.
- Keep the engine speed at 3 000 r/min and allow the pump to draw for five minutes. The measurement on the oil gauge should be within specification.

TOOL 09900-21602: CCI oil gauge

DATA Oil discharge amount:
0.8 – 1.2 ml at 3 000 r/min for 5 minutes

⚠ CAUTION

∗ Be sure to place the motorcycle on the center stand.
∗ Do not touch the rear wheel while the engine is running.

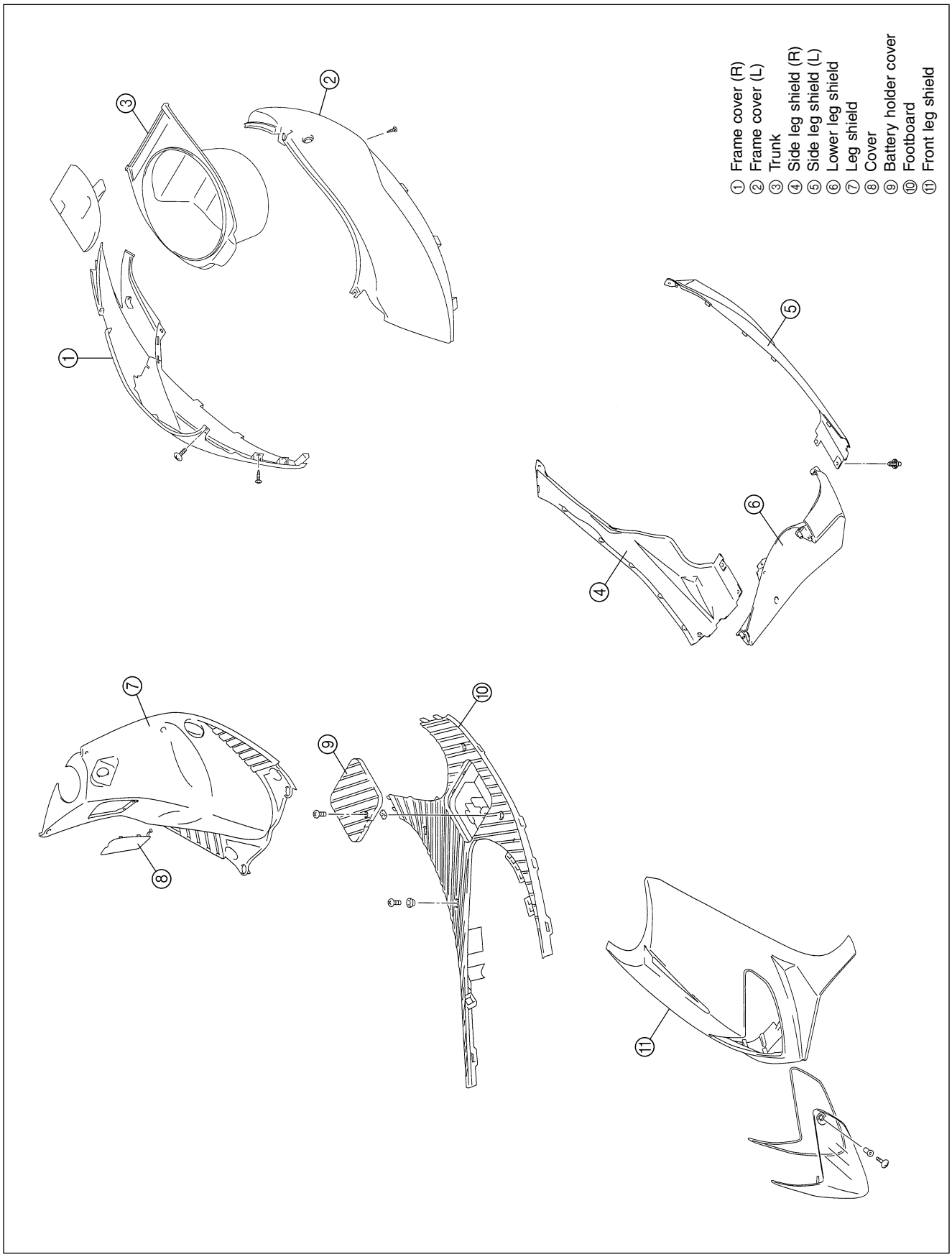
- After checking the oil pump, refer to the following section to adjust the respective item to specification.

∗ ENGINE IDLE SPEED ..... ☞ 2-7

CHASSIS

CONTENTS

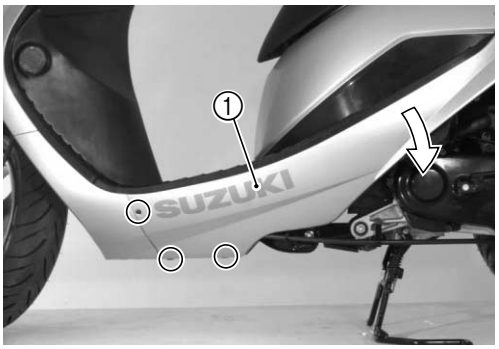
EXTERIOR PARTS
CONSTRUCTION



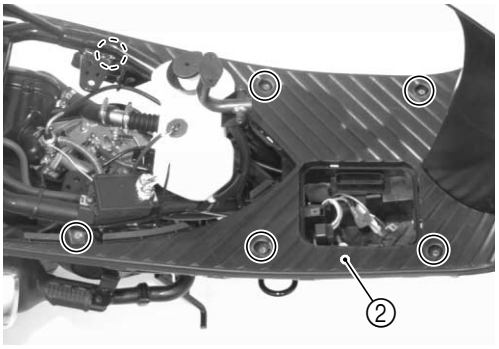
REMOVAL

LEG SHIELD

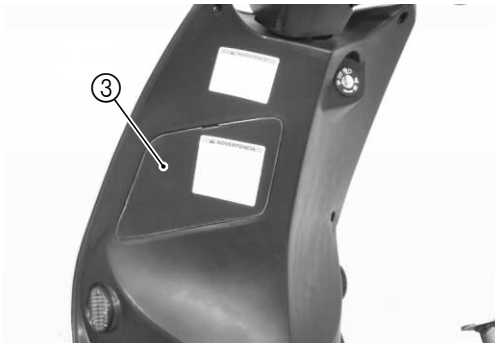
- Remove the battery. (☞ 6-30)
- Remove the side leg shields ①.



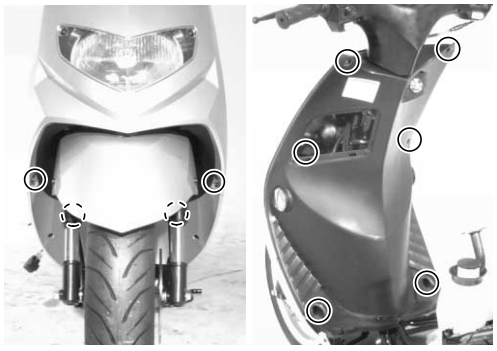
- Remove the frame cover.
- Remove the footboard ②.



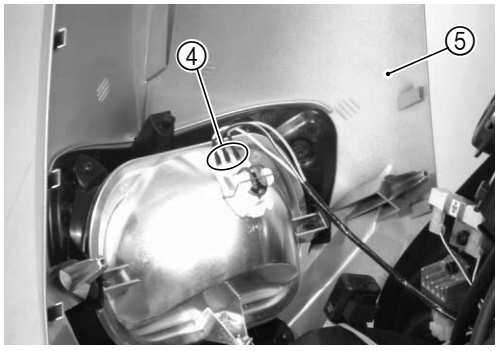
- Remove the cover ③.



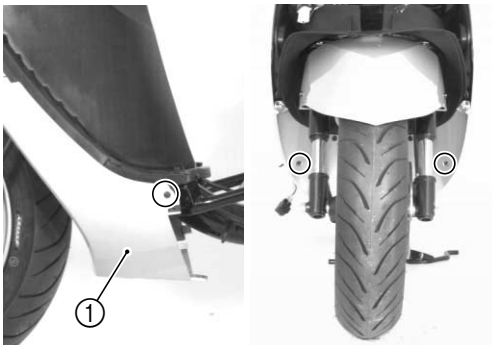
- Remove the front leg shield mounting screws.



- Disconnect the headlight lead wires ④ and remove the front leg shield ⑤.

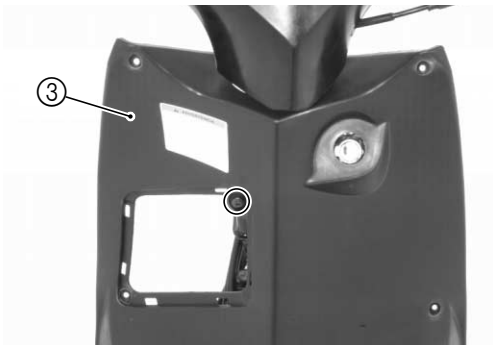


- Remove the lower leg shield ①.



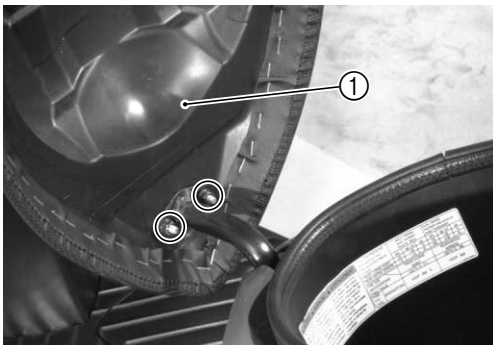
- Remove the ignition switch cap ②.

- Remove the leg shield ③.



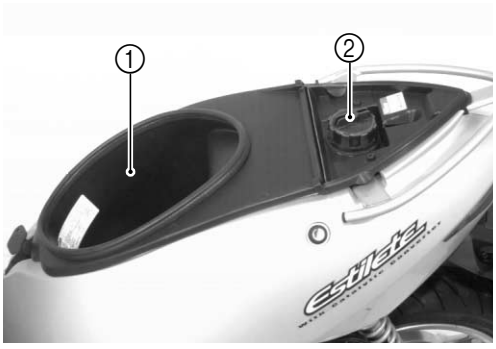
SEAT

- Remove the seat ①.

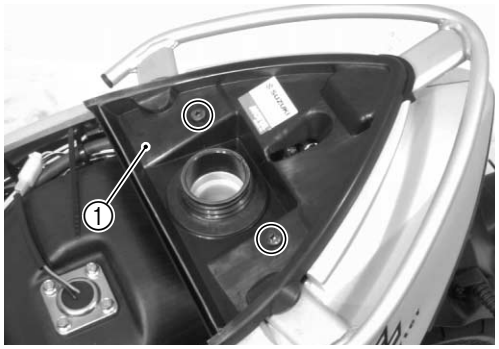


FRAME COVER

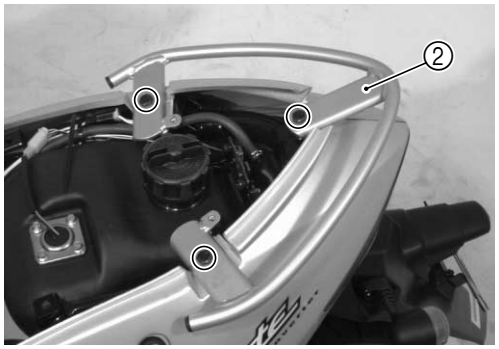
- Remove the seat.
- Remove the side leg shield. (☞ 5-3)
- Remove the trunk ① and fuel tank cap ②.



- Remove the upper fuel tank cover ①.
- After removing the upper fuel tank cover, reinstall the fuel tank cap.

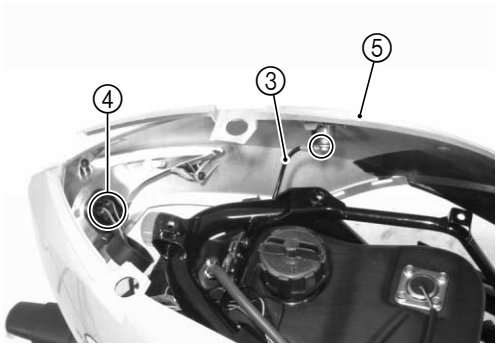


- Remove the passenger grab handle ②.



- Remove the frame cover mounting screw.

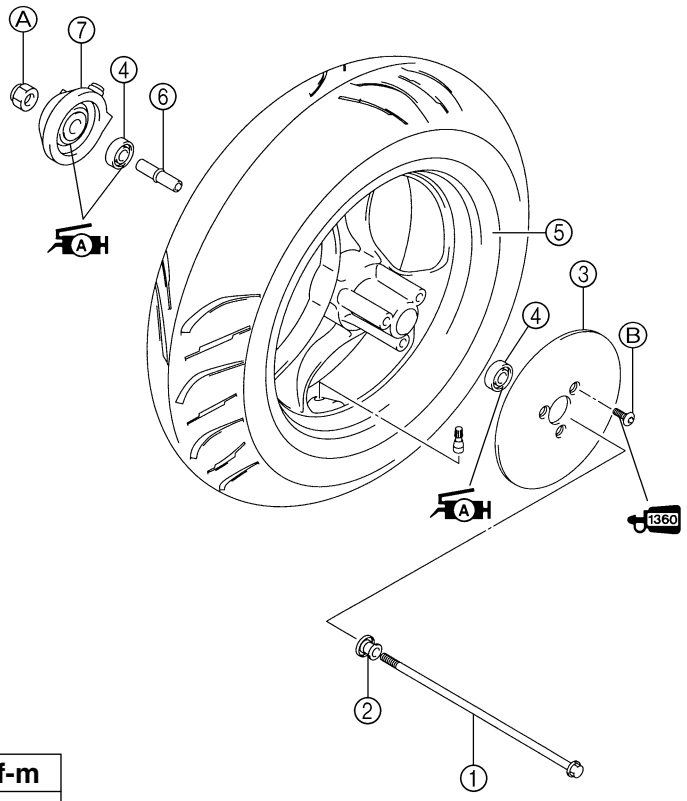
- Disconnect the seat lock cable ③, brake light/taillight lead wires ④, and remove the frame cover ⑤.



REMOUNTING

Remount the leg shield, seat, and frame cover in the reverse order of removal.

FRONT WHEEL
CONSTRUCTION



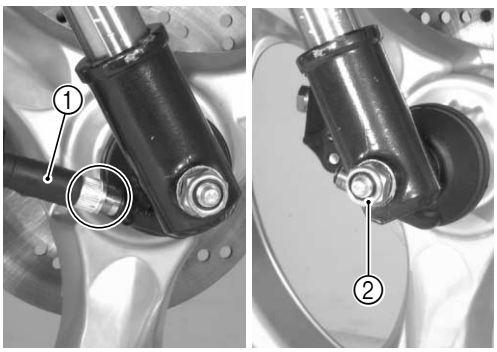
① Front axle
② Spacer
③ Brake disc
④ Bearing
⑤ Front wheel
⑥ Spacer
⑦ Speedometer gearbox

Ⓐ Front axle nut
Ⓑ Brake disc bolt

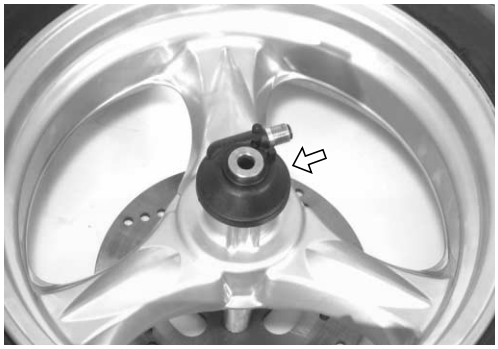
ITEM	N·m	kgf-m
Ⓐ	42	4.2
Ⓑ	23	2.3

REMOVAL

- Disconnect the speedometer cable ①.
- Remove the front axle nut ②.
- Raise the front wheel off the ground by raising the motorcycle with a jack or wooden block.
- Remove the front axle and then the front wheel and spacer.



- Remove the speedometer gearbox.



- Remove the brake disc.

INSPECTION AND DISASSEMBLY

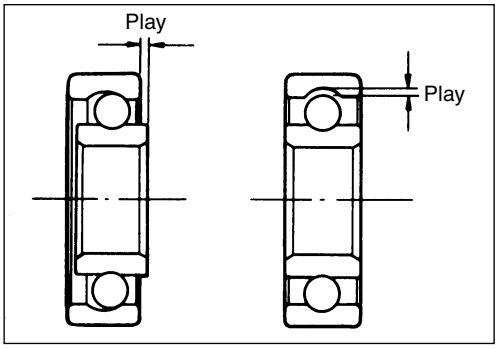
SPEEDOMETER GEARBOX DUST SEAL

Inspect the speedometer gearbox dust seal for damage. If any damage is found, replace the speedometer gearbox with a new one.

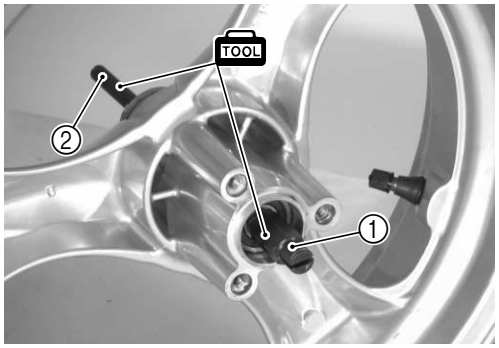
WHEEL BEARINGS

Inspect the play of the wheel bearings by hand while they are in the wheel. Rotate the inner race by hand to inspect for abnormal noise and smooth rotation. If any abnormal noise occurs, or rough movement is noted, replace the wheel bearings with new ones. Remove the wheel bearings as follows:

- Insert the bearing remover attachment ① into the wheel bearing.
- Insert the wedge bar ② from the opposite side and lock it into the slit of the bearing remover attachment.
- Drive out the wheel bearing by striking the wedge bar.

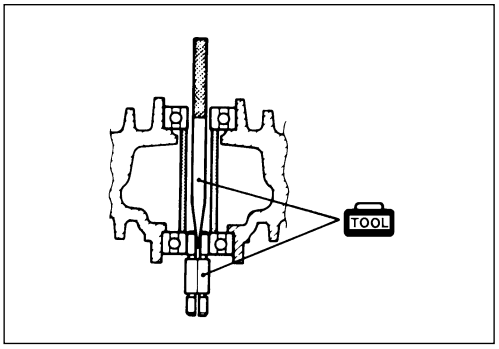


TOOL 09941-50111: Bearing remover



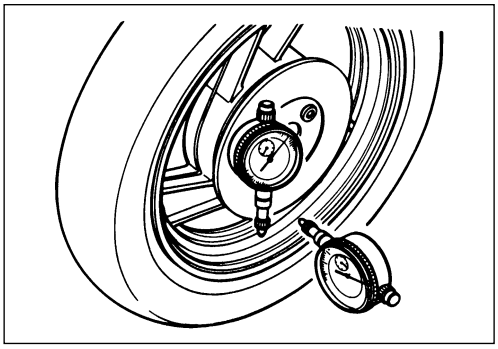
⚠ CAUTION

Replace the removed bearings with new ones.



FRONT WHEEL

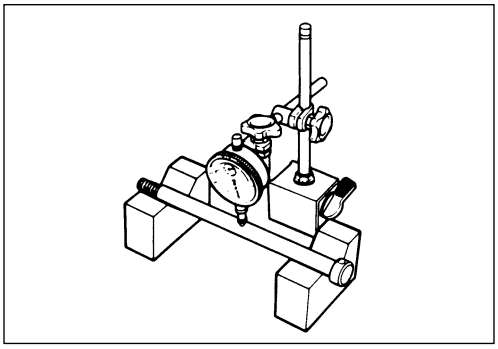
Make sure that the wheel runout (axial and radial) does not exceed the service limit when checked as shown. An excessive amount of runout is usually due to worn or loose wheel bearings and can be corrected by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel with a new one.



DATA Wheel rim runout (axial and radial)
Service Limit: 2.0 mm

FRONT AXLE

Measure the front axle runout using the dial gauge. If the runout exceeds the service limit, replace the front axle with a new one.



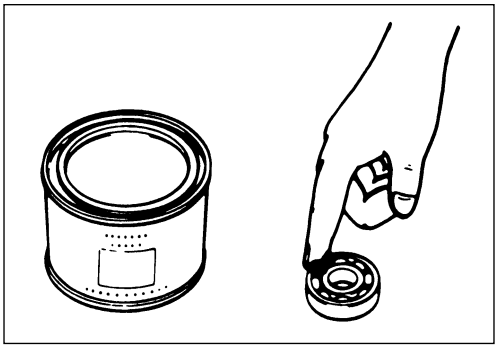
TOOL 09900-20606: Dial gauge (1/100 mm)
09900-20701: Magnetic stand
09900-21304: V-block set (100 mm)

DATA Wheel axle runout
Service Limit: 0.25 mm

TIRE ..... ☞ 2-12

REASSEMBLY AND REMOUNTING

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



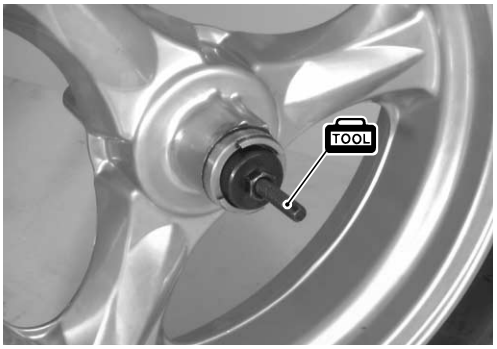
WHEEL BEARINGS

- Apply SUZUKI SUPER GREASE “A” to the wheel bearings.

A 99000-25010: SUZUKI SUPER GREASE “A”

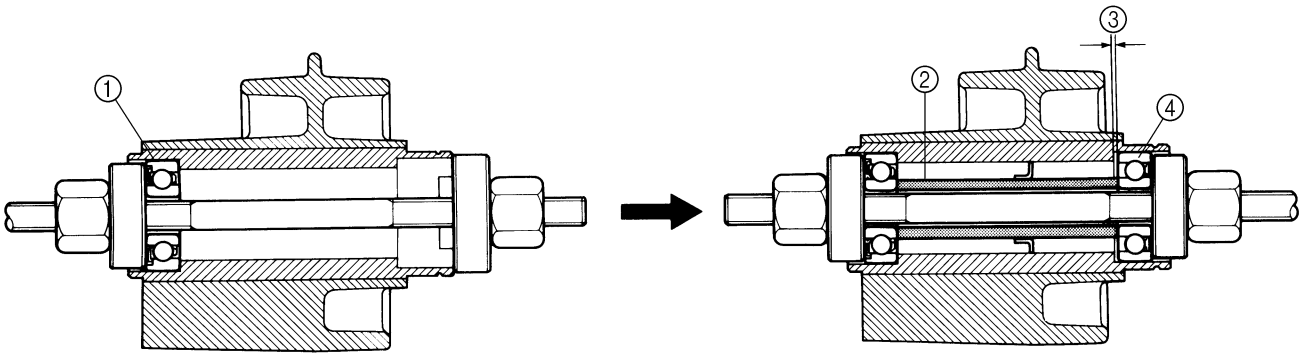
- Install the wheel bearings using the special tool.

TOOL 09924-84521: Bearing installer set



⚠ CAUTION

First, install the left wheel bearing, and then install the right wheel bearing. The sealed cover on the wheel bearing must face out.



① Bearing (L)
② Spacer
③ Clearance
④ Bearing (R)

BRAKE DISC

- Make sure that the brake disc is clean and free of any grease. Apply THREAD LOCK SUPER "1360" to the brake disc mounting bolts and tighten them to the specified torque.

99000-32130: THREAD LOCK SUPER "1360"

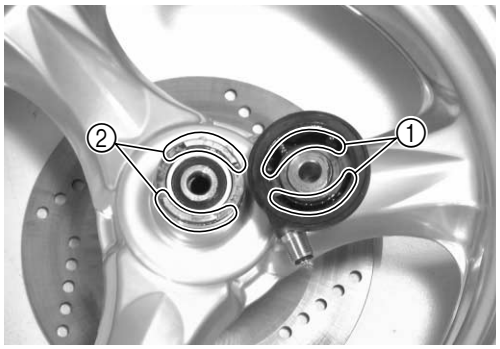
Brake disc mounting bolt: 23 N·m (2.3 kgf-m)

SPEEDOMETER GEARBOX

- Apply SUZUKI SUPER GREASE "A" to the teeth of the speedometer gear before installing the speedometer gearbox.

99000-25010: SUZUKI SUPER GREASE "A"

- Align the grooves ① on the speedometer gearbox with the lugs ② on the wheel hub.



FRONT WHEEL

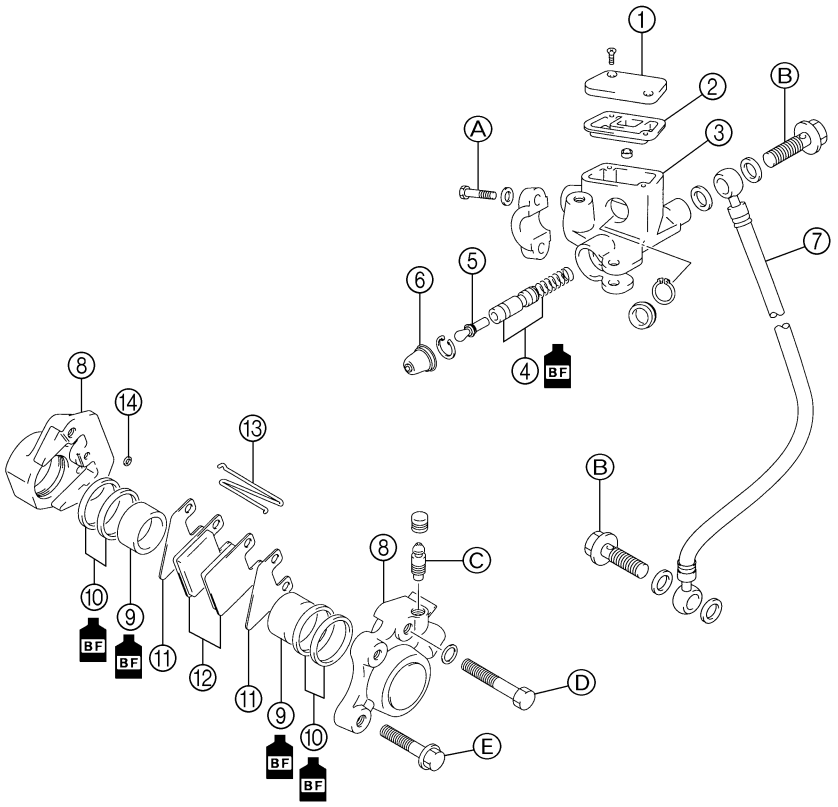
- Tighten the front axle nut to the specified torque.

Front axle nut: 42 N·m (4.2 kgf-m)

FRONT BRAKE
CONSTRUCTION

① Cap
② Diaphragm
③ Master cylinder
④ Piston set
⑤ Push rod
⑥ Dust boot
⑦ Brake hose
⑧ Caliper
⑨ Piston
⑩ Piston and dust seal
⑪ Shim
⑫ Pad set
⑬ Pad mounting pin
⑭ O-ring

Ⓐ Master cylinder mounting bolt
Ⓑ Brake hose union bolt
Ⓒ Air bleeder valve
Ⓓ Brake caliper housing bolt
Ⓔ Brake caliper mounting bolt



ITEM	N·m	kgf-m
Ⓐ	10	1.0
Ⓑ	23	2.3
Ⓒ	7.5	0.75
Ⓓ	26	2.6
Ⓔ	32	3.2

⚠ WARNING

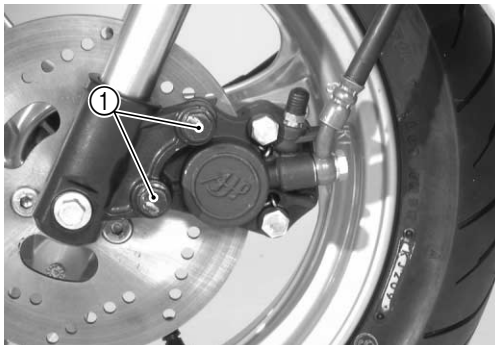
∗ The brake system is filled with an glycol-based brake fluid, which is classified DOT 4. Do not use or mix other types of brake fluid, such as silicone-based and petroleum-based brake fluids when refilling the brake system, otherwise serious damage to the brake system will result.
∗ Do not use any brake fluid taken from old, used, or unsealed containers.
∗ Do not reuse brake fluid left over from the last servicing or which has been stored for a long period of time.
∗ When storing brake fluid, be sure to seal the container completely and keep it out of the reach of children.
∗ When replenishing brake fluid, be sure not to get any dust or other foreign materials in the fluid.
∗ When washing brake components, always use new brake fluid. Do not use cleaning solvent.
∗ A contaminated brake disc or brake pad reduces braking performance. Discard contaminated pads and clean the brake disc with high-quality brake cleaner or a neutral detergent.

⚠ CAUTION

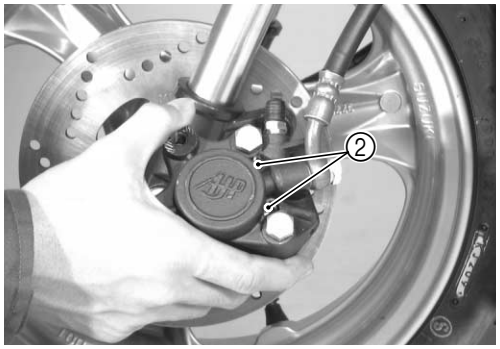
Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber material, etc.

BRAKE PADS REPLACEMENT

- Remove the brake caliper mounting bolts ①.



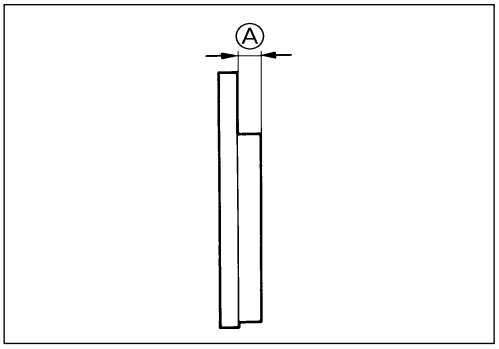
- Remove the brake pad mounting pins ② and brake pads.



⚠ CAUTION

Do not operate the brake lever during or after brake pad removal.

Measure the thickness Ⓐ of the brake pads. If the brake pad thickness is below the service limit, replace the brake pads with new ones.

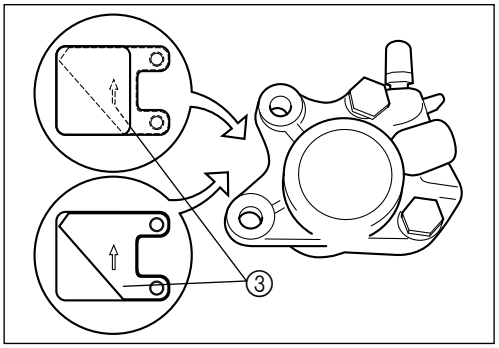


DATA Brake pad thickness Ⓐ
Service Limit: 0.7 mm

⚠ CAUTION

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

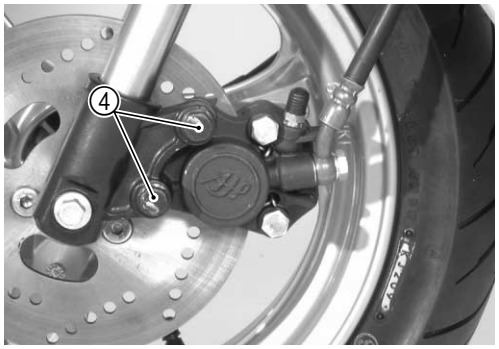
- Install the new brake pads and shims.



⚠ CAUTION

Be sure to properly install the shims ③ as shown in the illustration.

- Tighten the brake caliper mounting bolts ④ to the specified torque.



Brake caliper mounting bolt: 26 N·m (2.6 kgf-m)

NOTE:
After replacing the brake pads, pump the brake lever a few times to check for proper brake operation, and then check the brake fluid level.

BRAKE FLUID REPLACEMENT

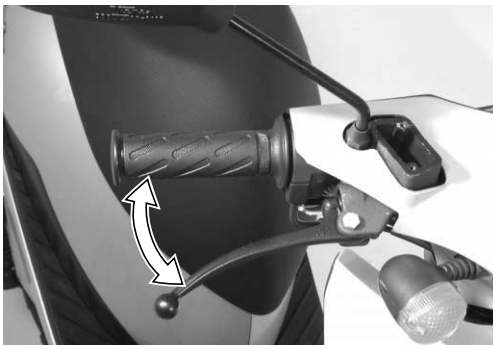
- Place the motorcycle on a level surface and keep the handlebar straight.
- Remove the master cylinder reservoir cap and diaphragm.
- Suck up the old brake fluid as much as possible.
- Fill the reservoir with fresh brake fluid.

Specification and classification: DOT 4

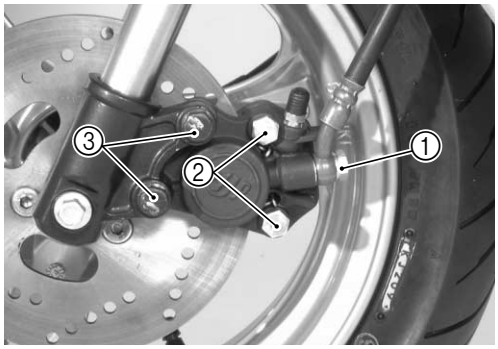
- Connect a clear hose to the air bleeder valve and insert the other end of the hose into a receptacle.
- Loosen the air bleeder valve and pump the brake lever until the old brake fluid is completely out of the brake system.
- Close the air bleeder valve and disconnect the clear hose. Fill the reservoir with new brake fluid to the upper end of the inspection window.

⚠ CAUTION

Bleed air from the brake fluid circuit. (☞ 2-10)



BRAKE CALIPER REMOVAL AND DISASSEMBLY



- Disconnect the brake hose from the brake caliper by removing the brake hose union bolt ① and allow the brake fluid to drain into a suitable receptacle.
- Slightly loosen the brake caliper housing bolts ②.
- Remove the brake caliper by removing the brake caliper mounting bolts ③.

⚠ WARNING

*** Never reuse the brake fluid left over from previous servicing or which has been stored for long period of time, otherwise serious damage to the brake system will result.**

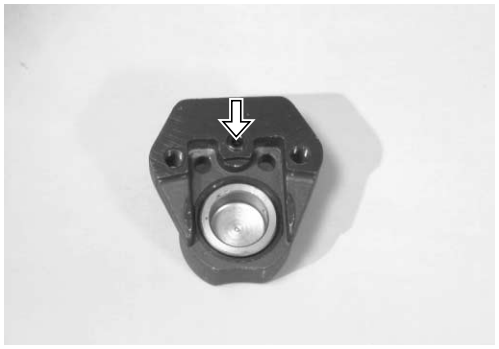
*** Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose and hose joints for cracks and oil leakage.**

- Remove the brake pads. (☞ 5-11)
- Remove the brake caliper housing bolts.

- Separate the brake caliper.
- Remove the O-ring.

⚠ CAUTION

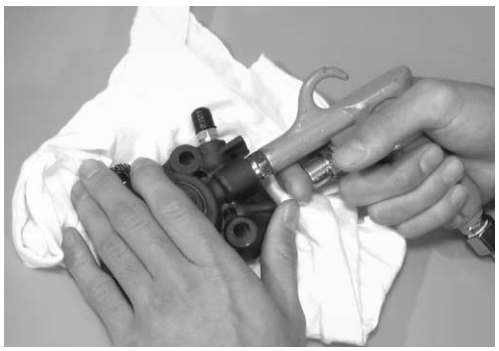
Do not reuse the O-ring to prevent fluid leakage.



- Place a rag over the brake caliper pistons to prevent them from popping out, and then force out the piston using compressed air.

⚠ CAUTION

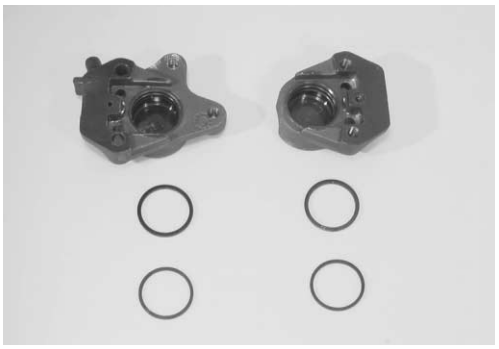
Do not use extremely high pressure air to remove the brake caliper pistons, otherwise damage to the pistons will result.



- Remove the dust seals and piston seals.

⚠ CAUTION

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



BRAKE CALIPER INSPECTION

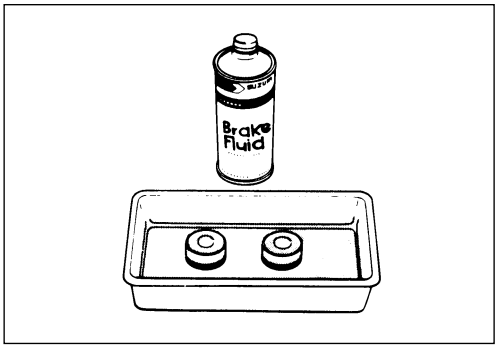
BRAKE CALIPER

Inspect the brake caliper cylinder wall for nicks, scratches, or other damage. If any damages are found, replace the brake caliper with a new one.

BRAKE CALIPER PISTON

Inspect the brake caliper pistons for any scratches or other damage. If any damages are found, replace the piston with a new one.

BRAKE CALIPER REASSEMBLY AND REMOUNTING



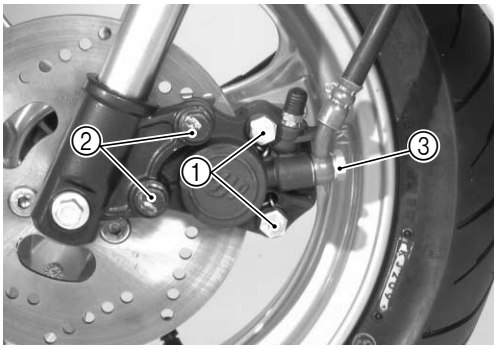
Reassemble and remount the brake caliper in the reverse order of removal and disassembly. Pay attention to the following points:

- Wash the caliper bores and brake caliper pistons with the specified brake fluid. Thoroughly wash the dust seal grooves and piston seal grooves.

BF Specification and classification: DOT 4

⚠ CAUTION

∗ Wash the brake caliper components with new brake fluid before reassembly.
∗ When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine etc.
∗ Do not wipe the brake fluid off after washing the components.
∗ Replace the removed piston seals and dust seals with new ones.
∗ Apply brake fluid to all of the seals, brake caliper bores and pistons before reassembly.



- Tighten the brake caliper housing bolts ①, brake caliper mounting bolts ②, and the brake hose union bolt ③ to the specified torque.

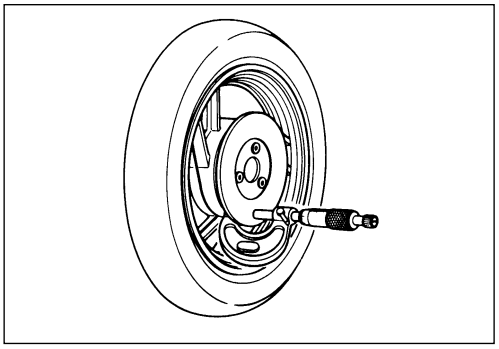
Brake caliper housing bolt: 32 N·m (3.2 kgf-m)
Brake caliper mounting bolt: 26 N·m (2.6 kgf-m)
Brake hose union bolt: 23 N·m (2.3 kgf-m)

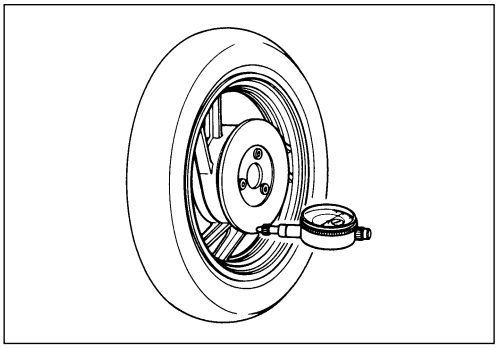
NOTE:
Before remounting the brake caliper, push the brake caliper pistons all the way into the brake caliper.

⚠ WARNING

Bleed air from the brake system after reassembling the brake caliper. (☞ 2-10)

BRAKE DISC INSPECTION





- Remove the front wheel. (☞ 5-6)

Check the brake disc for cracks or damage and measure the thickness using the micrometer. If the thickness is less than the service limit or if any damages are found, replace the brake disc with a new one.

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

DATA Brake disc thickness
Service Limit: 3.5 mm

Measure the runout using the dial gauge. If the runout exceeds the service limit, replace the brake disc with a new one.

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

DATA Brake disc runout
Service Limit: 0.30 mm

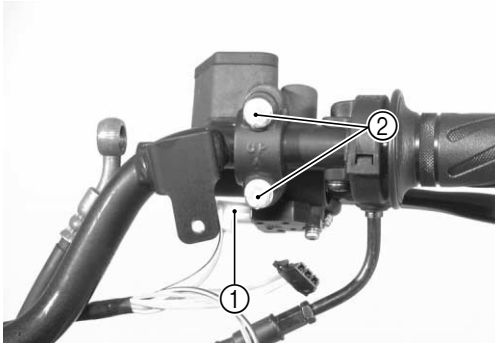
- If either measurement exceeds the service limit, replace the brake disc with a new one. (☞ 5-7)
- Install the front wheel. (☞ 5-9)

MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Remove the handlebar cover. (☞ 5-23 and 5-24)
- Place a rag underneath the brake hose union bolt on the master cylinder to catch any spilt brake fluid.
- Remove the brake hose union bolt and disconnect the brake hose/master cylinder joint.

⚠ CAUTION

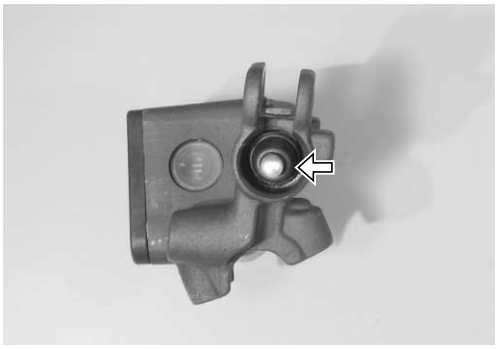
Immediately wipe off any brake fluid contacting any part of the motorcycle. The brake fluid reacts chemically with paint, plastics, rubber materials, etc., and will damage them severely.



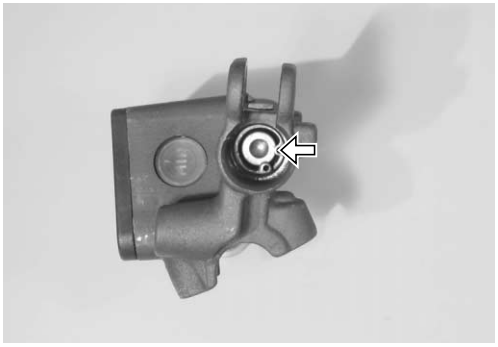
- Disconnect the front brake light switch lead wires ①.
- Remove the master cylinder assembly by removing the clamp bolts ②.

- Remove the brake lever and brake light switch.

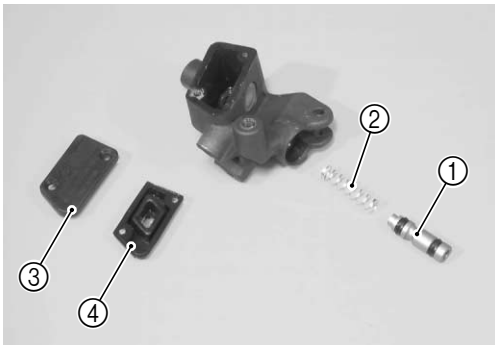
- Remove the dust boot and push rod.



- Remove the circlip.



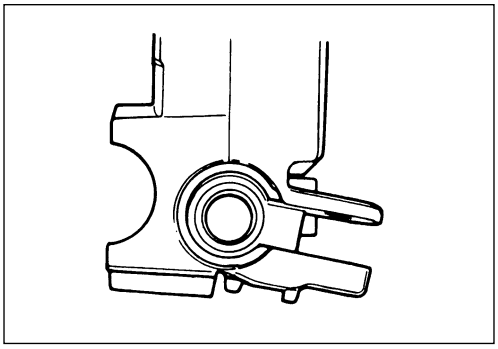
- Remove the piston/secondary cup ① and return spring ②.
- Remove the master cylinder reservoir cap ③ and diaphragm ④.
- Drain the brake fluid.



MASTER CYLINDER INSPECTION

MASTER CYLINDER

Inspect the master cylinder bore for any scratches or other damage. If any damages are found, replace the master cylinder with a new one.

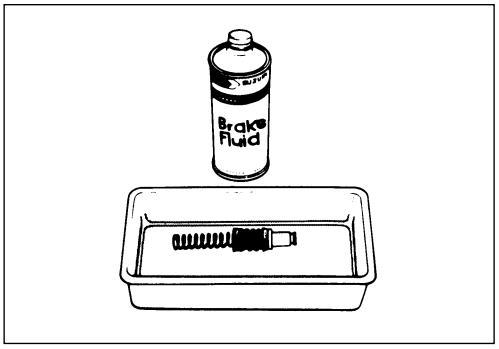


PISTON
Inspect the piston surface for any scratches or other damage. If any damages are found, replace the piston with a new one.

RUBBER PARTS
Inspect the primary cup, secondary cup and dust seal for wear or damage. If any damages are found, replace the piston/secondary cup, and dust seal with new ones.

MASTER CYLINDER REASSEMBLY AND REMOUNTING

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

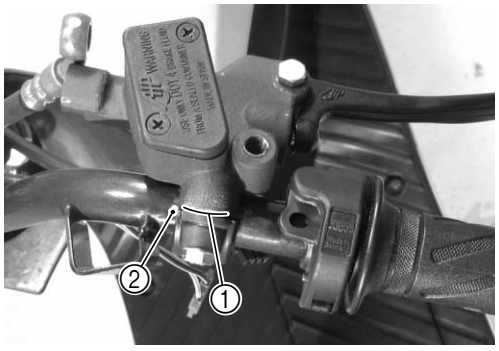


⚠ CAUTION

∗ Wash the master cylinder components with new brake fluid before reassembly.
∗ Do not wipe the brake fluid off after washing the components.
∗ When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine, etc.
∗ Apply brake fluid to the master cylinder bore and all of the master cylinder components before reassembly.

BF Specification and classification: DOT 4

- When remounting the master cylinder on the handlebar, align the master cylinder holder's mating surface ① with the punch mark ② on the handlebar, and then tighten the upper clamp bolt first.



Master cylinder clamp bolt: 10 N·m (1.0 kgf-m)

- Tighten the brake hose union bolt to the specified torque.

Brake hose union bolt: 23 N·m (2.3 kgf-m)

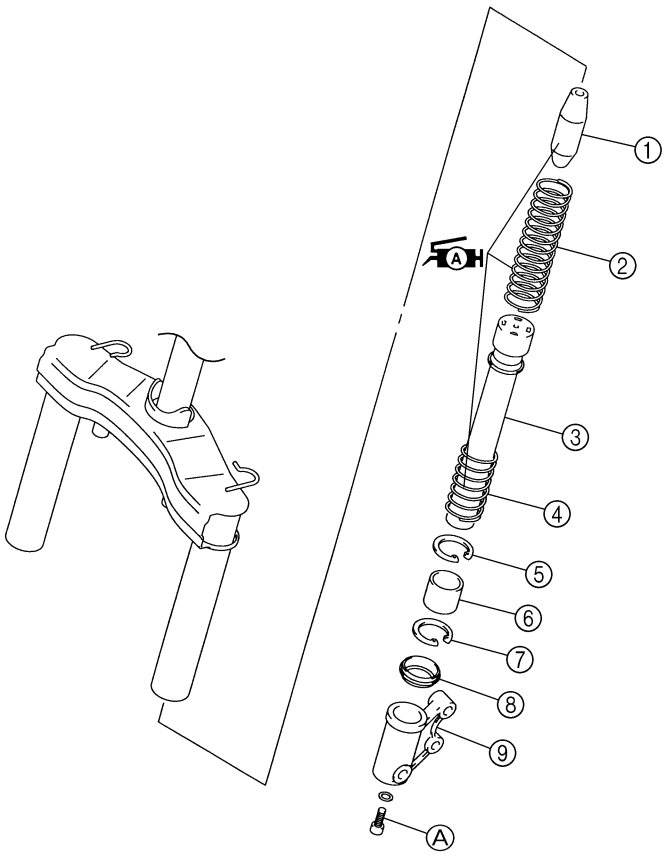
⚠ CAUTION

Bleed air from the brake system after reassembling the master cylinder. (☞ 2-10)

FRONT SUSPENSION
CONSTRUCTION

① Damper
② Upper spring
③ Inner tube
④ Lower spring
⑤ Upper circlip
⑥ Bushing
⑦ Lower circlip
⑧ Dust seal
⑨ Brake caliper bracket

Ⓐ Brake caliper bracket mounting bolt



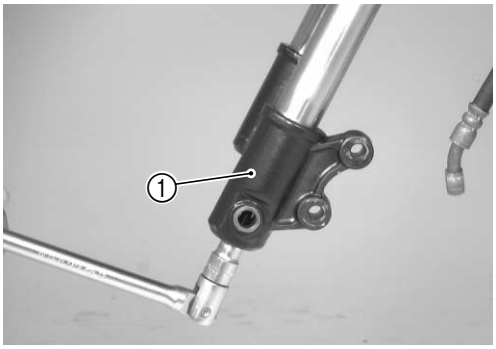
ITEM	N·m	kgf-m
Ⓐ	20	2.0

REMOVAL AND DISASSEMBLY

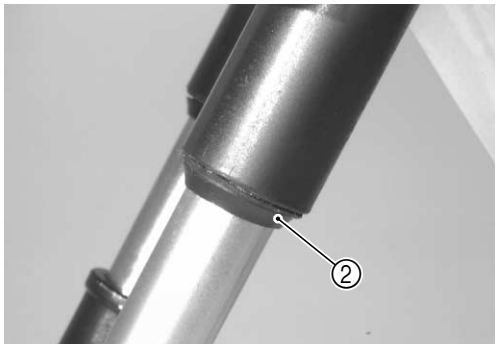
- Remove the front wheel. (☞ 5-6)
- Remove the brake caliper. (☞ 5-12)

Repeat following steps for each fork leg.

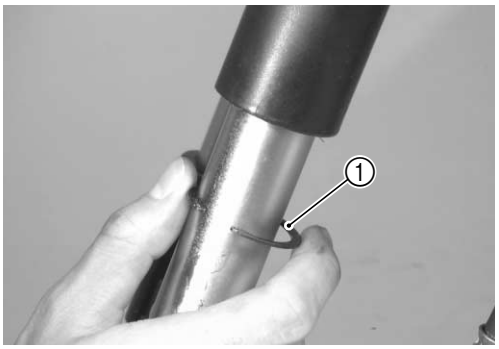
- Remove the brake caliper bracket ①.



- Remove the dust seal ②.



- Remove the lower circlip ①.

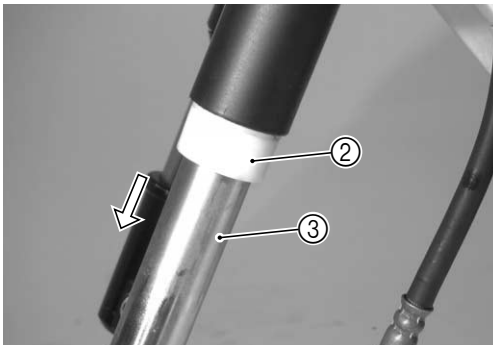


⚠ CAUTION

Replace the removed lower circlip with a new one.

- Remove the lower bushing ②.

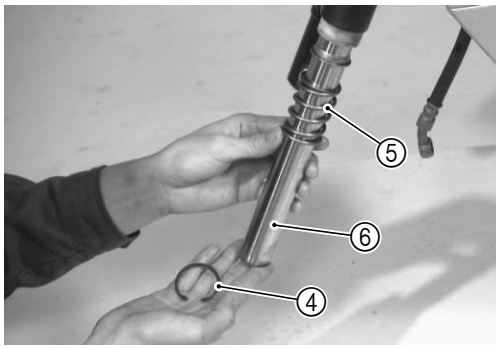
NOTE:
When removing the lower bushing ②, pull the inner tube ③ down.



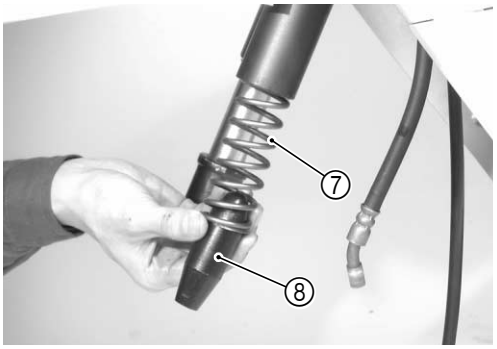
- Remove the upper circlip ④, lower spring ⑤, and inner tube ⑥.

⚠ CAUTION

Replace the removed upper circlip with a new one.



- Remove the upper spring ⑦ and damper ⑧.

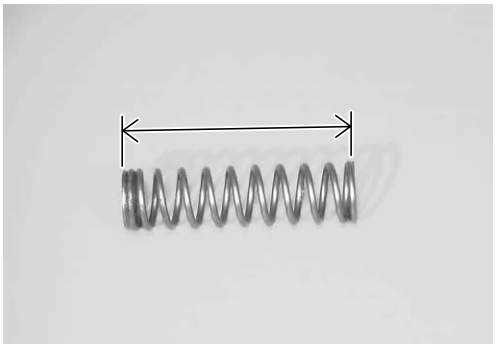


INSPECTION

FORK SPRING

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

DATA Front fork spring free length
Service Limit: 122 mm

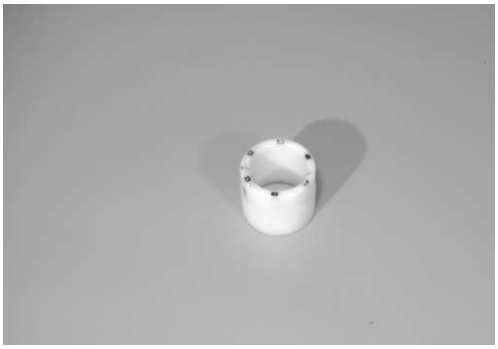


INNER TUBE

Inspect the inner tube sliding surface for any scuffing or damage. If any damages are found, replace the inner tube with a new one.

BUSHING

Inspect the bushing for wear or damage. If any damages are found, replace the bushing with a new one.



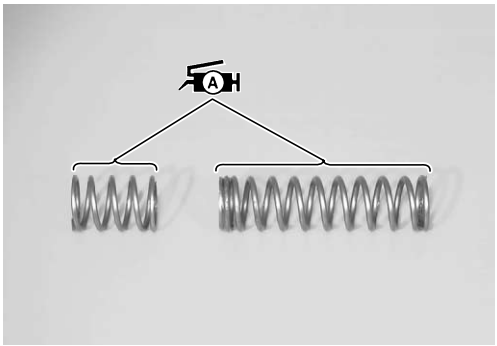
REASSEMBLY AND REMOUNTING

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

DAMPER AND SPRING

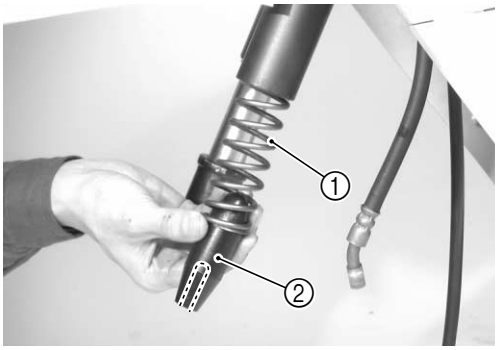
- Apply SUZUKI SUPER GREASE "A" (15 g) to the damper and springs.

99000-25010: SUZUKI SUPER GREASE "A"



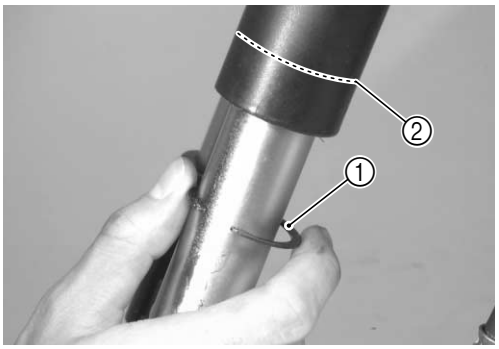
⚠ CAUTION

When installing the upper spring ① and damper ②, face the smaller diameter end of the upper spring and the hollow end of the damper towards the wheel.



UPPER CIRCLIP

- Install the circlip ① into the groove ②.



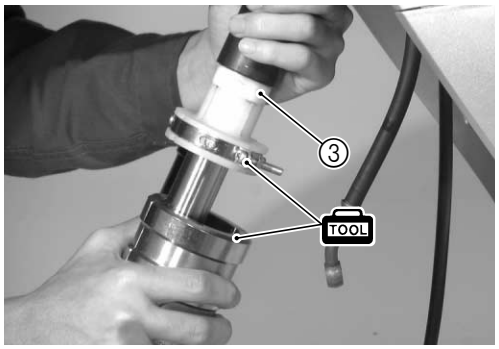
⚠ CAUTION

∗ Replace the upper circlip with a new one.
∗ The rounded side on the circlip must face upward.
∗ After installing the upper circlip, make sure that it is properly seated in the groove.

BUSHING

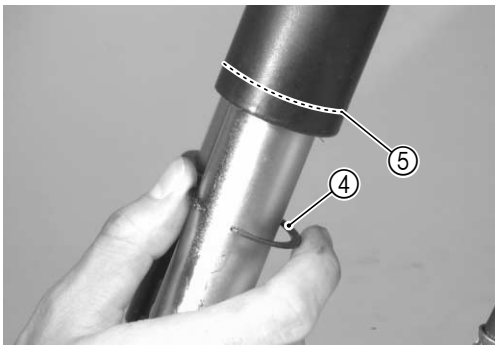
- Install the lower bushing ③ using the special tool.

TOOL 09940-52860: Front fork oil seal installer



LOWER CIRCLIP

- Install the lower circlip ④ into the ring groove ⑤.



⚠ CAUTION

∗ Replace the lower circlip with a new one.
∗ The rounded side on the circlip must face upward.
∗ After installing the lower circlip, make sure that it is properly seated in the groove.

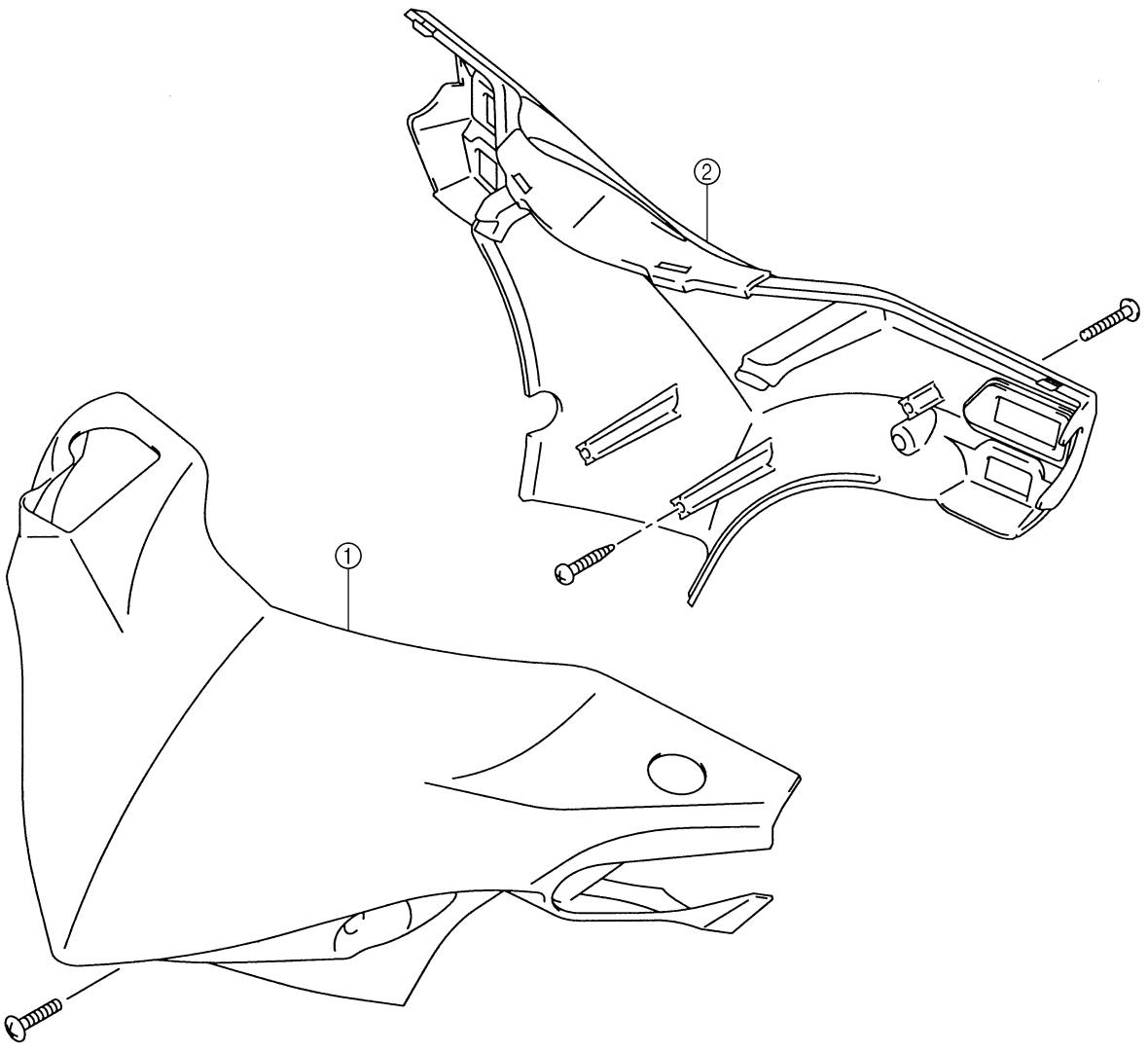
- Tighten the brake caliper bracket mounting bolt to the specified torque.

Brake caliper bracket mounting bolt: 20 N·m (2.0 kgf-m)

NOTE:
Before tightening the front axle nut, move the front fork up and down four or five times.

HANDLEBAR COVERS AND SPEEDOMETER ASSEMBLY

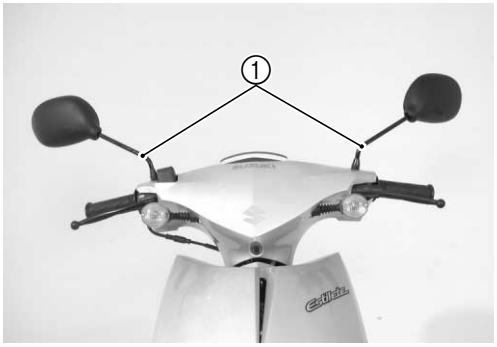
CONSTRUCTION



① Front handlebar cover
② Rear handlebar cover

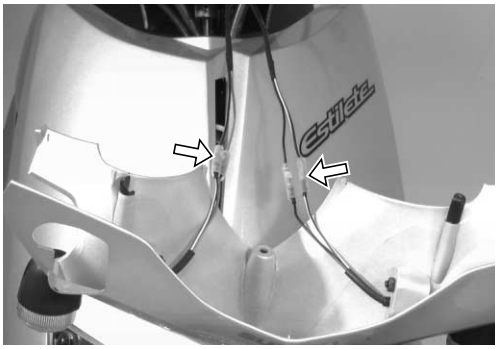
REMOVAL

- Remove the rear view mirrors ①.

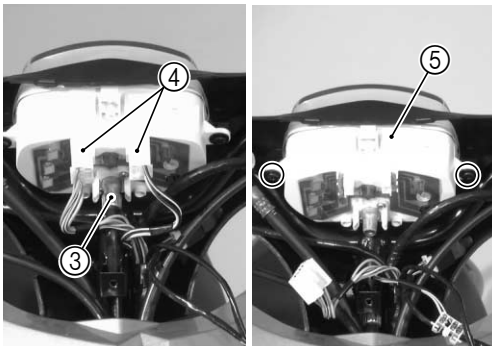


- Remove the front handlebar cover ②.

- Disconnect the front turn signal light lead wires.

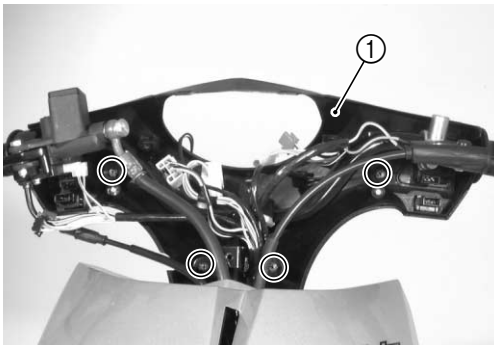


- Disconnect the speedometer cable ③ and speedometer couplers ④.
- Remove the speedometer assembly ⑤.



- Disconnect the handlebar switch couplers.

- Remove the rear handlebar cover ①.



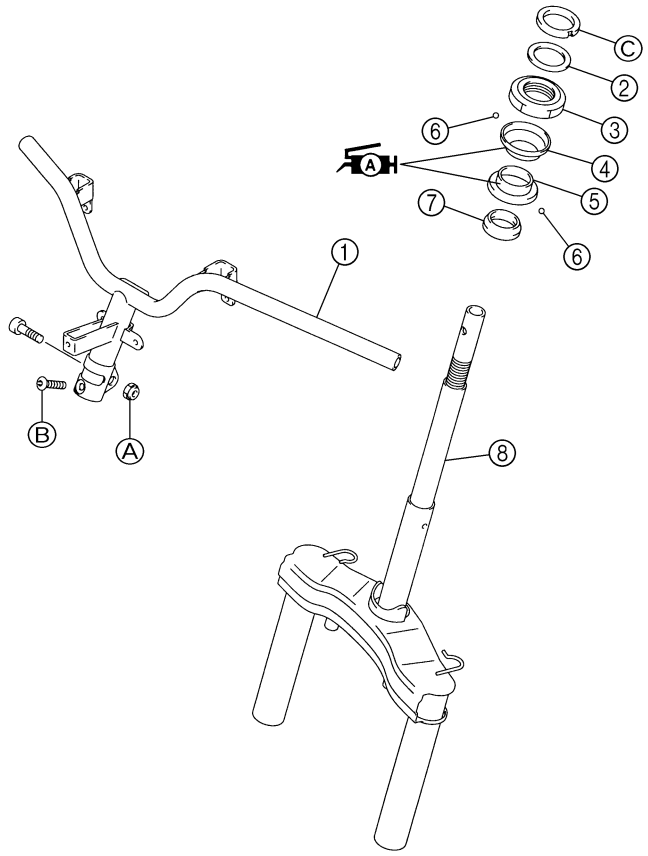
REMOUNTING

Remount the handlebar covers and the speedometer assembly in the reverse order of removal.

STEERING STEM
CONSTRUCTION

① Handlebar
② Washer
③ Steering stem nut
④ Inner upper race
⑤ Inner lower race
⑥ Steel ball
⑦ Outer lower race
⑧ Steering stem

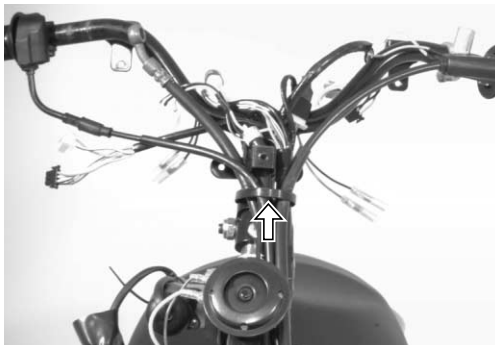
Ⓐ Handlebar clamp nut
Ⓑ Handlebar set bolt
Ⓒ Steering stem locknut



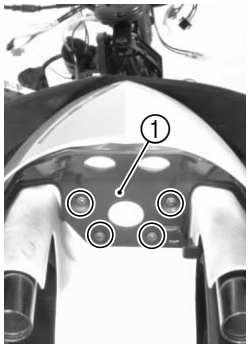
ITEM	N·m	kgf-m
Ⓐ	50	5.0
Ⓑ	25	2.5
Ⓒ	30	3.0

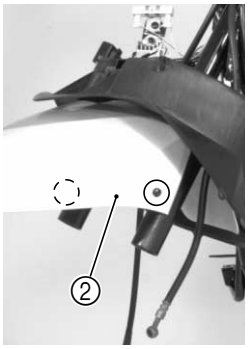
REMOVAL AND DISASSEMBLY

- Remove the front leg shield and leg shield. (☞ 5-3 and 5-4)
- Remove the master cylinder assembly. (☞ 5-15)
- Remove the front suspension. (☞ 5-18 and 5-19)
- Remove the handlebar cover and speedometer assembly. (☞ 5-23 and 5-24)
- Remove the cable clamp.

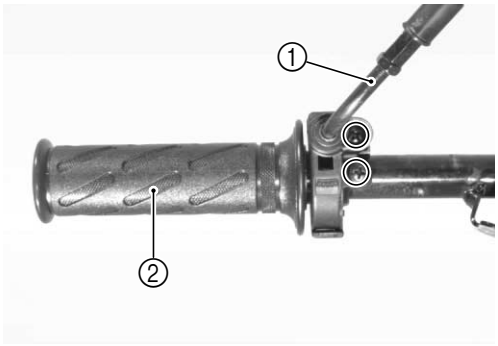


- Remove the front fender brace ① and front fender ②.

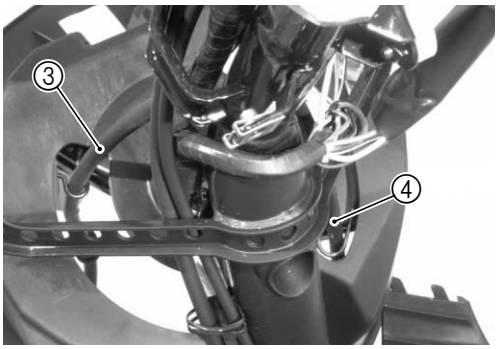




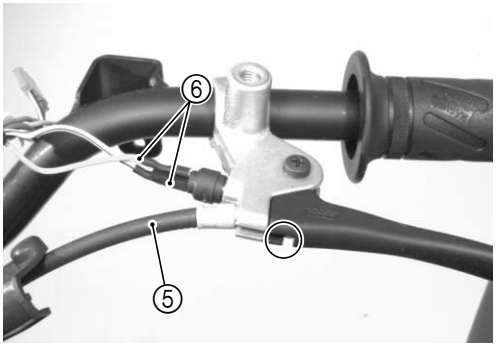
- Remove the throttle cable ① and throttle grip ②.



- Remove the brake hose ③ and speedometer cable ④.



- Remove the rear brake cable ⑤.
- Disconnect the rear brake light switch lead wires ⑥.



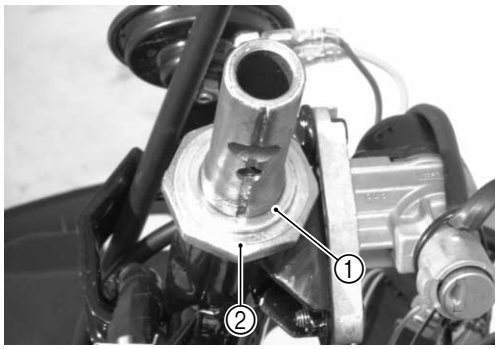
- Remove the handlebar.

- Remove the steering stem locknut using the special tool.

TOOL **09910-60611: Universal clamp wrench**

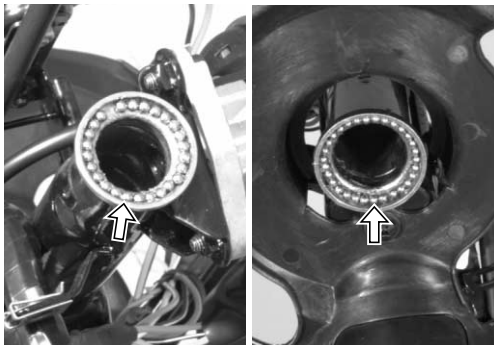
- Remove the washer ① and steering stem nut ②.
- Remove the steering stem.

NOTE:
Hold the steering stem bracket to prevent it from falling.



- Remove the upper and lower steel balls.

DATA **Steel balls**
Upper : 25 pcs
Lower : 30 pcs

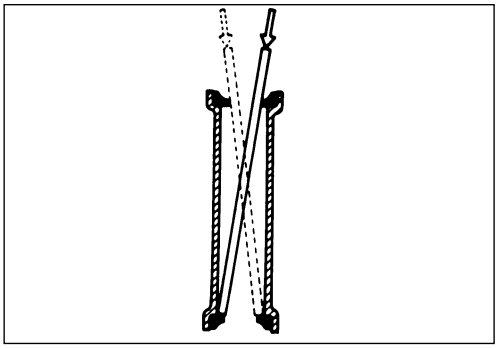


INSPECTION

Inspect the removed parts for the following abnormalities. If any damages are found, replace the respective part with a new one.
* Steering race wear and brinelling
* Worn and damaged steel balls
* Distortion of steering stem or handlebar

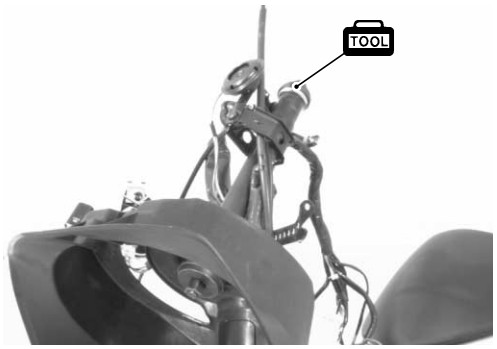
- Remove the outer lower race using a chisel.

- Drive out the upper and lower races.



REASSEMBLY AND REMOUNTING

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



UPPER AND LOWER RACES

- Press in the upper and lower races using the special tool.

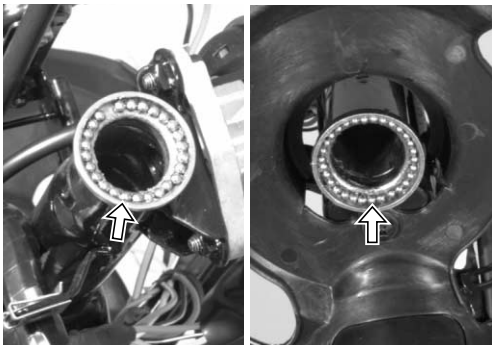
TOOL 09941-34513: Steering inner race installer

STEEL BALLS

- Apply SUZUKI SUPER GREASE "A" to the steering races when installing the upper and lower steel balls.

99000-25010: SUZUKI SUPER GREASE "A"

DATA Steel balls
Upper : 25 pcs
Lower : 30 pcs

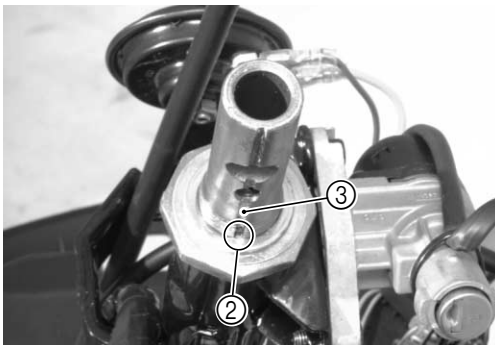


STEERING STEM

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

NOTE:
This adjustment will vary from motorcycle to motorcycle. Make sure that the steering turns smoothly and easily; in both directions.

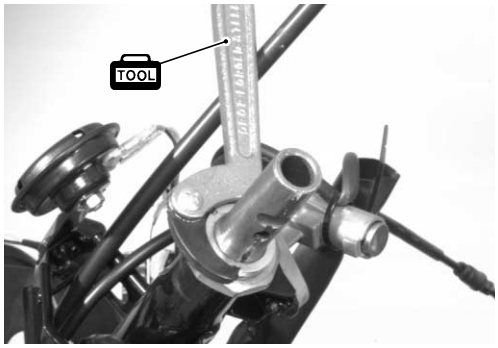
- When installing the washer, align the tongue ② of the washer with the groove ③ of the steering stem shaft.



- Tighten the steering stem locknut to the specified torque using the special tool.

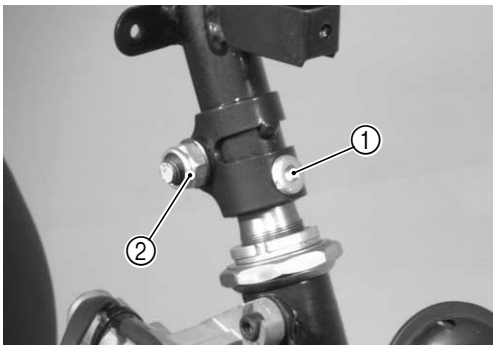
Steering stem locknut: 30 N·m (3.0 kgf-m)

TOOL 09910-60611: Universal clamp wrench



- Finger tighten the handlebar set bolt ① and handlebar clamp nut ②, and then tighten them to the specified torque.

Handlebar set bolt: 25 N·m (2.5 kgf-m)
Handlebar clamp nut: 50 N·m (5.0 kgf-m)



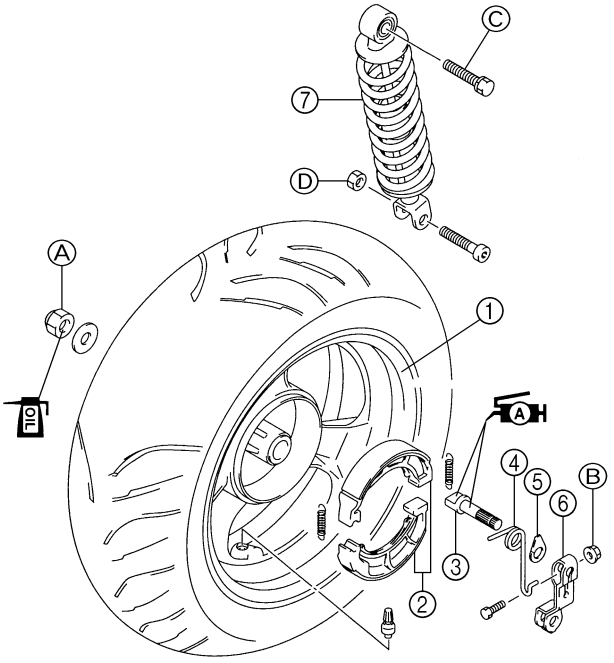
NOTE:
Hold the front fork legs, move them back and forth and make sure that the steering is not loose.

⚠ CAUTION

- **After performing the adjustment and installing the handlebar, "rock" the front wheel assembly forward and backward to ensure there is no play and the procedure was accomplished correctly.**
- **Check the steering stem to make sure that it moves freely from left to right with its own weight. If play or stiffness is noticeable, readjust the steering stem nut.**

REAR WHEEL, REAR BRAKE, AND REAR SHOCK ABSORBER

CONSTRUCTION



① Rear wheel
② Brake shoe
③ Brake cam
④ Return spring
⑤ Brake lining wear indicator plate
⑥ Brake cam lever
⑦ Rear shock absorber

Ⓐ Rear axle nut
Ⓑ Rear brake cam lever nut
Ⓒ Rear shock absorber upper mounting bolt
Ⓓ Rear shock absorber lower mounting nut

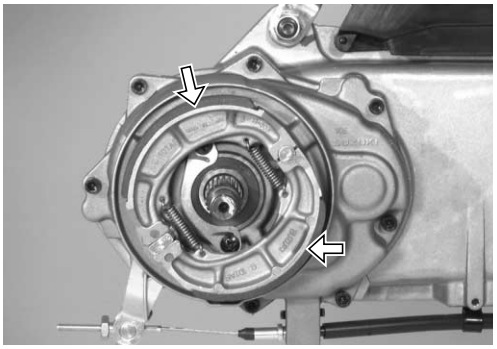
ITEM	N·m	kgf-m
Ⓐ	120	12.0
Ⓑ	10	1.0
Ⓒ	29	2.9
Ⓓ	35	3.5

REMOVAL AND DISASSEMBLY

REAR WHEEL AND BRAKE

- Place the motorcycle on level ground.
- Support the motorcycle using a jack or wooden block.
- Remove the exhaust pipe/muffler assembly. (☞ 3-6)
- Remove the rear wheel.

- Remove the brake shoes.



REAR SHOCK ABSORBER

- Remove the frame cover. (☞ 5-4 and 5-5)
- Remove the rear shock absorber.

INSPECTION

BRAKE DRUM

Inspect the brake drum and measure the brake drum I.D. to determine the extent of wear. If the measurement exceeds the service limit, replace the brake drum with a new one. The value of this limit is indicated inside the drum.

DATA Brake drum I.D.
Service Limit: 120.7 mm

BRAKE SHOE

Inspect the brake shoes for wear or damage. If any wear or damages are found, replace the brake shoes as a set.

⚠ CAUTION

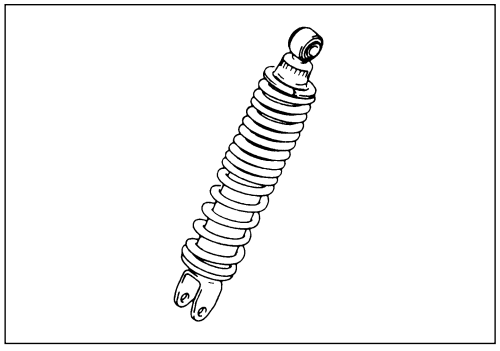
Replace the brake shoes as a set, otherwise braking performance will be adversely affected.

REAR SHOCK ABSORBER

Inspect the rear shock absorber for oil leakage or other damage. If any oil leakages or damages are found, replace the rear shock absorber with a new one.

⚠ CAUTION

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



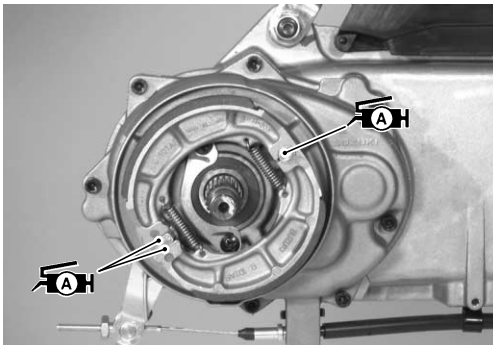
TIRE ..... ☞ 2-12

REASSEMBLY AND REMOUNTING

Reassemble and remount the rear wheel, rear brake, and rear shock absorber in the reverse order of removal and disassembly. Pay attention to the following points:

- Apply SUZUKI SUPER GREASE "A" to the brake cam and pin, and then install the brake shoes.

99000-25010: SUZUKI SUPER GREASE "A"



⚠ CAUTION

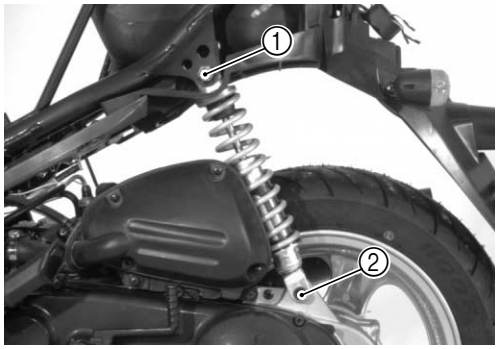
Be careful not to apply too much grease to the brake cam and pin. If grease gets on the lining, brake slippage will result.

- Tighten the rear axle nut to the specified torque.

NOTE:
Apply final gear oil (10W-40) to the axle nut before tightening it.

Rear axle nut: 120 N·m (12.0 kgf-m)

- Tighten the rear shock absorber upper mounting bolt ① and lower mounting nut ② to the specified torque.

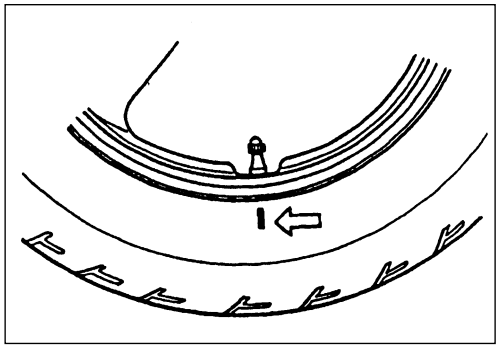


Rear shock absorber upper mounting bolt:
29 N·m (2.9 kgf-m)
Rear shock absorber lower mounting nut:
35 N·m (3.5 kgf-m)

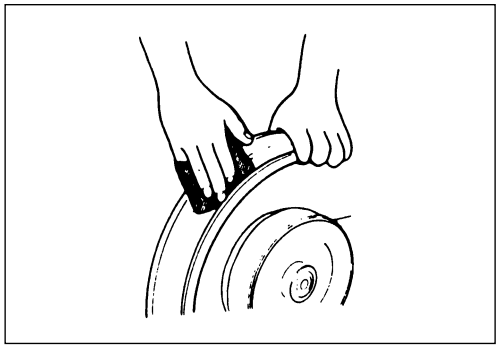
TIRES AND WHEELS
TIRE REMOVAL

The most critical factor of a tubeless tire is the seal between the wheel rim and the tire bead. Because of this, we recommended using a tire changer that can satisfy this sealing requirement and can make the operation efficient as well as functional.
For operating procedures, refer to the instructions supplied by the tire changer manufacturer.

NOTE:
* *When removing a tire for repair or inspection, be sure to mark the tire with chalk to indicate the tire position relative to the valve position.*
* *Even though the tire is refitted to the original position after repairing the puncture, the tire may have to be balanced again since such a repair can cause imbalance.*

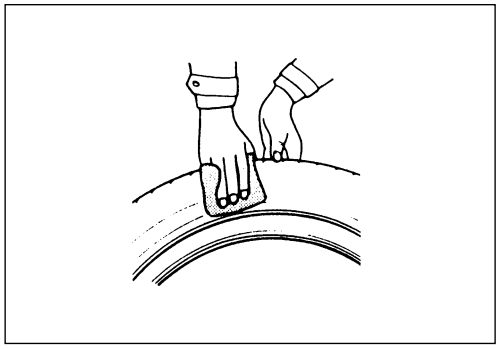


INSPECTION
WHEELS
Clean and check each wheel for the following. If any item is observed, replace the wheel with a new one.
* Distortion and crack
* Nick or scratch on bead
* Wheel rim runout

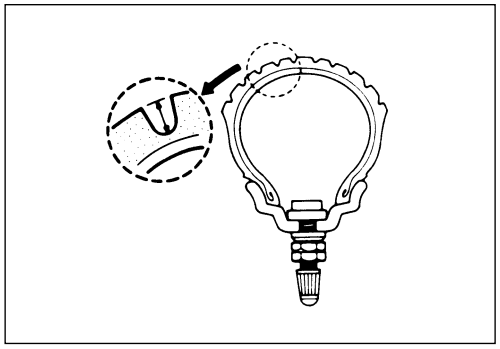


DATA Wheel rim runout (axial and radial)
Service Limit: 2.0 mm

TIRES
Check each tire for the following. If any item is observed, replace the tire with a new one.
* Nicks and rupture on sidewall
* Tread remaining depth
* Separation of cord
* Abnormal, uneven wear on tread
* Surface damage on bead
* Localized tread wear due to skidding (flat spot)
* Abnormal condition of inner liner



TOOL 09900-20805: Tire depth gauge



DATA Tire tread depth (front and rear)
Service Limit: 1.6 mm

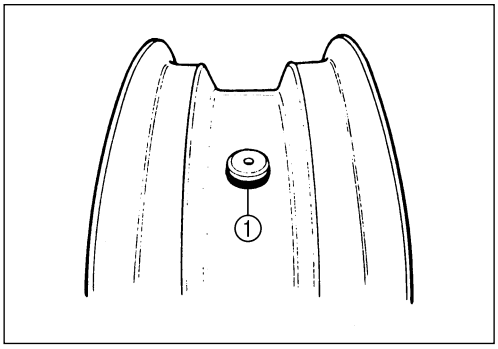
VALVE

Inspect the valve ① for damage.

If the seal rubber is peeling or damaged, replace the valve with a new one.

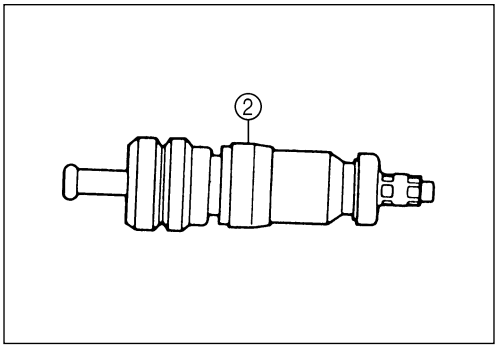
NOTE:

If the external appearance of the valve shows no abnormal condition, removing the valve is not necessary.



Inspect the valve core seal ② for deformation or damage.

If the valve core seal has abnormal deformation, replace the valve with a new one.



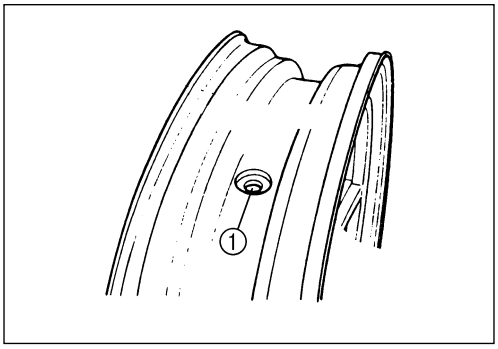
INSTALLATION

VALVE

- Clean any dust or rust around the valve hole ①.
- Install the valve in the rim.

NOTE:

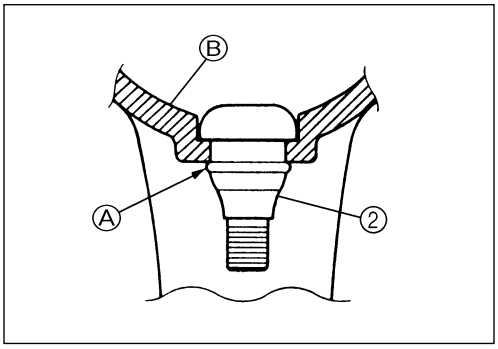
To properly install the valve ② into the valve hole, apply a special tire lubricant or neutral soapy liquid to the valve.



⚠ CAUTION

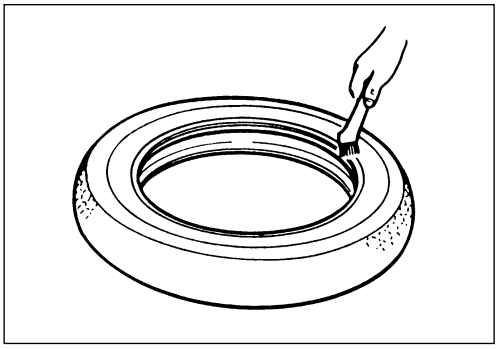
Be careful not to damage the valve lip Ⓐ.

Ⓑ Wheel



TIRE

- Apply a special tire lubricant to the tire bead.
- When installing the tire, make sure the arrow ① faces the direction of wheel rotation and align the balancing.



⚠ CAUTION

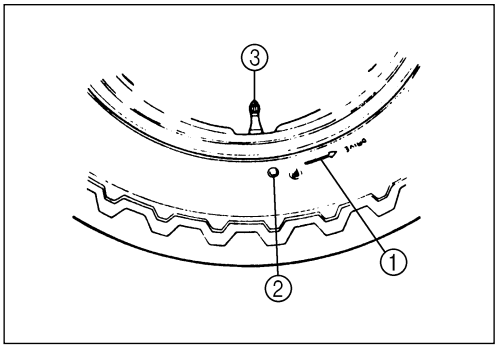
Replace the removed valve with a new one.

- The tire is designed to have specified rotational direction.

⚠ CAUTION

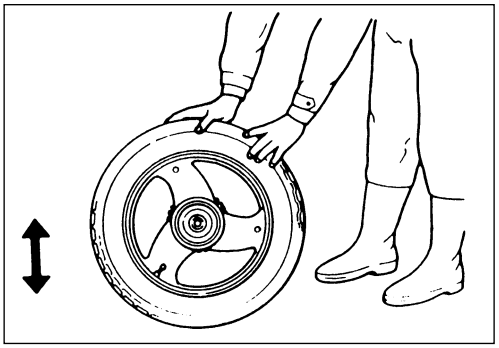
Never apply oil, grease, or gasoline to the tire bead.

- When installing the tire, make sure that the arrow ① faces the direction of wheel rotation and align the balancing mark ② on the tire with the valve ③ as shown.

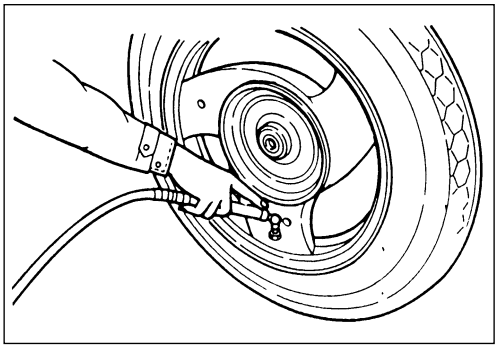


- For installing the tire onto the wheel, refer to the instructions given by the tire changer manufacturer.
- Bounce the tire several times while rotating it. This will allow the tire bead to expand outwards, making inflation easier.

NOTE:
Before inflating the tire, make sure that the balance mark is aligned with the valve stem.



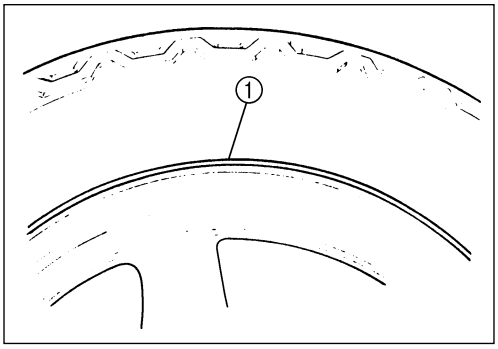
- After the tire is properly seated to the wheel rim, inflate the tire to the recommended pressure. Correct the wheel balance if necessary.



⚠ WARNING

∗ Do not inflate the tire to more than 400 kPa (4.0 kgf/cm²). The tire could burst with sufficient force to cause severe injury. Never stand directly over the tire while inflating it.
∗ When using a preset pressure air inflator, pay special care for the set pressure adjustment.

NOTE:
Check the "rim line" ① cast on the tire side walls. The line must be equidistant from the wheel rim all the way around. If the distance between the rim line and wheel rim varies, this indicates that the bead is not properly seated. If this is so, deflate the tire completely, and unseat the bead on both sides. Then, coat the bead with lubricant, and re-seat the tire.



- Adjust the tire pressure to the specification.

⚠ CAUTION

Do not run a repaired tire at a high speed.

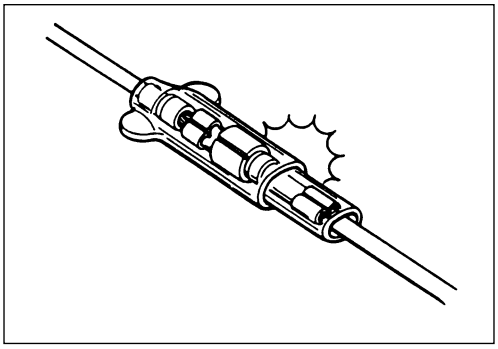
DATA Cold inflation tire pressure
Solo riding
Front : 125 kPa (1.25 kgf/cm²)
Rear : 175 kPa (1.75 kgf/cm²)
Dual riding (except for UF50Z)
Front : 125 kPa (1.25 kgf/cm²)
Rear : 230 kPa (2.30 kgf/cm²)

ELECTRICAL SYSTEM

CONTENTS

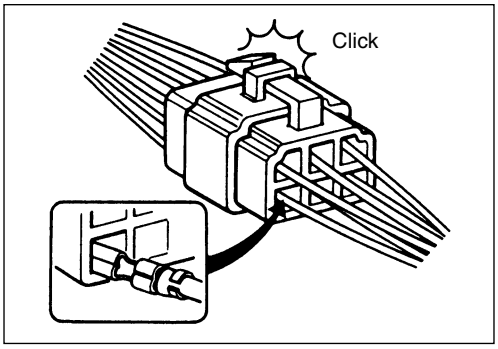
CAUTIONS IN SERVICING

CONNECTOR



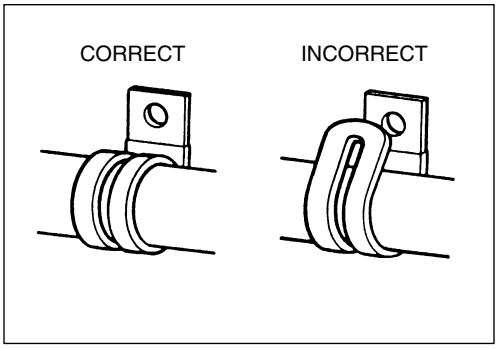
- When disconnecting a connector, be sure to hold the terminals; do not pull the lead wires.
- When connecting a connector, push it in so it is firmly attached.
- Inspect the connector for corrosion, contamination and any breakage in the cover.

COUPLER



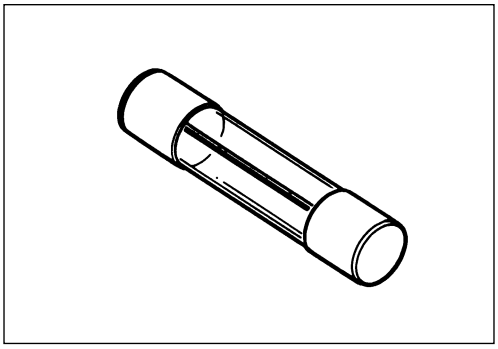
- With a lock-type coupler, be sure to release the lock before disconnecting it. When connecting a coupler, push it in until the lock clicks shut.
- When disconnecting a coupler, be sure to hold the coupler; do not pull the lead wires.
- Inspect each terminal on the coupler for looseness or bends.
- Inspect each terminal for corrosion and contamination.

CLAMPS



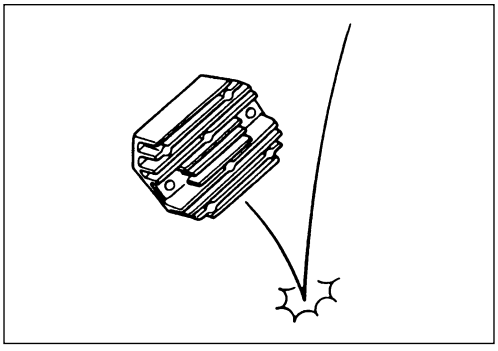
- Refer to the "WIRE HARNESS, CABLE, AND HOSE ROUTING" section for proper clamping procedures. (☞ 7-10 to 7-16)
- Bend the clamp properly, as shown in the illustration.
- When clamping the wire harness, do not allow it to hang down.
- Do not use wire or any other substitutes for the band-type clamp.

FUSE



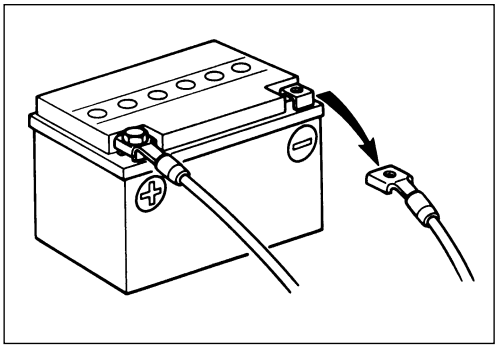
- When a fuse blows, always investigate the cause, correct the problem, and then replace the fuse.
- Do not use a fuse of a different capacity.
- Do not use any substitutes for the fuse (e.g., wire).

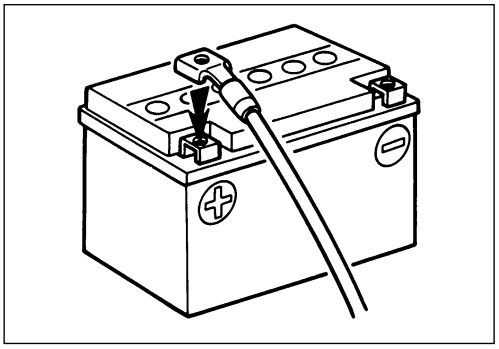
SEMICONDUCTOR EQUIPPED PARTS



- Do not drop any part that contains a semiconductor (e.g., CDI unit, regulator/rectifier).
- When inspecting the part, follow the inspection instructions carefully. Neglecting proper procedures may cause this part to be damaged.

CONNECTING THE BATTERY



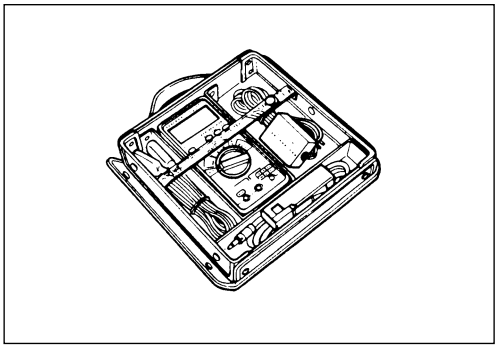


- When disconnecting terminals from the battery for disassembly or servicing, be sure to disconnect the ⊖ battery lead wire, first.
- When connecting the battery lead wires, be sure to connect the ⊕ battery lead wire, first.
- If the terminal is corroded, remove the battery, pour warm water over it and clean it with a wire brush.
- After connecting the battery, apply a light coat of grease to the battery terminals.
- Install the cover over the ⊕ battery terminal.

WIRING PROCEDURE

- Properly route the wire harness according to the “WIRE HARNESS, CABLE, AND HOSE ROUTING”. (☞ 7-10 to 7-16)

USING THE MULTI CIRCUIT TESTER

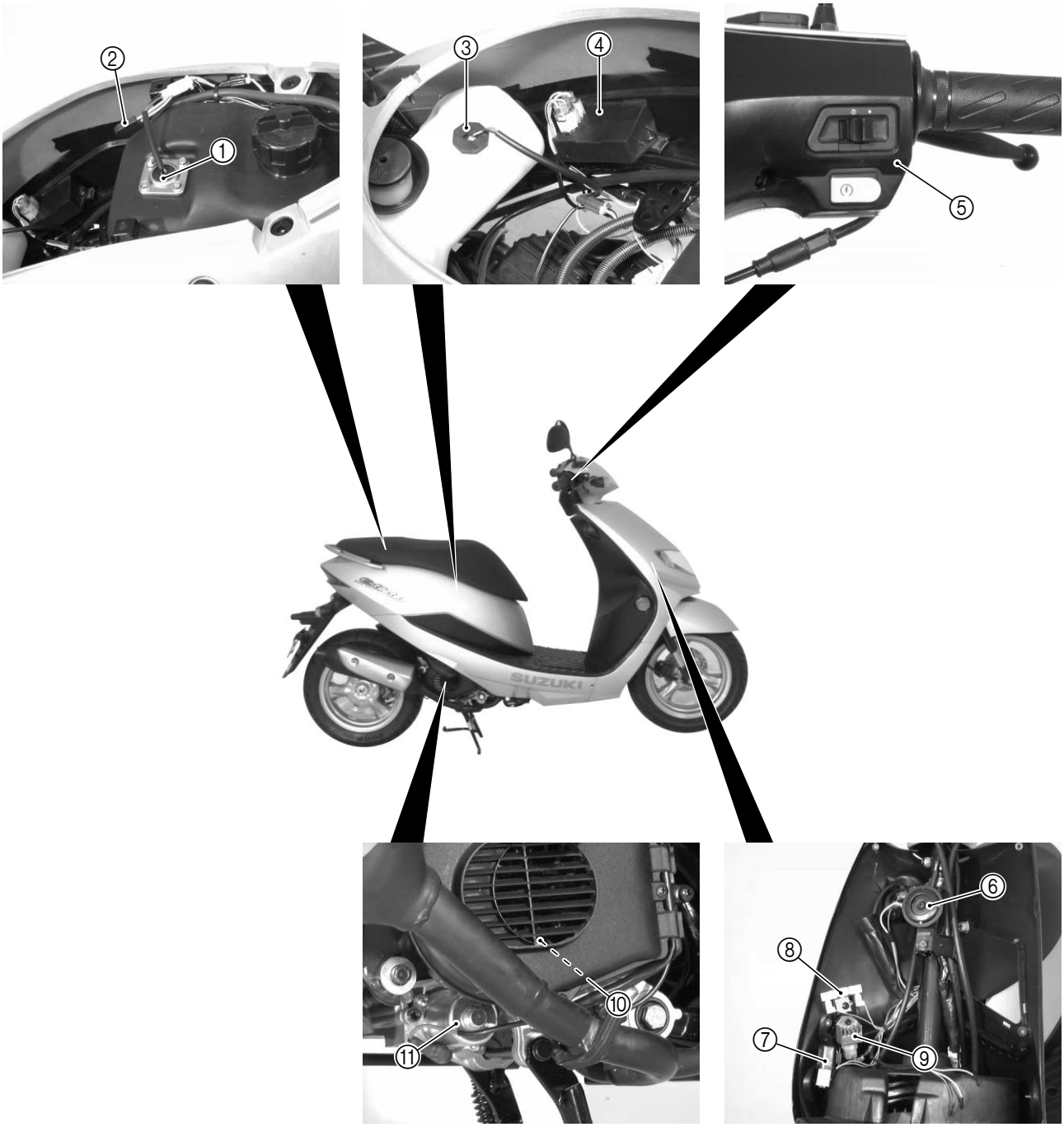


- Properly use the multi circuit tester ⊕ and ⊖ probes. Improper use can cause damage to the motorcycle and tester.
- If the voltage and current values are not known, begin measuring in the highest range.
- When measuring the resistance, make sure that no voltage is applied. If voltage is applied, the tester will be damaged.
- After using the tester, be sure to turn the switch to the OFF position.

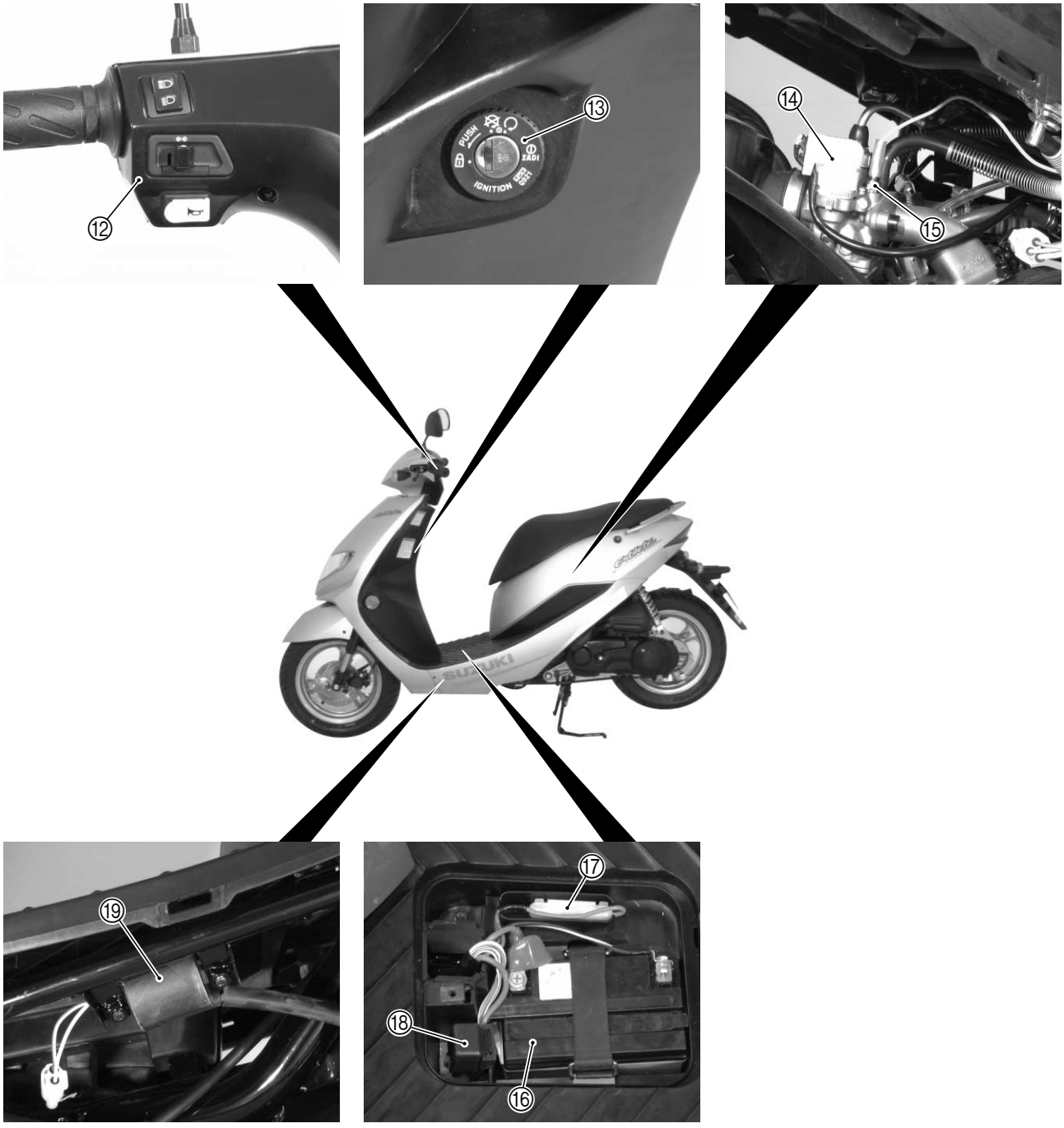
⚠ CAUTION

Before using the multi circuit tester, read its instruction manual.

LOCATION OF ELECTRICAL COMPONENTS



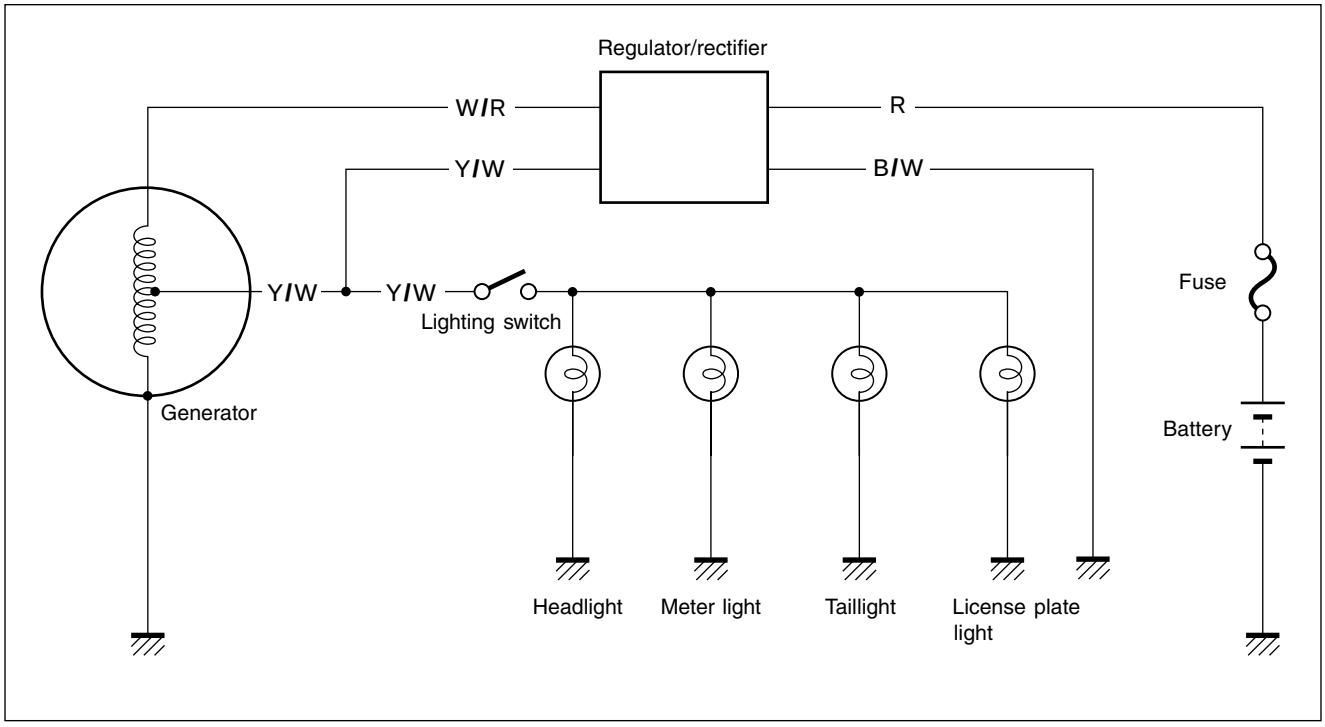
① Fuel level indicator switch
② Thermoswitch
③ Oil level indicator switch
④ CDI unit
⑤ Right handlebar switch
⑥ Horn
⑦ Turn signal relay
⑧ Resistor
⑨ Regulator/rectifier
⑩ Generator
⑪ Starter motor



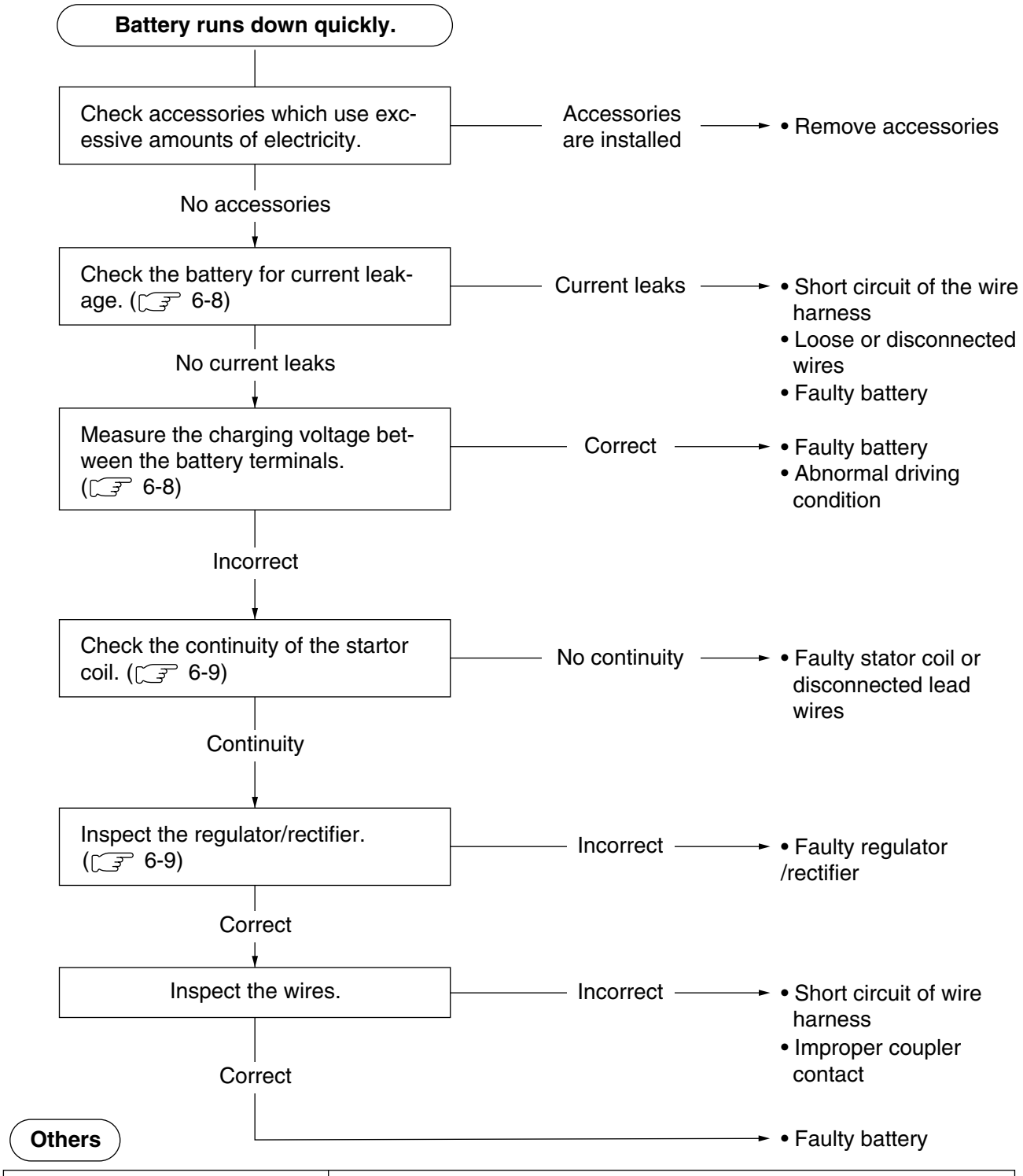
⑫ Left handlebar switch
⑬ Ignition switch
⑭ Thermoelement
⑮ Carburetor heater
⑯ Battery
⑰ Fuse
⑱ Starter relay
⑲ Ignition coil

CHARGING AND LIGHTING SYSTEM
DESCRIPTION

The charging system for this motorcycle uses a generator, as shown below. The charging and lighting coils are mounted on the generator stator and generate AC current as the generator rotor turns. The AC current, which is generated in the charging coil, is converted by the regulator/rectifier into DC current. The DC current then charges the battery and the lighting coil uses the regulated AC current to supply the meter light, headlight, and license plate light.



TROUBLESHOOTING



Others

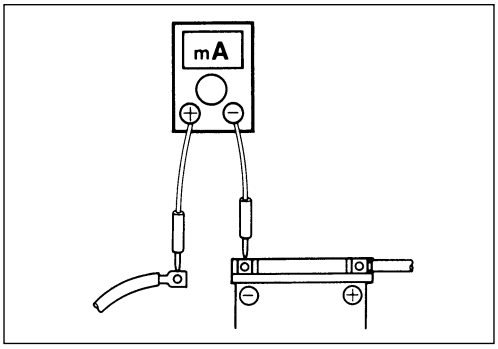
Battery overcharges	• Faulty regulator/rectifier • Faulty battery • Poor contact of generator lead wire coupler

INSPECTION

BATTERY CURRENT LEAKAGE

- Turn the ignition switch to the "OFF" position.
- Remove the battery holder cover. (☞ 6-30)
- Disconnect the ⊖ battery lead wire.

Measure the battery current between the ⊖ battery terminal and the ⊖ battery lead wire using the multi circuit tester. If the reading exceeds the specified value, leakage is evident.



TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Current (⎓ , 20 mA)

DATA Battery current (leak): Under 1 mA

⚠ CAUTION

*** Because the current leak might be large, turn the multi circuit tester to the high range, first to avoid damage to the tester.**
*** Do not turn the ignition switch to the "ON" position when measuring the current.**

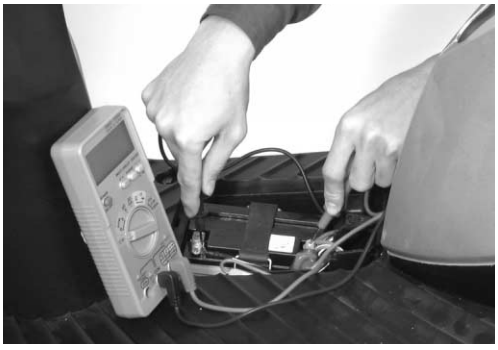
When checking to find the excessive current leakage, remove the couplers and connectors, one by one, checking each part.

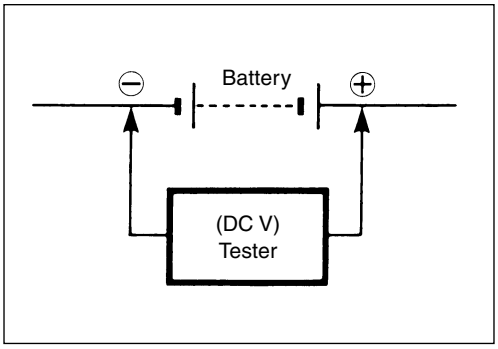
CHARGING OUTPUT

- Remove the battery holder cover. (☞ 6-30)
- Start the engine, turn the lighting switch to the on (☼) position and run the engine at 5 000 r/min.

Measure the DC voltage between the ⊕ and ⊖ battery terminals using the multi circuit tester. If the voltage is not within the specified value, inspect the stator coil and regulator/rectifier. (☞ 6-9)

NOTE:
When performing this measurement, make sure that the battery is fully charged.





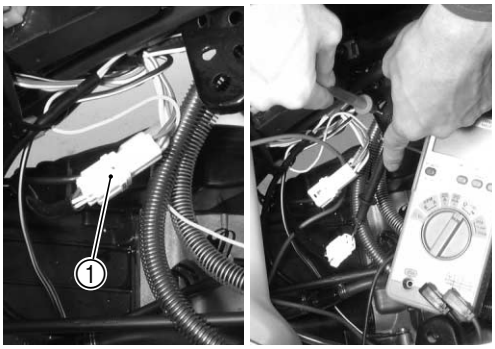
TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Voltage (⎓)

DATA Charging output (regulated voltage)
Standard: 13.5 – 15.0 V at 5 000 r/min

STATOR COIL RESISTANCE

- Remove the trunk. (☞ 5-4)
- Disconnect the generator coupler ①.

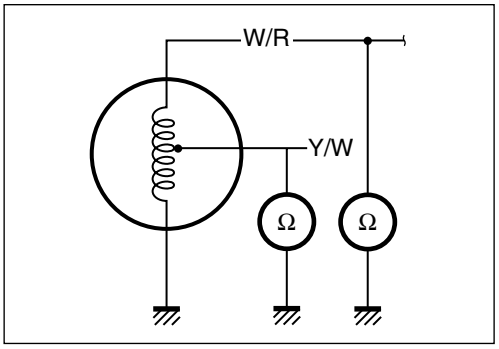


Measure the resistance between the lead wires using the multi circuit tester. If the resistance is not within the specified value, replace the stator coil with a new one.

09900-25008: Multi circuit tester set

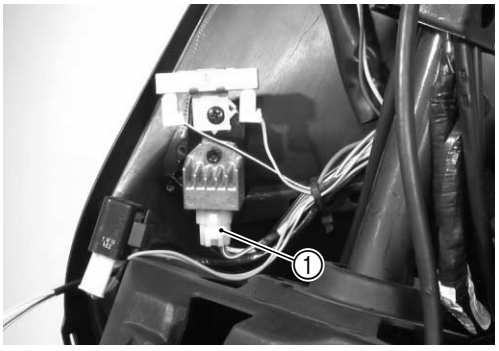
Tester knob indication: Resistance (Ω)

Stator coil resistance
Standard: 0.5 – 2.0 Ω (White/Red – Ground)
0.3 – 1.5 Ω (Yellow/White – Ground)



REGULATOR/RECTIFIER

- Remove the front leg shield. (☞ 5-3)
- Disconnect the regulator/rectifier coupler ①.



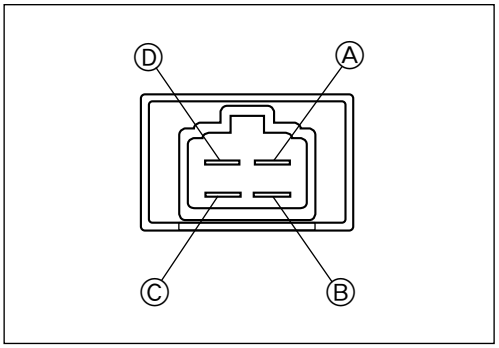
Measure the voltage between the terminals using the multi circuit tester, as indicated in the table below. If voltage is not within the specified value, replace the regulator/rectifier with a new one.

09900-25008: Multi circuit tester set

Tester knob indication: Diode test (⊣◄)

Unit: V

Tester probe ① \ ⊕ Tester probe	Ⓐ	Ⓑ	Ⓒ	Ⓓ
Ⓐ		1.4 – 1.5	1.4 – 1.5	1.4 – 1.5
Ⓑ	0.5 – 1.4		1.4 – 1.5	1.4 – 1.5
Ⓒ	1.4 – 1.5	1.4 – 1.5		0.6 – 1.5
Ⓓ	1.4 – 1.5	1.4 – 1.5	0.6 – 1.5	

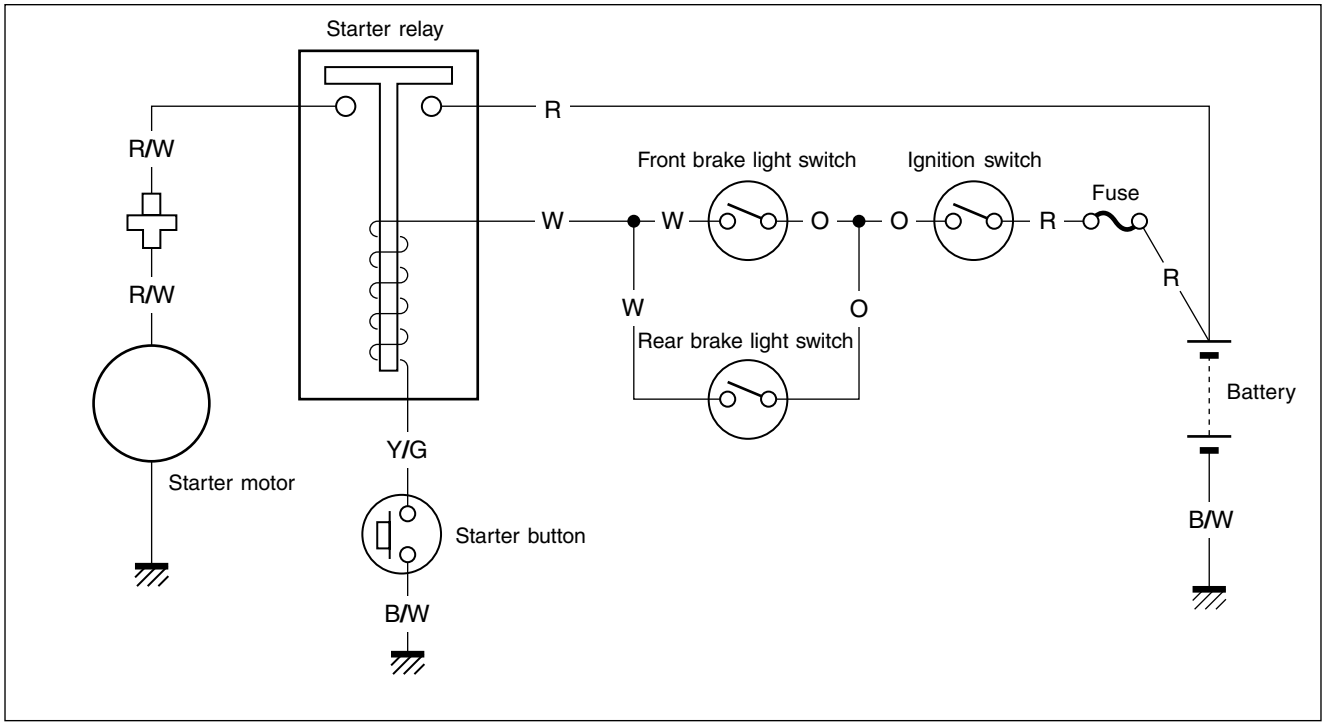


NOTE:
If the tester reads under 1.4 V, disconnect the tester probes from the wire leads, and then replace the multi circuit tester's battery.

STARTER SYSTEM

DESCRIPTION

The starter system consists of the following components: the starter motor, starter relay, starter button, brake light switches (front and rear brakes), ignition switch, and battery. Pressing the starter button, while squeezing the front or rear brake lever, energizes the starter relay, causing the contact points to close, thus, completing the circuit from the starter motor to the battery.



TROUBLESHOOTING

Starter motor will not run.

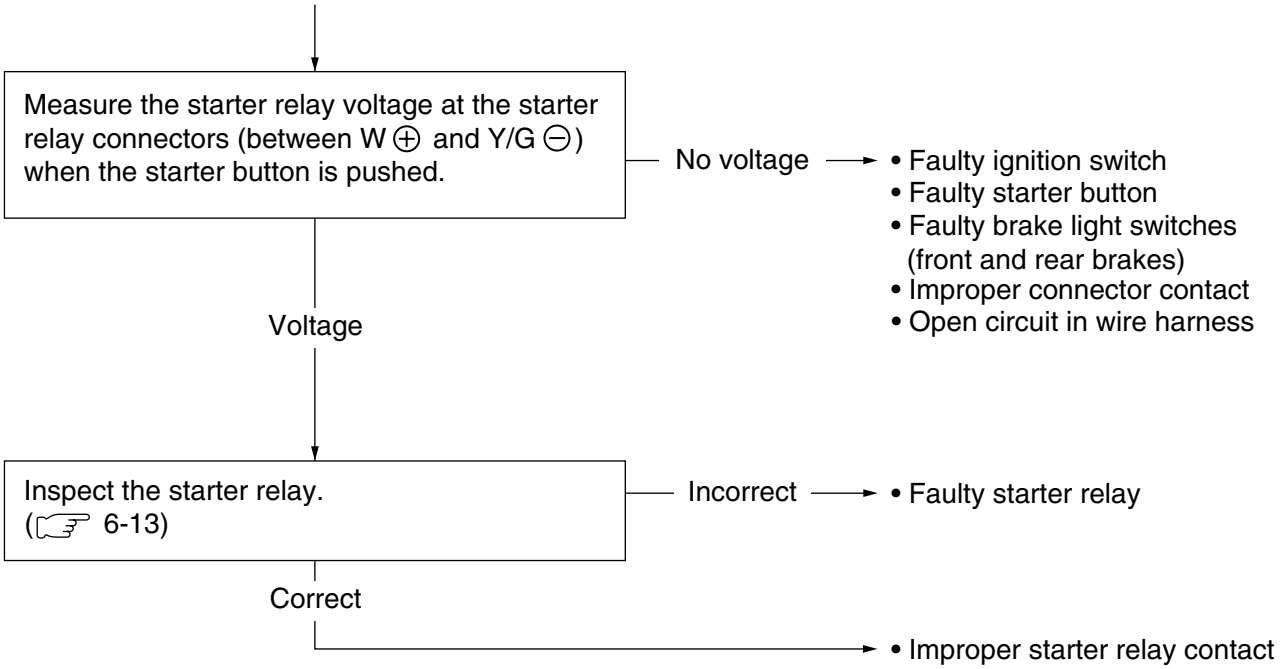
Turn the ignition switch to the “ON” position. Grasp the front or rear brake lever. Listen for a click from the starter relay when the starter button is pushed.

Clicks → Check if the starter motor runs when its terminal is connected to the ⊕ battery terminal (Do not use a thin wire because a large amount of current flows.)

No click → Continued on next page

Runs
- Faulty starter relay
- Loose or disconnected starter motor lead wire

Does not run
- Faulty starter motor

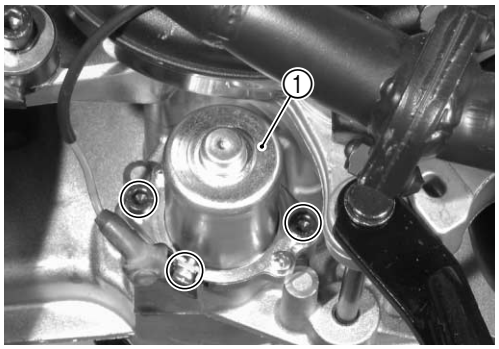


Others

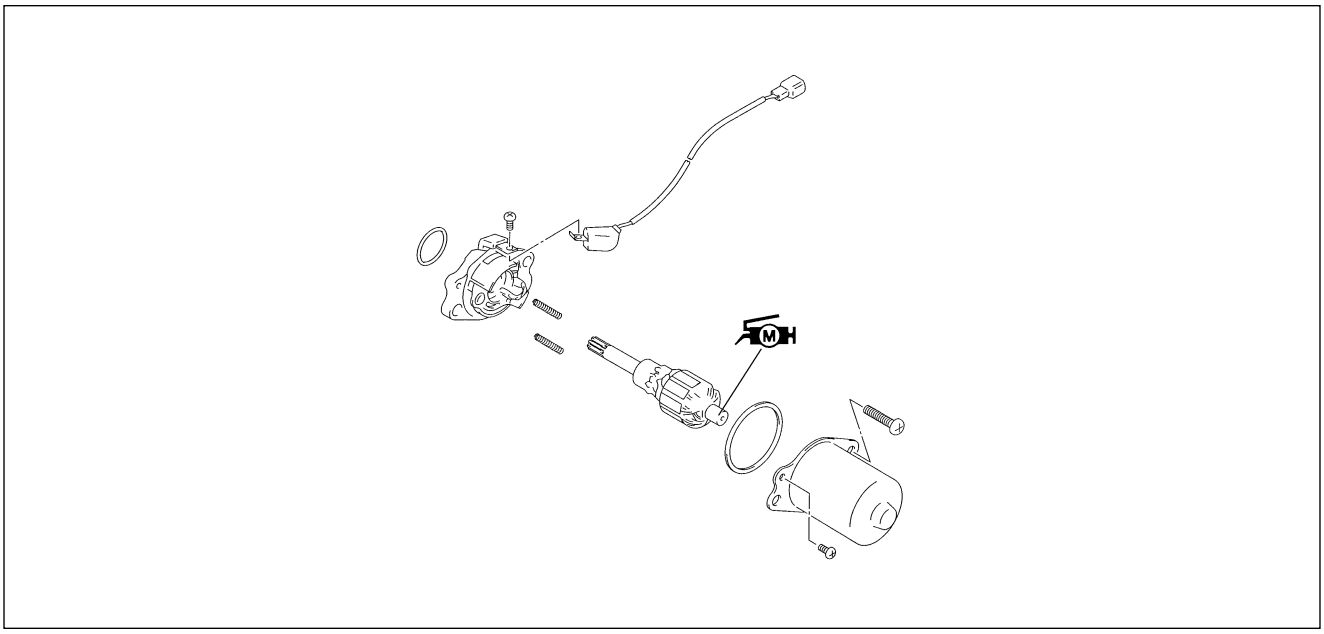
Engine does not turn though the starter motor runs.	• Faulty starter pinion gear assembly

STARTER MOTOR REMOVAL AND DISASSEMBLY

- Disconnect the starter motor lead wire and remove the starter motor ①.



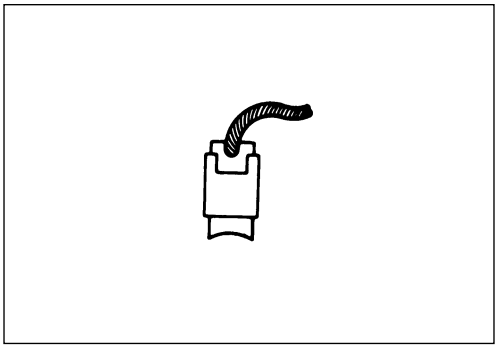
- Disassemble the starter motor, as shown.



STARTER MOTOR INSPECTION

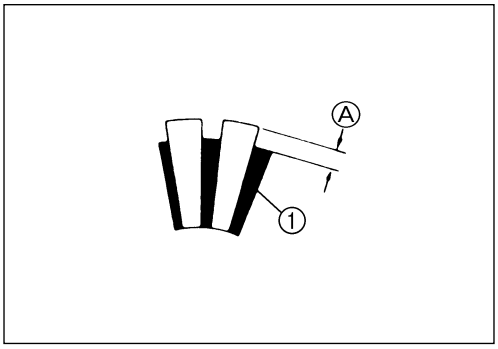
CARBON BRUSHES

Inspect the carbon brushes for abnormal wear, cracks, or smoothness in the brush holder. If any damages are found, replace the brush assembly with a new one.



COMMUTATOR

Inspect the commutator for discoloration, abnormal wear, or undercut Ⓐ. If any damages are found, replace the armature with a new one.
If the commutator surface is discolored, polish it with #400 sandpaper and wipe it using a clean, dry cloth.
If there is no undercut, scrape out the insulator ① with a saw blade.

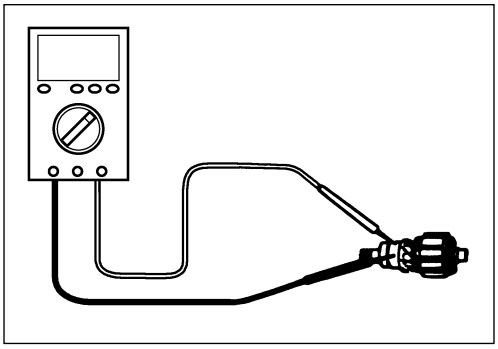


ARMATURE COIL

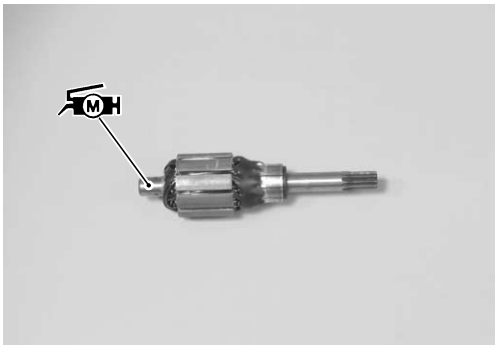
Check for continuity between each segment and the armature shaft using the multi circuit tester. If there is no continuity between the segments or there is continuity between the segments and shaft, replace the armature with a new one.

09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))



STARTER MOTOR REASSEMBLY

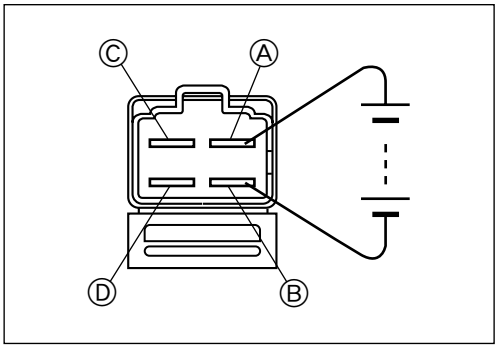


Reassemble the starter motor in the reverse order of disassembly. Pay attention to the following point:

- Apply a small quantity of SUZUKI MOLY PASTE to the armature shaft.

99000-25140: SUZUKI MOLY PASTE

STARTER RELAY INSPECTION

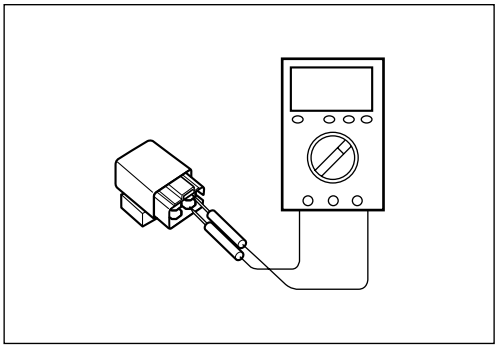


- Remove the battery holder cover. (☞ 6-30)
- Remove the starter relay.

Apply 12 volts to terminals Ⓐ and Ⓑ, and measure for continuity between terminals Ⓒ and Ⓓ as shown. If the starter relay clicks and continuity is found, the relay is operating correctly.

09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))



Measure the starter relay resistance between the terminals using the multi circuit tester. If the resistance is not within the specified value, replace the starter relay with a new one.

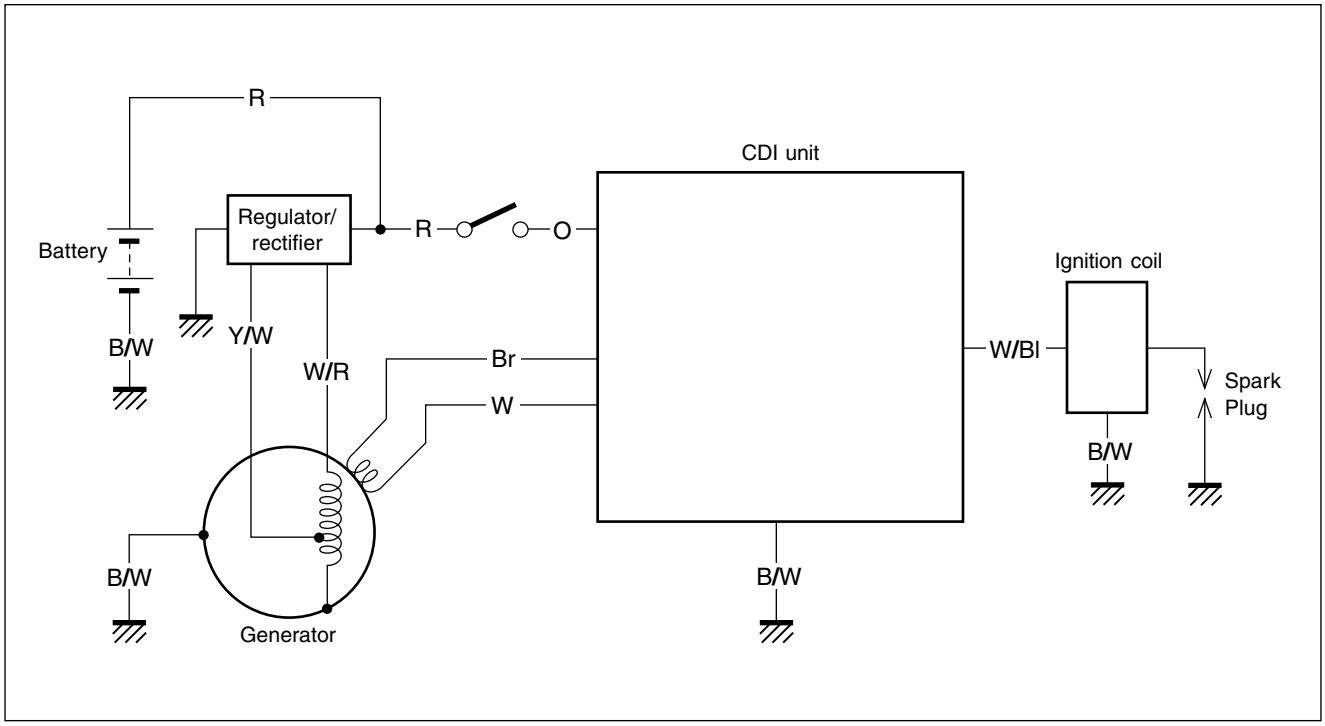
09900-25008: Multi circuit tester set

Tester knob indication: Resistance (Ω)

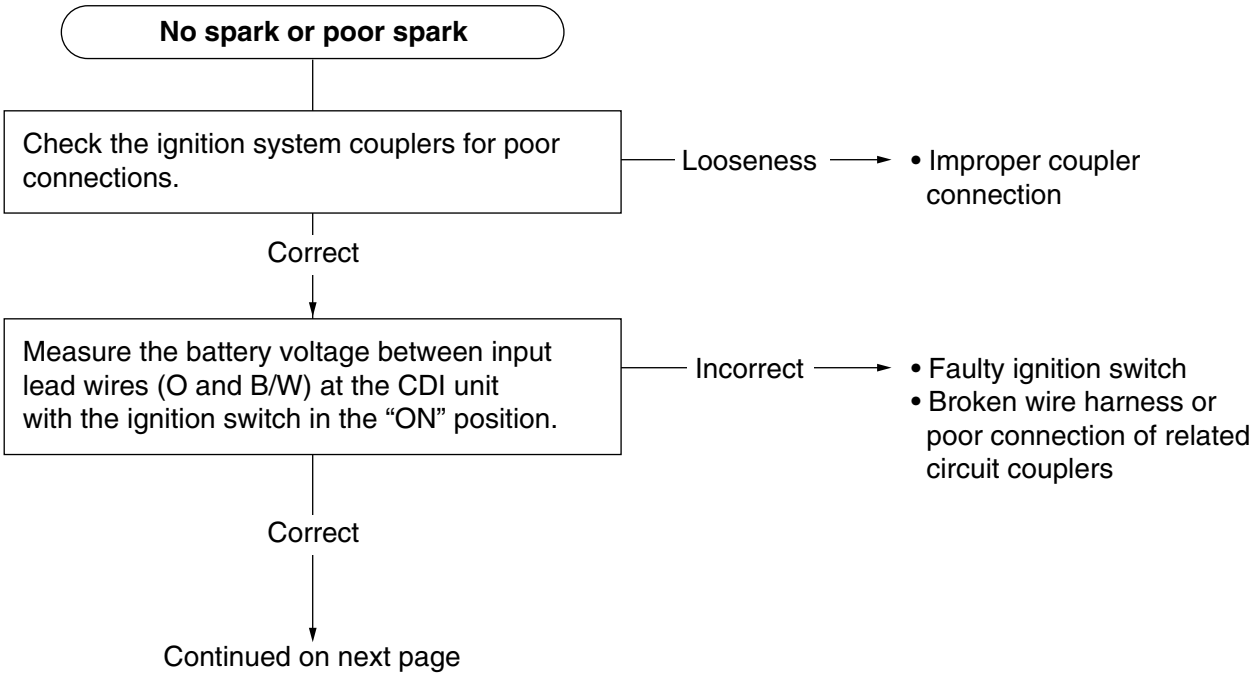
Starter relay resistance
Standard: 50 – 90 Ω

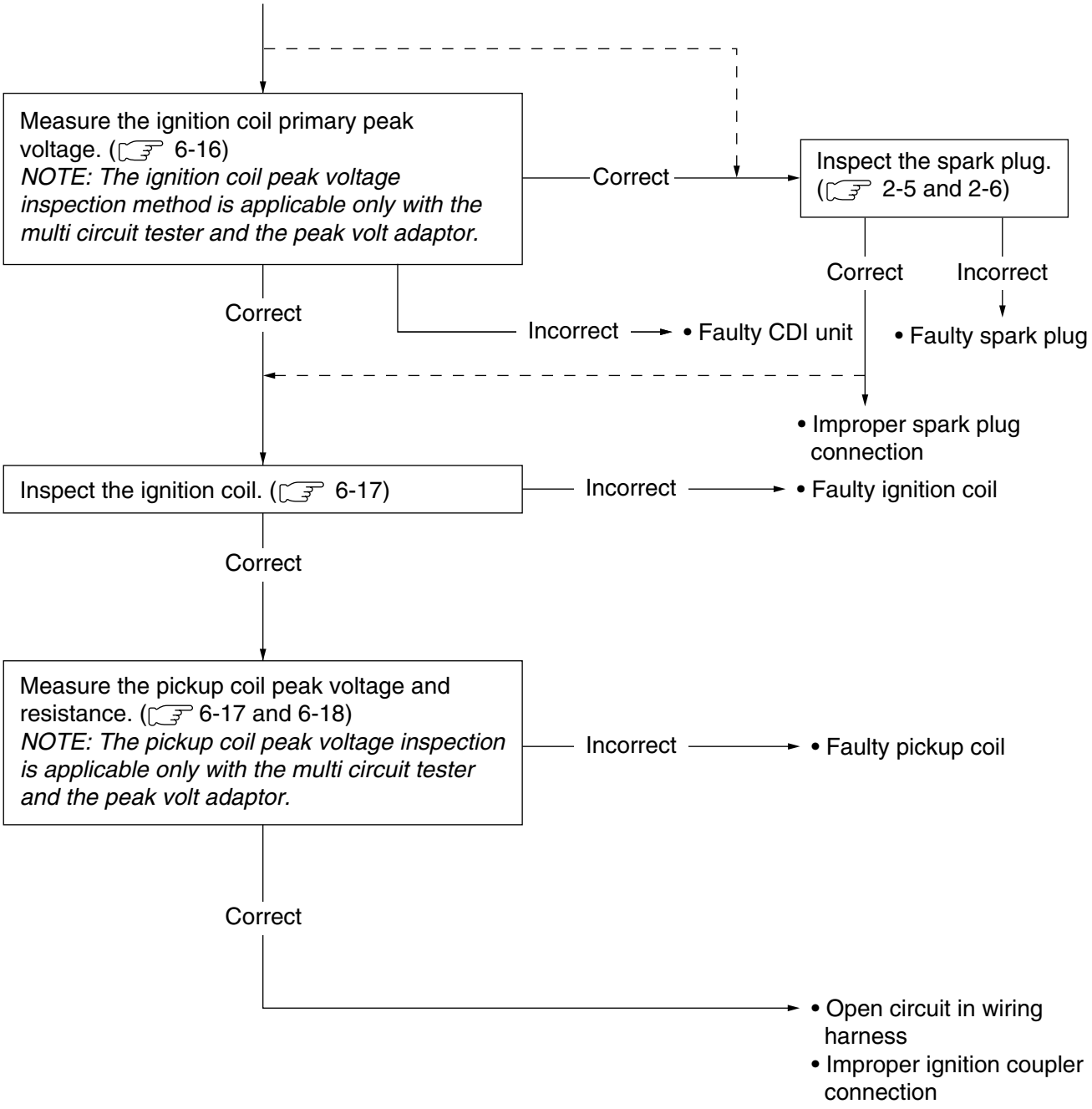
IGNITION SYSTEM
DESCRIPTION

In the capacitor discharged ignition system, the battery's electrical energy charges the capacitor. This energy is released in a single surge at the specified ignition timing point and the current flows through the primary side of the ignition coil. A high voltage is induced in the secondary windings of the ignition coil, resulting in a strong spark between the spark plug gap.



TROUBLESHOOTING




Measure the ignition coil primary peak voltage. (☞ 6-16)
NOTE: The ignition coil peak voltage inspection method is applicable only with the multi circuit tester and the peak volt adaptor.
Correct
Inspect the spark plug. (☞ 2-5 and 2-6)
Correct
Incorrect
• Faulty spark plug
Correct
Incorrect
• Faulty CDI unit
• Improper spark plug connection
Inspect the ignition coil. (☞ 6-17)
Incorrect
• Faulty ignition coil
Correct
Measure the pickup coil peak voltage and resistance. (☞ 6-17 and 6-18)
NOTE: The pickup coil peak voltage inspection is applicable only with the multi circuit tester and the peak volt adaptor.
Incorrect
• Faulty pickup coil
Correct
• Open circuit in wiring harness
• Improper ignition coupler connection

INSPECTION

IGNITION COIL PRIMARY PEAK VOLTAGE

- Remove the left side leg shield. (☞ 5-3)
- Remove the spark plug cap and spark plug.
- Connect a new spark plug to the spark plug cap and ground it to the crankcase.

NOTE:
Make sure that the spark plug cap and spark plug are connected properly.

Measure ignition coil primary peak voltage using the multi circuit tester in the following procedure.

- Connect the multi circuit tester with the peak voltage adaptor as follows.

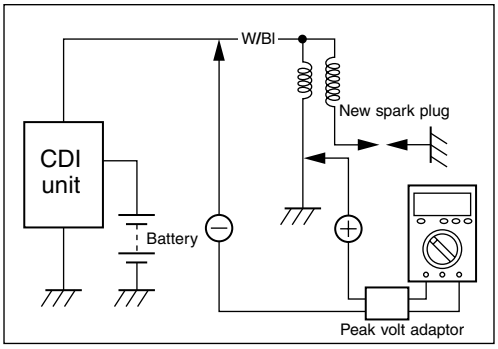
Ignition coil:
Ground (⊕ probe) – White/Blue terminal (⊖ probe)

NOTE:
Do not disconnect the ignition coil coupler.

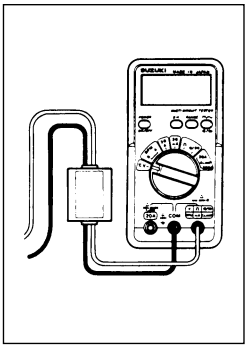
TOOL 09900-25008: Multi circuit tester set

⚠ CAUTION

Before using the multi circuit tester and peak volt adaptor, be sure to refer to the appropriate instruction manual.



- Turn the ignition switch to the "ON" position.
- Pull the brake lever.
- Press the starter button and allow the engine to crank for a few seconds, and then measure the ignition coil primary peak voltage.
- Repeat the above procedure a few times and measure the highest ignition coil primary peak voltage.



Tester knob indication: Voltage (⎓)

DATA Ignition coil primary peak voltage: More than 150 V

⚠ WARNING

While testing, do not touch the tester probes and spark plug to prevent receiving an electric shock.

If the voltage is lower than the specified values, inspect the ignition coil. (☞ 6-17)

IGNITION COIL RESISTANCE

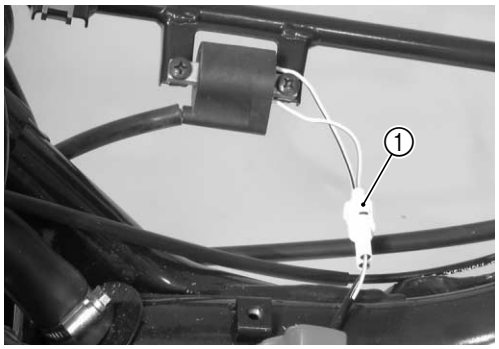
- Remove the footboard. (☞ 5-3)
- Disconnect the ignition coil coupler ①.

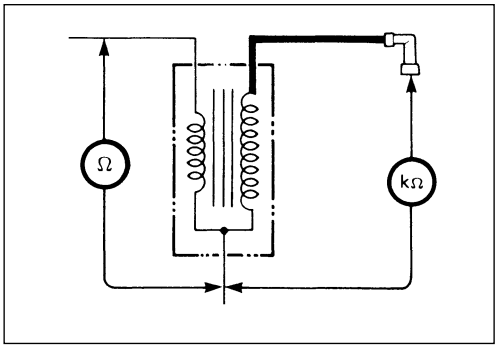
Measure the ignition coil resistance in both the primary and secondary windings using the multi circuit tester. If the resistance in both the primary and secondary windings is close to the specified values, the windings are in sound condition.

TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Resistance (Ω)

DATA Ignition coil resistance
Primary: 0.2 – 1.5 Ω (W/Bl – B/W)
Secondary: 10 – 20 kΩ (B/W – spark plug cap)





PICKUP COIL PEAK VOLTAGE

- Remove the trunk. (☞ 5-4)

NOTE:
Make sure that all of the couplers are connected properly and the battery is fully charged.

- Disconnect the CDI unit coil coupler ①.

Measure the pickup coil peak voltage in the following procedure.

- Connect the multi circuit tester with the peak volt adaptor as follows.

Brown (⊖ Probe) – White (⊕ Probe)

TOOL 09900-25008: Multi circuit tester set

⚠ CAUTION

Before using the multi circuit tester and peak volt adaptor, be sure to read the appropriate instruction manual.

- Turn the ignition switch to the “ON” position.

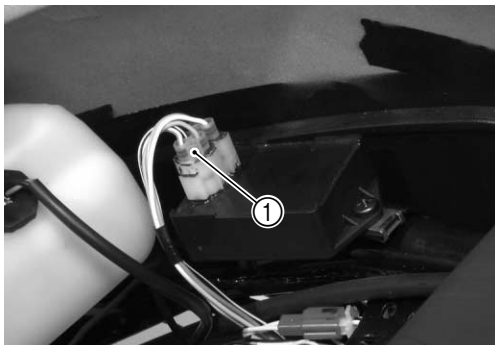
Measure the pickup coil peak voltage while squeezing the front or rear brake lever and pressing the starter button to turn the engine for a few seconds.

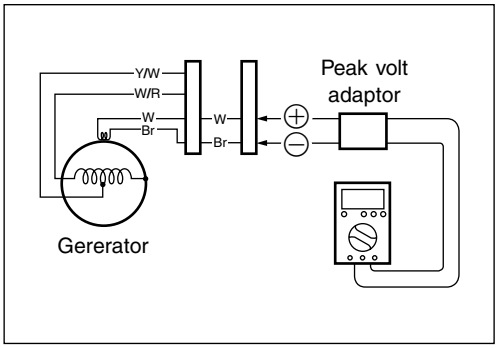
- Repeat the above procedure a few times and measure the highest pickup coil peak voltage.

Tester knob indication: Voltage (⎓)

DATA Pickup coil peak voltage: More than 5.0 V

If the peak voltage measured on the CDI unit coupler is lower than the standard value, measure the peak voltage on the pickup coil coupler as follows.





- Remove the trunk. (☞ 5-4)
- Disconnect the generator coupler ①.
- Connect the multi circuit tester with the peak volt adaptor as follows.

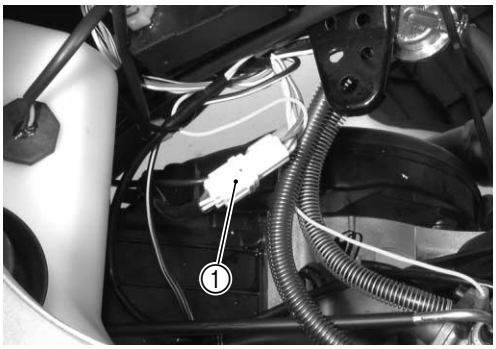
Brown (⊖ Probe) – White (⊕ Probe)
Measure the pickup coil peak voltage in the same manner as on the CDI unit coupler.

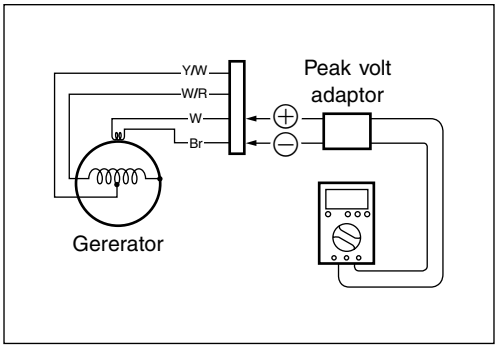
TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Voltage (⎓)

DATA Pickup coil peak voltage: More than 5.0 V

If the peak voltage on the generator coupler is within specification, but on the CDI unit coupler is not within specification, replace the wire harness with a new one. If both peak voltages are out of specification, replace the pickup coil with a new one.





PICKUP COIL RESISTANCE

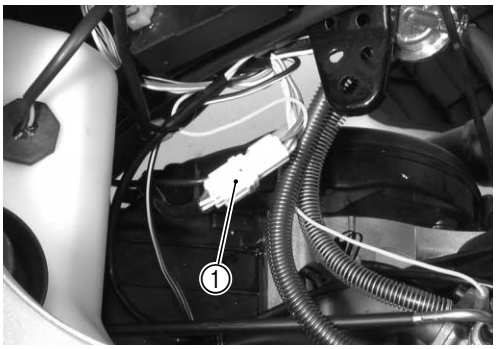
- Remove the trunk. (☞ 5-4)
- Disconnect the generator coupler ①.

Measure the resistance between the lead wires using the multi circuit tester. If the resistance is not within the specified value, the pickup coil must be replaced.

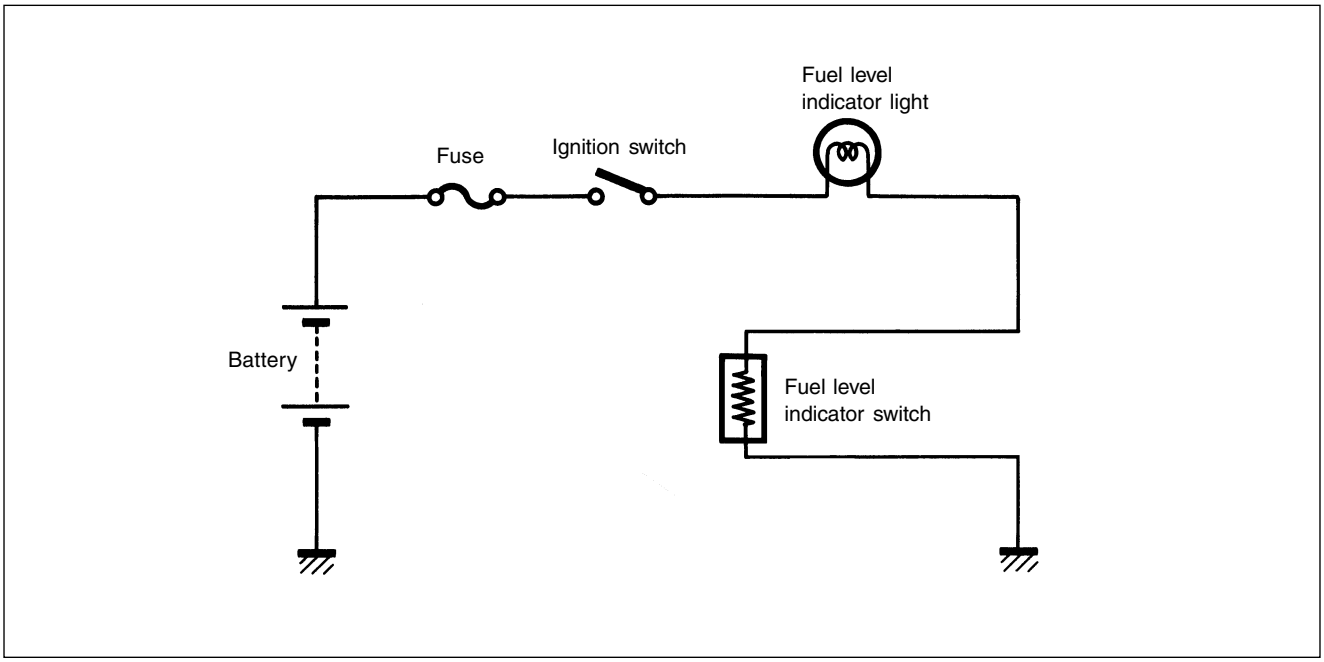
TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Resistance (Ω)

DATA Pickup coil resistance: 120 – 250 Ω (White – Brown)

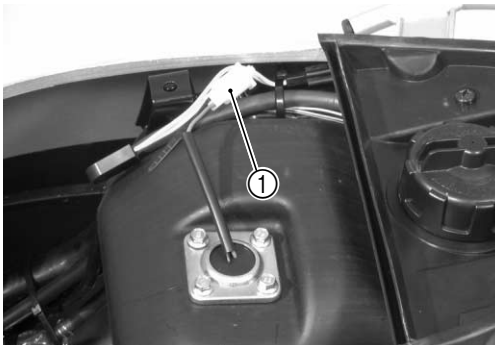


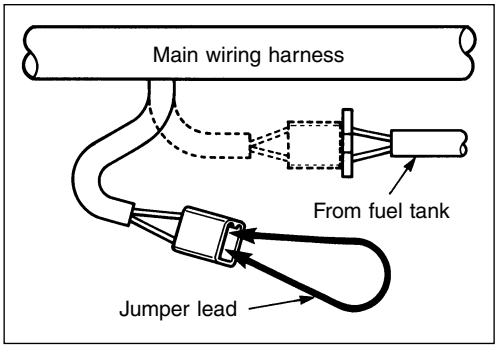
FUEL LEVEL INDICATOR SWITCH



INSPECTION

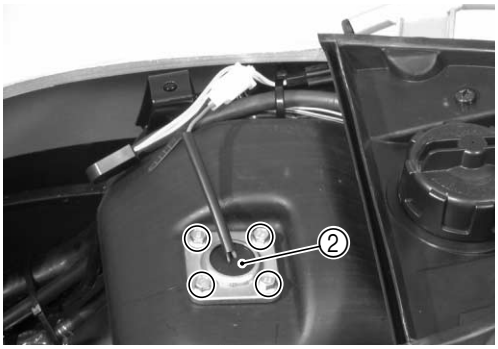
- Remove the trunk. (☞ 5-4)
- Turn the ignition switch to the “ON” position, and disconnect the fuel level indicator coupler ① going into the fuel level indicator switch, connect the lead wires from the main wiring harness with a jumper lead and check whether the fuel level indicator light comes on. If the fuel level indicator light comes on, the circuit of the fuel level indicator light is in good condition. If the fuel level indicator light does not come on, replace the indicator bulb or repair the circuit connection. If the bulb is in good condition, the fuel level indicator switch may be faulty.



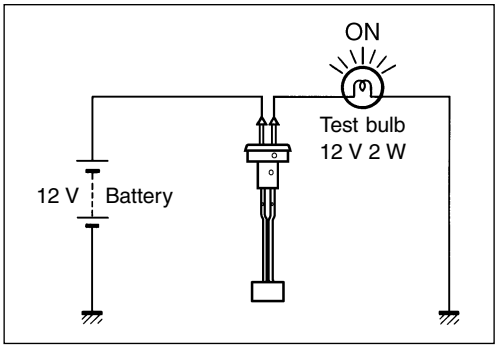


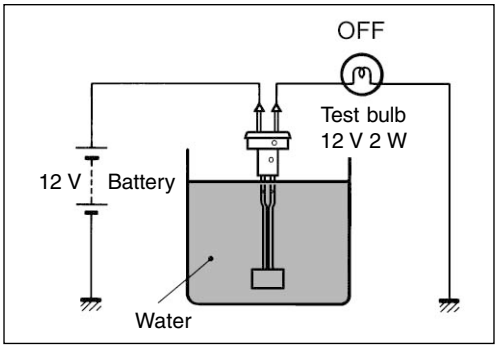
Inspect the fuel indicator switch for any faults. If any faults are found, replace the fuel indicator switch with a new one.

- Remove the fuel level indicator switch ② from the fuel tank.



- Connect a 12 V battery to the fuel level indicator switch and ground it through a 2 W bulb. The bulb should light up after several seconds if the switch is in good condition.
- When the switch is immersed in water under the above condition, the bulb should go out. If the bulb remains lit, replace the fuel level indicator switch.





OIL LEVEL INDICATOR SWITCH
INSPECTION

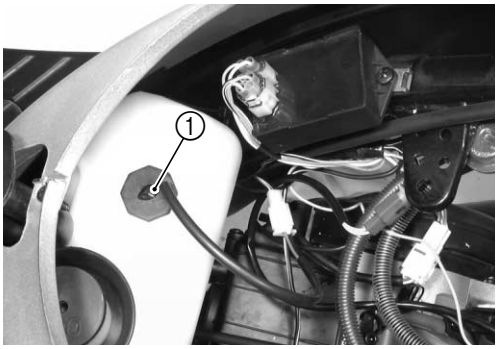
- Remove the trunk. (☞ 5-4)
- Disconnect the oil level indicator switch coupler and remove the oil level indicator switch ①.

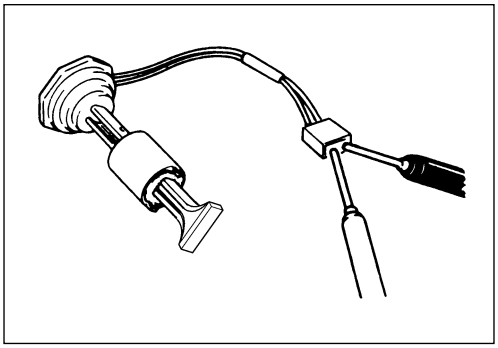
Measure the continuity between the lead wires of the oil level indicator switch.

If there is no continuity between the lead wires when the oil level indicator switch is in the low-level position, file the contact surface or replace the oil level indicator switch with a new one.

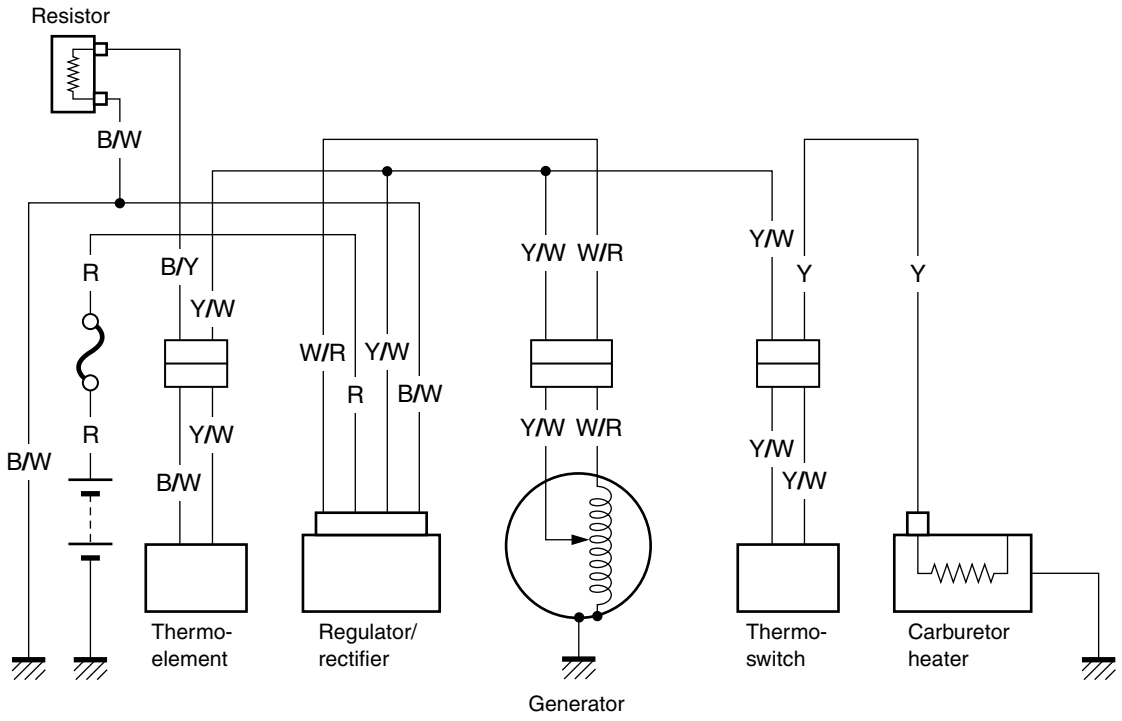
09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))





THERMOELEMENT, CARBURETOR HEATER, AND THERMOSWITCH

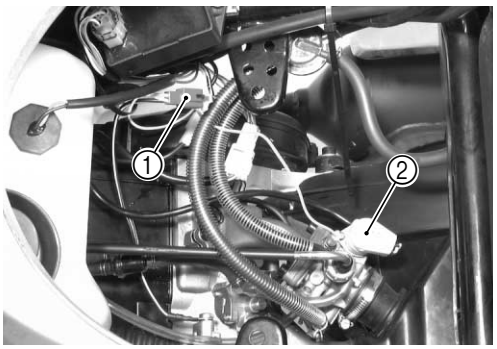


INSPECTION

THERMOELEMENT

- Remove the trunk. (☞ 5-4)
- Disconnect the thermoelement coupler ① and remove the thermoelement ②.
- Connect the thermoelement lead wires to a 12 V battery.

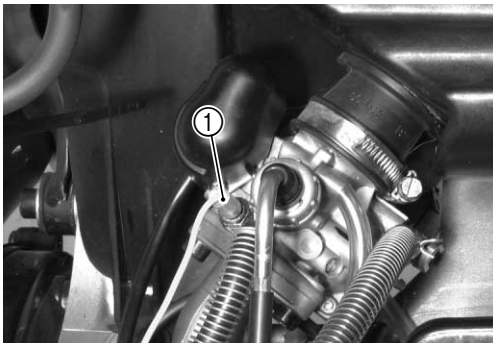
Wait five minutes and feel the thermoelement to see if it has reached approximately 36°C. If the appropriate temperature is not reached, replace the thermoelement with a new one.



NOTE:
This check should be carried out when the engine is cold.

CARBURETOR HEATER

- Remove the trunk. (☞ 5-4)
- Disconnect the carburetor heater lead wire and remove the carburetor heater ①.



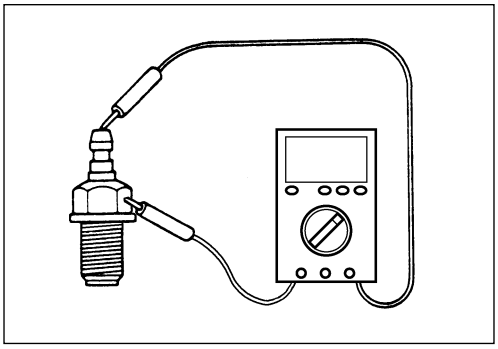
Measure the resistance between the terminals using the multi circuit tester. If the resistance is not within the specified value, replace the carburetor heater with a new one.

TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Resistance (Ω)

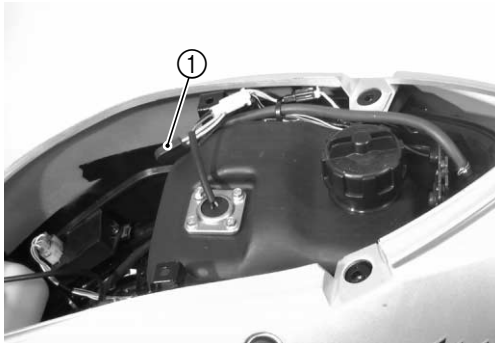
DATA Standard resistance: 8 – 18 Ω

NOTE:
This check should be carried out when the engine is cold.



THERMOSWITCH

- Remove the upper fuel tank cover. (☞ 5-5)
- Disconnect the thermoswitch coupler and remove the thermoswitch ①.



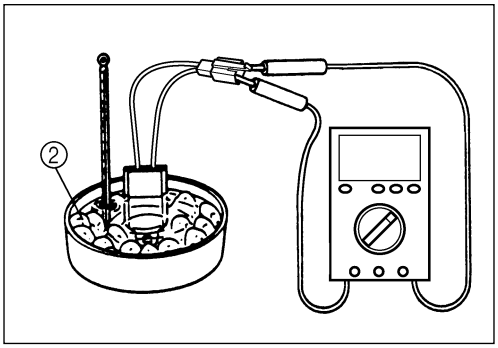
The temperature at which the thermoswitch closes must be within specification. Measure the closing temperature of the thermoswitch as follows.

- Connect the thermoswitch to the multi circuit tester and place it in a container of water. Cool the water with ice ② and observe the temperature when the thermoswitch closes.

TOOL 09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))

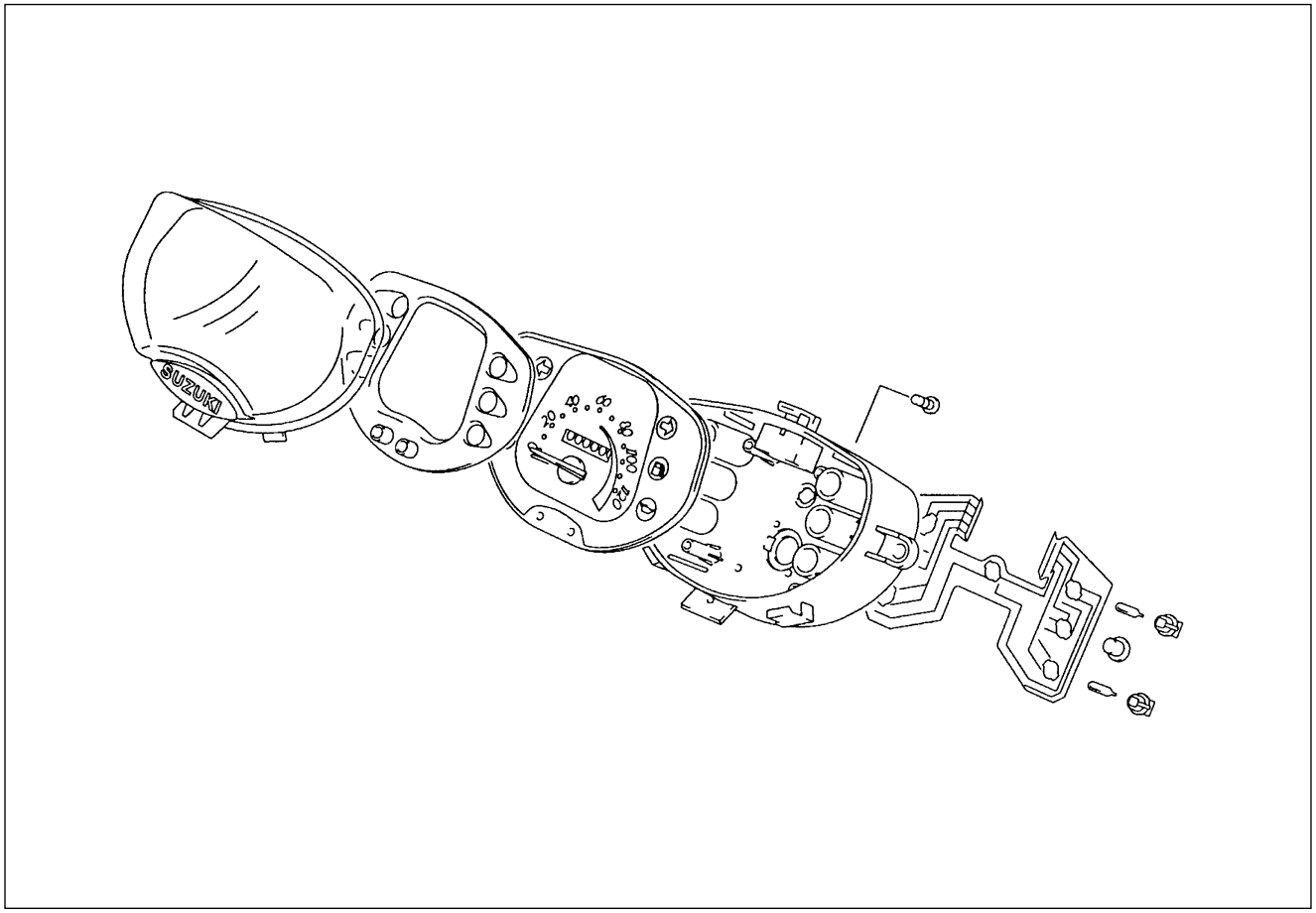
DATA Thermoswitch specification:
OFF → ON: Below 3 – 9°C
ON → OFF: Above 10 – 16°C



SPEEDOMETER
REMOVAL AND DISASSEMBLY

- Remove the speedometer assembly. (☞ 5-23)

Disassemble the speedometer, as shown.



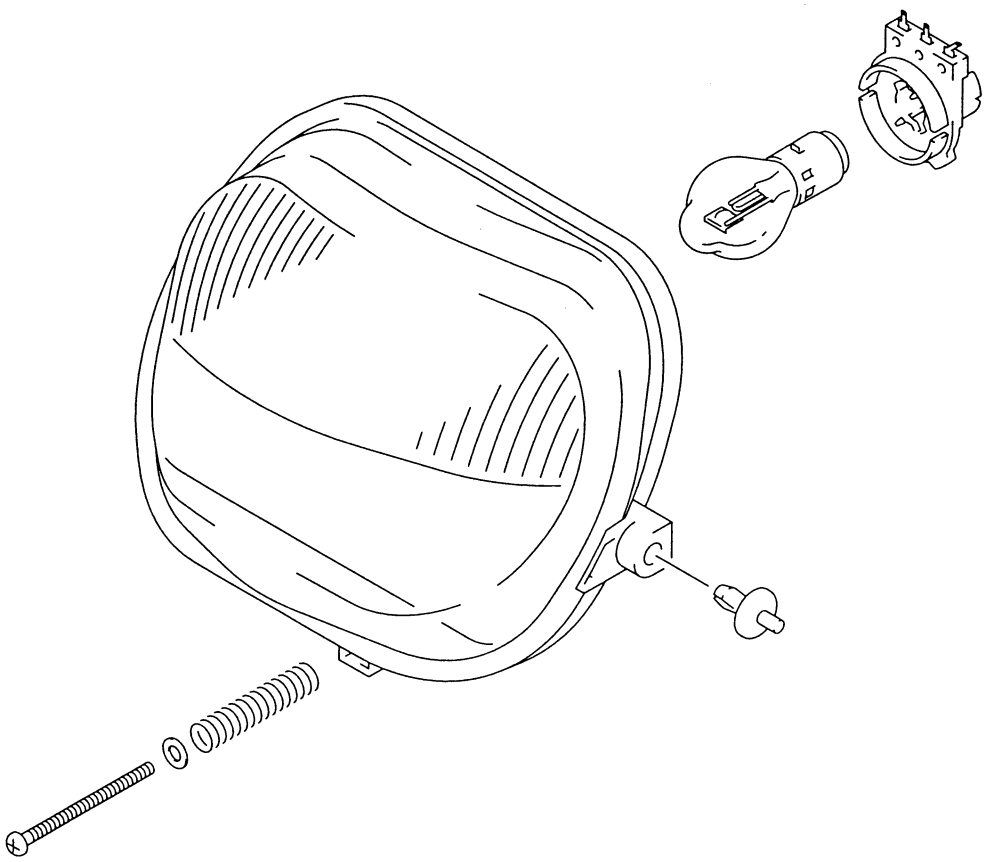
INSPECTION

Check the continuity between the lead wires using the multi circuit tester. If there is no continuity, replace the respective parts.

09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))

LAMPS
HEADLIGHT



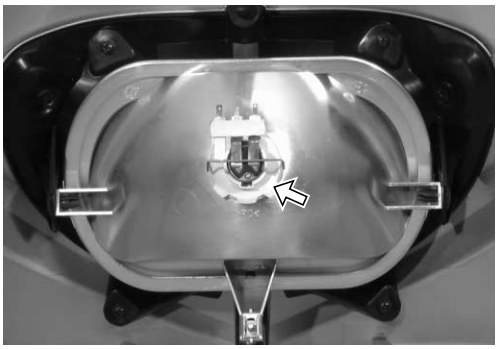
Headlight bulb: 12 V 35/35 W

HEADLIGHT BULB REPLACEMENT

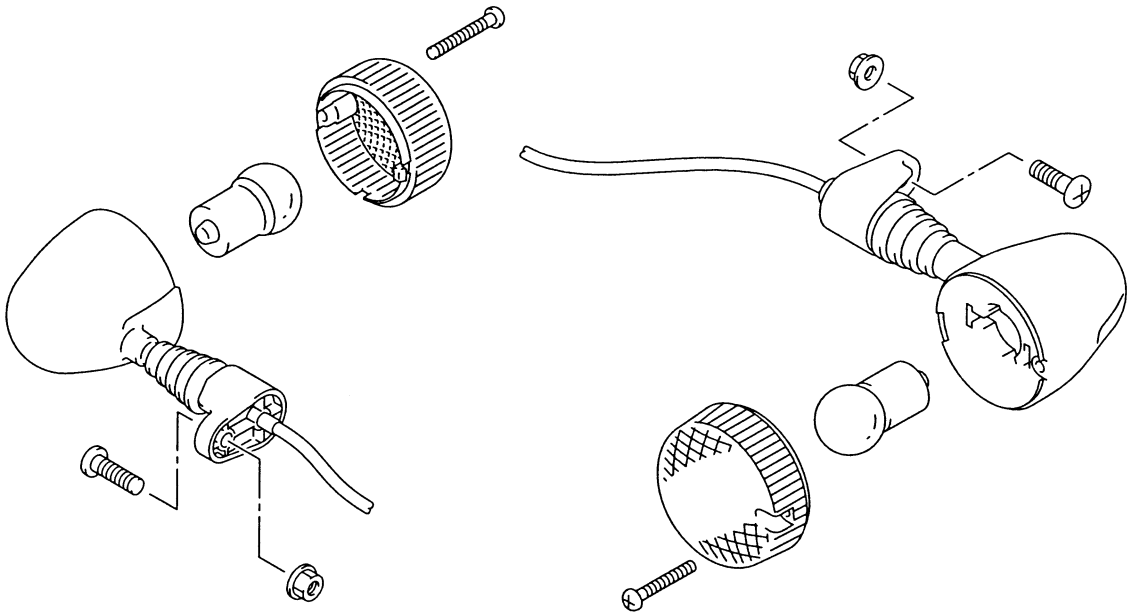
- Remove the front leg shield. (☞ 5-3)
- Remove the headlight bulb.

⚠ CAUTION

If you touch the bulb with your bare hands, clean the bulb with a cloth moistened with alcohol or soapy water to prevent premature bulb failure.



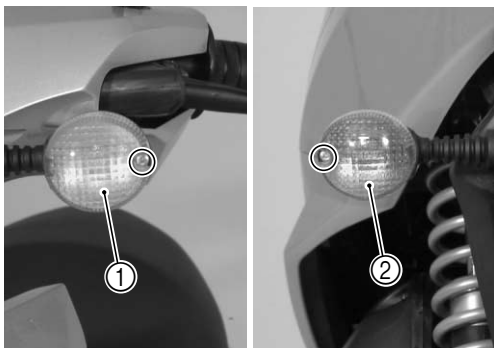
FRONT AND REAR TURN SIGNAL LIGHT



Turn signal light: 12 V 10 W

FRONT AND REAR TURN SIGNAL LIGHT BULB REPLACEMENT

- Remove the front turn signal light lens ① and rear turn signal light lens ②.

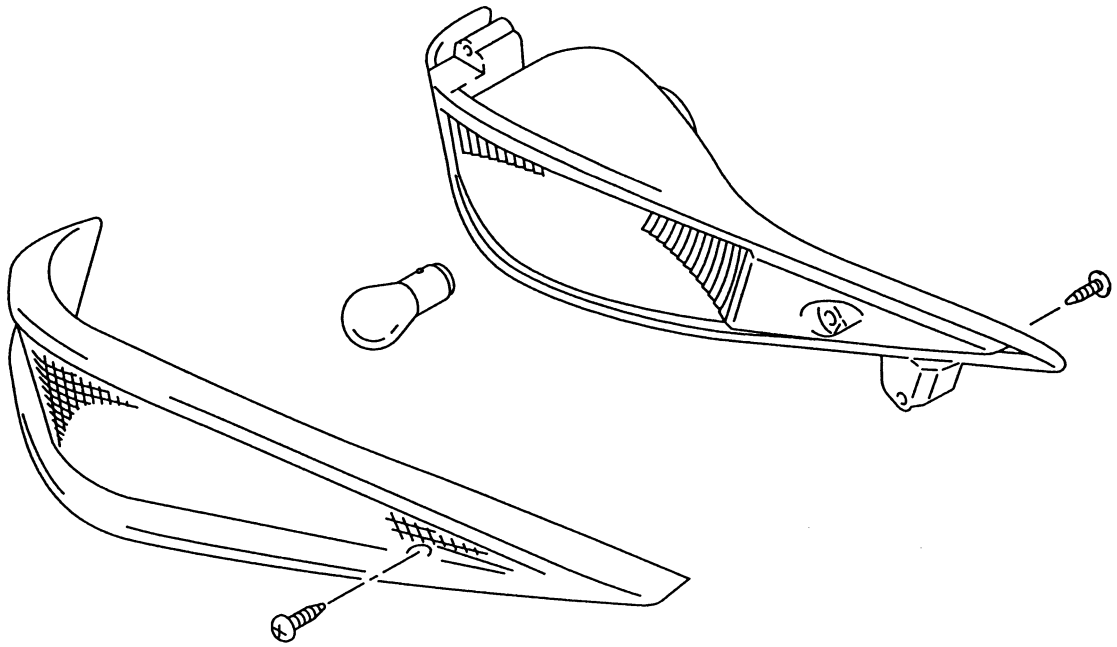


- Remove the front turn signal light bulb ③ and rear turn signal light bulb ④.

⚠ CAUTION

If you touch the bulb with your bare hands, clean the bulb with a cloth moistened with alcohol or soapy water to prevent premature bulb failure.

BRAKE LIGHT/TAILLIGHT



Brake light/taillight: 12 V 21/5 W

BRAKE LIGHT/TAILLIGHT BULB REPLACEMENT

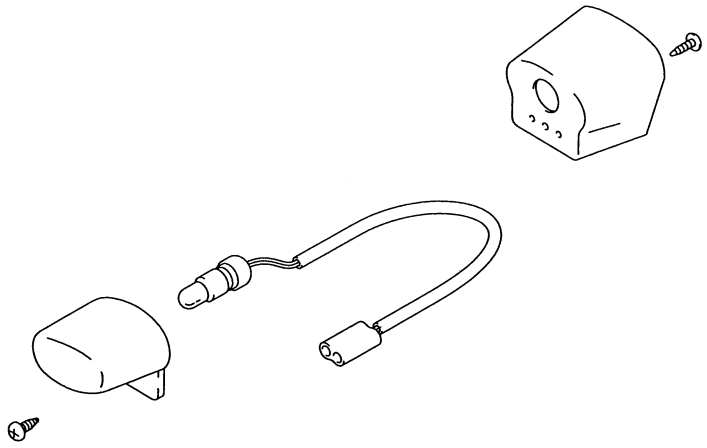
- Remove the brake light/taillight lens.

- Remove the brake light/taillight bulb.

⚠ CAUTION

If you touch the bulb with your bare hands, clean the bulb with a cloth moistened with alcohol or soapy water to prevent premature bulb failure.

LICENSE PLATE LIGHT

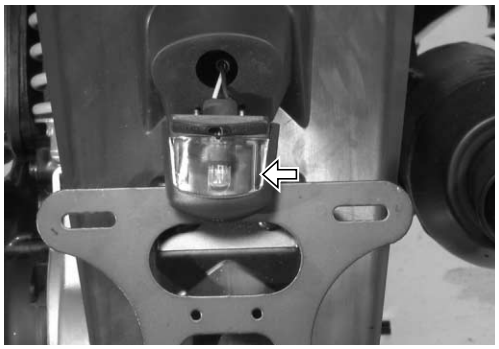


License plate light: 12 V 5 W

LICENSE PLATE LIGHT BULB REPLACEMENT

- Remove the license plate light case mounting screw.

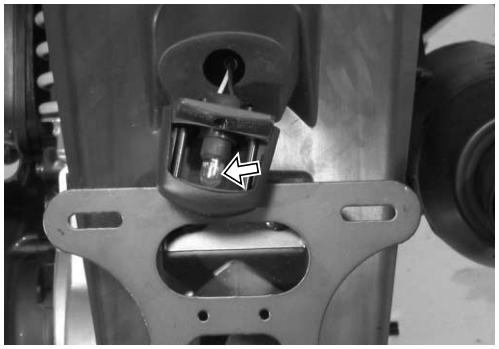
- Remove the license plate light case.



- Remove the license plate light bulb.

⚠ CAUTION

If you touch the bulb with your bare hands, clean the bulb with a cloth moistened with alcohol or soapy water to prevent premature bulb failure.

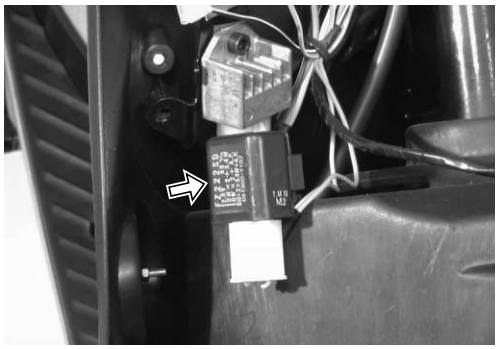


RELAYS

STARTER RELAY

The starter relay is located behind the battery holder cover. (☞ 6-30)

TURN SIGNAL RELAY



The turn signal relay is located behind the front leg shield. (☞ 5-3)
If the turn signal light does not light, inspect the bulb or repair the circuit connection.
If the bulb and circuit connection are OK, the turn signal relay may be faulty, replace it with a new one.

NOTE:
When making this test, make sure that the battery is fully charged.

SWITCHES

Measure each switch for continuity using the multi circuit tester. If there is no continuity, replace the respective switch with a new one.

IGNITION SWITCH

Color / Position	B/R	B/W	Bl/W	O	R
ON ( )				○	○
C ( )	○	○	○	○	○
OFF ( )	○	○			
Lock ( )	○	○			

LIGHTING SWITCH

Color / Position	G/W	Gr	Y/W
ON ( )		○	○
OFF (•)	○		○

TURN SIGNAL LIGHT SWITCH

Color / Position	B	Lbl	Lg
L ( )	○	○	
•			
R ( )		○	○

STARTER BUTTON

Color / Position	B/W	Y/G
•		
PUSH	○	○

DIMMER SWITCH

Color / Position	Gr	Y	W
HI	○	○	
LO	○		○

HORN BUTTON

Color / Position	G	B/W
PUSH	○	○
•		

FRONT BRAKE LIGHT SWITCH

Color / Position	O	W
ON	○	○
OFF		

REAR BRAKE LIGHT SWITCH

Color / Position	O	W
ON	○	○
OFF		

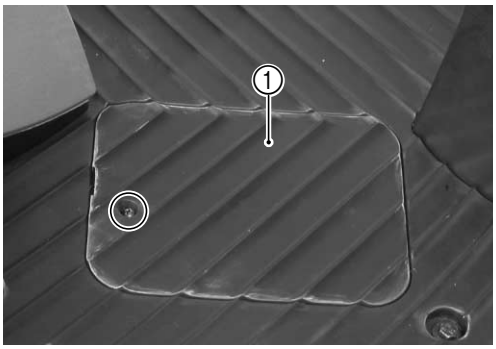
WIRE COLOR

B	: Black	Lbl	: Light blue	W	: White
Br	: Brown	Lg	: Light green		
G	: Green	O	: Orange		
Gr	: Gray	R	: Red		

B/R : Black with Red tracer
B/W : Black with White tracer
Bl/W : Blue with White tracer
G/W : Green with White tracer
Y/G : Yellow with Green tracer
Y/W : Yellow with White tracer

BATTERY

REMOVAL



- Remove the battery holder cover ①.

- Remove the battery.

NOTE:
Disconnect the ⊖ battery lead wire, first.

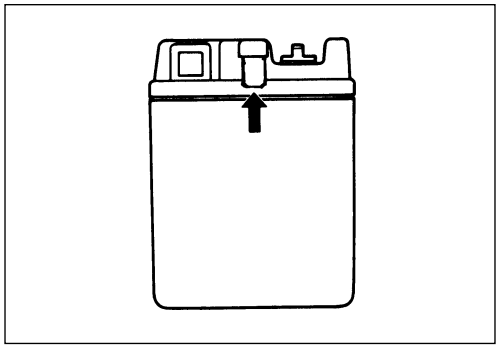
REMOUNTING

Remount the battery in the reverse order of removal.

SPECIFICATIONS

Type designation	CB4L-B, FB4L-B
Capacity	12 V, 14.4 kC (4 Ah)/10 HR
Standard electrolyte (Specific gravity)	1.280 at 20°C

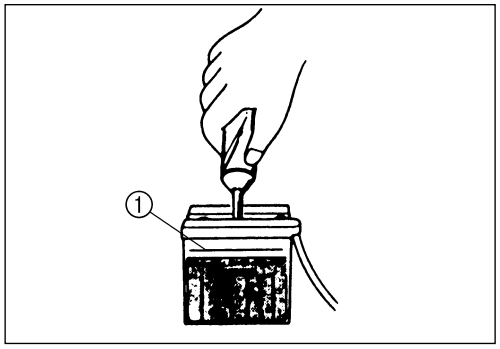
- When installing the battery onto the motorcycle, connect the breather tube to the battery vent.



INITIAL CHARGING

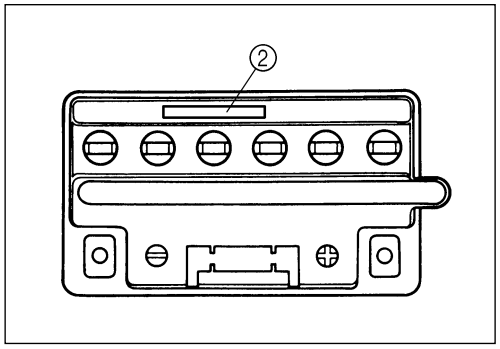
FILLING ELECTROLYTE

- Remove the short sealed tube.
- Fill the battery with electrolyte to the UPPER LEVEL line ①.
- Wait approximately a half-hour and check the electrolyte level. If the electrolyte level has fallen, add electrolyte to the UPPER LEVEL line ①.
- Slowly charge the battery with a battery charger at the specified current, as described below.



DATA Maximum charging current: 0.4 A

The charging time for a new battery is determined by the number of months that have elapsed since the date of manufacture. The manufacture's date is indicated by the six-digit stamp ② located on the battery. The day, month and year are each indicated by two digits.



Months after manufacturing	Necessary charging hours
Within 6	20
Within 9	30
Within 12	40
Over 12	60

NOTE:
If necessary, add only distilled water to the UPPER LEVEL line.

- Install the seal caps after charging.
- After charging the battery, allow the battery to cool for two hours, before installing it.

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, clean the battery terminals with sandpaper.
Check the electrolyte level, and if necessary, add distilled water to raise the electrolyte level, for each cell, to the UPPER LEVEL line.
Use a hydrometer to measure the electrolyte specific gravity reading. If the reading is 1.22 or less, as corrected to 20°C, this indicates that the battery needs to be charged.

Specific gravity at 20°C	Condition	Measure
1.250 – 1.280	Normal	
1.220 – 1.250	Under charged	Charge
Below 1.220	Run down	Charge or replace

TOOL 09900-28403: Hydrometer

RECHARGING OPERATION

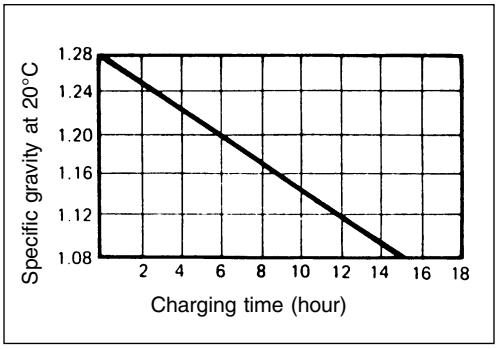
NOTE:
When charging the battery, be sure to remove the battery from the motorcycle to protect the regulator/rectifier against excessive voltage.

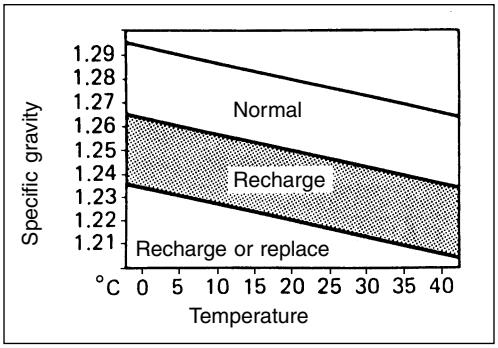
- Use the following formula to correct the specific gravity reading to 20°C.
  S20 = St + 0.0007 (t-20)
  Where S20 = corrected value of specific gravity (20°C)
  St = value of specific gravity read at temperature t°C
  0.0007 = temperature coefficient of specific gravity
  t = temperature in degrees centigrade at which St was read.
- Check the corrected specific gravity reading with the chart, to determine the charging time in hours. This is when a constant-current charge at a rate of 0.4 amperes (which is a tenth of the capacity of the present battery) is used.
- When charging the battery, do not allow the electrolyte temperature to exceed 45°C. Interrupt the operation, as necessary, to let the electrolyte cool down.

DATA Electrolyte specific gravity: 1.280 at 20°C

⚠ CAUTION

Do not quick charge the battery. Quick charging will shorten the life of the battery.





SERVICE LIFE

Lead oxide is on the plates of the battery and will gradually come off of the plates during the life of the battery. When the bottom of the battery case becomes full of this sediment, replace the battery. If the battery is not charged for a long period of time, lead sulfate may accumulate on the surface of the plates. If this occurs, replace the battery with a new one.

STORAGE

When a battery is not used for a long period of time, sulfation may occur. When the motorcycle is not used for more than one month (especially during the winter season), the battery should be charged at least once a month.

⚠ WARNING

- **Before charging the battery, remove the seal cap from each cell.**
- **Keep fire and sparks away from a battery which is being charged.**
- **When removing the battery from the motorcycle, be sure to remove the ⊖ battery terminal, first.**

SERVICING INFORMATION

CONTENTS

TROUBLESHOOTING
ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start or is hard to start.	**Compression too low**	
	1. Worn cylinder.	Replace.
	2. Worn piston ring.	Repair or replace.
	3. Gas leaks from the joint in crankcase, cylinder or cylinder head.	Repair or replace.
	4. Damaged reed valve.	Replace.
	5. Loose spark plug.	Tighten.
	6. Broken, cracked or damaged piston.	Replace.
	Spark plug not sparking	
	1. Damaged spark plug.	Replace.
	2. Damaged spark plug cap.	Replace.
	3. Fouled spark plug.	Clean or replace.
	4. Wet spark plug.	Clean and dry or replace.
	5. Defective ignition coil.	Replace.
	6. Defective stator coil.	Replace.
	7. Open or short in high-tension cord.	Replace.
	8. Defective ignition switch.	Replace.
	No fuel reaching the carburetor	
	1. Clogged hole in the fuel tank cap.	Clean or replace.
	2. Clogged or defective fuel valve.	Clean or replace.
	3. Defective needle valve.	Replace with needle valve seat.
	4. Clogged fuel hose or defective vacuum hose.	Clean or replace.
Engine stalls easily.	1. Fouled spark plug.	Clean or replace.
	2. Defective CDI unit.	Replace.
	3. Clogged fuel hose.	Clean.
	4. Clogged carburetor jet.	Clean.
	5. Clogged exhaust pipe.	Clean.
Engine is noisy.	**Noise appears to come from piston**	
	1. Worn down piston.	Replace.
	2. Worn cylinder.	Replace.
	3. Carbon built-up in the combustion chamber.	Clean.
	4. Worn piston pin, bearing or piston pin bore.	Replace.
	5. Worn piston rings or ring grooves.	Replace.
	Noise seems to come from crankshaft	
	1. Worn or burnt crankshaft bearings.	Replace.
	2. Worn or burnt big-end bearing.	Replace.
	Noise seems to come from final gearbox	
	1. Worn or rubbing final gears.	Replace.
	2. Worn splines.	Replace.
	3. Worn or damaged bearings of driveshaft or rear axle shaft.	Replace.
Clutch slips.	1. Worn or damaged clutch shoes.	Replace.
	2. Worn clutch drum.	Replace.

Complaint	Symptom and possible causes	Remedy
Engine idles poorly.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston ring.	Replace.
	4. Gas leaks from crankshaft oil seal.	Replace.
	5. Excessive spark plug gap.	Adjust or replace.
	6. Defective ignition coil.	Replace.
	7. Defective CDI unit.	Replace.
	8. Defective stator coil.	Replace.
	9. Incorrect float chamber fuel level.	Adjust float height.
	10. Clogged carburetor jet.	Clean.
	11. Broken or damaged reed valve.	Replace.
Engine runs poorly in high-speed range.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston ring.	Replace.
	4. Insufficient spark plug gap.	Regap or replace.
	5. Ignition not advanced sufficiently due to poorly working ignition coil.	Replace.
	6. Defective CDI unit.	Replace.
	7. Defective stator coil.	Replace.
	8. Low float chamber fuel level.	Adjust float height.
	9. Dirty air cleaner element.	Clean.
	10. Clogged fuel hose, resulting in inadequate fuel supply to the carburetor.	Clean and prime.
	11. Clogged fuel valve vacuum pipe.	Clean.
Dirty or heavy exhaust smoke.	1. Incorrect engine oil.	Change.
Engine lacks power.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston rings.	Replace.
	4. Gas leaks from crankshaft oil seal.	Replace.
	5. Insufficient spark plug gap.	Regap or replace.
	6. Clogged carburetor jet.	Clean.
	7. Incorrect float chamber fuel level.	Adjust float height.
	8. Clogged air cleaner element.	Clean.
	9. Fouled spark plug.	Clean or replace.
	10. Air leakage from intake pipe.	Tighten or replace.
	11. Slipping or worn drive belt.	Replace.
	12. Damaged or worn rollers in the movable drive face.	Replace.
	13. Weakened movable drive face spring.	Replace.
	14. Rich air-fuel mixture due to defective starter system.	Replace.
Engine overheats.	1. Carbon build-up on piston crown.	Clean.
	2. Defective oil pump or clogged oil circuit.	Clean or replace.
	3. Low float chamber fuel level.	Adjust float height.
	4. Air leakage from intake pipe.	Tighten or replace.
	5. Incorrect engine oil.	Change.
	6. Incorrect spark plug.	Change.
	7. Clogged exhaust pipe/muffler.	Clean or replace.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Starting difficulty.	1. Defective thermoelement. 2. Air leaking from the joint between intake pipe and carburetor. 3. Air leaking from carburetor joint or vacuum hose joint. 4. Clogged fuel pipe.	Replace. Check intake pipe and carburetor for tightness, and replace gasket. Tighten or replace the defective part. Clean.
Idling or low-speed trouble.	1. Clogged or loose pilot jet. 2. Air leaking from carburetor joint, vacuum pipe joint, or intake pipe. 3. Improperly operating thermoelement.	Check and clean. Tighten or replace the defective part. Replace.
Medium or high-speed trouble.	1. Clogged main jet. 2. Clogged needle jet. 3. Improperly set fuel level. 4. Improperly operating throttle valve. 5. Clogged fuel filter.	Check and clean. Check and clean. Check and adjust float height. Check and adjust. Clean or replace.
Overflow and fuel level fluctuations.	1. Worn or damaged needle valve. 2. Broken needle valve spring. 3. Improperly working float. 4. Foreign matter on the needle valve. 5. High or low fuel level.	Replace. Replace. Check and adjust. Clean or replace with needle seat. Adjust float height.

CHASSIS

Complaint	Symptom and possible causes	Remedy
Steering is heavy.	1. Overtightened steering stem nut. 2. Broken bearing/race in steering stem. 3. Distorted steering stem. 4. Low tire pressure.	Adjust. Replace. Replace. Adjust.
Handlebar wobbles.	1. Loss of balance between right and left front suspension. 2. Distorted front axle or crooked tire.	Replace. Replace.
Front wheel wobbles.	1. Distorted wheel rim. 2. Worn front wheel bearings. 3. Defective or incorrect tire. 4. Loose front axle nut. 5. Loose bolt or nut on the rear shock absorber. 6. Worn engine mounting bushing. 7. Loose engine mounting nuts or bolts.	Replace. Replace. Replace. Tighten. Tighten. Replace. Tighten.
Front suspension too soft.	1. Weak springs.	Replace.
Front suspension too noisy.	1. Insufficient grease on the spring and damper. 2. Loose front suspension fastener.	Add. Tighten.
Rear wheel wobbles.	1. Distorted wheel rim. 2. Defective or incorrect tire. 3. Loose rear axle nut. 4. Worn engine mounting bushing. 5. Loose engine mounting nuts or bolts.	Replace. Replace. Tighten. Replace. Tighten.
Rear suspension too soft.	1. Weak spring. 2. Rear shock absorber leaks oil.	Replace. Replace.
Rear suspension too noisy.	1. Loose bolt or nut on the rear shock absorber. 2. Worn engine mounting bushing.	Tighten. Replace.

BRAKES

Complaint	Symptom and possible causes	Remedy
Brake power insufficient.	1. Leakage of brake fluid. 2. Worn brake pads. 3. Oil on brake pad surface. 4. Worn brake disc. 5. Air in hydraulic system. 6. Worn brake shoes. 7. Oil on brake shoe surface. 8. Worn brake drum. 9. Excessive brake lever play.	Repair or replace. Replace. Clean brake disc and brake pads. Replace. Bleed. Replace. Clean brake drum and brake shoes. Replace. Adjust.
Brake squeaks.	1. Carbon adhesion on brake pad surface. 2. Tilted brake pad. 3. Damaged wheel bearing. 4. Worn brake pad. 5. Foreign material in brake fluid. 6. Clogged return port of master cylinder. 7. Brake shoe surface glazed. 8. Loose front axle or rear axle nut. 9. Worn brake shoes.	Clean surface with sandpaper. Readjust brake pad position or replace. Replace. Replace. Change brake fluid. Disassemble and clean master cylinder. Clean surface with sandpaper. Tighten. Replace.
Brake lever stroke excessive.	1. Air in hydraulic system. 2. Insufficient brake fluid. 3. Incorrect brake fluid. 4. Worn brake cam lever. 5. Worn brake shoe and/or drum.	Bleed. Check level and add. Bleed any air. Change. Replace. Replace.
Brake fluid leaks.	1. Loose connection joints. 2. Cracked hose. 3. Worn piston seal.	Tighten. Replace. Replace.
Brake drags.	1. Rusty parts. 2. Insufficient brake lever lubrication.	Clean and lubricate. Lubricate.

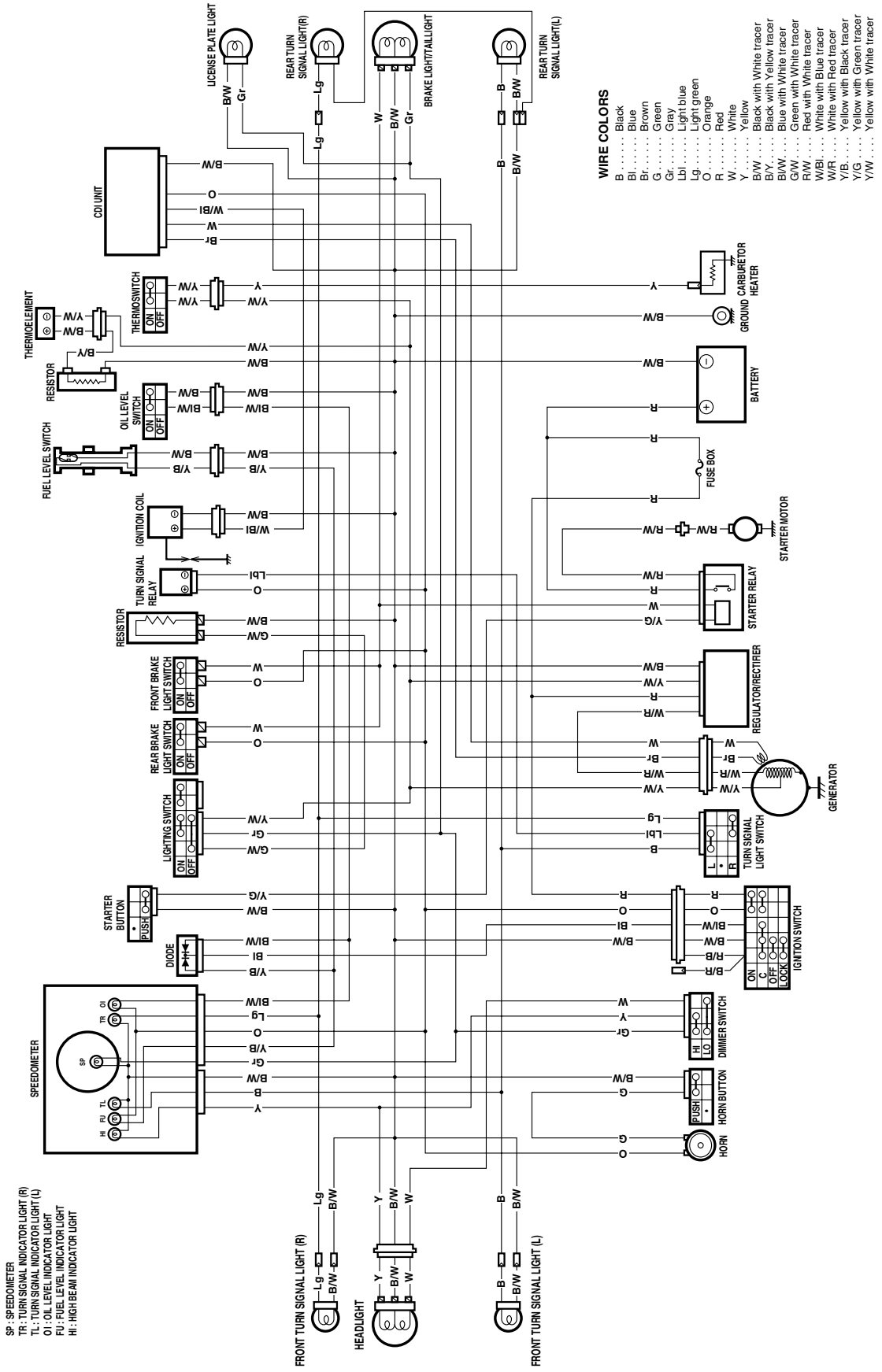
ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective ignition coil. 2. Defective spark plug. 3. Defective stator coil or pickup coil. 4. Defective CDI unit. 5. Loose connection of lead wire.	Replace. Replace. Replace. Replace. Connect or tighten.
Spark plug soon becomes fouled with carbon.	1. Excessively rich air-fuel mixture. 2. High idling speed. 3. Incorrect gasoline. 4. Dirty air cleaner element. 5. Incorrect spark plug (cold type). 6. Incorrect engine oil.	Adjust carburetor. Adjust carburetor. Change. Clean or replace. Change to hot type spark plug. Replace.
Spark plug electrodes overheat or burn.	1. Incorrect spark plug (hot type). 2. Overheated engine. 3. Loose spark plug. 4. Excessively lean air-fuel mixture. 5. Not enough engine oil.	Change to cold type plug. Tune-up. Tighten. Adjust carburetor. Check oil pump.
Generator does not charge.	1. Open or short in lead wires, or loose lead connections. 2. Shorted, grounded, or open generator coil. 3. Shorted or punctured regulator/rectifier.	Repair, replace or tighten. Replace. Replace.
Generator charges but charging rate is below the specifications.	1. Lead wires tend to get shorted or open-circuited or loosely connected at terminal. 2. Grounded or open-circuited stator coils or generator. 3. Defective regulator/rectifier. 4. Defective battery cell.	Repair or tighten. Replace. Replace. Replace battery.
Generator overcharges.	1. Internal short-circuit in the battery. 2. Defective regulator/rectifier.	Replace battery. Replace.
Unstable charging.	1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 2. Internally shorted generator. 3. Defective regulator/rectifier.	Repair or replace. Replace. Replace.
Starter switch does not work.	1. Run down battery. 2. Defective switch contacts. 3. Brushes do not seat properly on the commutator in the starter motor. 4. Defective starter relay. 5. Defective starter pinion gear assembly. 6. Defective front or rear brake light switch circuit.	Recharge or replace. Replace. Repair or replace. Replace. Replace. Repair or replace.

BATTERY

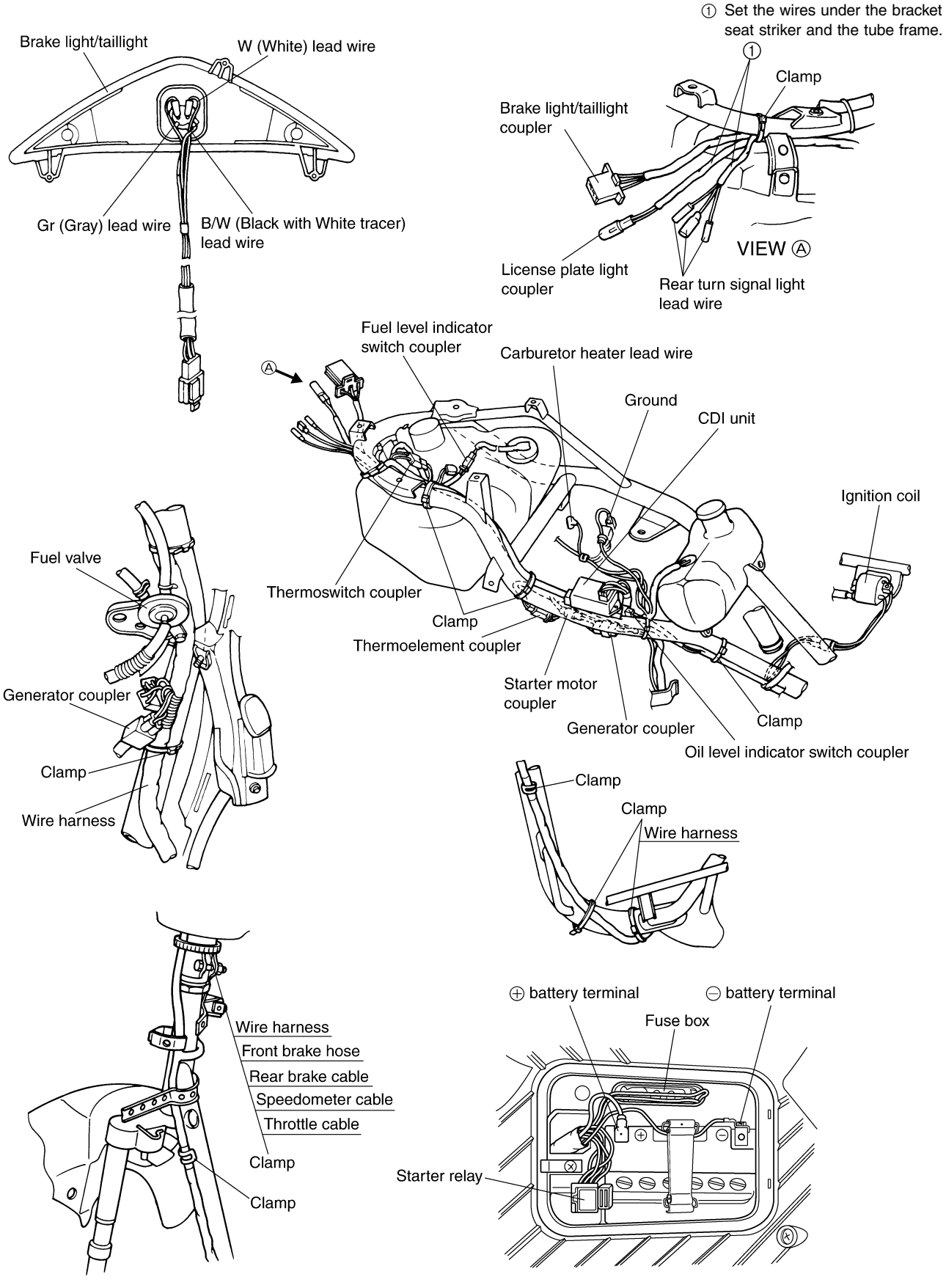
Complaint	Symptom and possible causes	Remedy
Sulfation, acidic white powdery substance or spots on surfaces of cell plates.	1. Insufficient electrolyte.	Add distilled water, if the battery has not been damaged and sulfation has not advanced too far, then recharge.
	2. Cracked battery case.	Replace.
	3. Battery has been left in a run-down condition for a long time.	Replace.
	4. Foreign matter has entered the battery and has become mixed with the electrolyte.	If sulfation has not advanced too far, try to restore the battery by replacing the electrolyte, recharging it fully with the battery detached from the motorcycle and then adjusting the electrolyte specific gravity.
Battery runs down quickly.	1. Incorrect charging method.	Check the generator, regulator/rectifier and circuit connections and make necessary adjustments to obtain specified charging operation.
	2. Battery cell plates have lost much of their active material as a result of overcharging.	Replace and correct the charging system.
	3. A short-circuit condition exists within the battery to excessive accumulation of sediments caused by the high electrolyte specific gravity.	Replace.
	4. Low electrolyte specific gravity.	Recharge and adjust electrolyte specific gravity.
	5. Foreign matter has entered the battery and has become mixed with the electrolyte.	Replace the electrolyte, recharge the battery, and then adjust specific gravity.
	6. Old battery.	Replace.
Reversed battery polarity.	1. Improperly connected battery leads. (i.e., ⊖ to ⊕ and ⊕ to ⊖)	Replace the battery and be sure to connect it properly.
Battery "sulfation"	1. Incorrect charging rate. (When not in use, the battery should be checked at least once a month to avoid sulfation.)	Replace.
	2. Excessive or insufficient battery electrolyte or high or low specific gravity.	Keep the electrolyte at the prescribed level, or adjust the specific gravity by consulting the battery manufacturer's directions.
	3. The battery was left unused for too long in a cold climate.	Replace the battery if badly sulfated.
Battery discharges too rapidly.	1. Dirty container top and sides.	Clean.
	2. Impurities in the electrolyte or electrolyte specific gravity is too high.	Change the electrolyte by consulting the battery manufacturer's directions.

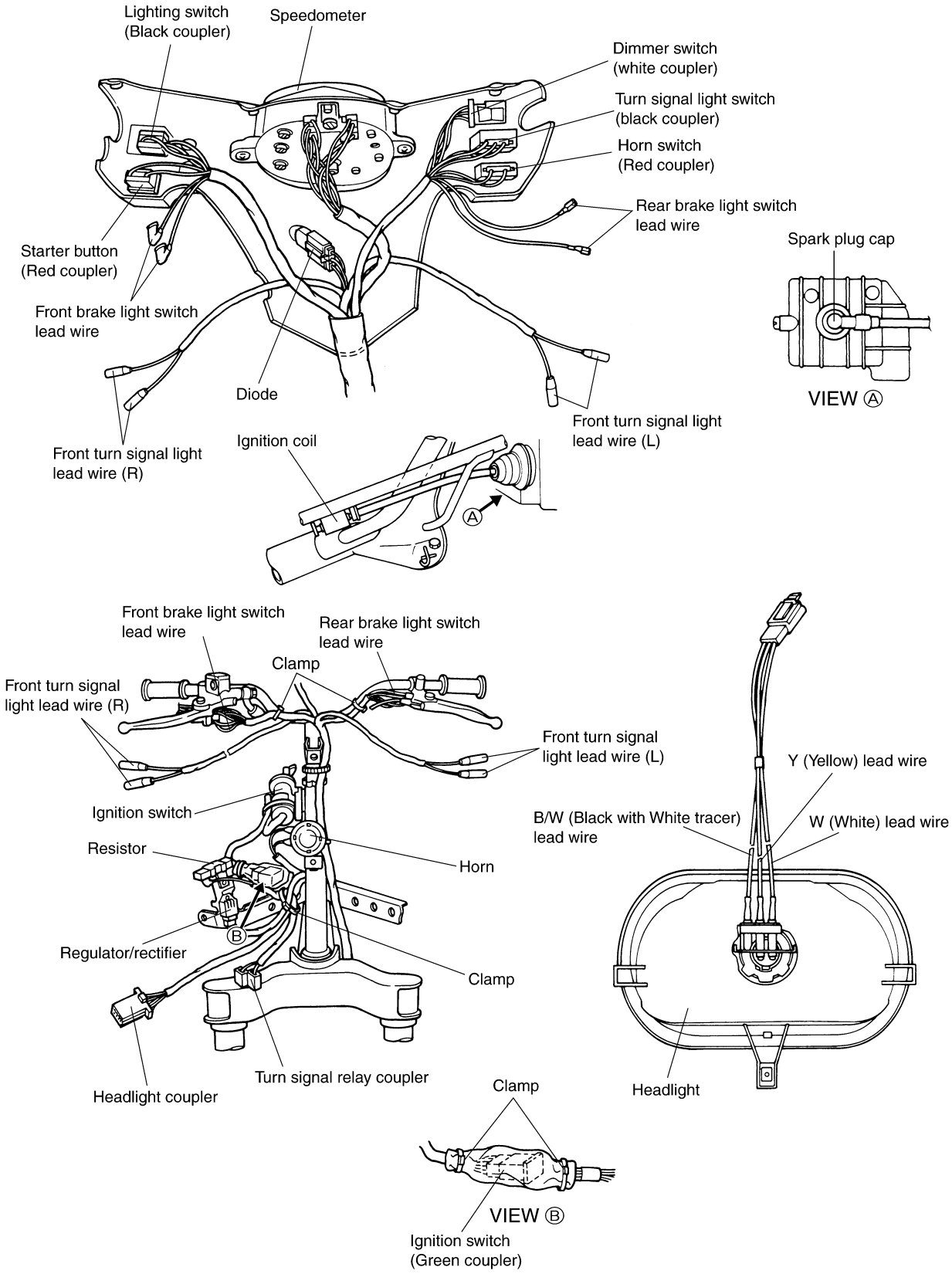
WIRING DIAGRAM



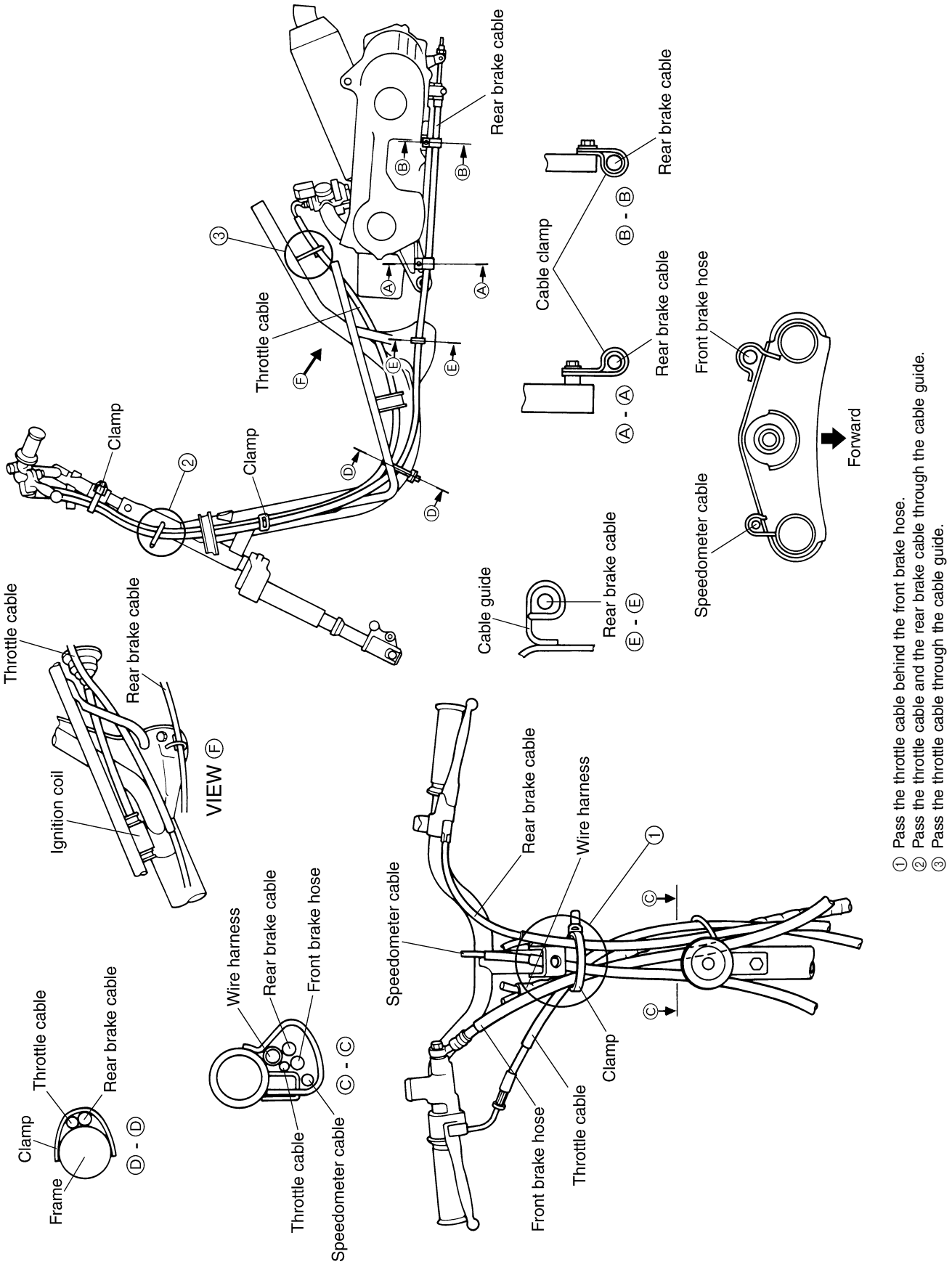
WIRE HARNESS, CABLE, AND HOSE ROUTING

WIRE HARNESS

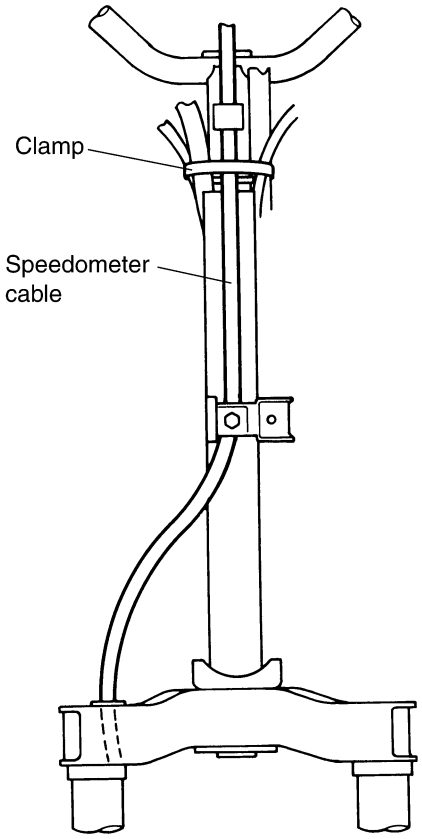



Lighting switch (Black coupler)
Speedometer
Dimmer switch (white coupler)
Turn signal light switch (black coupler)
Horn switch (Red coupler)
Rear brake light switch lead wire
Starter button (Red coupler)
Front brake light switch lead wire
Diode
Front turn signal light lead wire (R)
Front turn signal light lead wire (L)
Spark plug cap
VIEW Ⓐ
Ignition coil
Ⓐ
Front brake light switch lead wire
Rear brake light switch lead wire
Clamp
Front turn signal light lead wire (R)
Front turn signal light lead wire (L)
Ignition switch
Resistor
Horn
Ⓑ
Regulator/rectifier
Clamp
Turn signal relay coupler
Headlight coupler
Y (Yellow) lead wire
B/W (Black with White tracer) lead wire
W (White) lead wire
Headlight
Clamp
VIEW Ⓑ
Ignition switch (Green coupler)

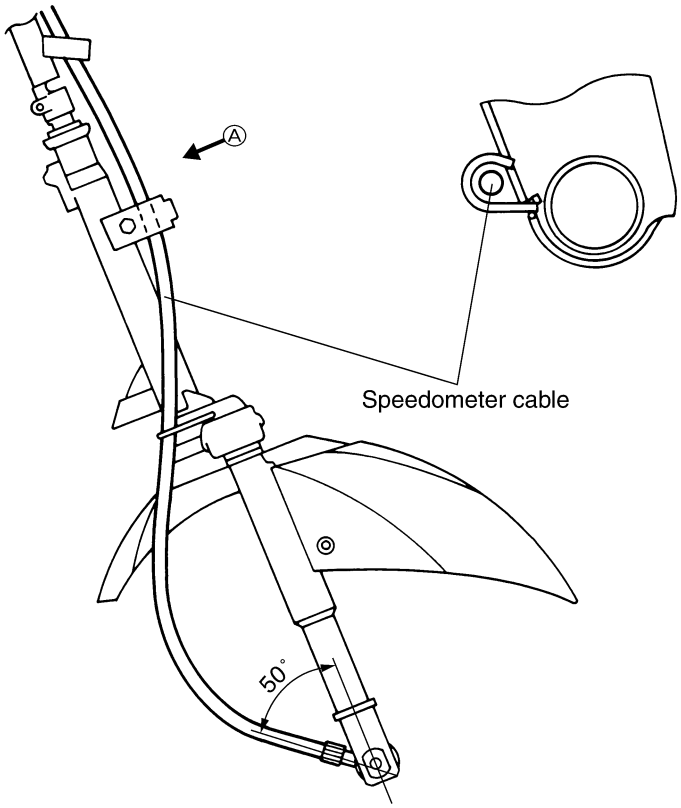
CABLE ROUTING



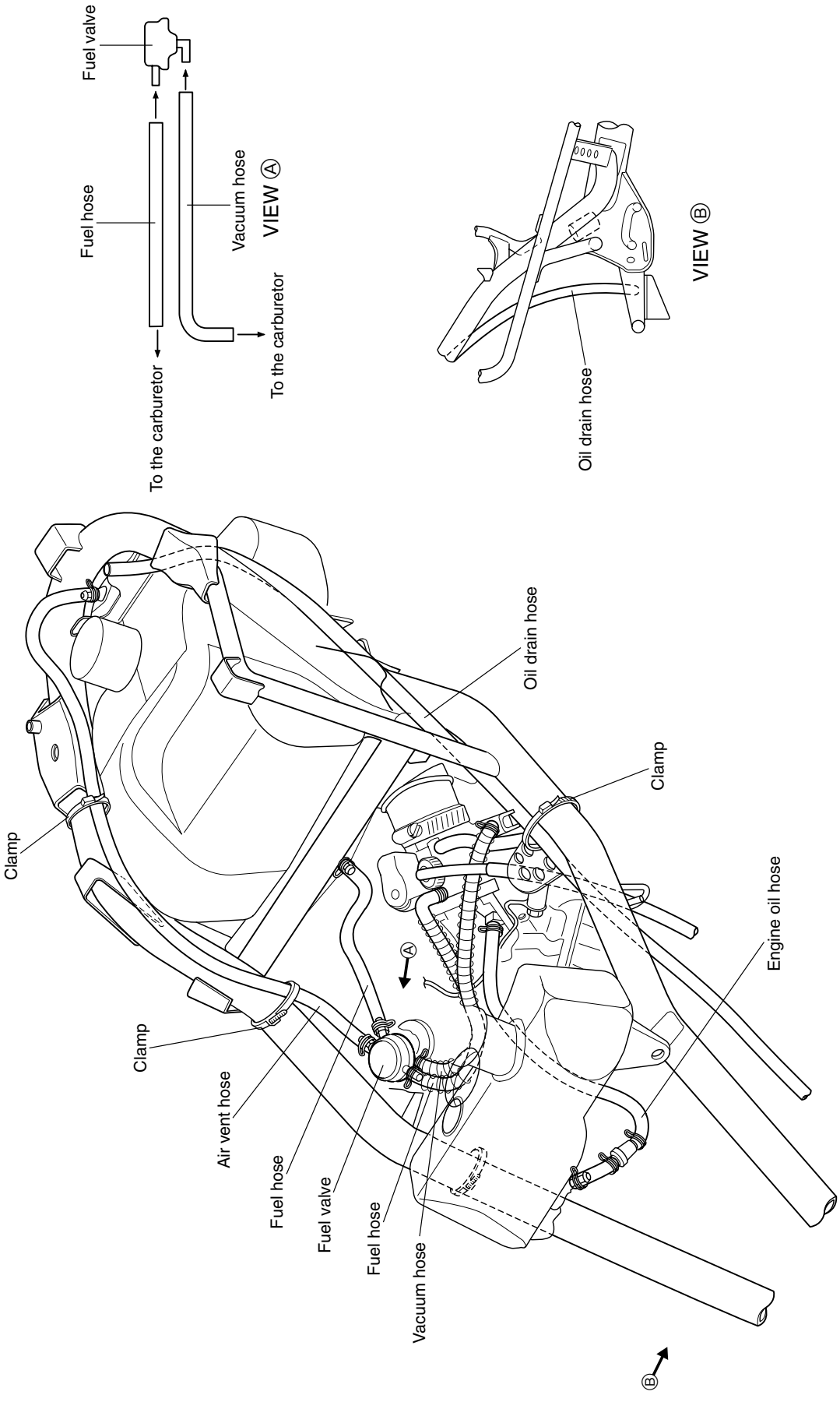
① Pass the throttle cable behind the front brake hose.
② Pass the throttle cable and the rear brake cable through the cable guide.
③ Pass the throttle cable through the cable guide.



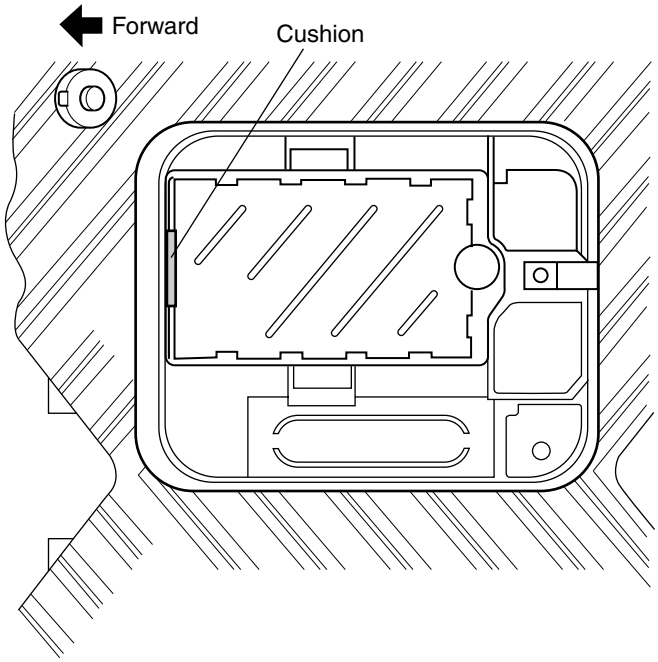
VIEW Ⓐ

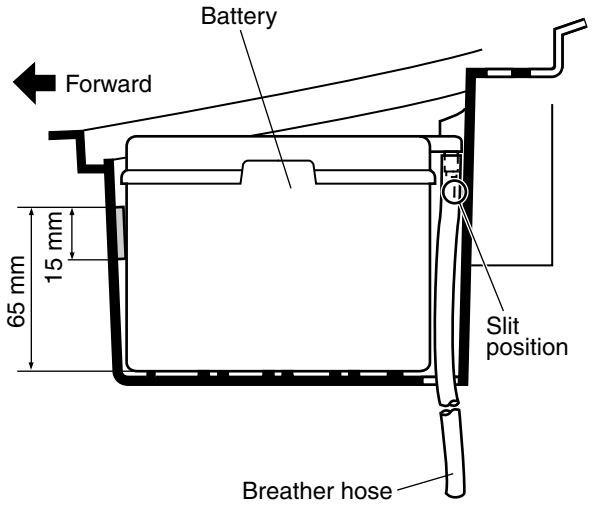


FUEL SYSTEM HOSE ROUTING



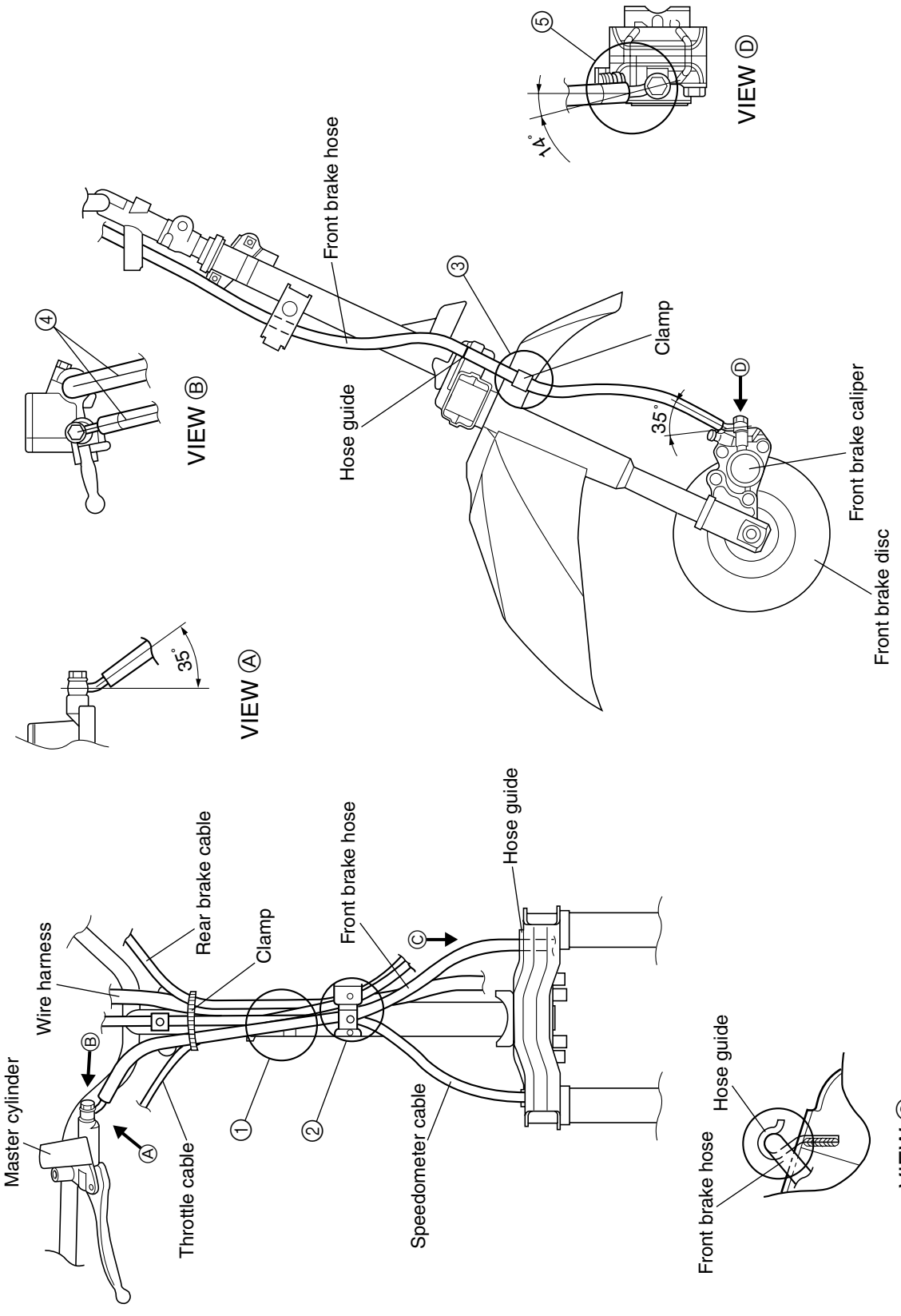
BATTERY BREATHER HOSE ROUTING





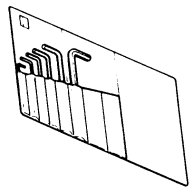
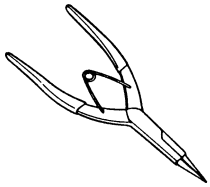
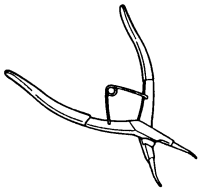
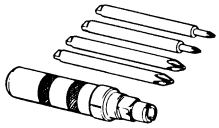
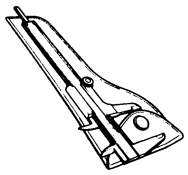
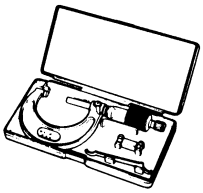
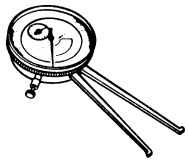
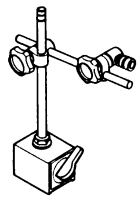
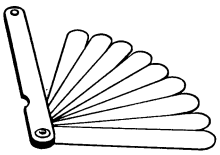
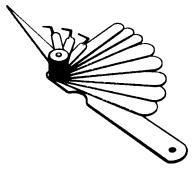
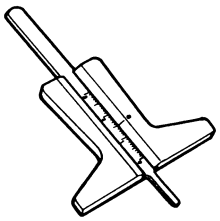
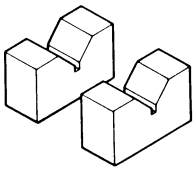
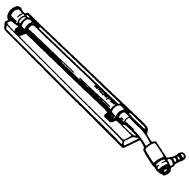
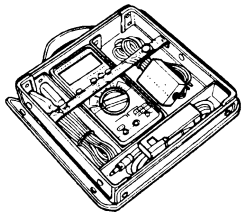
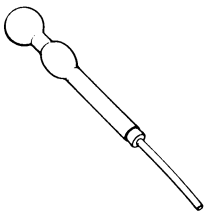
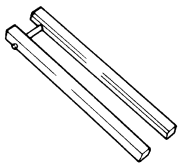
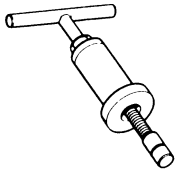
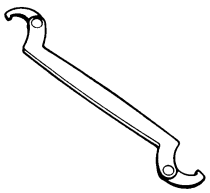
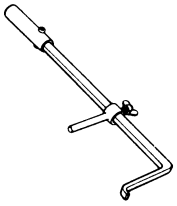
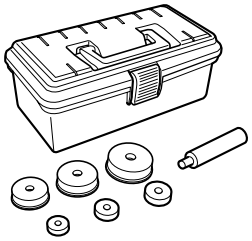
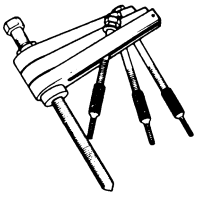
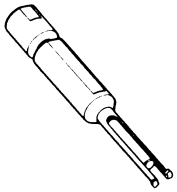
NOTE:
The slit on the breather hose must face battery side.

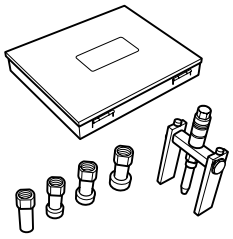
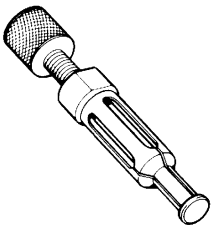
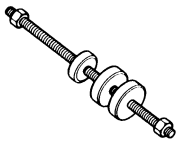
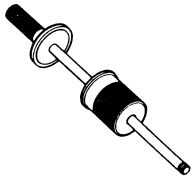
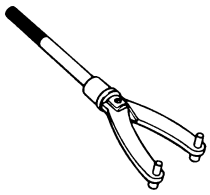
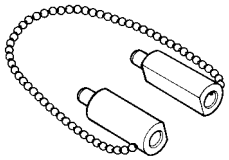
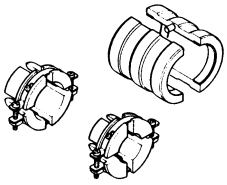
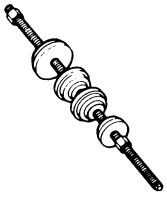
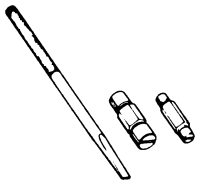
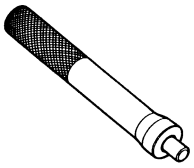
FRONT BRAKE HOSE ROUTING



① Pass the brake hose in front of the wire harness and each cable.
② Pass the brake hose through the hose guide.
③ Clamp the sleeve firmly.
④ Tighten the brake hose union bolt so that the hose is parallel to the handlebar.
⑤ Tighten the brake hose union bolt so that the hose is contacting the stopper.

SPECIAL TOOLS

 **09900-00401** **Hexagon wrench set**	 **09900-06107** **Snap ring pliers**	 **09900-06108** **Snap ring pliers**	 **09900-09003** **Impact driver set**	 **09900-20101** **Vernier calipers (150 mm)**
 **09900-20202** **Micrometer (25 – 50 mm)**	 **09900-20205** **Micrometer (0 – 25 mm)**	 **09900-20508** **Cylinder bore gauge set**	 **09900-20605** **Dial calipers**	 **09900-20606** **Dial gauge (1/100 mm)**
 **09900-20701** **Magnetic stand**	 **09900-20803** **Thickness gauge**	 **09900-20804** **Thickness gauge**	 **09900-20805** **Tire depth gauge**	 **09900-21304** **V-block (100 mm)**
 **09900-21602** **CCI oil gauge**	 **09900-25008** **Multi circuit tester set**	 **09900-28403** **Hydrometer**	 **09910-20116** **Conrod holder**	 **09910-32812** **Crankshaft installer**
 **09910-60611** **Universal clamp wrench**	 **09913-50121** **Oil seal remover**	 **09913-70210** **Bearing installer set**	 **09920-13120** **Crankcase separating tool**	 **09921-20210** **Bearing remover**

 **09921-20220** **Bearing remover set**	 **09923-73210** **Bearing remover**	 **09923-74510** **Bearing remover**	 **09924-84521** **Bearing installer set**	 **09930-30102** **Sliding hammer**
 **09930-40113** **Rotor holder**	 **09930-40131** **Rotor holder attachment**	 **09940-52860** **Front fork oil seal installer**	 **09941-34513** **Steering inner race installer**	 **09941-50111** **Bearing remover**
 **09941-74910** **Bearing installer**	 **09943-88211** **Bearing remover/ installer**			

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kgf-m
Cylinder head nut	10	1.0
Spark plug	28	2.8
Exhaust pipe mounting nut and bolt	10	1.0
Engine mounting bracket nut	65	6.5
Engine mounting nut	60	6.0
Clutch housing nut	50	5.0
Kick starter nut	50	5.0
Generator rotor nut	40	4.0
Clutch shoe nut	50	5.0
Kick starter lever bolt	10	1.0
Final gear oil drain bolt	5.5	0.55
Final gear oil level bolt	12	1.2
Oil pump mounting screw	4	0.4

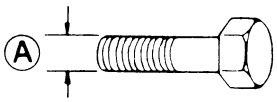
CHASSIS

ITEM	N·m	kgf-m
Steering stem locknut	30	3.0
Handlebar clamp nut	50	5.0
Handlebar set bolt	25	2.5
Front brake caliper mounting bolt	26	2.6
Front brake hose union bolt	23	2.3
Front brake caliper air bleeder valve	7.5	0.75
Front brake caliper housing bolt	32	3.2
Front brake disc bolt	23	2.3
Front brake master cylinder bolt	10	1.0
Front axle nut	42	4.2
Rear axle nut	120	12.0
Rear shock absorber bolt (upper)	29	2.9
Rear shock absorber nut (lower)	35	3.5
Rear brake cam lever nut	10	1.0

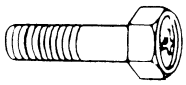
TIGHTENING TORQUE CHART

For other nuts and bolts not listed in the preceding page, refer to this chart:

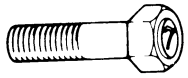
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt		"7" marked bolt	
	N·m	kgf-m	N·m	kgf-m
4	1.5	0.15	2.3	0.23
5	3	0.3	4.5	0.45
6	5.5	0.55	10	1.0
8	13	1.3	23	2.3
10	29	2.9	50	5.0
12	45	4.5	85	8.5
14	65	6.5	135	13.5
16	105	10.5	210	21.0
18	160	16.0	240	24.0



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06 – 0.07			0.120
Cylinder bore	41.005 – 41.020 Measure at 20 mm from the top surface			41.075
Piston diameter	40.940 – 40.955 Measure at 15 mm from the skirt end			40.885
Cylinder distortion	—			0.05
Cylinder head distortion	—			0.05
Piston ring free end gap	1st	R	Approximately 4.0	3.2
	2nd	R	Approximately 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10 – 0.25	0.80
Piston-ring-to-piston-ring-groove clearance	1st		0.03 – 0.07	—
	2nd		0.02 – 0.06	—
Piston pin bore	10.002 – 10.010			10.030
Piston pin O.D.	9.995 – 10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003 – 14.011	14.040
Conrod deflection	—	3.0
Crank web to web width	36.0 ± 0.05	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8 – 1.2 ml for 5 minutes at 3 000 r/min

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	4 100 – 4 500 r/min	—
Clutch lock-up	5 600 – 6 200 r/min	—

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.975 – 1.033	—
Final reduction ratio	13.812 (51/15 × 65/16)	—
Drive belt width	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		30F0
Idle r/min		1 900 ± 200 r/min
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	# 65
Jet needle	(J.N.)	N5GJ-2nd
Slow jet	(S.J.)	# 42
Air screw	(A.S.)	2 turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR7HS DENSO: W22FPR	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Primary	0.2 – 1.5 Ω	W/Bl – B/W
		Secondary	10 – 20 kΩ	Plug cap-B/W
Ignition coil primary peak voltage		More than 150 V		⊕: Ground ⊖: W/Bl
Generator coil resistance		Lighting	0.3 – 1.5 Ω	Y/W – Ground
		Charging	0.5 – 2.0 Ω	W/R – Ground
		Pickup	120 – 250 Ω	W – Br
Pickup coil peak voltage		More than 5.0 V		⊕: W ⊖: Br
Regulated voltage		13.5 – 15.0 V at 5 000 r/min		
Generator maximum output		125 W at 5 000 r/min		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	CB4L-B, FB4L-B		
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		
	Standard electrolyte specific gravity	1.280 at 20°C		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		2
Fuel level indicator light		2
Turn signal indicator light		2
Oil level indicator light		2
High beam indicator light		1.2
License plate light		5

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake lever play	Rear	15 – 25	—
Brake drum I.D.	Rear	—	120.7
Brake disc thickness	Front	4.0 ± 0.2	3.5
Brake disc runout	Front	—	0.30
Master cylinder bore	Front	11.000 – 11.043	—
Master cylinder piston diameter	Front	10.957 – 10.984	—
Brake caliper cylinder bore	Front	30.230 – 30.306	—
Brake caliper piston diameter	Front	30.150 – 30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J12 × MT3.50	—

TIRE

Unit: mm

ITEM		STANDARD/SPECIFICATION		LIMIT
Cold inflation tire pressure		Front	125 kPa (1.25 kgf/cm^2)	—
	Solo riding	Rear	175 kPa (1.75 kgf/cm^2)	—
	Dual riding (Except for UF50Z)	Front	125 kPa (1.25 kgf/cm^2)	—
		Rear	230 kPa (2.30 kgf/cm^2)	—
Tire size		Front	120/ 70-12 51L	—
		Rear	130/ 70-12 56L	—
Tire type		Front	BRIDGESTONE: HOOP B02 G	—
		Rear	BRIDGESTONE: HOOP B02	—
Tire tread depth		Front	—	1.6
		Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	—
Front fork spring free length	124.7	122
Rear wheel travel	60	—

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use only gasoline that is graded 91 octane or higher. Unleaded gasoline is recommended.	
Fuel tank capacity	6.0 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W-40	
Final gear oil capacity	130 ml	

UF50K1 AND UF50ZK1 ('01-MODEL)

CONTENTS

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 840 mm
Overall width	650 mm
Overall height	1 095 mm
Wheelbase	1 255 mm
Ground clearance	135 mm
Seat height	795 mm
Dry mass	83 kg

ENGINE

Type	Two-stroke, forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	7.2:1
Carburetor	KEIHIN PWS14
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 reduction ratio... (2.975 – 1.033)
Final reduction ratio	13.812 (51/15) × (65/16)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25°30'
Trail	82 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51L
Rear tire size	130/70-12 56L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK: BPR7HS or DENSO: W22FPR
Battery	12 V 14.4 kC (4 Ah)/10 HR
Generator	Generator
Fuse	10 A
Headlight	12 V 35/35 W
Brake light/taillight	12 V 21/5 W
Turn signal light	12 V 10 W

CAPACITIES

Fuel tank	6.0 L
Engine oil tank	1.2 L
Final gear oil	130 ml

NOTE:
These specifications are subject to change without notice.

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06 – 0.07			0.120
Cylinder bore	41.005 – 41.020 Measure at 20 mm from the top surface			41.075
Piston diam.	40.940 – 40.955 Measure at 15 mm from the skirt end			40.885
Cylinder distortion	———			0.05
Cylinder head distortion	———			0.05
Piston ring free end gap	1st	R	Approx. 4.0	3.2
	2nd	R	Approx. 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10 – 0.25	0.80
Piston ring to groove clearance	1st		0.03 – 0.07	———
	2nd		0.02 – 0.06	———
Piston pin bore	10.002 – 10.010			10.030
Piston pin O.D.	9.995 – 10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003 – 14.011	14.040
Conrod deflection	———	3.0
Crank web to web width	36.0 ± 0.05	———
Crankshaft runout	———	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8 – 1.2 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	4 300 ± 200 r/min.	———
Clutch lock-up	5 900 ± 300 r/min.	———

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.975 – 1.033	———
Final reduction ratio	13.812 (51/15 × 65/16)	———
Drive belt width	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		30F0
Idle r/min.		1 900 ± 200 r/min.
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	#65
Jet needle	(J.N.)	N5GJ-2nd
Slow jet	(S.J.)	#42
Air screw	(A.S.)	2 turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR7HS DENSO: W22FPR	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Primary	0.2 – 1.5 Ω	W/Bl – B/W
		Secondary	10 – 20 kΩ	Plug cap – B/W
Ignition coil primary peak voltage		More than 150 V		⊕ : Ground ⊖ : W/Bl
Generator coil resistance		Lighting	0.3 – 1.5 Ω	Y/W – Ground
		Charging	0.5 – 2.0 Ω	W/R – Ground
		Pick-up	120 – 250 Ω	W – Br
Pick-up coil peak voltage		More than 5.0 V		⊕ : W ⊖ : Br
Regulated voltage		13.5 – 15.0 V at 5 000 r/min.		
Generator Max. output		125 W at 5 000 r/min.		
Starter relay resistance		50 – 90 Ω		Y/G – W
Battery	Type designation	CB4L-B		
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		
	Standard electrolyte S.G.	1.280 at 20°C		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		2
Turn signal indicator light		2
Oil level indicator light		2
Fuel level indicator light		2
High beam indicator light		1.2
License light		5

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake lever play	Rear	15 – 25	———
Brake drum I.D.	Rear	———	120.7
Brake disc thickness	Front	4.0 ± 0.2	3.5
Brake disc runout	Front	———	0.30
Master cylinder bore	Front	11.000 – 11.043	———
Master cylinder piston diam.	Front	10.957 – 10.984	———
Brake caliper cylinder bore	Front	30.230 – 30.306	———
Brake caliper piston diam.	Front	30.150 – 30.200	———
Brake fluid type	DOT 4		———
Wheel rim runout	Axial	———	2.0
	Radial	———	2.0
Wheel axle runout	Front	———	0.25
Wheel rim size	Front	J12 × MT3.50	———
	Rear	J12 × MT3.50	———

TIRE

ITEM	STANDARD/SPECIFICATION		LIMIT
COLD INFLATION TIRE PRESSURE (SOLO RIDING)	Front	125 kPa (1.25 kgf/cm^2, 18 psi)	———
	Rear	175 kPa (1.75 kgf/cm^2, 25 psi)	———
COLD INFLATION TIRE PRESSURE (DUAL RIDING) (Except for UF50Z)	Front	125 kPa (1.25 kgf/cm^2, 18 psi)	———
	Rear	230 kPa (2.30 kgf/cm^2, 33 psi)	———
Tire size	Front	120/70-12 51L	———
	Rear	130/70-12 56L	———
Tire type	Front	BRIDGESTONE: HOOP B02 G	———
	Rear	BRIDGESTONE: HOOP B02	———
Tire tread depth	Front	———	1.6
	Rear	———	1.6

SUSPENSION

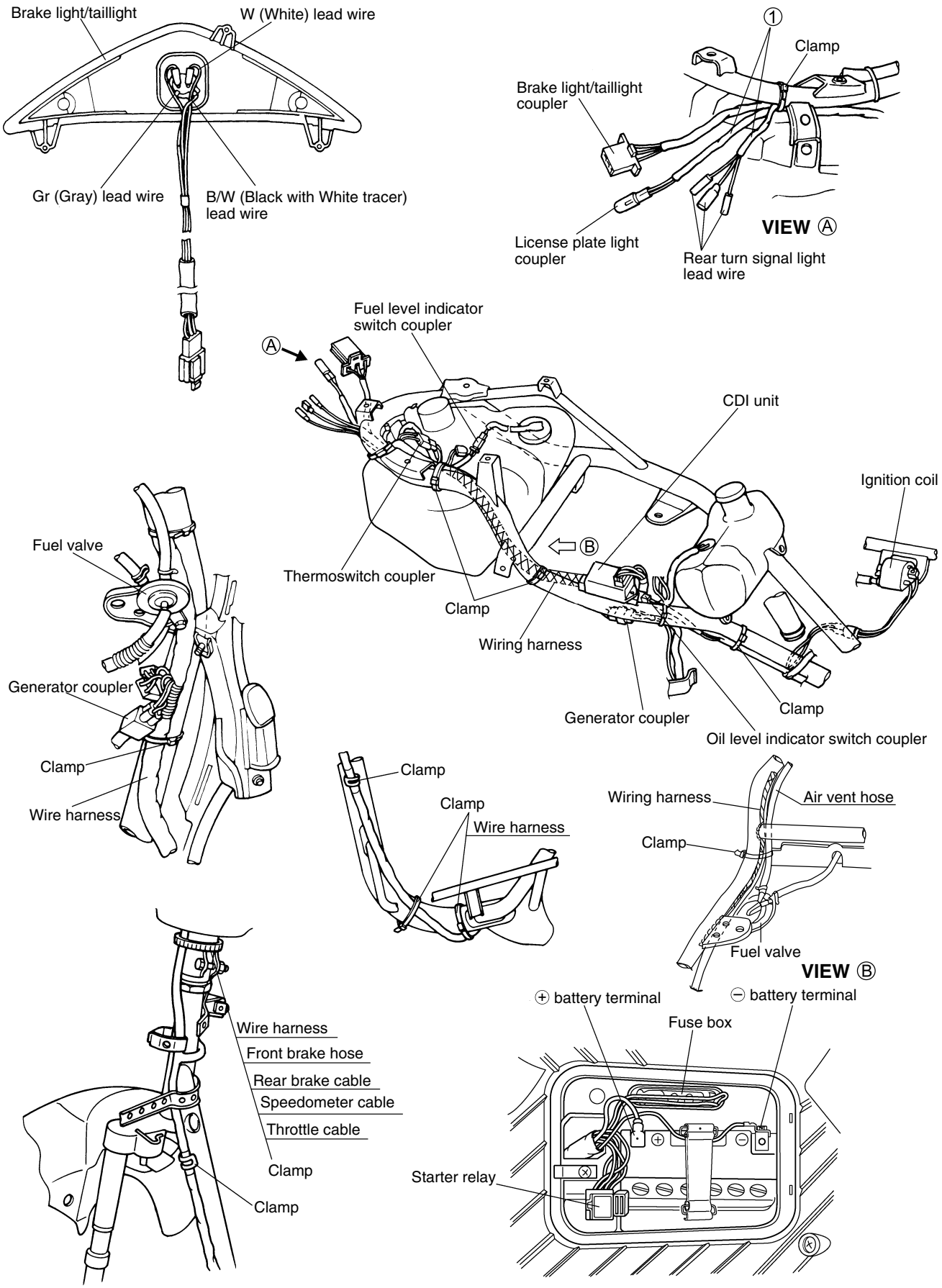
Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	———
Front fork spring free length	124.7	122
Rear wheel travel	60	———

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.0 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml	

WIRE HARNESS ROUTING



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